INALOGY

MidPoint Integrations: Partner Series

Keycloak as an Access Layer

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IAM, IDM, IGA, AM

- IDM - Identity Management is focusing on identity lifecycle management and data orchestration.

- Identity lifecycle management
- Password management
- Management policies
- Requesting access
- Data synchronization

- IGA - Identity Governance and Administration expands on IDM by adding governance and compliance features.

- Identity analysis
- Recertification
- Role governance
- Segregation of duties
- Audit and Compliance

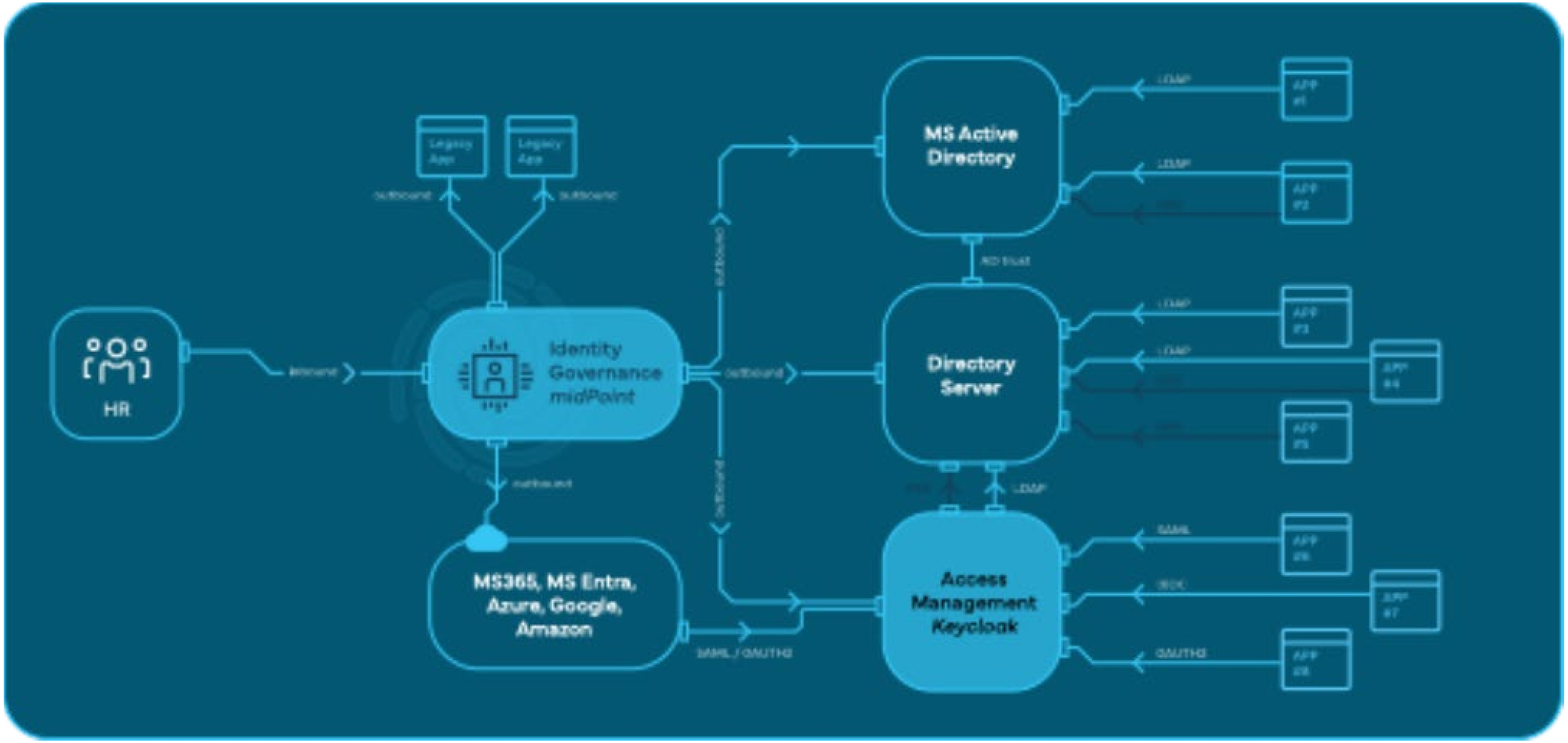
- AM - Access Management specifically about controlling access, rather than managing identities.

