

Jami and how it empowers users

LibrePlanet 2021

Amin Bandali



What is Jami?



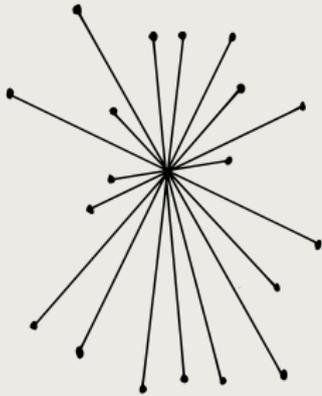
Jami is free software for universal communication
that respects the freedom and privacy of its users

- one-on-one conversations
- file sharing
- audio/video calls & conferences
- screen sharing in video calls & conferences
- recording & sending audio/video messages
- SIP phone software functionality
- cross-platform communication framework

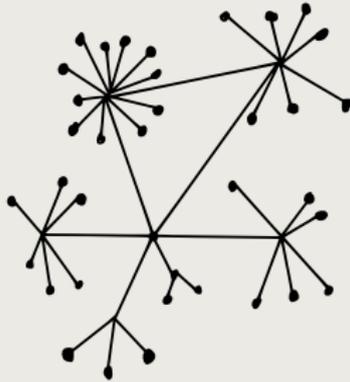
Architecture overview

Jami is

an **end-to-end encrypted** secure
and **distributed** voice, video,
and chat **communication platform**
that requires **no central server**
and leaves the power of **privacy**
and **freedom** in the hands of *users*



