

Mobile phone and computer lit up in a dark room

TOR

2014 Nominet Trust 100 Winner

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THE COUNTER-SURVEILLANCE 'ONION ROUTER'

By The Tor Project

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- Social Exclusion
- Internet

Tor (The Onion Router) is a non-profit software programme and network of servers to protect people from the form of internet surveillance called 'traffic analysis' – the third party monitoring of where you are and who you are talking to.

This form of espionage is something of a hidden frontier to most domestic internet users – and Tor was originally developed to protect the US Navy communications.

Tor works by disguising the huge amount that can be gleaned from the 'headers' that are attached to your messages for routing through networks. Even if you have gone to the trouble of encrypting the 'data payload', geekspeak for the content of a message; headers show the origin, destination, size and timing of your communications.

This can reveal your behaviour, interests, geographical location to everyone from authorised internet service providers to anyone with a spyware app - and increasingly sophisticated statistical techniques make it possible for third parties to track the communication patterns of organisations and individuals.

Traffic analysis can reveal, for example, which research department in a company is in closest communication with a company's patent lawyers, or it can show visits to sensitive sites that might compromise individuals, such as forums for rape or abuse survivors, or for particular health conditions.

Tor works by randomly relaying and distributing your communications across a network of volunteer servers, anonymising the transport of your messages, so it is impossible for observers to identify these patterns.

Messages travel along a circuit of encrypted connections along the network – each link in the chain only records its connection with the immediate next server, making it impossible to ascertain the origin and destination of messages passing all the way along the chain.

Tor's clients include dissidents, whistleblowers, law-enforcement agents working undercover and website publishers who want to circumvent censorship. It is also increasingly working with charities that work with vulnerable groups, such as victims of domestic abuse, whose abusers might be using spying software.

Image 'Galaxy light waves' courtesy of {Zack}

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