


Jami and how it empowers users

LibrePlanet 2021

Amin Bandali



What is Jami?



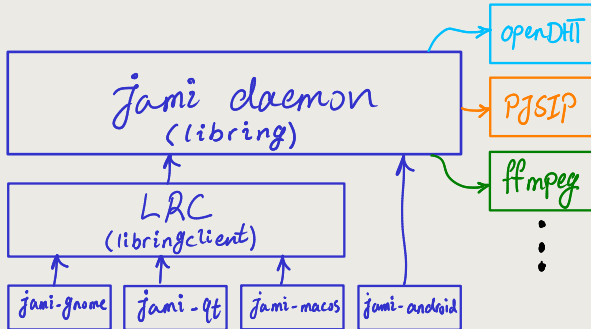
Jami is free software for universal communication
that respects the freedom and privacy of its users



Jami is developed by **Savoir-faire Linux**® based in Montréal, Canada. Savoir-faire Linux is a team of free software consultants providing training, consulting, development, and support services for free software technologies.

- 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

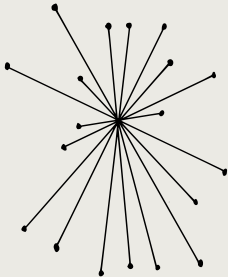
Architecture overview



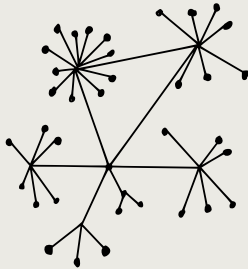
Architecture & components of Jami

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

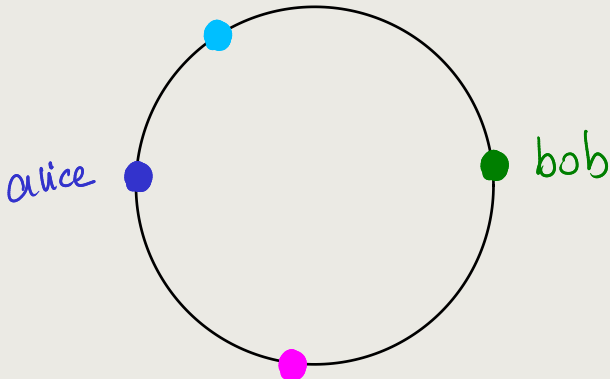


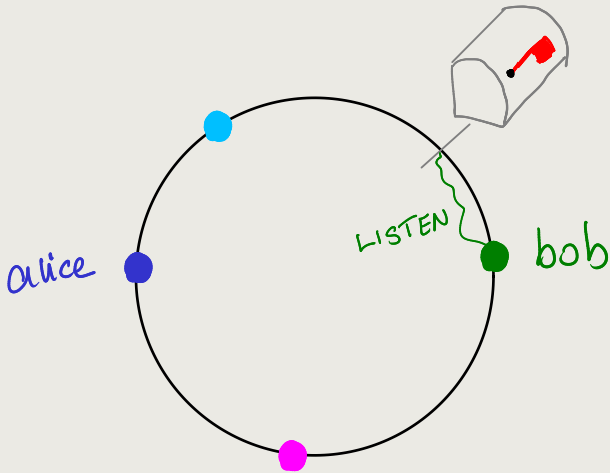
Distributed

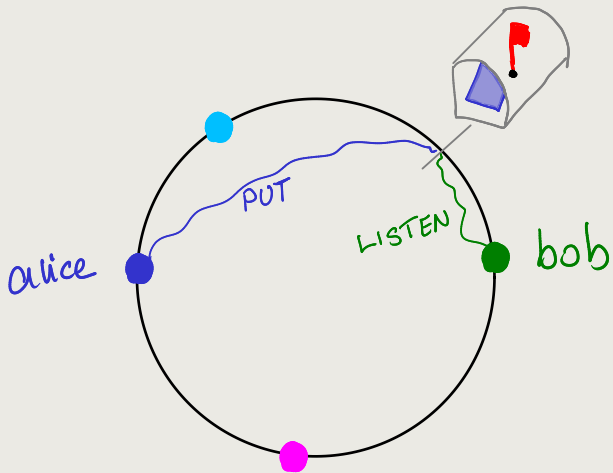
OpenDHT



- 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

Meeting meeting9876 Talking 17:26

Find or start a conversation... +

- Meeting meeting9876 Talking
- Guillaume skp276 Outgoing 09:07
- Emeline emeline@orange.fr Outgoing 2021-03-19
- Cake cake@orange.fr Outgoing 2021-03-19
- David David@orange.fr Outgoing 2021-03-19
- Myrtille myrtille@orange.fr Outgoing 2021-03-19
- Harry harry@orange.fr Outgoing 2021-03-19
- Louane louane@orange.fr Outgoing 2021-03-19
