

Navigating the “Dark Web”

Why private networks matter, and how onion routing works

THE QUESTION

What is the “dark web”, and why does private networking matter?

THE PROMISE

You will see how onion routing hides who is talking to whom.

OUR JOB

Learn the tools, the risks and the habits. For readers 18 years of age or older.



Surface

Deep

Dark

Your tools

What people mean by “dark web”

Surface web

Pages that search engines index. News sites, shops, encyclopedias.

Deep web

Pages behind a login or not indexed. Your email, bank and cloud files. This is most of the web.

Dark web

Sites you can reach only with special software, such as Tor onion services and I2P sites.

The name sounds sinister. The technology is neutral. It hides where a connection comes from and where it goes, which journalists, activists and ordinary people rely on.

A fair warning. Like the rest of the web, you can stumble across things that may not be legal and may be upsetting. We do not host, run or endorse other sites. Know your local laws, use judgment, and leave anything that troubles you.

Who can see **what you do online?**

Directly

- Your internet provider sees which site you visit
- The site sees your address
- HTTPS hides the page itself from the network

Through a VPN

- Your provider sees only the VPN
- The site sees the VPN's address
- The VPN company sees both. You must trust it completely

Through Tor

- Your provider sees only that you use Tor
- The entry relay knows you, not the site
- The exit relay knows the site, not you
- No single relay knows both

HTTPS protects what you send. Tor and VPNs change who sees where you connect. Use both ideas together, and remember that anything you tell a site yourself is not hidden.

What to watch for in the lab

Who can see what?

- Pick direct, VPN, Tor, onion service or I2P
- Select each stop on the path
- Toggle HTTPS and logging in

Peel the onion

- Wrap a message in three layers
- Pass it from relay to relay
- See what each relay learns

Predict: in a Tor circuit, which single relay knows both who you are and which site you asked for?

Write down your answer. The lab will show it.