

INTERNET2

2022
TECHNOLOGY
exchange

IdP MFA in the Brazilian Federation

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—● Agenda



RNP, CAFe and Motivation



Key Features



IdP MFA Architecture



Current and Next steps

Brazilian NREN

~800 Institutions
45 metropolitan
networks
27 PoPs
+ 4 million users

RINIP

ORGANIZAÇÃO SOCIAL DO MCTI

Research,
Development
& Innovation



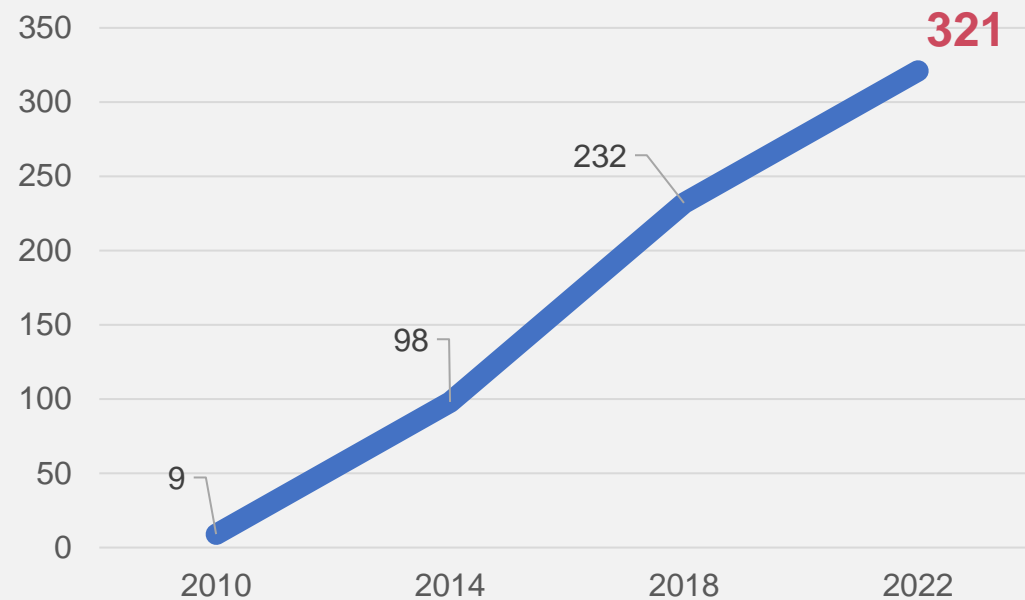
Services
&
Solutions



Brazilian Academic Federation



NUMBER OF SHIBBOLETH IDPs



Only password-based authentication (1FA)

Account Takeover (ATO)



- ✓ easy-to-guess passwords
- ✓ same password in multiple accounts

- ✓ phishing and social engineering
- ✓ brute force attacks
- ✓ purchase leaked passwords