- Laurent laurent@orange.fr Outgoing 2021-03-19
- Matt matt@orange.fr Outgoing 2021-03-17
- Caramel caramel@orange.fr Outgoing 2021-03-17
- Lena Moure lena@orange.fr Outgoing 2021-03-17
- Christophe christophe@orange.fr Outgoing 2021-03-17
- Marie-zoé marie-zoe@orange.fr Outgoing 2021-03-16
- Lara lara@orange.fr Outgoing 2021-03-16
- Nicolas nicolas@orange.fr Outgoing 2021-03-16
- Kids kids@orange.fr Outgoing 2021-03-16

Participants in the video call grid:

- Emeline (top left)
- Laurent Gagne (top right)
- Christophe (bottom left)
- Marie-zoé (bottom right)

Guillaume skp276 Outgoing

Emeline emeline@orange.fr Outgoing

Cake cake@orange.fr Outgoing

David David@orange.fr Outgoing

Myrtille myrtille@orange.fr Outgoing

Harry harry@orange.fr Outgoing

Louane louane@orange.fr Outgoing

Laurent laurent@orange.fr Outgoing

Matt matt@orange.fr Outgoing

Caramel caramel@orange.fr Outgoing

Lena Moure lena@orange.fr Outgoing

Christophe christophe@orange.fr Outgoing

Marie-zoé marie-zoe@orange.fr Outgoing

Lara lara@orange.fr Outgoing

Nicolas nicolas@orange.fr Outgoing

Kids kids@orange.fr Outgoing

Laurent Gagne

Meeting controls: mute, video, chat, screen share, end call

Meeting interface showing a list of participants on the left and a video grid on the right.

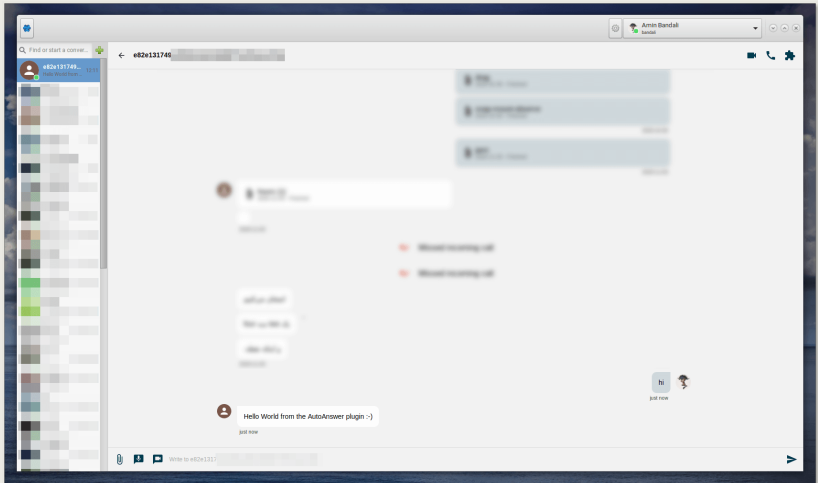
Participant List:

