


# Jami and how it empowers users

LibrePlanet 2021

Amin Bandali



**What is Jami?**



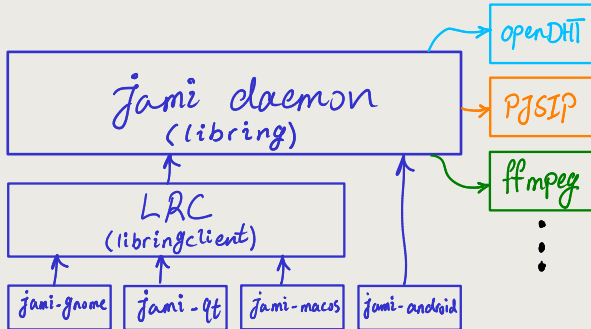
**Jami** is free software for universal communication  
that respects the freedom and privacy of its users



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**

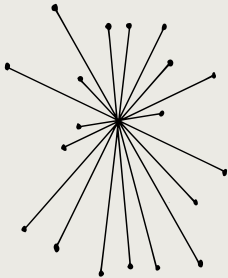


Architecture & components of Jami

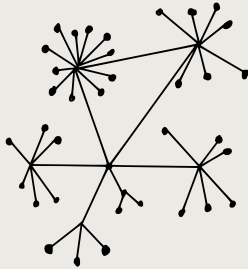
Jami is

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

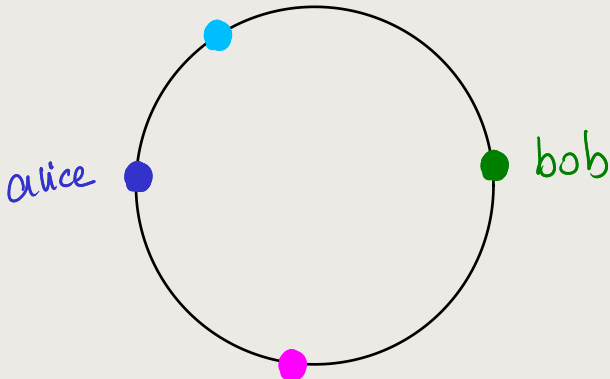


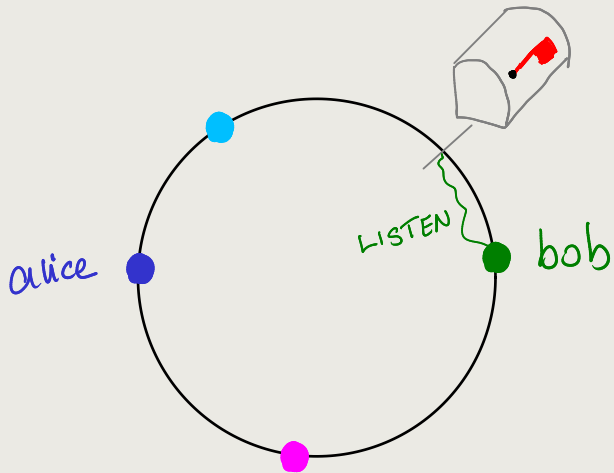
Distributed

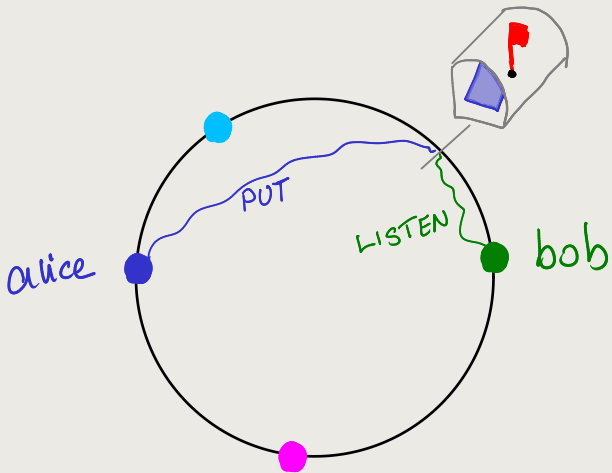