*80% of attacks against web applications
were using stolen credentials*

BEST

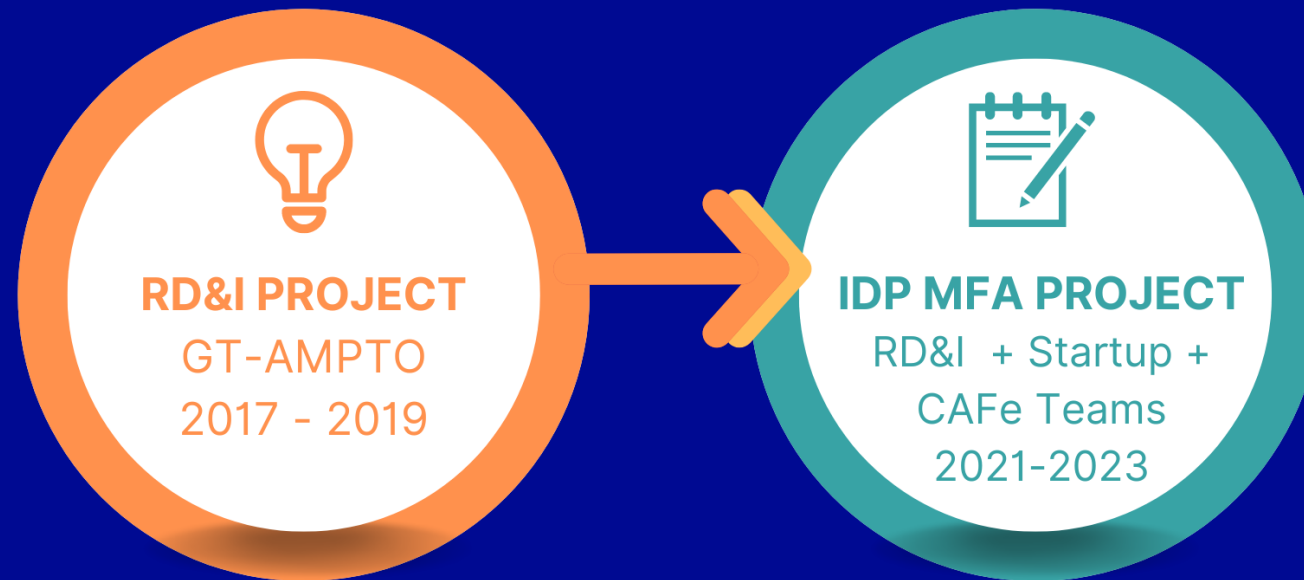
P R A C T I C E

Multi-Factor
Authentication
(MFA)





Our path...

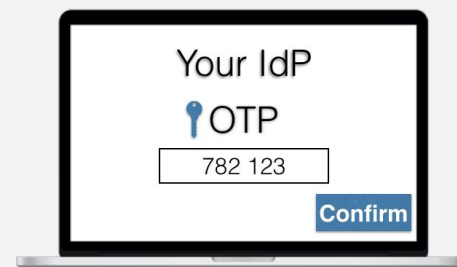
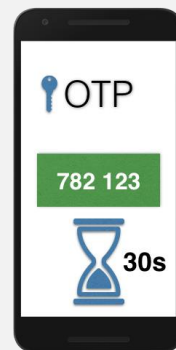
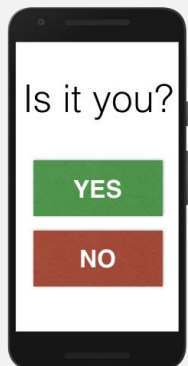


RD&I project: GT-AMPTo (2017 - 2019)



Shibboleth[®]
V3.3

*Principal Investigator
Prof. Emerson Mello (IFSC)*

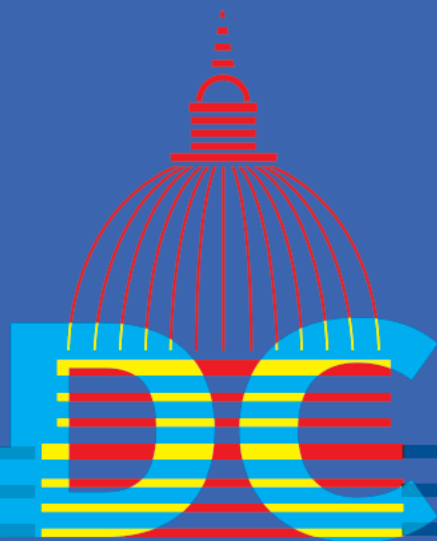




A solution for supporting MFA in Shibboleth IdPs in accordance with REFEDS MFA Profile

MICHELLE WANGHAM

Coordinator of the Identity Management Technical Committee, RNP (Brazilian NREN)



WASHINGTON DC MARCH 5-8



Key Features

— IdP MFA Project (2021-2023)



- REFEFS MFA profile
- Shibboleth IdP v4.1+
- Modular and extensible
- TOTP (v.1) and WebAuthN (v.2)
- User experience (self-service portal)
- Accountability