Name	Avatar	Status	Last Seen
Guillaume		Outgoing	09:07
Emeline		Outgoing	2021-03-19
Cake		Outgoing	2021-03-19
David		Outgoing	2021-03-19
Myrtille		Outgoing	2021-03-19
Harry		Outgoing	2021-03-19
Louane		Outgoing	2021-03-18
Laurent		Outgoing	2021-03-18
Matt		Outgoing	2021-03-17
Caramel		Outgoing	2021-03-17
Lena Moure		Outgoing	2021-03-17
Christophe		Outgoing	2021-03-17
Marie-zoé		Outgoing	2021-03-16
Lara		Outgoing	2021-03-16
Nicolas		Outgoing	2021-03-16
Kids		Outgoing	2021-03-16

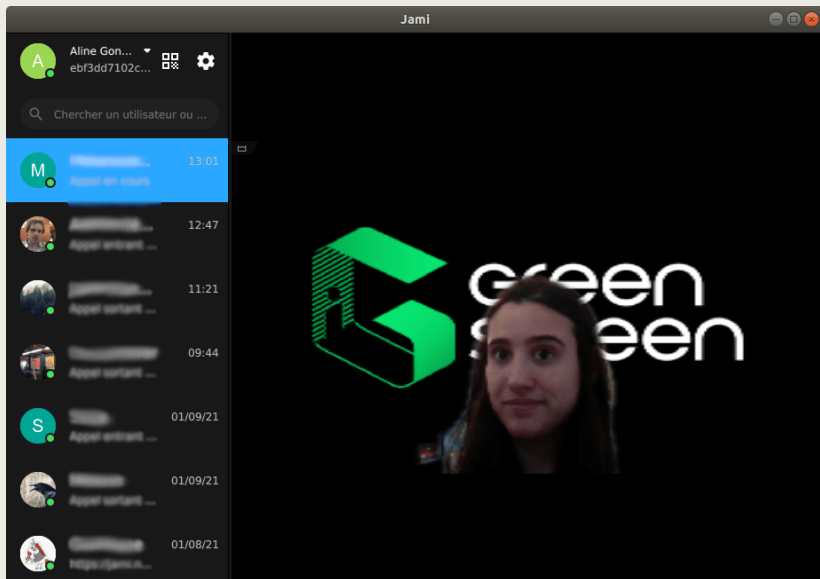
Video Grid:

- Top row: 7 small video thumbnails of participants.
- Main view: Large video of a participant wearing headphones and a microphone.

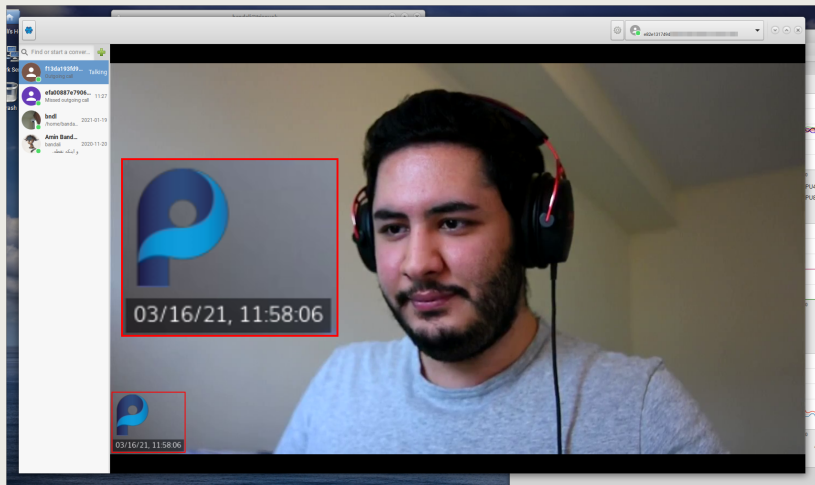
Plugins



AutoAnswer



GreenScreen



WaterMark

discover more Jami plugins
jami.net/plugins

learn more about the plugins SDK
jami.net/plugins-sdk

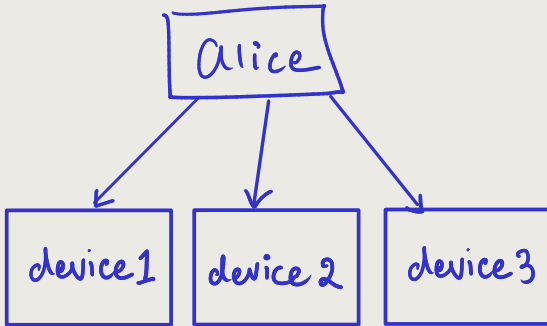
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jami.net/plugins

