

Darknet (overlay network)

A **darknet** is a private network where connections are made only between trusted peers — sometimes called “friends” (F2F)^[1] — using non-standard protocols and ports. The collection of all darknets forms a subsection of the Deep Web.^[2]

Darknets are distinct from other distributed peer-to-peer networks as sharing is anonymous (that is, IP addresses are not publicly shared).^[3]

The term has been widely adopted and has been used by major media sources, including *Rolling Stone* and *Wired*.

1. Any widely distributed object will be available to a fraction of users in a form that permits copying.
2. Users will copy objects if it is possible and if they are interested in doing so.
3. Users are connected by high-bandwidth channels.

The darknet is the distribution network that emerges from the injection of objects according to assumption 1 and the distribution of those objects according to assumptions 2 and 3.

1 Ambiguously called dark web

It is known as the **Dark Web**, subsection of the deep web, though there is some ambiguity in the common use of *dark web*.^[2]

The Microsoft researchers argued that the presence of the darknet was the primary hindrance to the development of workable DRM technologies.

2 Darknet uses

The darknet may be used for various reasons, such as:

- Out of privacy concerns or for fear by dissidents of political reprisal
- To publish for criminal gain
- To share media files (sometimes copyrighted files)

4 Other variances of meaning

The term “darknet” can be used to describe *all* non-commercial sites on the Internet.^[6]

It has also been used to refer to *all* “underground” web communications and technologies, most commonly those associated with illegal activity or dissent.^[3]

3 First use of the term

Originally coined in the 1970s to designate networks which were isolated from ARPANET (which evolved into the Internet) for security purposes,^[4] darknets were able to receive data from ARPANET but had addresses which did not appear in the network lists and would not answer pings or other inquiries.

The term gained public acceptance following publication of “The Darknet and the Future of Content Distribution”,^[5] a 2002 paper by Peter Biddle, Paul England, Marcus Peinado, and Bryan Willman, four employees of Microsoft who described the concept as follows:

The idea of the darknet is based upon three assumptions:

5 Terms

When used to describe a file sharing network, the term darknet is often used as a synonym for “friend-to-friend”—both describing networks where direct connections are only established between trusted friends. A most widespread “non-darknet” file sharing network, such as BitTorrent, is not a “friend-to-friend” network since peers may communicate with anyone else on the network.

Almost all known darknets are decentralized and therefore considered peer-to-peer.

Many darknets require software to be installed to access them.

5.1 Software

- Freenet is a popular darknet (friend-to-friend) by default; since version 0.7 it can run as a “openet” (connecting to untrusted users)

- **GNUnet** is a popular darknet if the "F2F (network) topology" option is enabled
- **Retroshare** run as a darknet (friend-to-friend) by default to perform anonymous file transfers if DHT and Discovery features are disabled
- **Syndie** is software used to publish distributed forums over several networks. The network may be an anonymous deep web network like I2P or Tor.

5.1.1 Defunct software

- AllPeers
- anoNet
- Turtle F2F
- WASTE

6 See also

- Crypto-anarchism
- Private P2P
- Sneakernet
- Internet privacy
- Virtual private network (VPN)

7 References

- [1] Mansfield-Devine, Steve (December 2009). "Dark-nets". *Computer Fraud & Security* **2009** (12): 4–6. doi:10.1016/S1361-3723(09)70150-2.
- [2] "Clearing Up Confusion – Deep Web vs. Dark Web". *brightplanet.com*. April 2014.
- [3] Wood, Jessica (2010). "The Darknet: A Digital Copyright Revolution" (PDF). *Richmond Journal of Law and Technology* **16** (4). Retrieved 25 October 2011.
- [4] "About Darknet". Retrieved 11 March 2012.
- [5] Biddle, Peter; England, Paul; Peinado, Marcus; Willman, Bryan (18 November 2002). *The Darknet and the Future of Content Distribution* (PDF). ACM Workshop on Digital Rights Management. Washington, D.C.: Microsoft Corporation. Retrieved 10 October 2012.
- [6] Lasica, J. D. (2005). *Darknets: Hollywood's War Against the Digital Generation*. Hoboken, NJ: J. Wiley & Sons. ISBN 0-471-68334-5.

