



OST

Eastern Switzerland
University of Applied Sciences

Distributed Systems (DSy)

Distributed Applications - Mastodon

Thomas Bocek

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Learning Goals

- Lecture 9 (Distributed Applications, Mastodon)
 - What is Mastodon and ActivityPub

What is Mastodon?

- “A mastodon (mastós 'breast' + odoús 'tooth') is any proboscidean belonging to the extinct genus Mammut” [\[link\]](#)
- A decentralized, open-source social network
 - “Mastodon is free and open-source software for running self-hosted social networking services” [\[link\]](#)
- Launched in 2016 by Eugen Rochko, now with Mastodan gGmbH [\[link\]](#)
 - Alternative to traditional social media platforms, offering greater privacy, user control, and an ad-free experience.



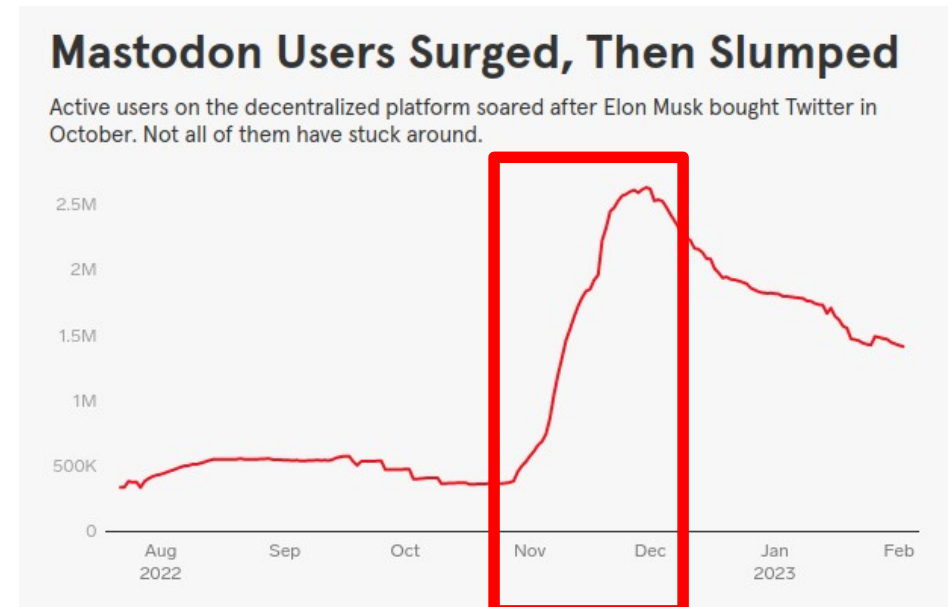
Key Features

- Decentralized Structure
 - Network of interconnected instances (servers)
 - Users can choose an instance based on their interests or create their own
- Chronological Timeline
 - No algorithmic manipulation or ads
 - Ensures user control
- Toots and Content Warning (CW)
 - Toots are similar to tweets (up to 500 characters)
 - Content Warning feature to hide sensitive content
- Federation and Moderation
 - Instance-level Moderation
 - Flag inappropriate content
 - Each instance can set its own moderation policies
 - Helps create safer spaces for users
 - Federation
 - Instances can communicate with each other
 - Allows users from different instances to interact

Key Features

- Privacy and Customization
 - Adjustable Privacy Settings
 - Public, unlisted, followers-only, and direct toots
 - Increased control over content visibility
 - Customization
 - Customizable interface and themes

- Adoption and Growth
 - Growth driven by dissatisfaction with mainstream platforms



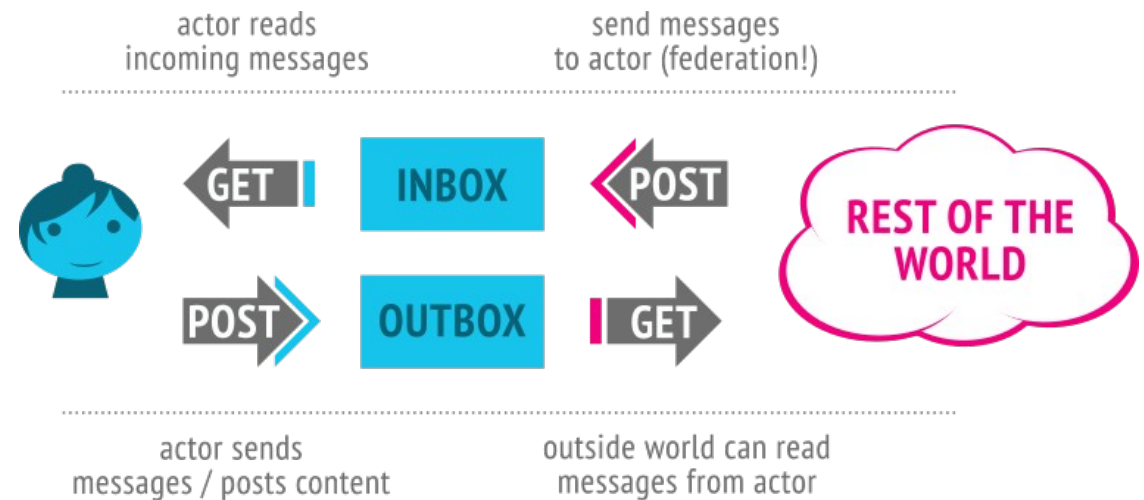
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- Challenges
 - User retention

Federation

- ActivityPub – decentralized communication protocol [\[link\]](#)
 - Open, decentralized protocol developed by the World Wide Web Consortium (W3C)
 - Enables communication and interaction between various social networks and applications
 - Uses URIs (Uniform Resource Identifiers) for uniquely identifying objects and users
 - Sends, receives, and processes activities such as Toots, Likes, and Follower relationships

- Inbox/Outbox



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Setup

- Many Tutorials
 - How to Setup a Mastodon Server [[link](#)]
 - How To Install Mastodon on Ubuntu 20.04 [[link](#)]
 - How to Set Up a Mastodon Server [[link](#)]
 - Github [[link](#)]
 - git clone <https://github.com/tootsuite/mastodon>
 - cd mastodon
 - docker-compose.yml
 - Comment out the build: . lines for all images (web, streaming, sidekiq)
 - cp .env.production.sample .env.production
 - docker-compose build
 - chown -R 991:991 public
 - docker-compose run --rm web rake mastodon:setup
 - docker-compose up (-d)