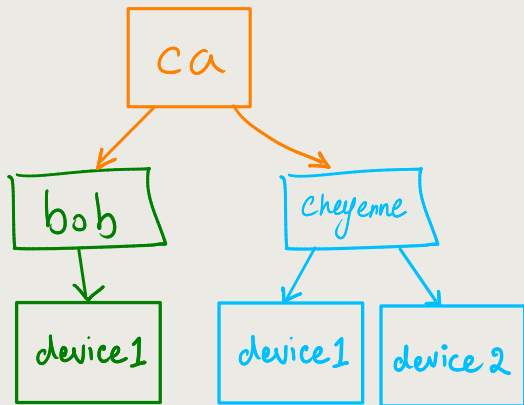
learn more about the plugins SDK

jami.net/plugins-sdk

JAMS

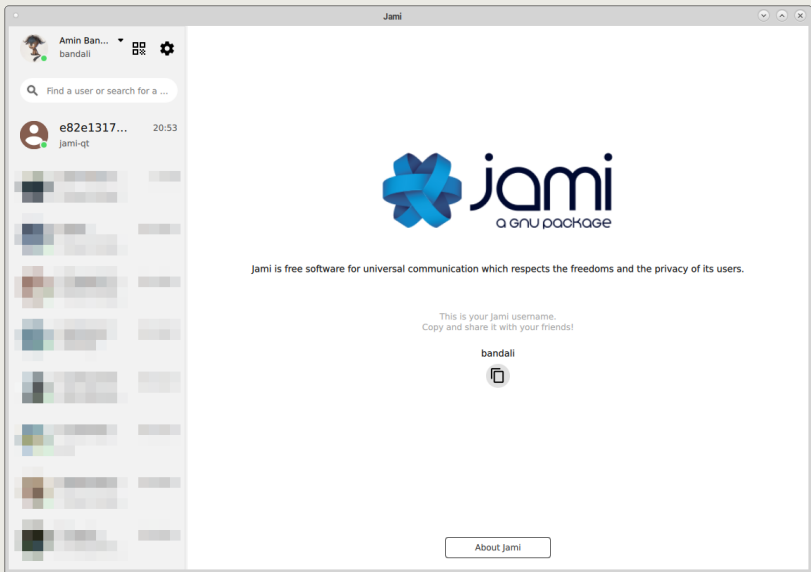


Jami account & device management

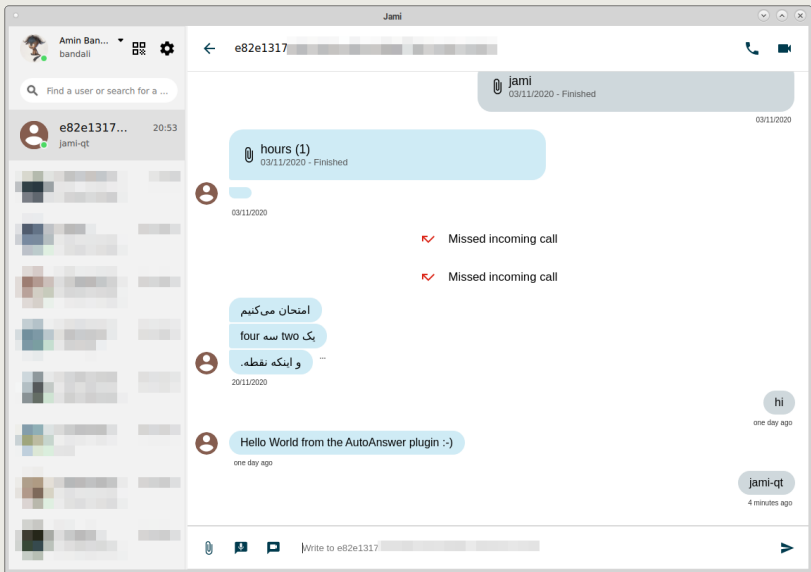


Jami account & device management (with JAMS)