Centralized



Decentralized

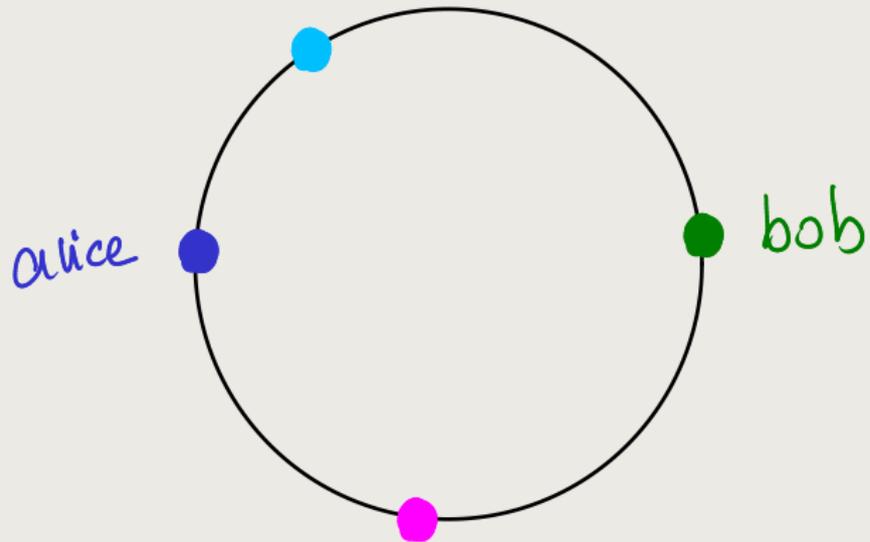


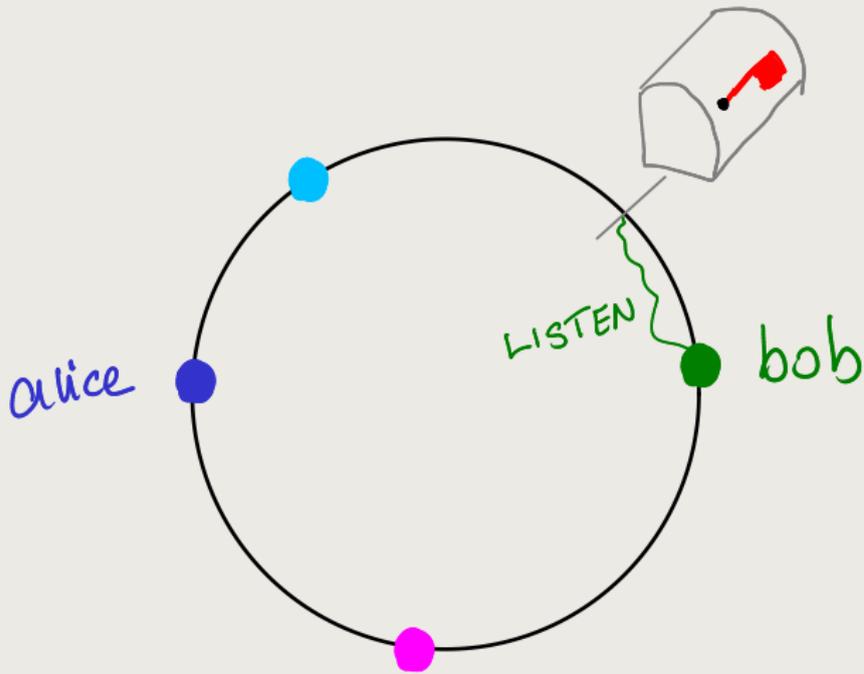
Distributed

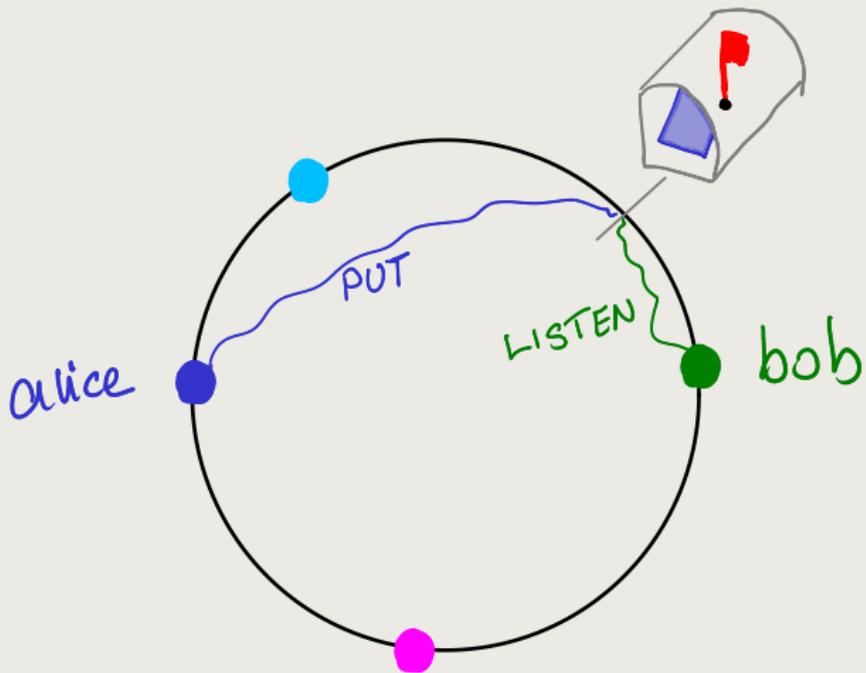
OpenDHT



- lightweight and scalable, designed for large networks and small devices
- high resilience to network disruption
- IPv4 and IPv6 support
- clean and powerful C++14 *map* API
- C, Rust, and Python 3 bindings
- public key crypto layer providing optional data signing and encryption (using GnuTLS)
- REST API with optional HTTP client+server and push notification support









TLS
ICE



SIP
TLS
ICE



SRTP

SIP

TLS

ICE



Development news

- many connectivity improvements
- automatic video bitrate adjustment
- detached host rendezvous points
- notification improvements
- bidi text in the chat view
- video renderer improvements
- conference call moderation
- improved error handling
- object copy reductions
- plugin API overhaul
- ... and more!

Rendezvous points

Windows taskbar: Start button, Settings icon, and a window titled "Michael" with a dropdown arrow and window control buttons.

Search bar: "Find or start a co... +"

Participant list (left sidebar):

- Bruce Hay...** (brucehayler) - Talking - Outgoing ...
- John Sawyer** (johnsawyer) - Talking - Outgoing ...
- Oliver** (olivier56) - 16:40 - /home/fhaggartr...
- Will Do...** (willdoohan) - 2019-11-12 - /home/fina...
- Daniell...** (danielleca...) - 2019-11-12 - sfdslfg
- Justin C...** (justinclarke) - 2019-11-12 - asdf
- Rocio** (rociio26) - 2019-11-12 - asdf
- Laura Sc...** (laurascott) - 2019-11-12 - asdf
- Camille** (camille33) - 2019-11-12 - asdf
- Marc** (marc258) - 2019-11-12 - cs
- Lyna La...** (lynalaurens) - 2019-11-12 - Outgol...
- Lena Kean** (lenakean) - 2019-11-12 - Outgol...
- Julie** (julie42) - 2019-11-12 - Outgol...