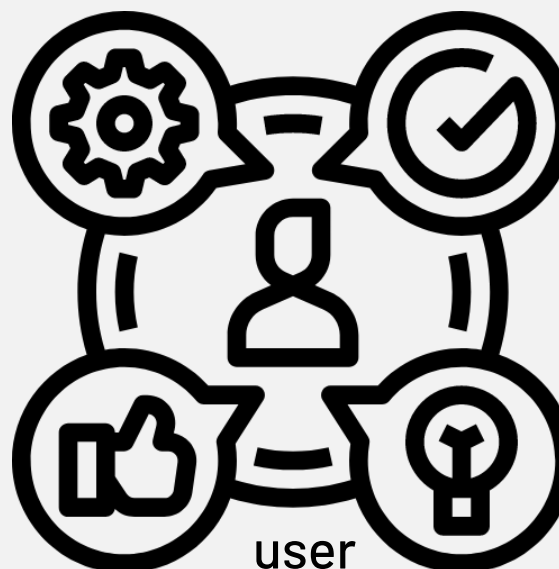
— Features for users

Easy to use

Enable or disable 2FA
(TOTP, WebAuthN)



backup
codes



user
portal


Choose the default
2FA technology

Register trusted
devices


— Features for users

the user can change the
current second factor

Acesso pela instituição:



ORGANIZAÇÃO SOCIAL DO MCTI

 ******TOKEN**

Digite o token O que é isso? ⓘ

Entrar

Entrar com outro fator de autenticação

[Painel de Segurança 🔒](#)

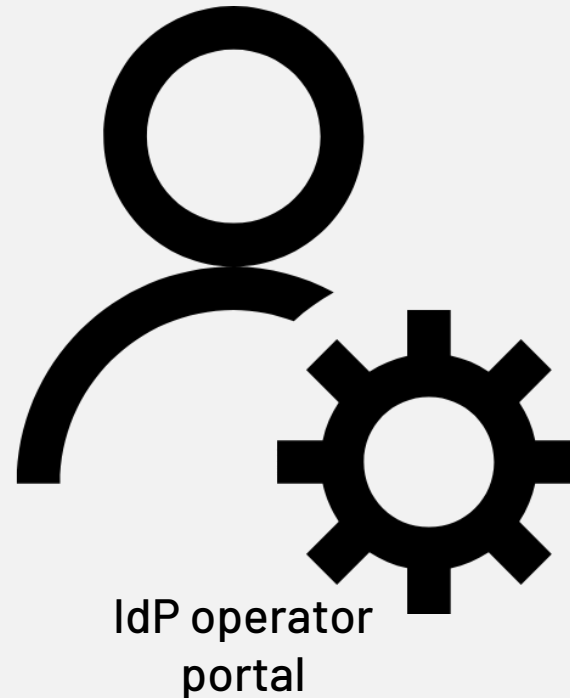
IdP Login

—● Features for IdP operators

List users who have second factor enabled

Exclude the second factor

Grant/remove the support role



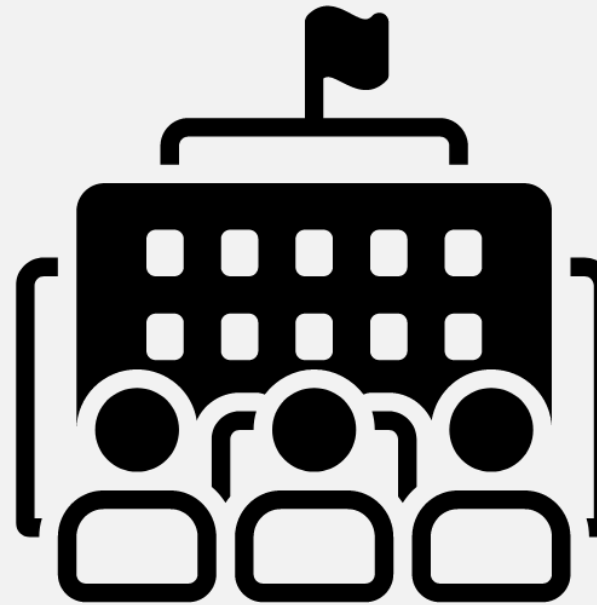
Monitor the logging of each user's actions