- Central authentication
- Single Sign-On (SSO)
- Clients and services management
- Multifactor authentication (MFA)
- Identity federation

- IAM - Identity and Access Management is an overarching concept that includes aspects of all the others.

- IDM
- IGA
- AM

Inalogy IAM concept



Why there is a need for access layer

- To isolate the authentication layer
- Advanced safety mechanism
  - Brute force prevention
  - MFA
- Single Sign-On
- Delegated authentication
- Multiple options on the market
  - Keycloak
  - Microsoft Entra
  - Okta
  - CAS
  - Etc…

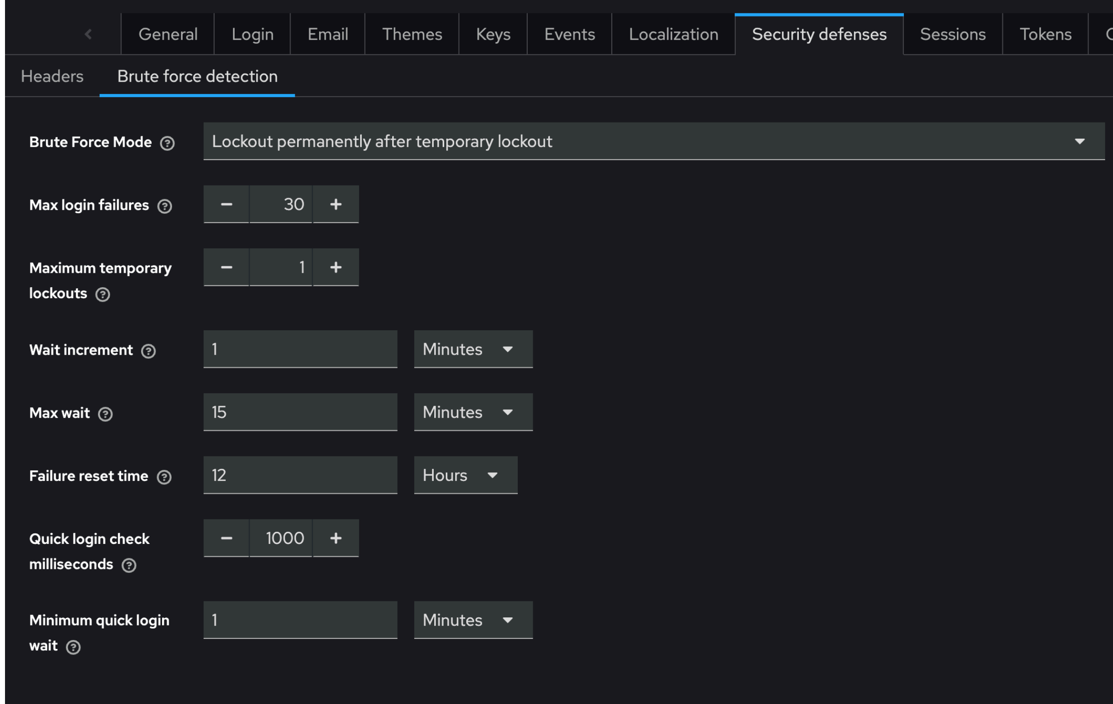
Why Keycloak

- Open-Source backed by CNCF
- Highly customizable UI
  - Themes
  - Localizations
- Supports customization of flows, processes, and screens via extension modules without impacting core code
- All standardized protocols
  - OAuth, OpenID Connect, SAML2.0
- Identity brokering via 3rd party IDPs
  - Microsoft, Google, Apple…
  - Custom IDPs supporting standard protocols