## OpenDHT



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

Lauret 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:**

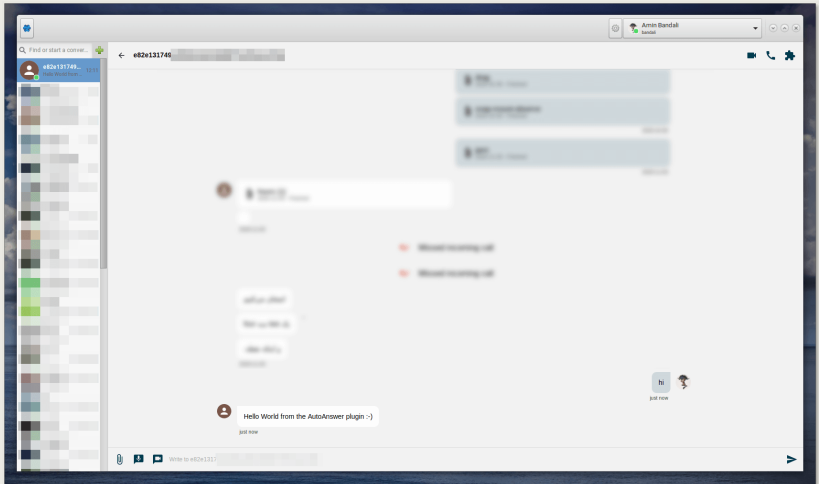
- Top row: 7 small video thumbnails of participants.
- Main view: Large video of a participant wearing headphones and a microphone.

**Search Bar:** Find or start a conversation... +

**Meeting Info:** Meeting meeting6876 Outgoing Talking

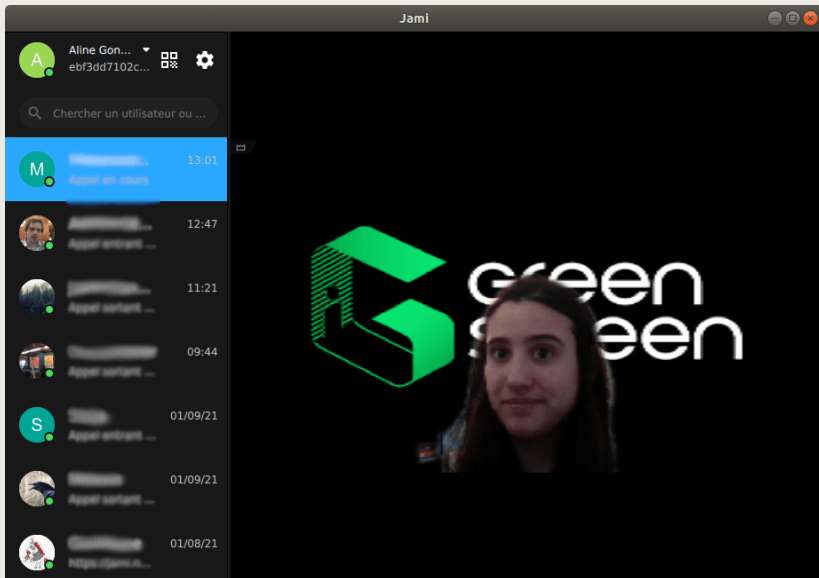
**Participant Name:** Guillaume

# Plugins

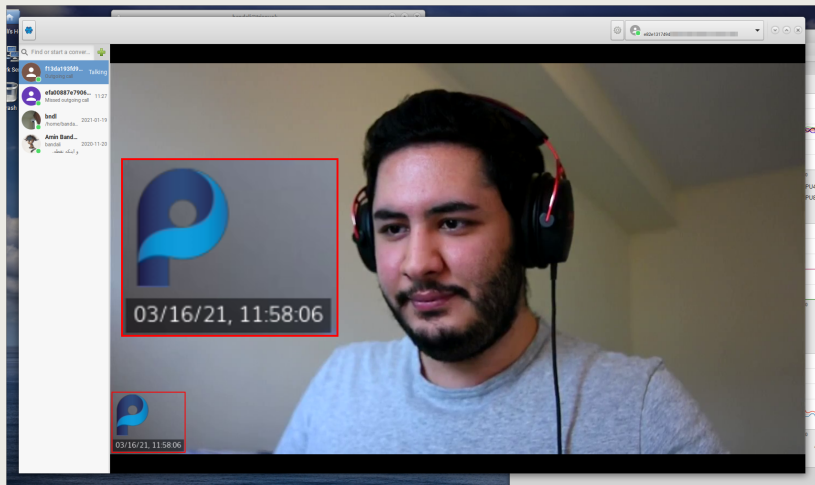


AutoAnswer





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)