Header: **John Sawyer** (johnsawyer) Talking 00:41

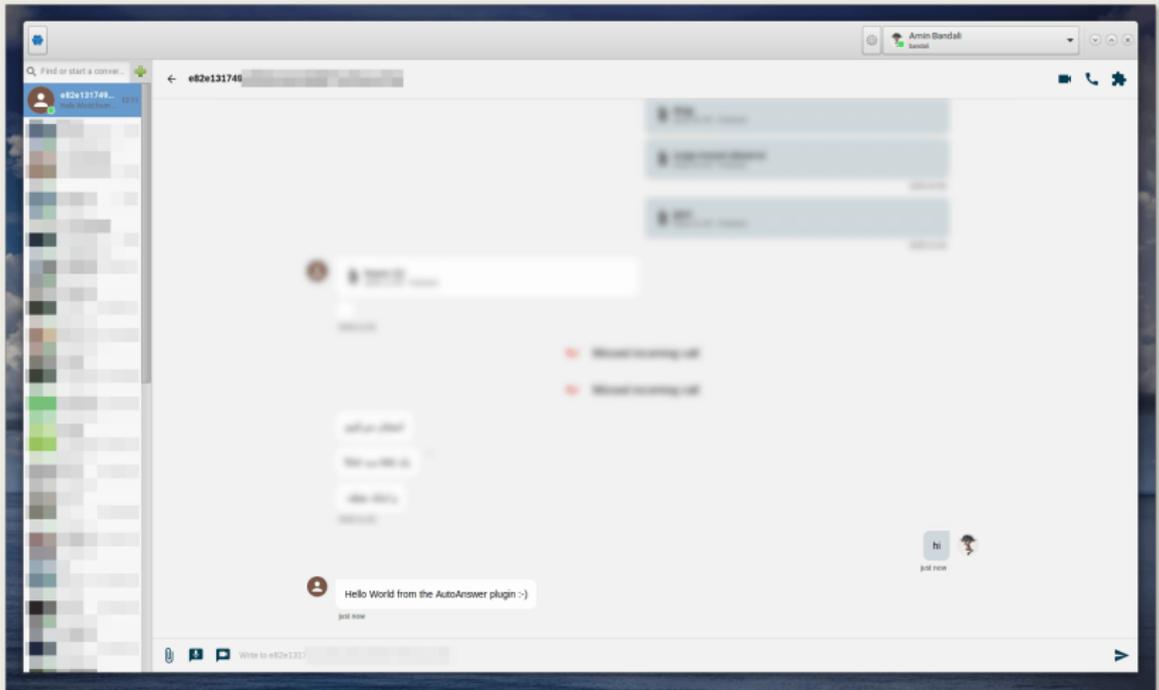
Video feeds:

- Top-left: John Sawyer, smiling, wearing a red beanie and a dark jacket, outdoors near a beach.
- Top-right: Close-up of a young man with wavy brown hair.
- Bottom-left: A young man looking upwards, outdoors in front of a building.
- Bottom-right: A black video feed, indicating the participant is muted.

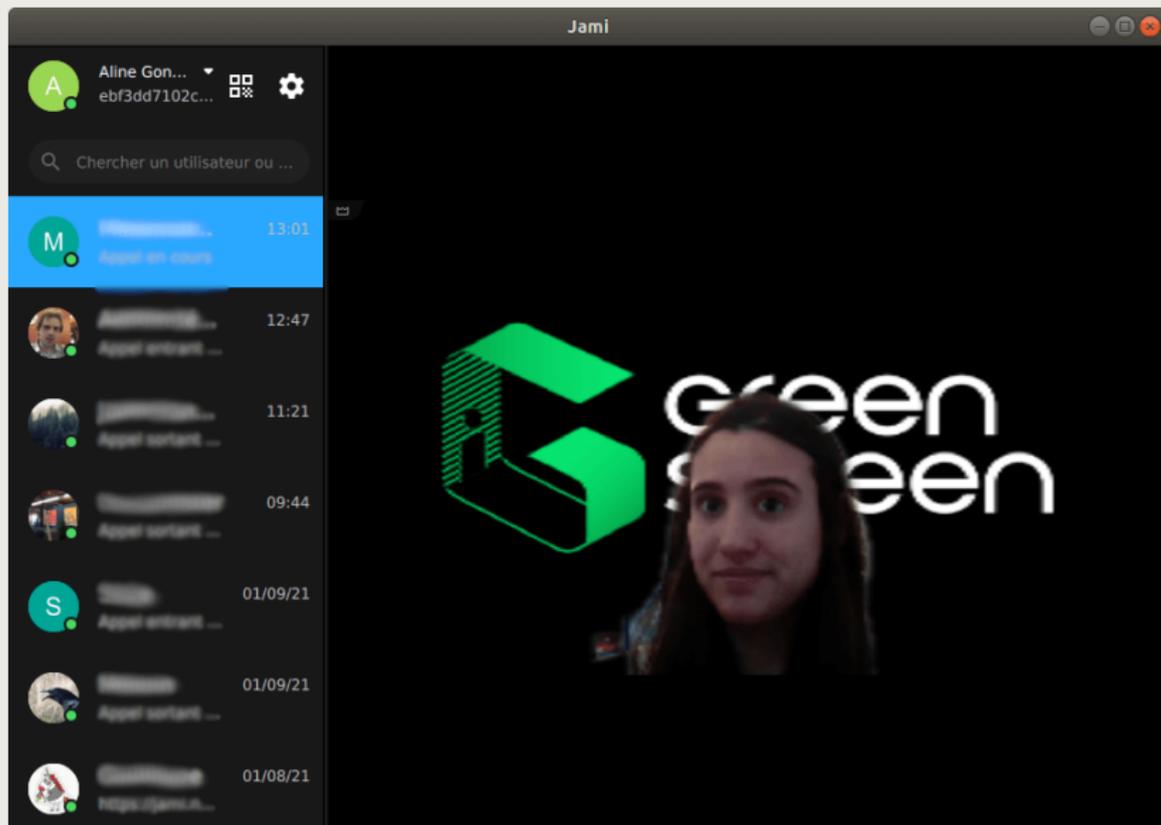
Control bar (bottom):