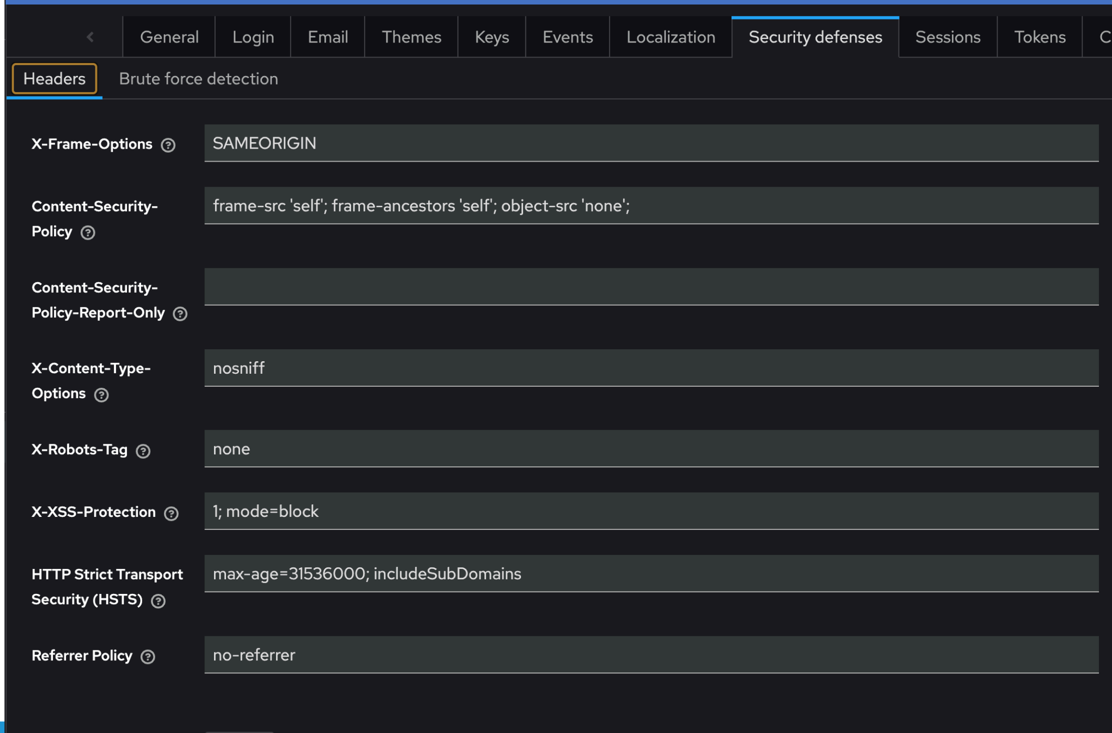
- MFA
  - OTP
  - Webauth
  - Certificates
  - Physical keys (Yubikey)
  - Passkeys
  - Push-notifications*

Mitigating security threats

- Defense mechanisms
    - Brute force detection
        - Lockout permanently
        - Lockout Temporarily
        - Lockout permanently after temporary lockout
    - Security Headers



Brute Force Mode	Lockout permanently after temporary lockout	
Max login failures	30	
Maximum temporary lockouts	1	
Wait increment	1	Minutes
Max wait	15	Minutes
Failure reset time	12	Hours
Quick login check milliseconds	1000	
Minimum quick login wait	1	Minutes

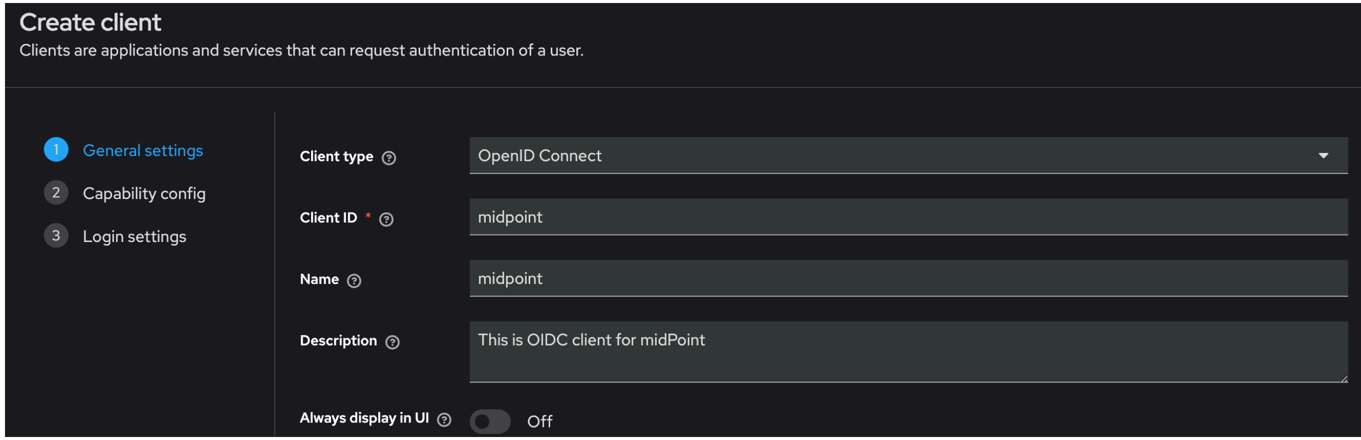


X-Frame-Options	SAMEORIGIN
Content-Security-Policy	frame-src 'self'; frame-ancestors 'self'; object-src 'none';
Content-Security-Policy-Report-Only	
X-Content-Type-Options	nosniff
X-Robots-Tag	none
X-XSS-Protection	1; mode=block
HTTP Strict Transport Security (HSTS)	max-age=31536000; includeSubDomains
Referrer Policy	no-referrer