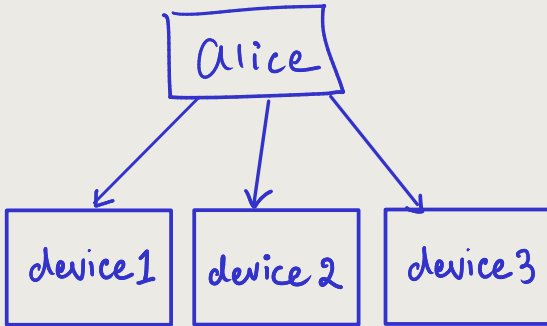
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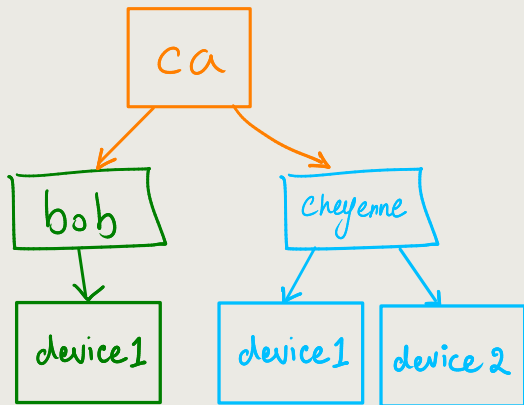
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**JAMS**



