


# Jami and how it empowers users

LibrePlanet 2021

Amin Bandali



**What is Jami?**



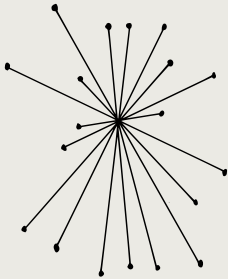
**Jami** is free software for universal communication  
that respects the freedom and privacy of its users

- 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

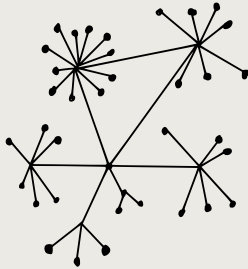
# **Architecture overview**

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



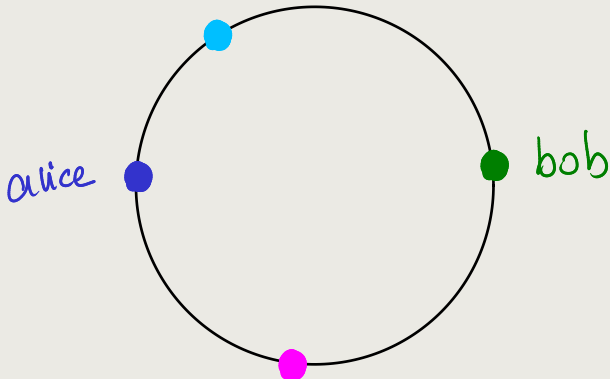
Distributed

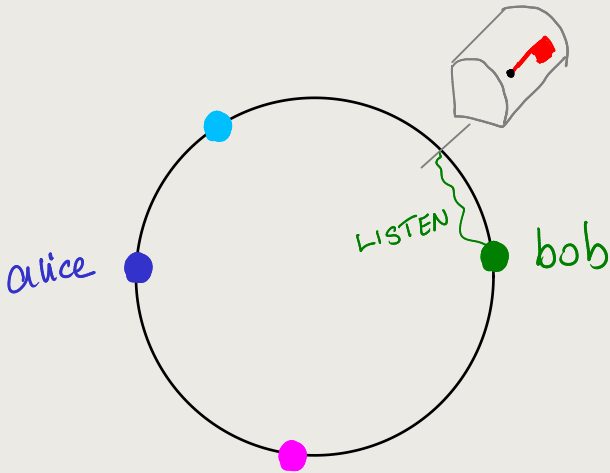
## OpenDHT

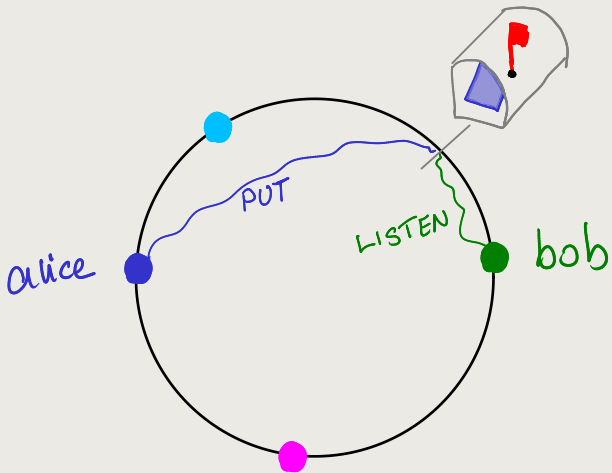


- lightweight and scalable, designed for large networks and small devices
- high resilience to network disruption
- IPv4 and IPv6 support
- clean and powerful C++14 *map* API
- C, Rust, and Python 3 bindings
- public key crypto layer providing optional data signing and encryption (using GnuTLS)
- REST 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 icons: Start button, File Explorer, Microsoft Edge, Microsoft Word, Microsoft Excel, Microsoft PowerPoint, Microsoft Teams, and System tray (Network, Volume, Power).

Microsoft Teams window title bar: Michael (michael1) [Settings] [Maximize] [Close]

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

Participant list (left sidebar):

- Bruce Hay... (brucehayler) - Talking
- John Sawyer (johnsawyer) - Talking
- Oliver (olivier56) - 16:40
- Will Do... (willdoohanvan) - 2019-11-12
- Daniell... (danielleca) - 2019-11-12
- Justin C... (justinclarke) - 2019-11-12
- Rocio (rocioc26) - 2019-11-12
- Laura Sc... (laurascott) - 2019-11-12
- Camille (camille33) - 2019-11-12
- Marc (marc258) - 2019-11-12
- Lyna La... (lynalaurens) - 2019-11-12
- Lena Kean (lenakean) - 2019-11-12
- Julie (julie42) - 2019-11-12