midPoint OIDC configuration

Keycloak side

- Create midPoint client in Keycloak
  - General settings
  - Capability configuration
  - Login settings
- Secret is generated after client creation
- [Documentation link]()



Create client

Clients are applications and services that can request authentication of a user.

1. General settings
2. Capability config
3. Login settings

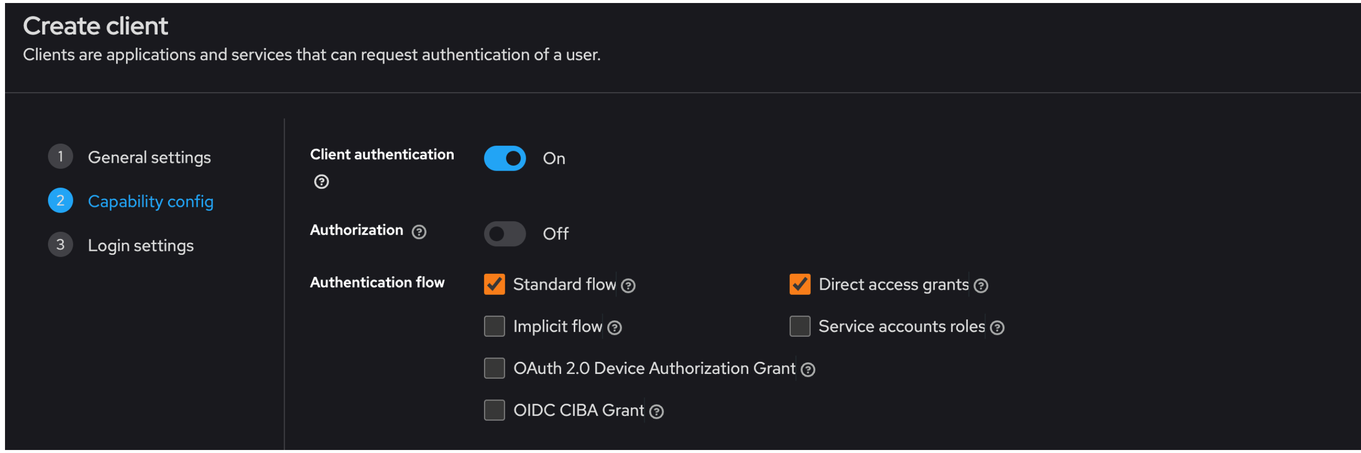
Client type: OpenID Connect

Client ID *: midpoint

Name: midpoint

Description: This is OIDC client for midPoint

Always display in UI: Off



Create client

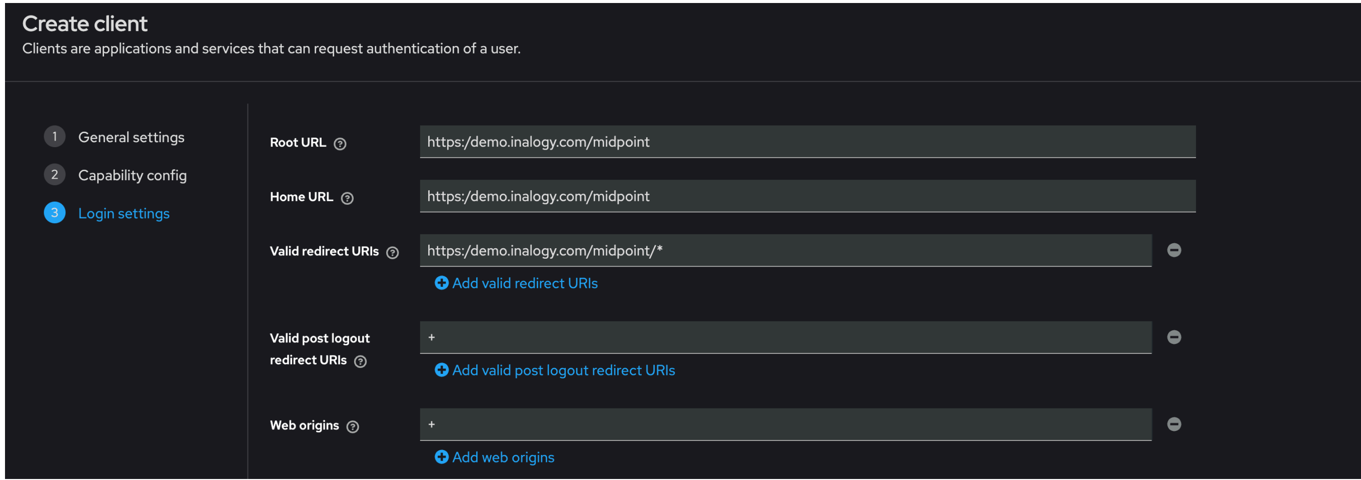
Clients are applications and services that can request authentication of a user.

