Bandada: Managing Privacy-Preserving Groups

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Structure

What is Bandada?

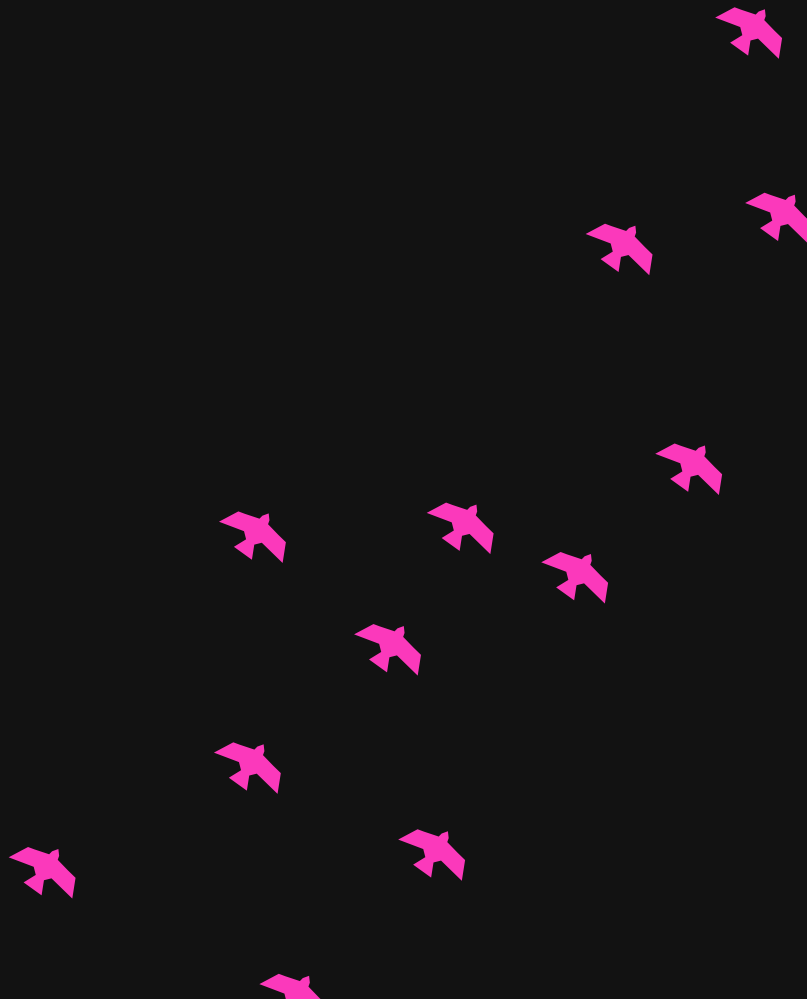Bandada is an infrastructure to manage privacy-preserving groups. It also provides antisybil mechanisms by using credential groups so that you can only join a group if you meet a specific criteria.

Bandada is a public good project. It is free and open source. Everyone can use it and contribute to it.

- Bandada is a Spanish word that means group of birds. It is the same as the English word flock.

Use cases

- Platforms for DAOs

- Group of people in a private organization

- Group with members who have contributed to a specific GitHub repository

- Groups of wallets holding a specific NFT

- Group of members with +500 Twitter (X) followers

- Group of people with +300 number of transactions on a specific network

Ideas to build with Bandada: https://github.com/orgs/bandada-infra/discussions/367

Functionalities

Functionalities	Off-chain	On-chain
Create group(s)	✅	✅
Update group(s)	✅	❌
Remove group(s)	✅	❌
Invite code to join a group	✅	❌
Credentials to join a group	✅	❌
Add member(s)	✅	✅
Remove member(s)	✅	❌

Credential Groups

Providers	Validators
GitHub	Followers Personal Stars Repository Commits
Twitter (X)	Followers Following User
Blockchain	Balance Transactions
EAS	Attestations

Credentials package: https://github.com/bandada-infra/bandada/tree/main/libs/credentials

Interact with Bandada

Tools	Off-chain	On-chain
API	✅	❌
API SDK	✅	❌
Dashboard	✅	✅

❌ The Bandada on-chain groups are Semaphore groups at the moment, you can work with them using the Semaphore packages. More about Semaphore: https://semaphore.pse.dev/

Start using Bandada

There are 3 ways you can start using

Bandada in your project:

- API

- API SDK

- Boilerplate

Bandada documentation

https://docs.bandada.pse.dev/

API

The API has a list of endpoints to interact with the Bandada infrastructure.

It is compatible with any programming language that supports REST API requests.

https://api.bandada.pse.dev/

Bandada API Docs v2.2.6

A system for managing privacy-preserving groups.

invites

POST	/invites

GET	/invites/{code}

groups

GET	/groups

POST	/groups

API SDK

The API SDK is a wrapper of the API.

It is a JavaScript package that provides a list of functions to make it easier to work with the Bandada API.