8 External links

- Boutin, Paul (January 28, 2004). "See You on the Darknet". *Slate*.
- "File-sharing 'darknet' unveiled". *BBC News*. August 16, 2006.
- Darknet 101 - introduction for non technical people

9 Text and image sources, contributors, and licenses

9.1 Text

- **Darknet (overlay network)** *Source:* [http://en.wikipedia.org/wiki/Darknet%20\(overlay%20network\)?oldid=657448820](http://en.wikipedia.org/wiki/Darknet%20(overlay%20network)?oldid=657448820) *Contributors:* M~enwiki, Shii, Lousyd, Delirium, CesarB, Haakon, DropDeadGorgias, Ciphergoth, Scott, Thomas~enwiki, Vodex, TJ, K1Bond007, Dbabbitt, MilkMiruku, DocWatson42, Obli, Neuro, Terrible Tim, Stuuf, AlistairMcMillan, RadioYeti, Chaikney, Kusunose, Creidieki, Ustrnme h8er, Alkivar, Cmdrjameson, Blenda~enwiki, Ziggurat, Scubacuda, Wtmitchell, Markaci, Alvis, Vorash, Eyreland, Qwertyus, GrundyCamellia, Phillipdison1891, XP1, RobertG, LastIin, JYOuyang, Eldred, Wongm, Intgr, Benlisquare, Dadu~enwiki, Thodin, Remmelt, Hydrargyrum, Romanc19s, Irishguy, GeoffCapp, Ninly, MarkTAW, RamirBorja, Jonasfagundes, Arasb~enwiki, That Guy, From That Show!, Iancjclarke, MacsBug, SmackBot, MeiStone, Cassivs, A. B., Shadow7789, Frap, JonHarder, Marc-André Aßbrock, Michael Rogers, Writtenonsand, CoolKoon, 16@r, Anonymous anonymous, Norm mit, Twas Now, Pbaehr, Tawkerbot2, JebJoya, PuerExMachina, Cydebot, DumbBOT, Rapidconfusion, East718, AshishKulkarni, Litening, Ginoslug, WLU, Wkussmaul, ExplicitImplicity, RockMFR, Touisiau, AntiSpamBot, Rei-bot, Econterms, THC Loadee, Jsystinc, Sempcom, Joydeep jra, ClueBot, Fyyer, Cambrasa, Sv1xv, Excirial, Rhododendrites, Arjayay, Badfoo, Baudway, LeheckaG, Addbot, Ztnorman, Favonian, Lightbot, SasiSasi, Yobot, Amirobot, AnomieBOT, FrescoBot, CSEMike, Desnacked, LittleWink, Pmokeefe, Pdreiss, RjwilmsiBot, Pegaze34, Dewritech, Wingman417, LWG, Chuispaston-Bot, LZ6387, Wluce0, ClueBot NG, Vincent Moon, ProcMoss, Csoler, Helpful Pixie Bot, BG19bot, AgentEm84, BattyBot, DarafshBot, Fragg, Rogikalomni, Nodove, Fixture, Monkbot, Lymaniffy and Anonymous: 121

9.2 Images

- **File:Gartoon-fs-ftp.png** *Source:* <http://upload.wikimedia.org/wikipedia/commons/3/35/Gartoon-fs-ftp.png> *License:* GPL *Contributors:* ? *Original artist:* ?
- **File:Internet_map_1024.jpg** *Source:* http://upload.wikimedia.org/wikipedia/commons/d/d2/Internet_map_1024.jpg *License:* CC BY 2.5 *Contributors:* Originally from the English Wikipedia; description page is/was here. *Original artist:* The OpTe Project

9.3 Content license

- Creative Commons Attribution-Share Alike 3.0