Install the IdP with the MFA solution OR install only the MFA solution

— MFA Benefits

Robust authentication

Comply with a
Brazilian regulation
(cloud services)



Institutions

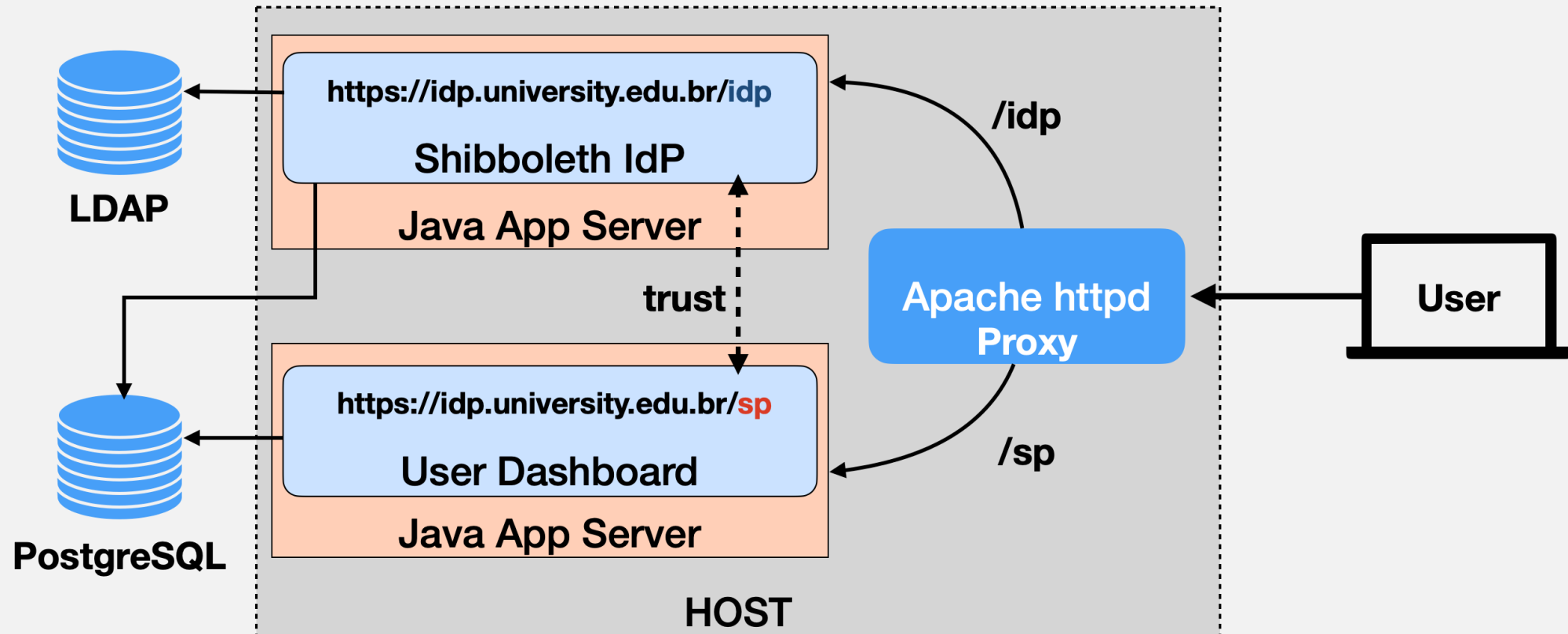
Use the IdP MFA for its
internal services