Install the API SDK package

```
npm install @bandada/api-sdk
```

https://docs.bandada.pse.dev/api/api-sdk

API SDK Demo

https://github.com/bandada-infra/bandada-sdk-demo

API SDK Example

```typescript
import { ApiSdk, GroupCreationDetails } from "@bandada/api-sdk"

const apiSdk = new ApiSdk()

const apiKey = "70f07d0d-6aa2-4fe1-b4b9-06c271a641dc"

const groupCreationDetails: GroupCreationDetails = {
  name: "Group 1",
  description: "This is Group 1",
  treeDepth: 16,
  fingerprintDuration: 3600
}

const group = await apiSdk.createGroup(groupCreationDetails, apiKey)

const members = ["1", "2", "3"]

await apiSdk.addMembersByApiKey(group.id, members, apiKey)

await apiSdk.removeMemberByApiKey(group.id, "1", apiKey)
```
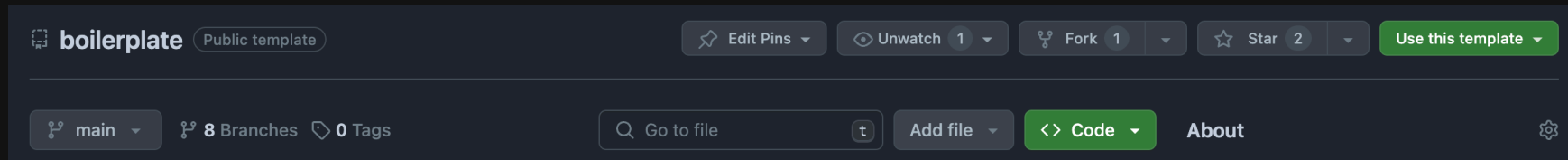
Boilerplate

Boilerplate live app:
https://demo.bandada.pse.dev/

You can fork it, clone it or use it as a template:

https://github.com/bandada-infra/boilerplate

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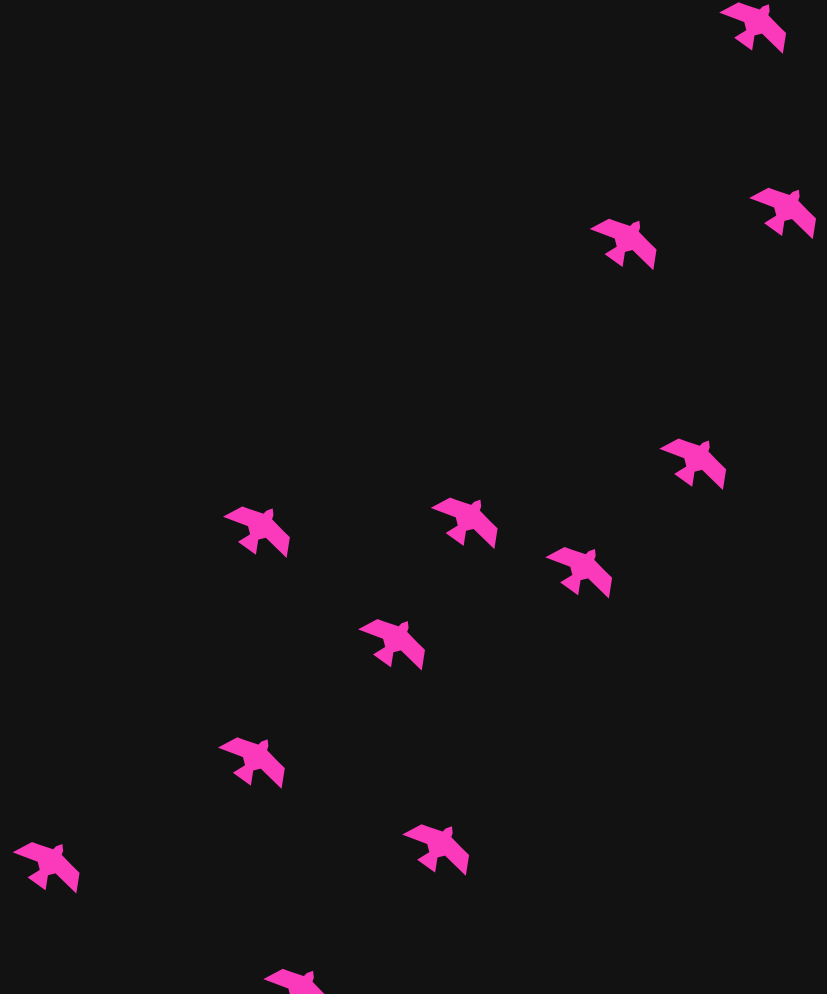| ⑂ main ⌄ | ⑂ **8** Branches | 🏷 **0** Tags | | 🔍 Go to file | t | Add file ⌄ | <> Code ⌄ | **About** | ⚙ |

Roadmap

- Improve user experience and developer experience (Documentation, SDKs, CLI, templates).

- Integrate other protocols like POAP, Zupass, etc.

- Logical operators for credentials, create groups with multiple credentials.

- Work on on-chain groups to have the same functionalities that off-chain groups have now (join groups with invite link, credential groups, etc.).

- Build a modular architecture that supports several data structures and different types of groups.

https://github.com/orgs/bandada-infra/discussions/350

Hacker Guide

Document with the main Bandada

information and links for hackers.

Connect

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