

# Friend-to-friend

A **friend-to-friend** (F2F) computer network is a type of [peer-to-peer network](#) in which users only make direct connections with people they know. [Passwords](#) or [digital signatures](#) can be used for [authentication](#).

Unlike other kinds of [private P2P](#), users in a friend-to-friend network cannot find out who else is participating beyond their own circle of friends, so F2F networks can grow in size without compromising their users' anonymity. Retroshare, WASTE, GNUnet, [Freenet](#) and [OneSwarm](#) are examples of software that can be used to build F2F networks, though RetroShare is the only one of these configured for friend-to-friend operation by default.

Many F2F networks support indirect [anonymous](#) or [pseudonymous](#) communication between users who do not know or trust one another. For example, a [node](#) in a friend-to-friend [overlay](#) can automatically forward a file (or a request for a file) anonymously between two friends, without telling either of them the other's name or [IP address](#). These friends can in turn automatically forward the same file (or request) to their own friends, and so on.

[Dan Bricklin](#) coined the term "friend-to-friend network" in 2000.<sup>[1]</sup>

## Potential applications of F2F

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- The Bouillon project uses a friend-to-friend network to assign trust ratings to messages.<sup>[2]</sup>

## See also

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- Darknet
- [LAN messenger](#)
- [Private peer-to-peer](#)
- [Web of trust](#)

## References

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- B.C. Popescu, B. Crispo, and [A.S. Tanenbaum](#). "Safe and Private Data Sharing with Turtle: Friends Team-Up and Beat the System." (<https://turtle-p2p.sourceforge.net/turtleinitial.pdf>) In 12th International Workshop on Security Protocols, Cambridge, UK, April 2004.

- T. Chothia and K. Chatzikokolakis. "A Survey of Anonymous Peer-to-Peer File-Sharing." (<http://www.lix.polytechnique.fr/~tomc/P2P/Papers/AnonP2PSurvey.pdf>) In Proceedings of the IFIP International Symposium on Network-Centric Ubiquitous Systems (NCUS 2005), Nagasaki, Japan, volume 3823 of [Lecture Notes in Computer Science](#), pages 744–755. Springer, 2005.
- J. Li and F. Dabek. "F2F: Reliable Storage in Open Networks." (<http://pdos.csail.mit.edu/~jinyang/pub/iptps-f2f.pdf>) In 5th International Workshop on Peer-to-Peer Systems (IPTPS '06), Santa Barbara, CA, USA, February 2006.
- M. Rogers and S. Bhatti. "How to Disappear Completely: A Survey of Private Peer-to-Peer Networks." ([http://www0.cs.ucl.ac.uk/research/researchnotes/documents/RN\\_07\\_13.pdf](http://www0.cs.ucl.ac.uk/research/researchnotes/documents/RN_07_13.pdf)) In 1st International Workshop on Sustaining Privacy in Collaborative Environments (SPACE 2007), Moncton, NB, Canada, July 2007.
- Numbered references:
  1. D. Bricklin. [Friend-to-friend Networks](http://www.bricklin.com/f2f.htm). (<http://www.bricklin.com/f2f.htm>) Archived (<https://web.archive.org/web/20041205122542/http://bricklin.com/f2f.htm>) 2004-12-05 at the [Wayback Machine](#) August 11, 2000.
  2. Grishchenko, Victor (2007). "Bouillon: A Wiki-Wiki Social Web". In Diekert, Volker; Volkov, Mikhail V.; Voronkov, Andrei (eds.). *Computer Science – Theory and Applications*. Lecture Notes in Computer Science. Vol. 4649. Berlin, Heidelberg: Springer. pp. 139–145. doi:10.1007/978-3-540-74510-5\_16 ([https://doi.org/10.1007%2F978-3-540-74510-5\\_16](https://doi.org/10.1007%2F978-3-540-74510-5_16)) . ISBN 978-3-540-74510-5.

## External links

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- [Friend2Friend.net](https://archive.today/20130221132152/http://wiki.friend2friend.net/) (<https://archive.today/20130221132152/http://wiki.friend2friend.net/>) , An XML scripting language for writing F2F software
- Discussion about F2F (<http://zgp.org/pipermail/p2p-hackers/2005-December/003272.html>) Archived (<https://web.archive.org/web/20060924165755/http://zgp.org/pipermail/p2p-hackers/2005-December/003272.html>) 2006-09-24 at the [Wayback Machine](#) involving Ian Clarke of Freenet
- F2F page at altruists.org (<http://www.altruists.org/projects/ge/ff/>) Archived (<https://web.archive.org/web/20070202200413/http://www.altruists.org/projects/ge/ff/>) 2007-02-02 at the [Wayback Machine](#)
- Bouillon project website (<https://web.archive.org/web/20100716172504/http://bouillon.math.usu.ru/>) at the [Wayback Machine](#) (archived July 16, 2010)