1. General settings
2. Capability config
3. Login settings

Client authentication: On

Authorization: Off

Authentication flow:
- ☑ Standard flow
- ☑ Direct access grants
- □ Implicit flow
- □ Service accounts roles
- □ OAuth 2.0 Device Authorization Grant
- □ OIDC CIBA Grant



Create client

Clients are applications and services that can request authentication of a user.

1. General settings
2. Capability config
3. Login settings

Root URL: https:/demo.inalogy.com/midpoint

Home URL: https:/demo.inalogy.com/midpoint

Valid redirect URIs: https:/demo.inalogy.com/midpoint/*

Add valid redirect URIs

Valid post logout redirect URIs: +

Add valid post logout redirect URIs

Web origins: +

Add web origins

midPoint OIDC configuration

midPoint side

- Security policy
- Flexible authentication
- OIDC module
- Authentication via ClientID and Secret
- [Documentation link]

❶ To allow logging in for users that have no accounts in Keycloak (e.g., default midPoint `administrator`). Not strictly necessary.

❷ OpenID Connect login for ordinary users.

❸ Technical information that may be basically anything legal for inclusion into URI.

❹ ID of the client as registered in Keycloak.

❺ Secret of the client as generated by Keycloak (or provided manually).

❻ URL at which Keycloak runs.

