


# TECHDISPATCH

FEDERATED SOCIAL MEDIA PLATFORMS



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The Fediverse consists of many independent, interoperable social media platforms that allow their users to interact with each other across those platforms. In the absence of vendor lock-in, users can choose a platform with terms and data location matching their preferences.

## I. What are Federated Social Media Platforms?

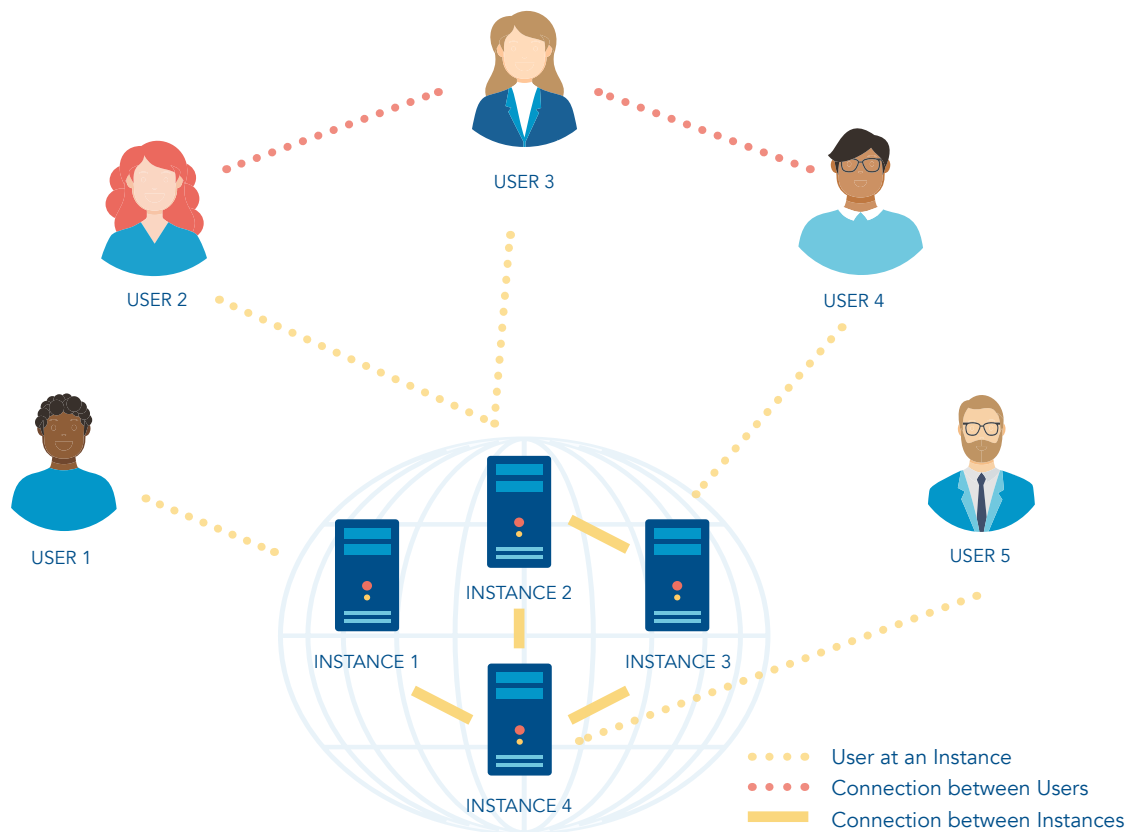
**The Fediverse** is a set of federated social media platforms, and relevant supporting servers, independent from each other, that are interoperable and as such enable their users to interact across different platforms (see Figure 1). For this, the Fediverse relies on open protocols that provide platforms with a common language to exchange profile information, private messages, public timeline contributions, etc. with other platforms. Consequently, people can choose to register on any Fediverse platform and still connect with users registered on any other interoperable platform. For instance, the [W3C ActivityPub](#) is such an open protocol for social media interoperability.

The Fediverse offers an alternative to centralised, non-interoperable social media

platforms. Due the dominant position of the existing centralised mainstream social media, often people have no other choice than to register on those platforms to connect with their other registered users and are not able to interact with users of other social media (network effect).

Furthermore, the Fediverse platforms can choose independently their terms of use, moderation policies, server location, and graphical user interfaces giving people more choice. Some special-interest communities operate their own Fediverse platform and can rely on donations or paid plans for funding.

Fig. 1



**Figure 1:** Each instance hosts a number of user accounts. Users of the same instance (here User 2 and 3) can communicate without data leaving their instance. Users of different instances (here User 3 and 4) can communicate, because their instances are connected and interoperable. If this is not the case due to network discovery issues or policy restrictions, users cannot communicate (here User 1 and User 4 or 5). What are the data protection issues?

## II. Compliance with different jurisdictions

Centralised social media platforms addressing users from many regions may face compliance issues due to contradicting regulations in the jurisdictions of residence of the users.