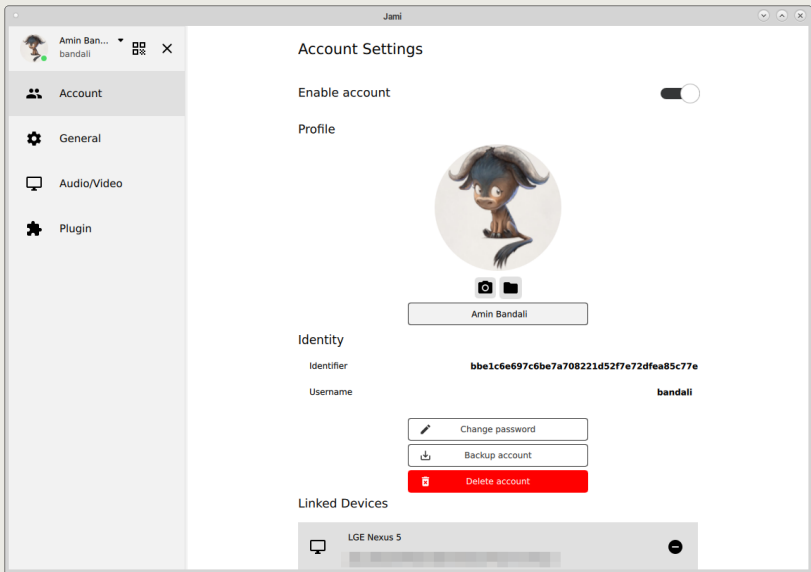
jami-qt **client**



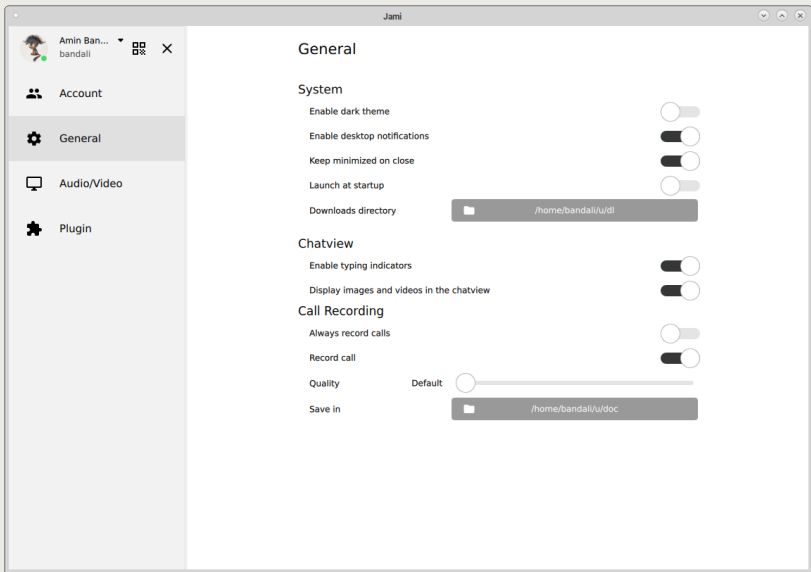
jami-qt - main window



jami-qt - chat view



jami-qt - settings view (account)



jami-qt - settings view (general)

Moderation

f13da193... Find a user or search for a ...

efa00887... 10:21 Talking

Amin Ban... 01/15/21 t

e82e1317... 12/17/20 Contact added

Munnin 12/15/20 Missed outgoi...

efa00887e7906fc5d6fedc506b64f89f00e43052

INSIDE/OUTSIDE

Microphone, Video, Chat, and other call controls are visible at the bottom.

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

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

Amin Bandali <bandali@gnu.org>

kelar.org/~bandali/jami-empowers-users.html

(GPLv3+)