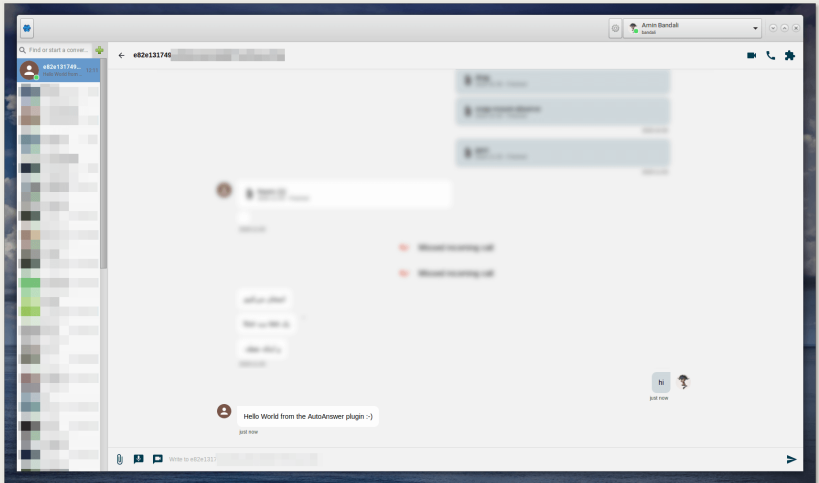
Current call header: John Sawyer (johnsawyer) Talking 00:41

Video thumbnails:

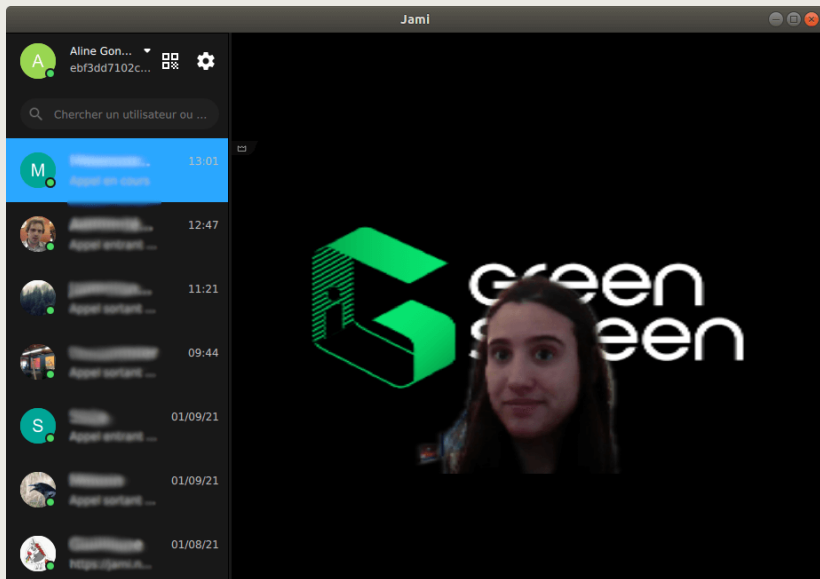
- Top-left: A man wearing a red beanie and a dark jacket, smiling broadly outdoors.
- Top-right: A close-up portrait of a man with wavy brown hair.
- Bottom-left: A man in a blue t-shirt looking upwards outdoors.

Call controls (bottom bar): End call, Add participants, Mute, Unmute, Video on, Video off, Chat.

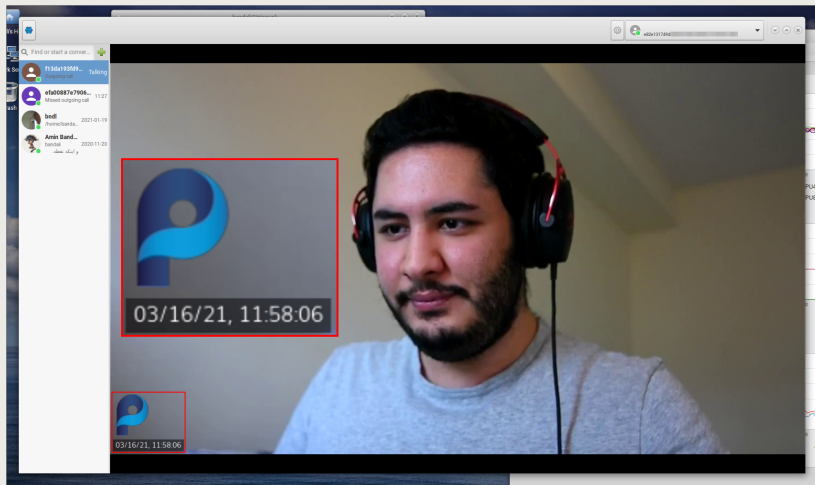
# Plugins



AutoAnswer



GreenScreen



WaterMark

discover more Jami plugins  
[jami.net/plugins](https://jami.net/plugins)

learn more about the plugins SDK  
[jami.net/plugins-sdk](https://jami.net/plugins-sdk)