A federated social media platform addressing users from a specific region can in principle offer users of that region a higher level of compliance. Yet, platforms with few users may struggle to afford a professional

compliance programme. Exchange with non-compliant platforms can be restricted based on a case-by-case analysis.

Special-interest communities or individual users may decide to use a federated platform with a server location in their region. This way, they can engage in confidential communication with other users of the same platform without involving international data transfers and the risks they present.

However, as with email, users might interact with users on other platforms with little transparency on potential data transfers. To increase the efficiency and robustness, many federated platforms share and cache user-generated public content widely and irrespectively of legal requirements on international data transfers.

matching advertisements and ranks up certain topics in the users' newsfeed.

Federated platforms can choose individually how to collect funds for their operation. While they could technically also employ profiling, most of them operate without it and are independent of advertising and advertisers.

## II.2 Data subject rights

Special-interest communities operating their own small-scale federated platform may be in a better position to offer their users meaningful and better response upon data subject requests, such as requests for content or account erasure, in face of fake accounts, or unsolicited uploads of personal data.

Platform moderators belonging to the special-interest community may speak the same language and understand the context of the requests. Of course, this calls for an adequate level of accountability and platform governance.

## II.3 Profiling and Curation Algorithms

Many centralised platforms rely on profiling for behavioural advertisement. For this, these platforms try to measure the user interaction with content, e.g. via the time spent watching, sharing, or liking. These clues serve to infer the user's personal preferences and enrich user profiles. Based on these profiles, the platform selects

Consequently, those platforms offer a privacy-preserving alternative: they do not collect unnecessary personal data, do not share user data with advertisers, and rely on simpler, but more transparent techniques to rank content, such as chronological ranking.

## II.4 Data protection by design and by default

Most federated platforms are developed and operated as an alternative to privacy-invasive mainstream social media and with data protection by design and by default in mind. Often, platforms offer users to fine-tune the visibility of their content, e.g. to users of the same platform. The users' content impressions, such as views per post, are usually not registered, and in general content statistics are limited to explicit interactions such as sharing and liking.

The Fediverse users are distributed over many platforms. If one of those platforms suffers from a data breach, data of less users is at stake than in centralised social media. This also lowers the incentive for malicious attacks. The use of open source software allows for public audits of and an open

debate on the way such platforms process data. The underlying open protocol of federated platforms, e.g. W3C ActivityPub, will also need to implement data protection by design and by default, as the result of a

common effort. As a shared core component of federated platforms, the protocol helps to bundle developments, yet it could slow down advancements in case of disagreement.

## II.5 Interoperability and Portability

Fig. 2



**Figure 2:** Fediverse applications are interoperable. Users can discover content from various instances and possibly from different services (such as microblogging, photo and video platforms) in one integrated view.

The open protocol of federated platforms enables users to exchange with users of other platforms supporting the same protocol (see example in Figure 2). Thus, users can choose to register their account on a specific platform on the basis of terms of service, community affiliation, server location etc. instead of being bound to one only platform as in the case of centralised social media. The diversity of the offer may even pose users a challenge to identify the most appropriate platform. Of course, their peers (friends, colleagues, but also companies and public services) would need to use at least one interoperable platform to enable communication and thus help overcome the vendor lock-in effect. Open protocols may also enable the

development of independent 3rd-party apps or user interfaces to give users more choice on how to control their own account. Most federated platforms offer an advanced web interface compatible with all devices with a modern web browser. Hence, users do not have to use native apps and app stores if they do not want to. Many federated platforms offer data export features to their users. However, full portability with an import is rarely available, also because federated platforms may not trust other platforms or users with the integrity and honesty of timestamped user-generated content. Malicious users could export their data, modify dates and content, and import it afterwards, which would undermine trust in the platforms.



## II.6 Availability

The Fediverse as a whole is more robust and more available than centralised platforms due its decentralised character. Access is not limited through one single website or vendor apps that could be removed from app stores for various reasons. Consequently, the Fediverse is more resistant to censorship. Users' content is distributed to the platforms of their subscribers and accessible also when their platform is temporarily offline to improve the availability and performance of the Fediverse. However, this duplication mechanism renders content deletion or rectification more difficult. In case of deletion by the user, the platforms with duplicates

receive usually an automated deletion request and must be trusted to comply and delete their duplicate.

Furthermore, often the organisations that manage the Fediverse platforms have not enough resources to afford the same high level of security measures when it comes to e.g. hardware redundancy, backups, or safeguards against DDoS attacks that may be detrimental to the platform availability. Also scarce human resources to maintain the platform may impact the availability.

## Recommended Readings

Wikipedia. **ActivityPub** (as of 25 April 2022).  
Wikipedia. **Network effect** (as of 16 May 2022)

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rixx.de. On Running a Mastodon Instance (2021). <https://rixx.de/blog/on-running-a-mastodon-instance/>

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