- Red phone icon (End call)
- Person icon (Add participants)
- Pause icon (Mute all)
- Microphone icon (Mute self)
- Video camera icon (Toggle video)
- Red dot icon (Activity)
- Document icon (Share screen)
- Chat icon (Open chat)

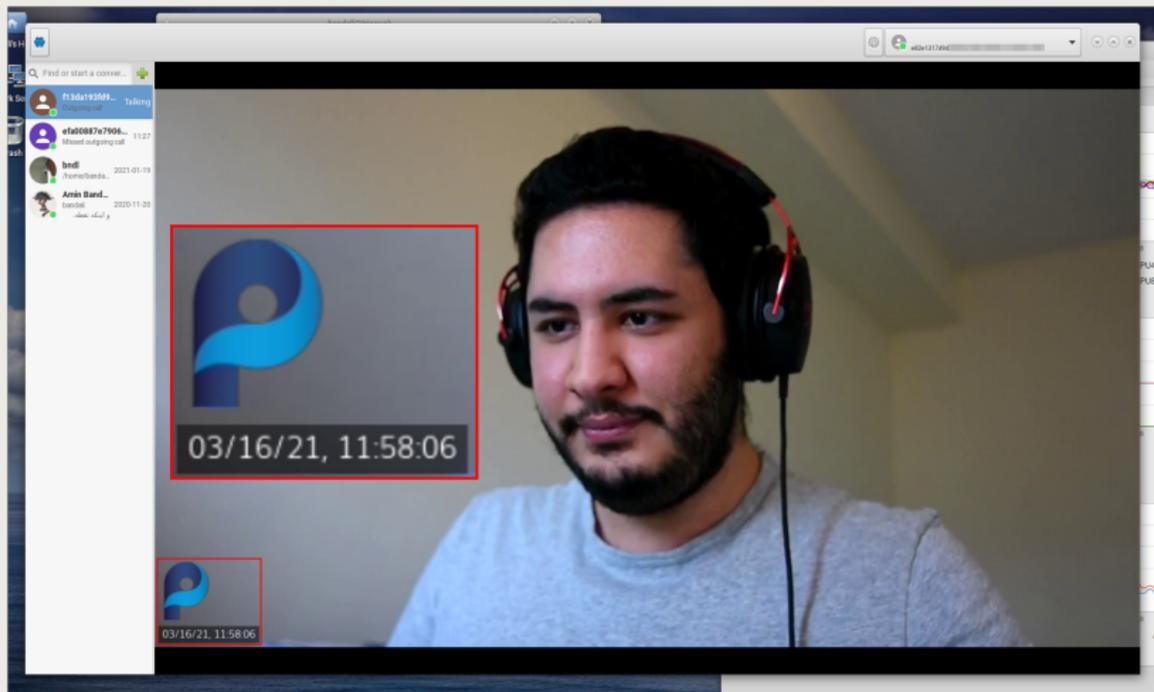
Plugins



AutoAnswer



GreenScreen



WaterMark

discover more Jami plugins

jami.net/plugins

learn more about the plugins SDK

jami.net/plugins-sdk

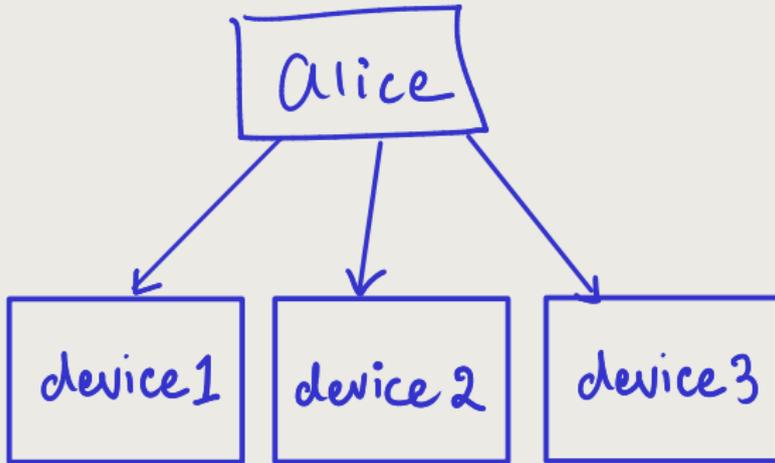
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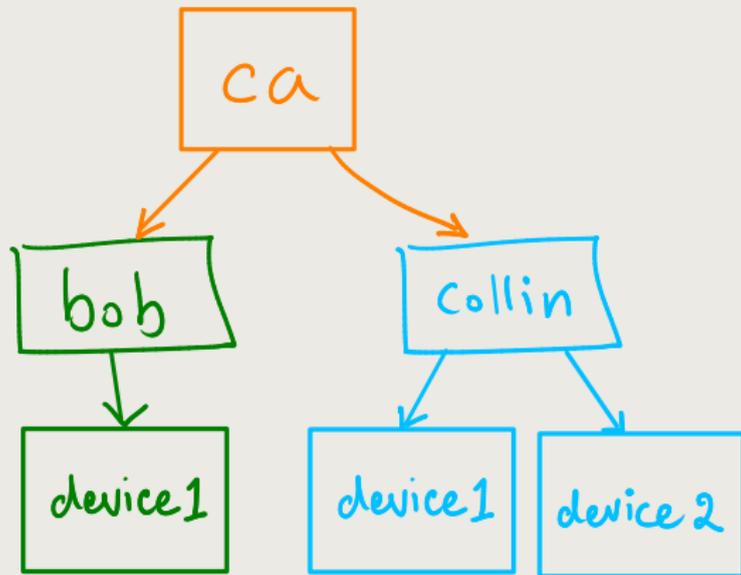
learn more about the plugins SDK