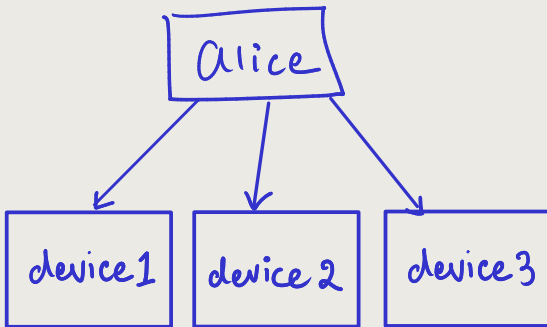
discover more Jami plugins

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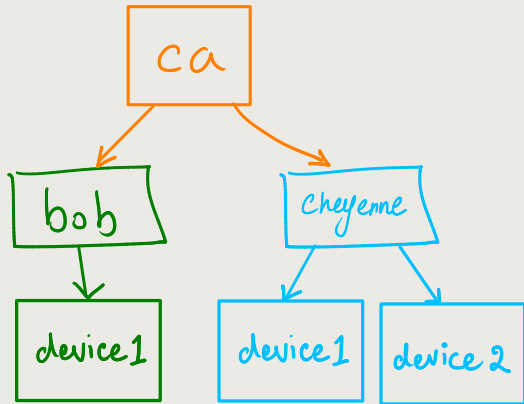
learn more about the plugins SDK

[jami.net/plugins-sdk](http://jami.net/plugins-sdk)

**JAMS**

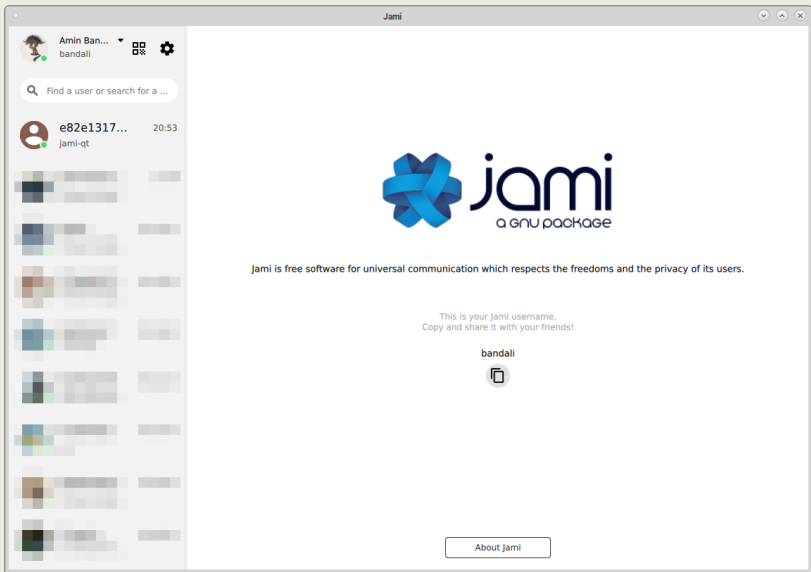


Jami account & device management

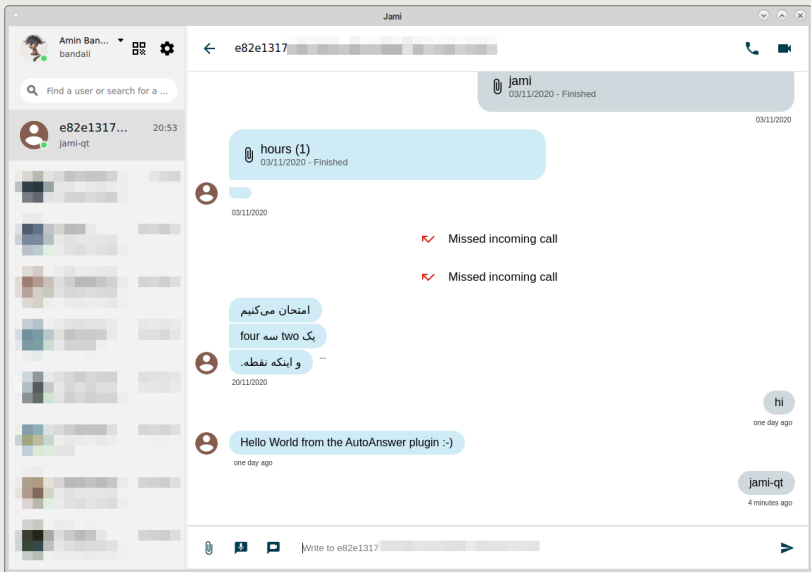


Jami account & device management (with JAMS)