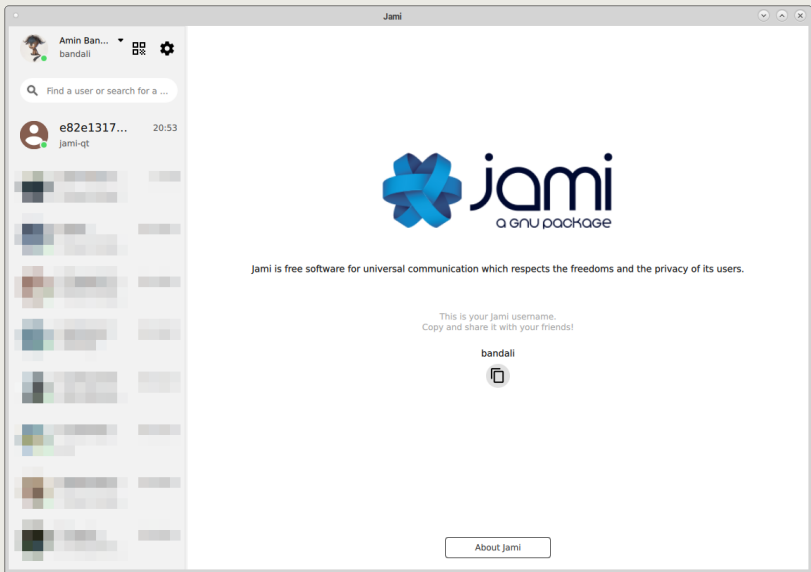
Jami account & device management



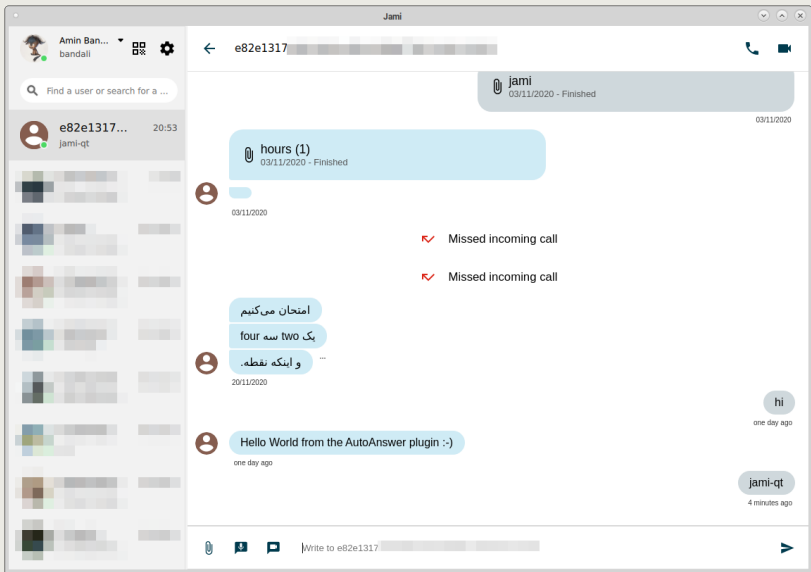
Jami account & device management (with JAMS)

jami-qt **client**

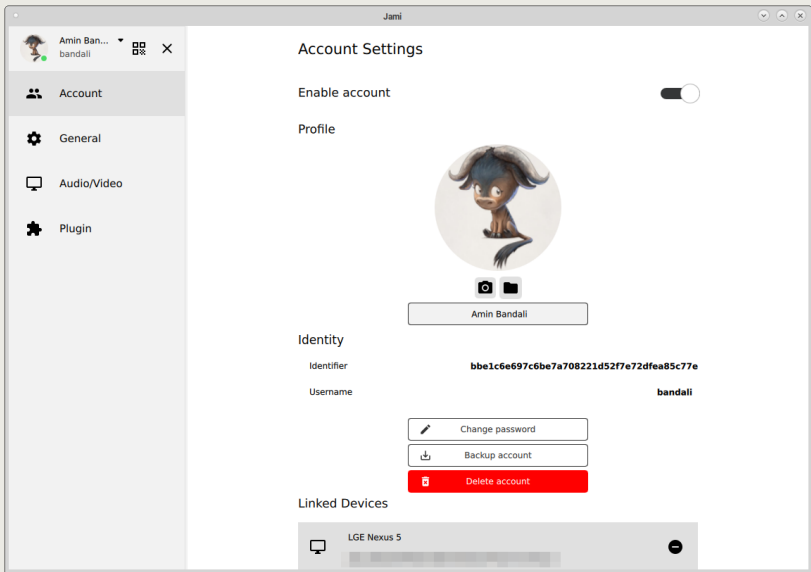




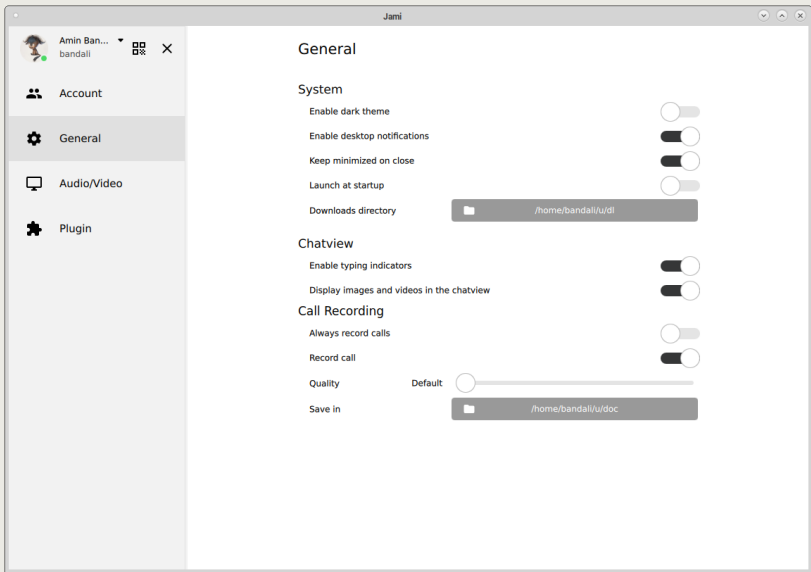
jami-qt - main window



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

02:07

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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- 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**

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

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