jami.net/plugins-sdk

JAMS

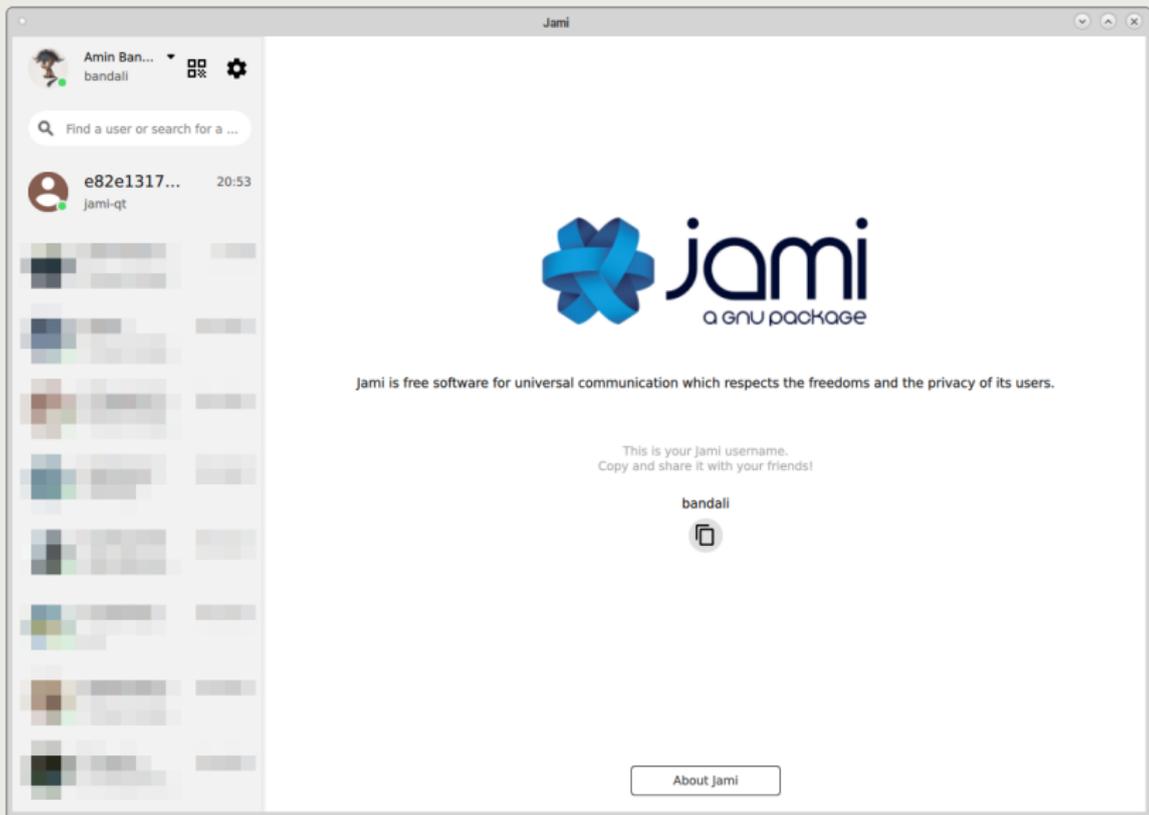


Jami account & device management

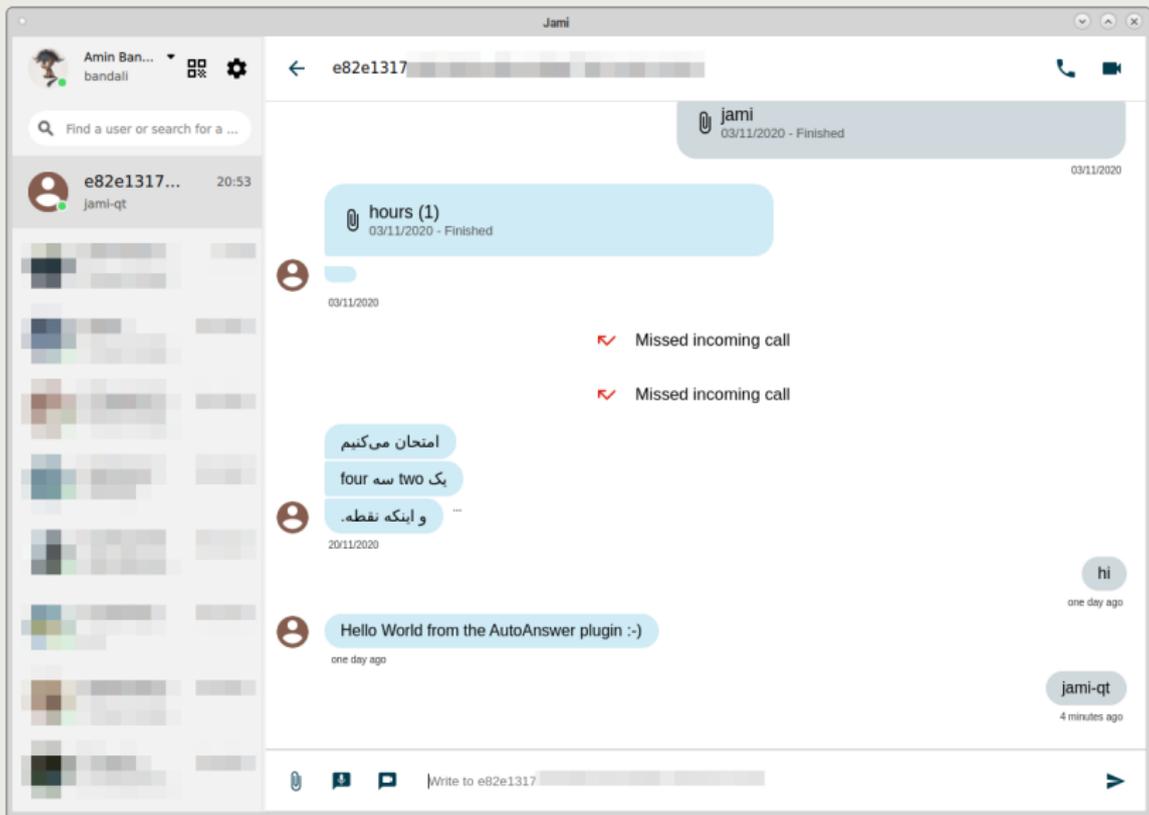


Jami account & device management (with JAMS)