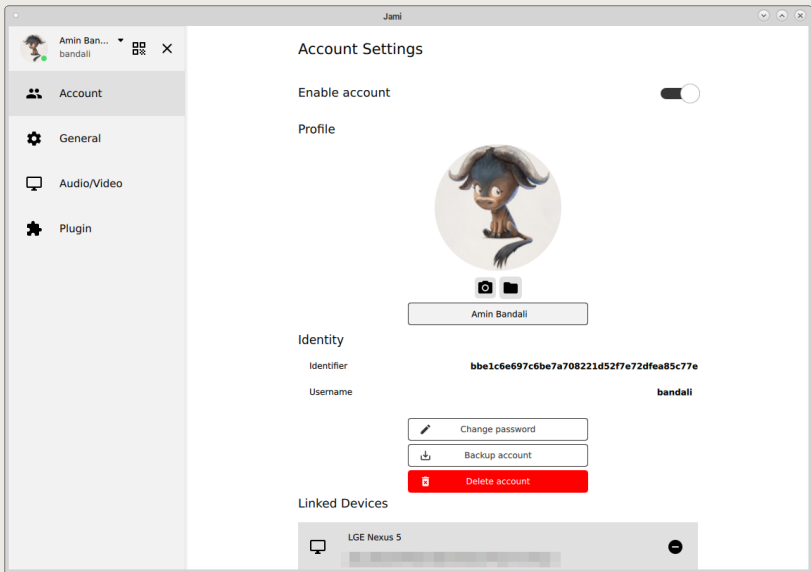
jami-qt **client**



jami-qt - main window

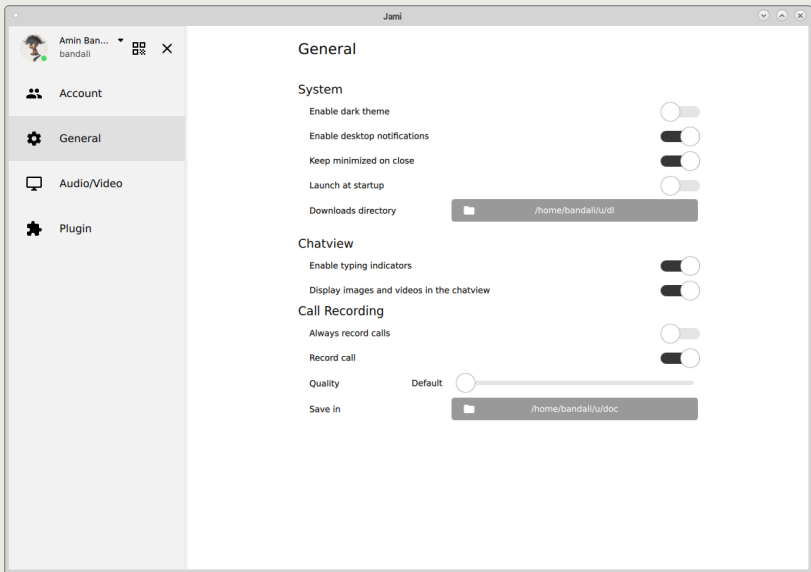


jami-qt - chat view



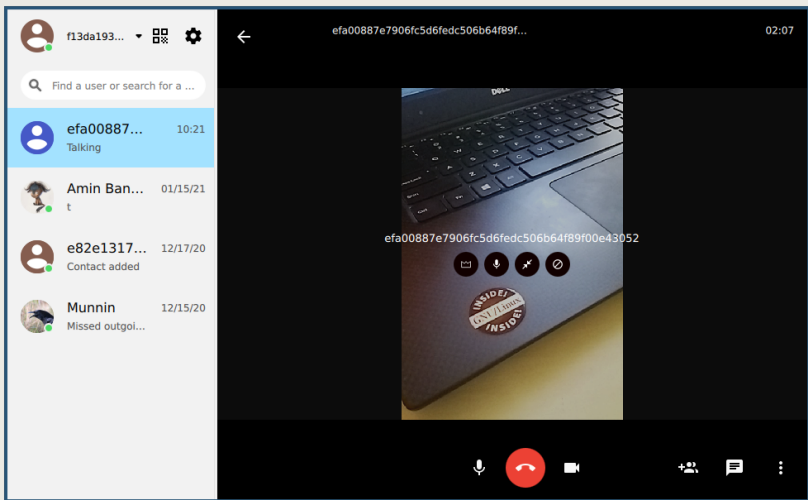
jami-qt - settings view (account)





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](http://jami.net/download)



**Community**

- `jami.net`
- `forum.jami.net`
- `jami@gnu.org`
- `#jami` on freenode
- `git.jami.net`
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# Thanks!

Amin Bandali <[bandali@gnu.org](mailto:bandali@gnu.org)>  
[shemshak.org/~bandali/lp2021](http://shemshak.org/~bandali/lp2021)  
(GPLv3+)