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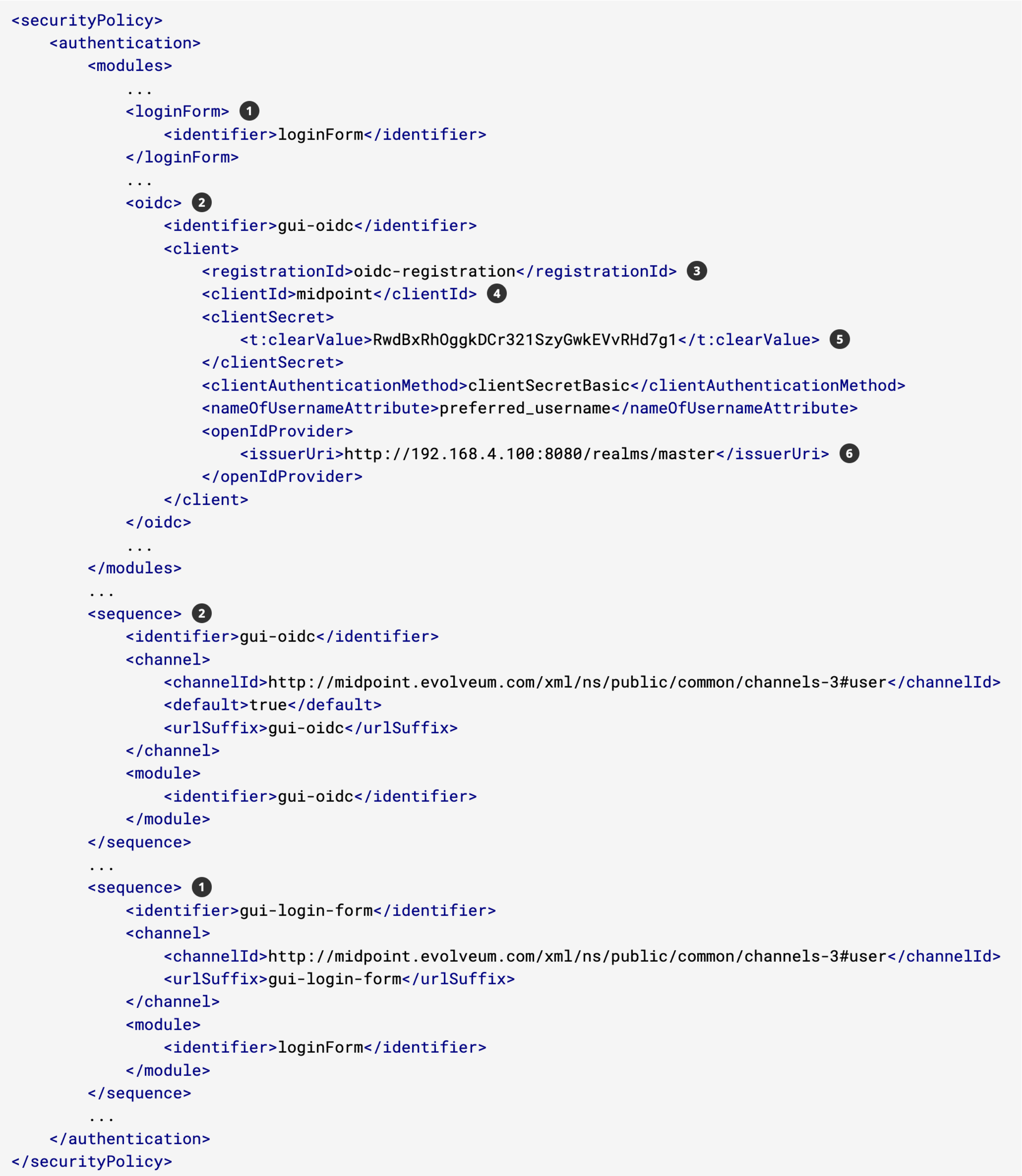

```
<securityPolicy>
    <authentication>
        <modules>
            ...
            <loginForm> ❶
                <identifier>loginForm</identifier>
            </loginForm>
            ...
            <oidc> ❷
                <identifier>gui-oidc</identifier>
                <client>
                    <registrationId>oidc-registration</registrationId> ❸
                    <clientId>midpoint</clientId> ❹
                    <clientSecret>
                        <t:clearValue>RwdBxRhOggkDCr321SzyGwkEVvRHd7g1</t:clearValue> ❺
                    </clientSecret>
                    <clientAuthenticationMethod>clientSecretBasic</clientAuthenticationMethod>
                    <nameOfUsernameAttribute>preferred_username</nameOfUsernameAttribute>
                    <openIdProvider>
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                    </openIdProvider>
                </client>
            </oidc>
            ...
        </modules>
        ...
        <sequence> ❷
            <identifier>gui-oidc</identifier>
            <channel>
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                <urlSuffix>gui-oidc</urlSuffix>
            </channel>
            <module>
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            </module>
        </sequence>
        ...
        <sequence> ❶
            <identifier>gui-login-form</identifier>
            <channel>
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                <urlSuffix>gui-login-form</urlSuffix>
            </channel>
            <module>
                <identifier>loginForm</identifier>
            </module>
        </sequence>
        ...
    </authentication>
</securityPolicy>
```