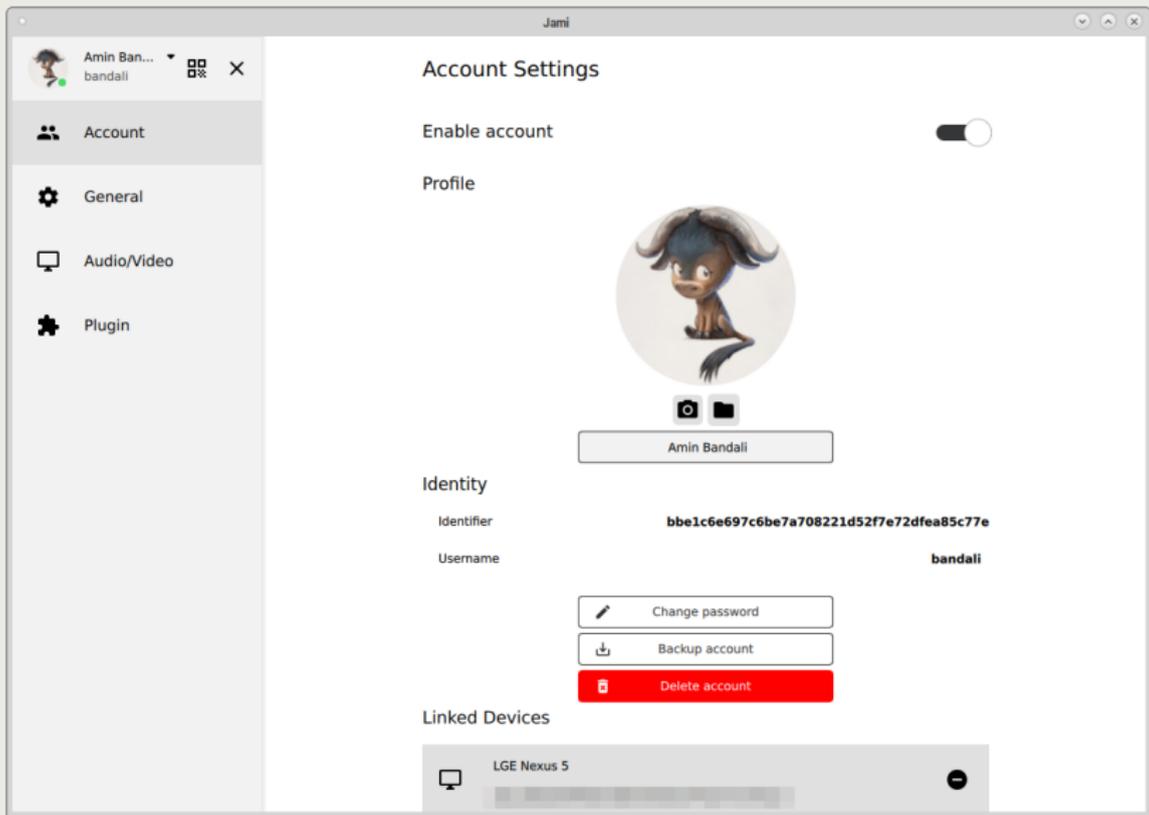
jami-qt **client**



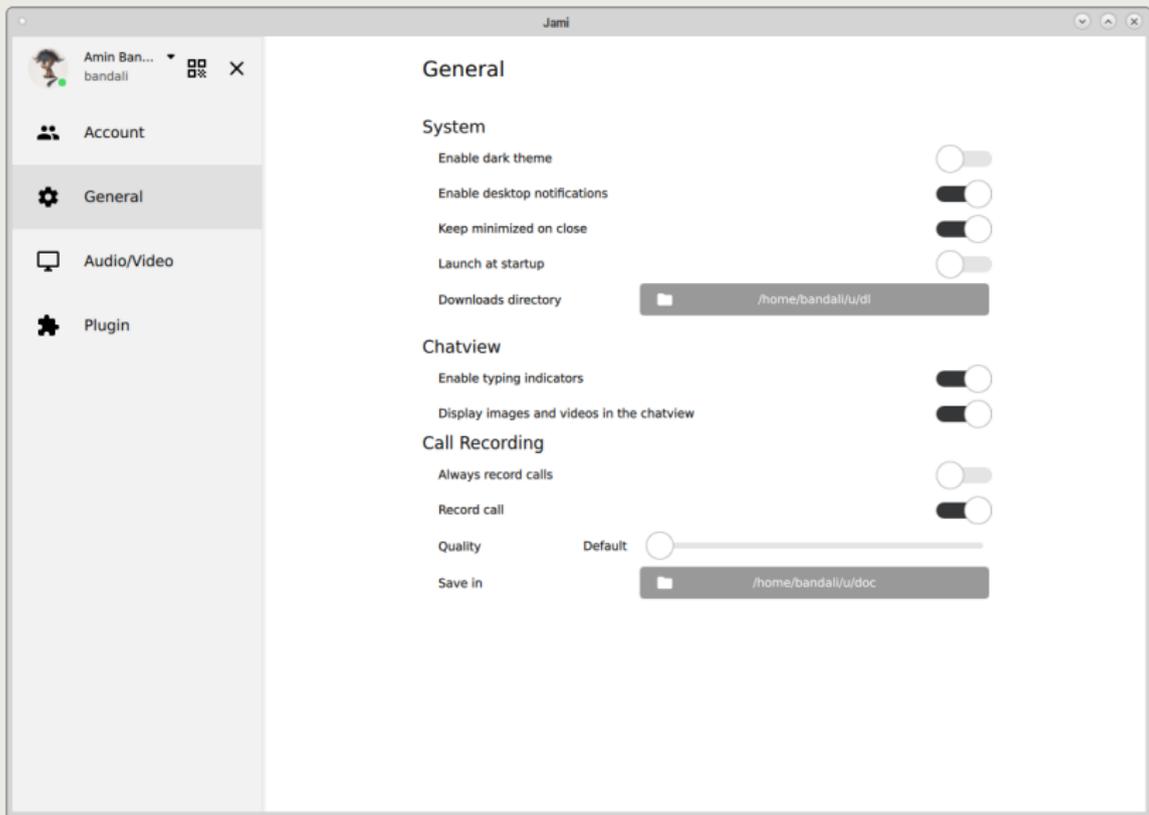
jami-qt - main window



jami-qt - chat view

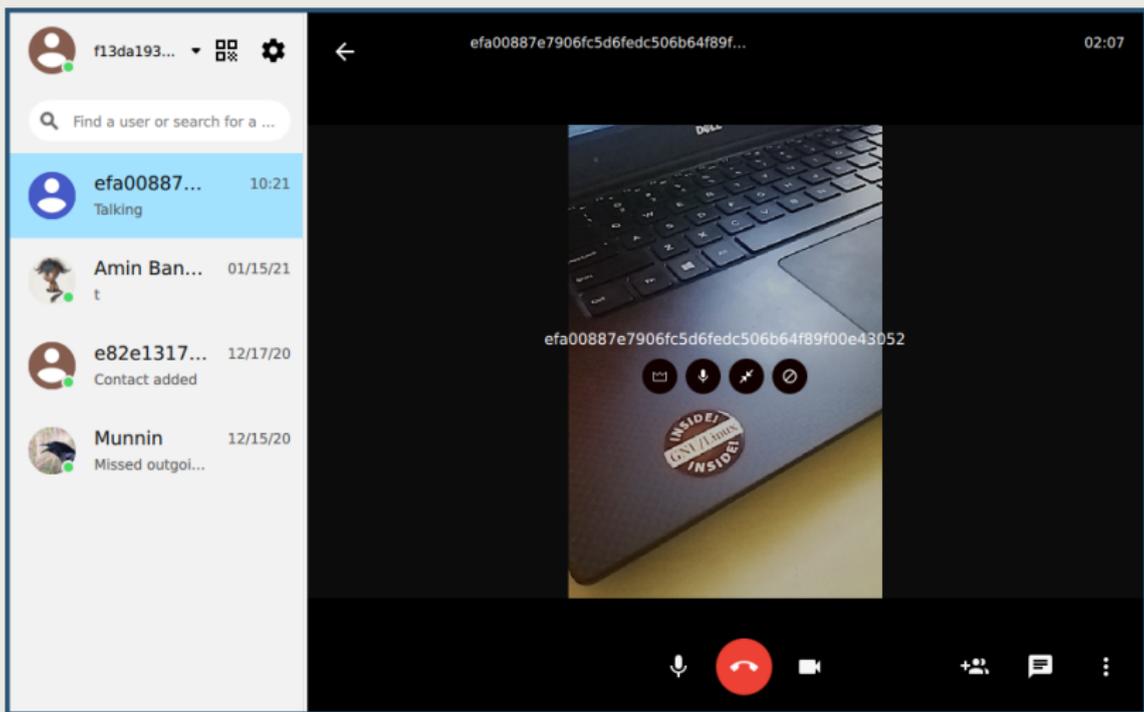


jami-qt - settings view (account)



jami-qt - settings view (general)

Moderation



jami-qt - moderation

Swarm chat

characteristic features of swarm chats:

- split and merge based on connectivity
- message history synchronization
- no central authority or server
- non-repudiation: each device must be able to verify validity of old messages and replay the whole history
- PFS during transport
- device-local storage

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four modes for swarm chats:

- 1-to-1 (conversation with another Jami user)
- admin-invite-only (e.g. a class where the teacher can invite people, but not students)
- invite-only (a private group of friends)
- public (a public chat forum)

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each conversation will be a git repository

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reasons for using git include:

- need to synchronize and order messages
- git is distributed by nature
- widely used and popular
- can verify commits using hooks and cryptographic signatures
- can be stored in a database if needed
- conflicts arising from splits/merges are much better handled by using commit messages rather than files

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demo time!

download jami-qt
jami.net/download

Community

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- `forum.jami.net`
- `jami@gnu.org`
- `#jami` on freenode
- `git.jami.net`
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- help translate Jami to your language(s)
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Thanks!

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shemshak.org/~bandali/lp2021
(GPLv3+)