How to still get connected from Iran using Your Freedom

Document version

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What has happened?

We can only guess. From what we see, the Iranian government and/or the Iranian providers have put additional filtering in place that blocks and/or slows down many of our IP addresses. It started with TCP based connection protocols and was followed by UDP based protocols a day later.

Can we still use YF?

Yes. There are still ways to get connected, but we cannot make promises that they'll work as well as you are used to. There are, however, some technical steps that you need to take.

Run YF as Administrator all the time

The more sophisticated connection protocols only work if the YF client has administrative privileges. There are two ways to run a program with administrative privileges in Windows:

1. Run it every time using right-click, "Run as administrator".
2. Right-click on the link you use to start the program (or the executable file), choose "Properties", then open the "Compatibility" panel and tick "Run as administrator". You only need to do this once.

In both cases, YF will (in common Windows configurations) request to run with admin privileges each time you start it. The additional privileges enable the use of protocols like ICMP, low source ports and (though not related to getting connected) OpenVPN mode.

Use IPv6

What is IPv6?

The protocol widely used on the Internet nowadays is called IPv4, or IP version 4. No-one really remembers why it is version 4 but it is. IPv4 uses addresses that consist of 32 bit, or tuples of 4 numbers between 0 and 255.

IPv6 is a new version of the protocol that is meant to replace IPv4 in the end. It uses 128 bit addresses (written as tuples of 8 hex numbers, each containing up to 4 hex digits, or 16 bit).

Many of our servers are "dual stacked", i.e. they support both. Your PC most likely is "dual stacked" as well. But do you use IPv6? Most likely you don't, because some network component in-between does not support it. There are ways around this problem though, and fascinatingly they work very well against censorship.

Why does it help?

Because censors aren't more informed than most users. They are crafting their filter lists for IPv4, not IPv6, and they are not aware of automatic mechanisms to use one through the other. Or they are aware of it but consider it a relatively small problem not worth solving at the moment.

Native IPv6

If you have IPv6 connectivity directly from your provider (an example would be "Three" in France) you are probably using it without knowing about it. Many universities have IPv6 connectivity as well on all their PCs. Fact is, places that strictly filter on IPv4 often don't on IPv6 so you really want to look out for IPv6.

With Windows, just open a "cmd" window and type "ipconfig" -- if you have IPv6 you'll see it. You'll have some weird looking address like "2a02:345:abcd::2" or similar.

I don't have IPv6, can I get it?

Probably yes. There are transition services to help people like you getting connected to IPv6. One of them is called **Teredo**. There are more but we'll concentrate on Teredo here because it's easy to use and works for many.

Most current Windows versions have Teredo enabled by default (Vista does, and Windows 7 does as well). With XP SP2 you need to enable it.

First ensure the IPv6 protocol stack is installed on your PC. Just open Network Connections (e.g. through Control Panel, Network and Internet, Networks and Shares, Adapter Settings), then open any interface's properties window and check if the IPv6 protocol is there; if not, install it (it ships with all Windows versions XP SP2 and newer but is not always installed by default).

Then open a "cmd" window (click on Start, then click "Run" in XP and type "cmd"; with Vista/Windows 7 type "cmd" in the search field, wait until "cmd.exe" appears, right-click on it and choose "run as administrator"). In it, type this:

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netsh interface ipv6 show teredo
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If type is "default" and you haven't got IPv6 connectivity try this:

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netsh interface ipv6 set teredo enterpriseclient
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Unless you are behind a web proxy this should get you on the IPv6 network -- and the YF client will notice.

Try exotic connection modes

UDP mode

Well, there is nothing really exotic about this mode, but it is not so commonly used for user facing services. Many services that work in the background use UDP though and generally blocking it would break a lot of things. Also, since many services related to network operations use UDP, chances are good that there are whitelist records in filter lists for them that the YF client can use.

If you cannot use UDP (i.e. you don't find servers), try configuring a "low" source port for it (for example: 53, 123, 161, and 162 – no, these are *not* randomly chosen, they correspond to the DNS, NTP and SMTP protocols). This can be done in the configuration window, server connection panel. It often makes a difference because chances are good that there are whitelist records for network control traffic and/or providing services.

UPDATE Nov 29: We do not see any more UDP based connections coming in; this seems to have been shut down.

ECHO mode

ECHO mode uses ICMP ECHO requests and replies (aka "ping"). Chances are good that either ICMP as a whole or network testing protocols like ECHO are generally whitelisted.

UPDATE Nov 29: Right now no ECHO mode connections are active; this is probably no longer working.

DNS mode

Even censoring places need to permit DNS to some degrees. If you are able to resolve names (i.e. things like www.microsoft.com get translated to IP addresses) chances are good that you can use DNS mode. In DNS mode, the YF client uses specially crafted DNS queries that receive specially crafted replies for transport of data. The most exceptional thing about this is that it also works if you cannot directly exchange data with our servers; as long as you are able to resolve names, even if through intermediate servers, DNS mode will work.

UPDATE Nov 29: Right now, there are no DNS mode connections from Iran on our servers. We will try to make it work again in the next client release but doubt it will work for long. (Unless you are able to use a DNS server outside Iran, of course. But this has one big disadvantage: we cannot determine where you are connecting from and therefore cannot offer special conditions.)

Try to change the new DNS domain setting option (click Configure and scroll down), maybe it makes a difference.

CGI Relay mode

As a last resort, there is another funny way of getting connected: through web sites of other people who actively support it (they receive bonus points for it if you use their relay). Client versions 20121203-01 and above support (again) searching for such servers; just tick the "CGI Relays" option when searching for servers (and disable everything that doesn't work anyway to speed things up). There is no need to be alarmed about your privacy if you use relays; all they'll see is what any eavesdropper in-between can see. Even if such a relay was operated by your government, they'd not learn anything new.

There is only one way to find out! Generally, these protocols are not meant for high-volume data transport and chances are that if they work they will not work too well, but if you are desperate enough they are probably better than nothing. In fact, both UDP mode and ECHO mode are able to provide 1 Mbit/s of bandwidth without special configuration; it does depend a lot on your local networking situation though. DNS mode will likely not let you use this much bandwidth unless direct communication with our servers is possible, but it will probably still be enough to access web pages and even watch YouTube videos.

Update the YF client installation!

Folks, this is important: update frequently! It's not difficult (as long as you are still connected), especially if you are running as administrator, and it's convenient. If you use a version that is older than 20121121-01, update now if possible! This version fixes a nasty UDP mode bug that broke UDP mode for many, and you certainly want this fix in your current situation.

You can always get the latest version through email; just send an empty email to get@your-freedom.net and you will receive instructions.

What about PPTP?

PPTP connections to our servers using the XX.pptp.your-freedom.de aliases no longer work from Iran.

As far as we can tell, they are not filtering PPTP in general but our IPs in particular. You can attempt to use one of the "hidden IPs" – naturally, we cannot list them on our web page or in this text, but they usually are similar to the main IP address.

You cannot use IPv6 addresses of our PPTP servers at the moment; the Linux PPTP implementation "poptop" unfortunately does not support it.

Bandwidth shaping

We have also noticed that Iran shapes bandwidth to less than 500 kbit/s. If you are unable to get more than roughly 450 kbit/s and you should be getting more – it's not us.