MidPoint Keycloak integration

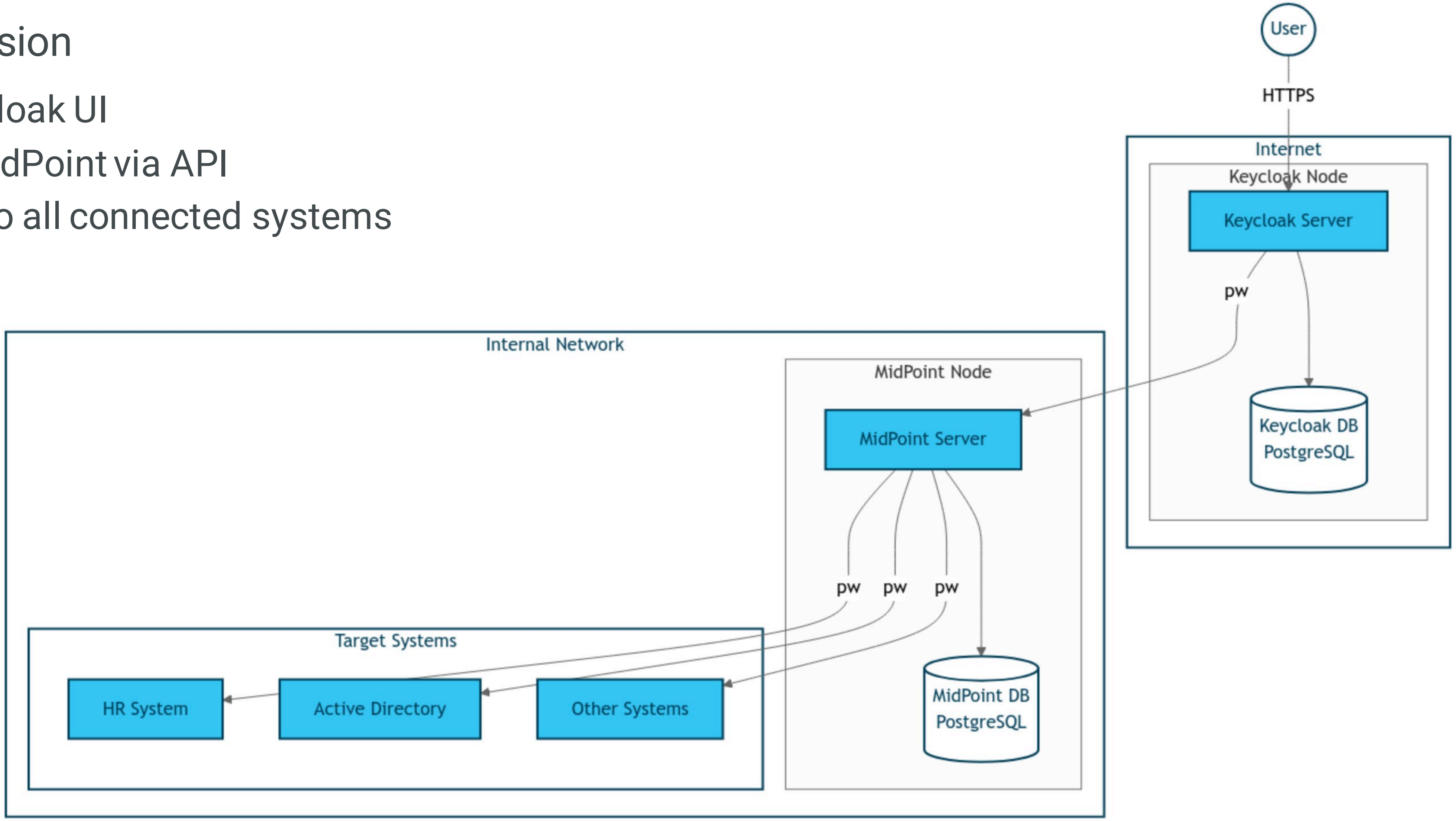
Outbound

- Keycloak connector by NRI
  - https://docs.evolveum.com/connectors/connectors/jp.openstandia.connector.keycloak.KeycloakConnector/
  - Assigning KC roles directly
- Native LDAP federation
  - Assigning KC roles via LDAP groups
- 3rd Party Identity providers like EntraID
  - Assigning KC roles via AD groups

MidPoint Keycloak integration

Inbound

- Password provisioning extension
  - Manage password via Keycloak UI
  - Send a new password to midPoint via API
  - Distribute new passwords to all connected systems
- Use cases
  - Password change
  - Forgotten password
  - Account recovery