SP may require only
MFA

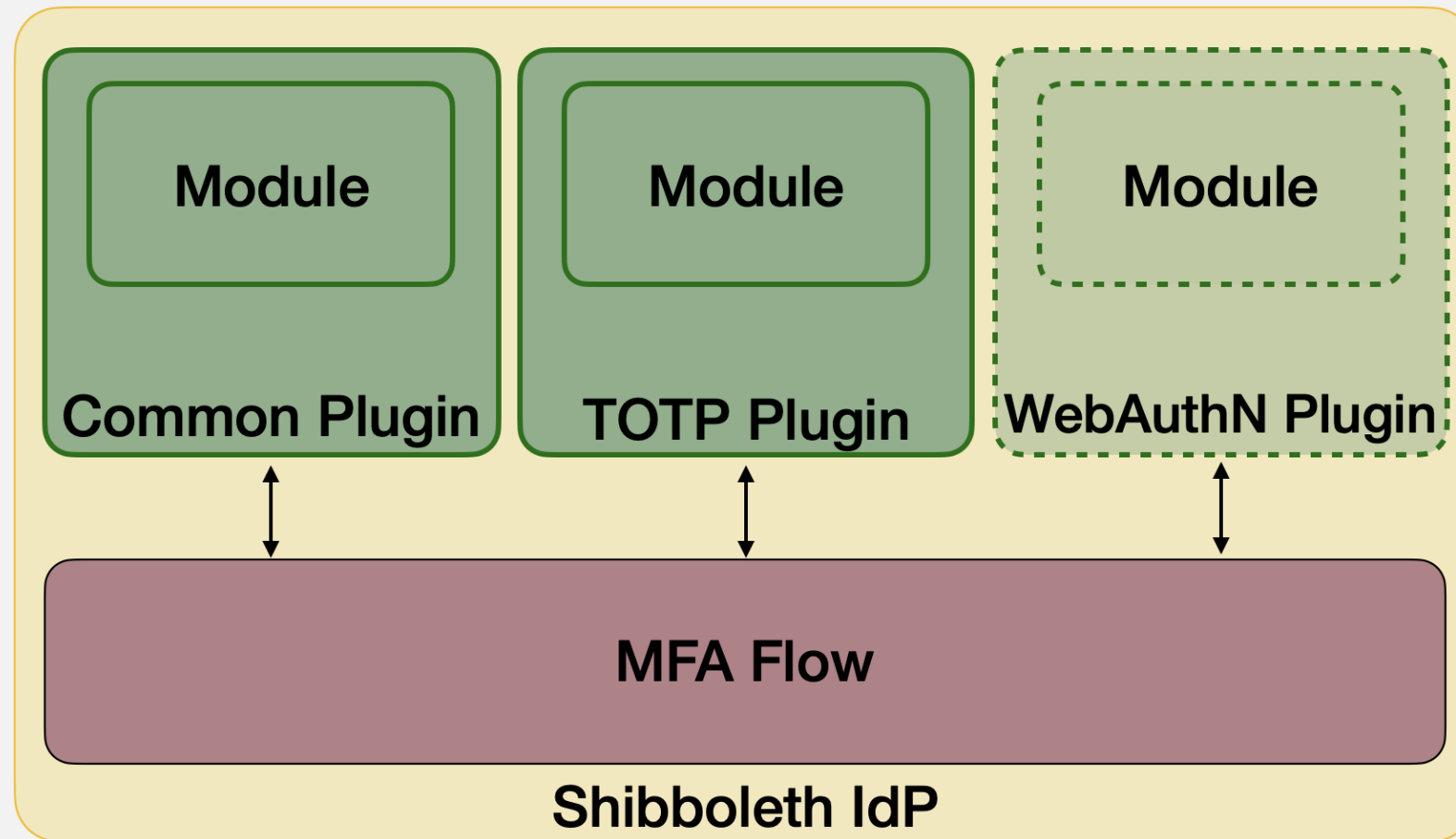


IdP MFA Architecture

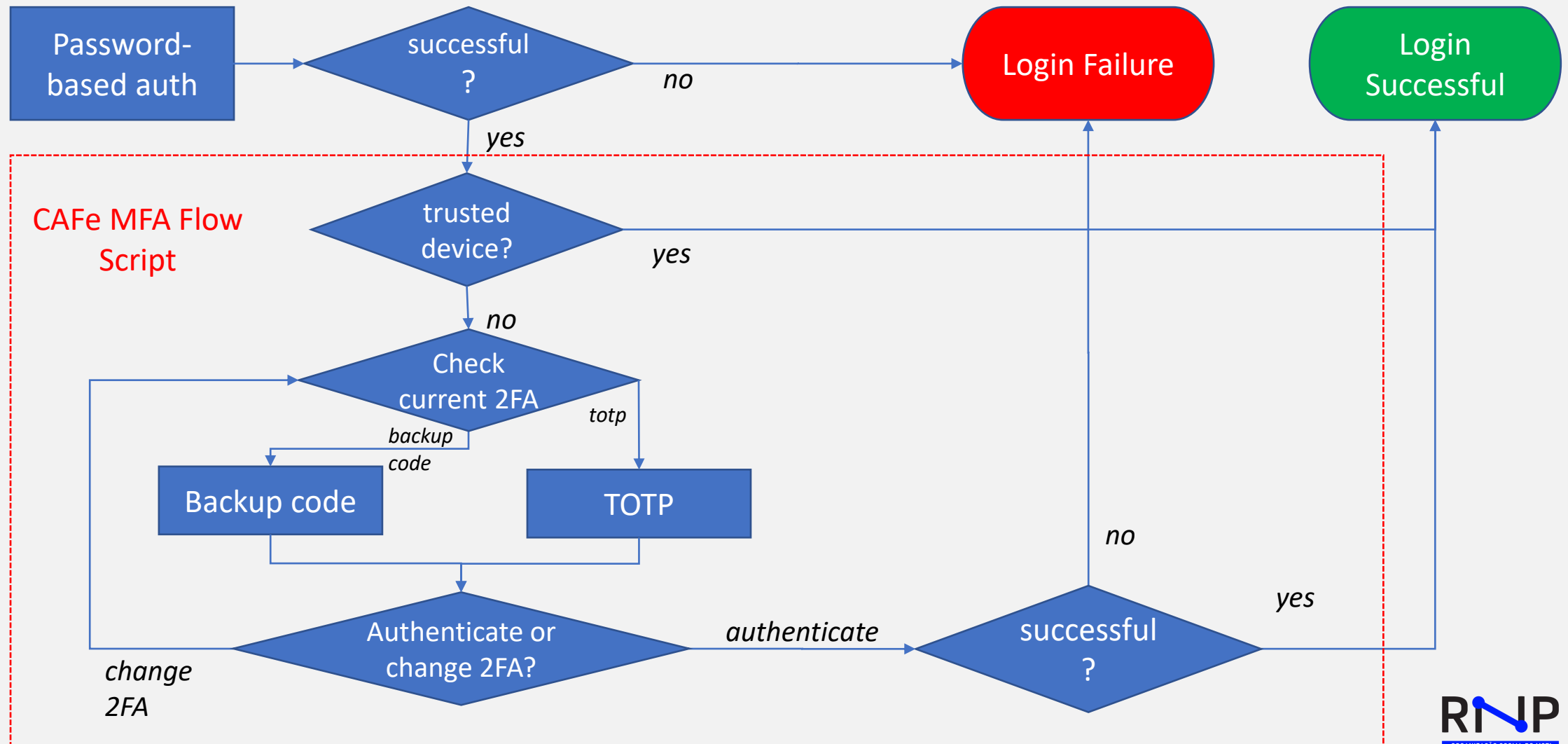
IdP MFA Architecture



IdP MFA Modules



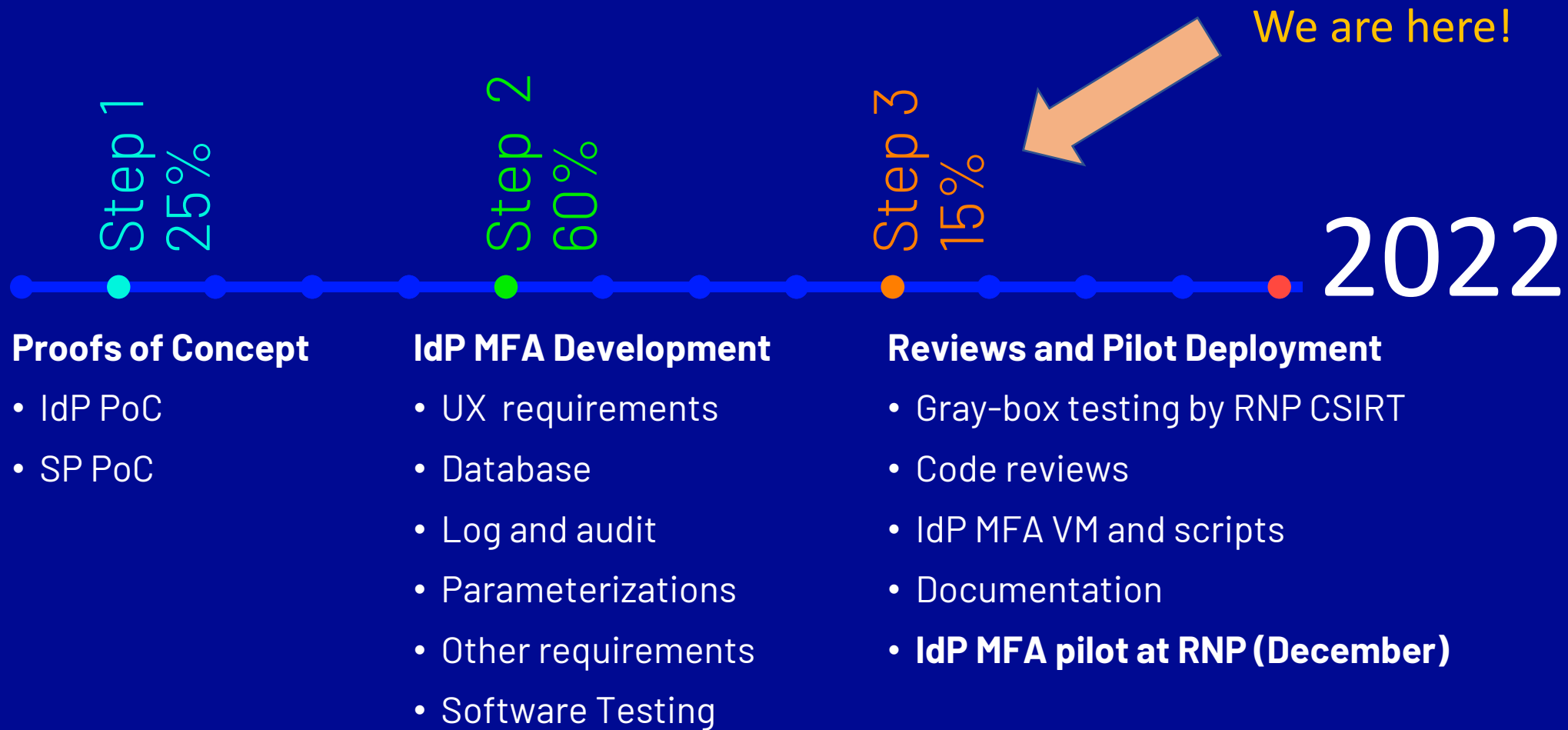
MFA Orchestration





Current and Next steps

IdP MFA Development (4Q 2021 – 4Q 2022)



— 2023 roadmap



- 1Q: Pilot Evaluation (RNP)
- 1Q: Communication campaign
- 2Q: IdP MFA v.1 available
- 3Q: Usability Survey (NPS)
- 2Q -3Q: WebAuthN Module
- 4Q: IdP MFA v.2



Software registration and open-source code to community



Educação, Pesquisa
e Inovação em Rede

IdP MFA Project Team

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Prof. Michelle Wingham (RNP – RD&I)

Sarom Torres (RNP – RD&I)

Felipe Cardoso (RNP – RD&I)

Reinaldo Matushima (BrainyIT startup)

Laerte Belotto (RNP - CAFé)

Jean Faustino (RNP – CAFé)

Thanks! Q&A

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Demo