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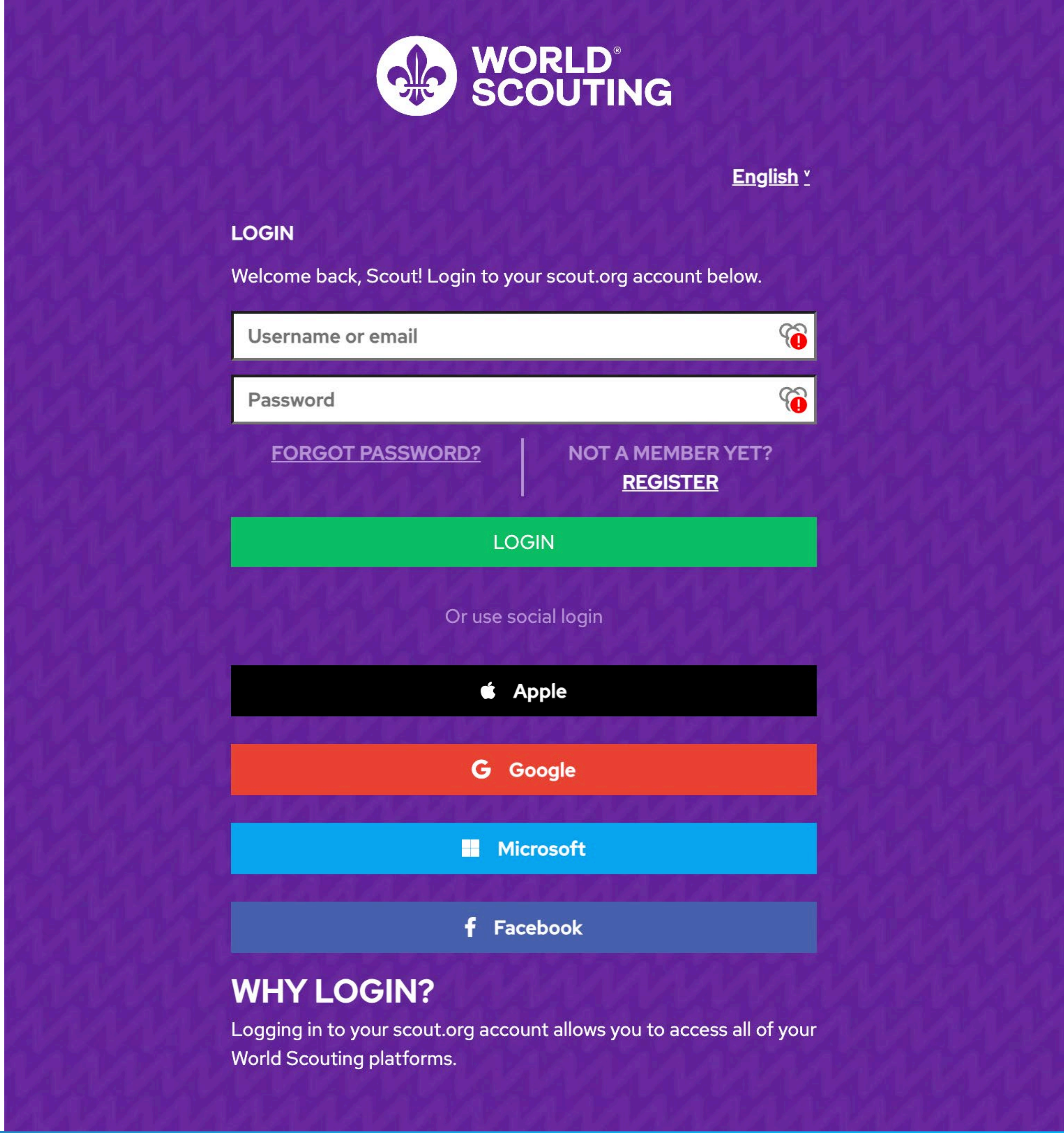
midPoint

Keycloak customization

- Authentication flows
  - Login
  - Register
  - Password reset
- Themes
  - Templates (Apache FreeMarker)
  - Custom CSS
  - Custom e-mail templates
- Extensions



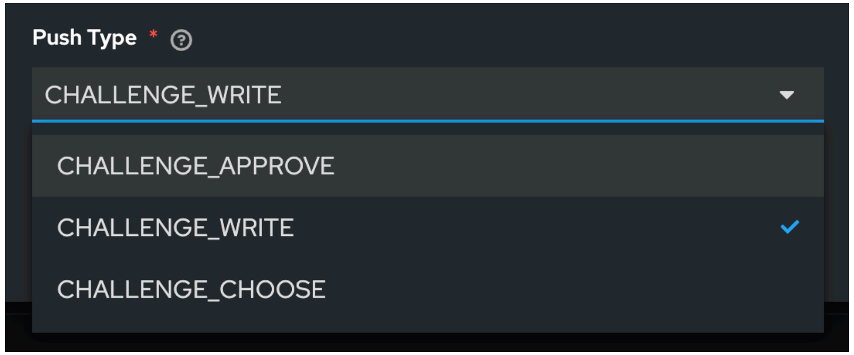
Welcome back, Scout! Login to your scout.org account below.

WHY LOGIN?

Logging in to your scout.org account allows you to access all of your World Scouting platforms.

Push Notifications for on-prem AM

- Push notifications for on-prem AM
- Multiple security options

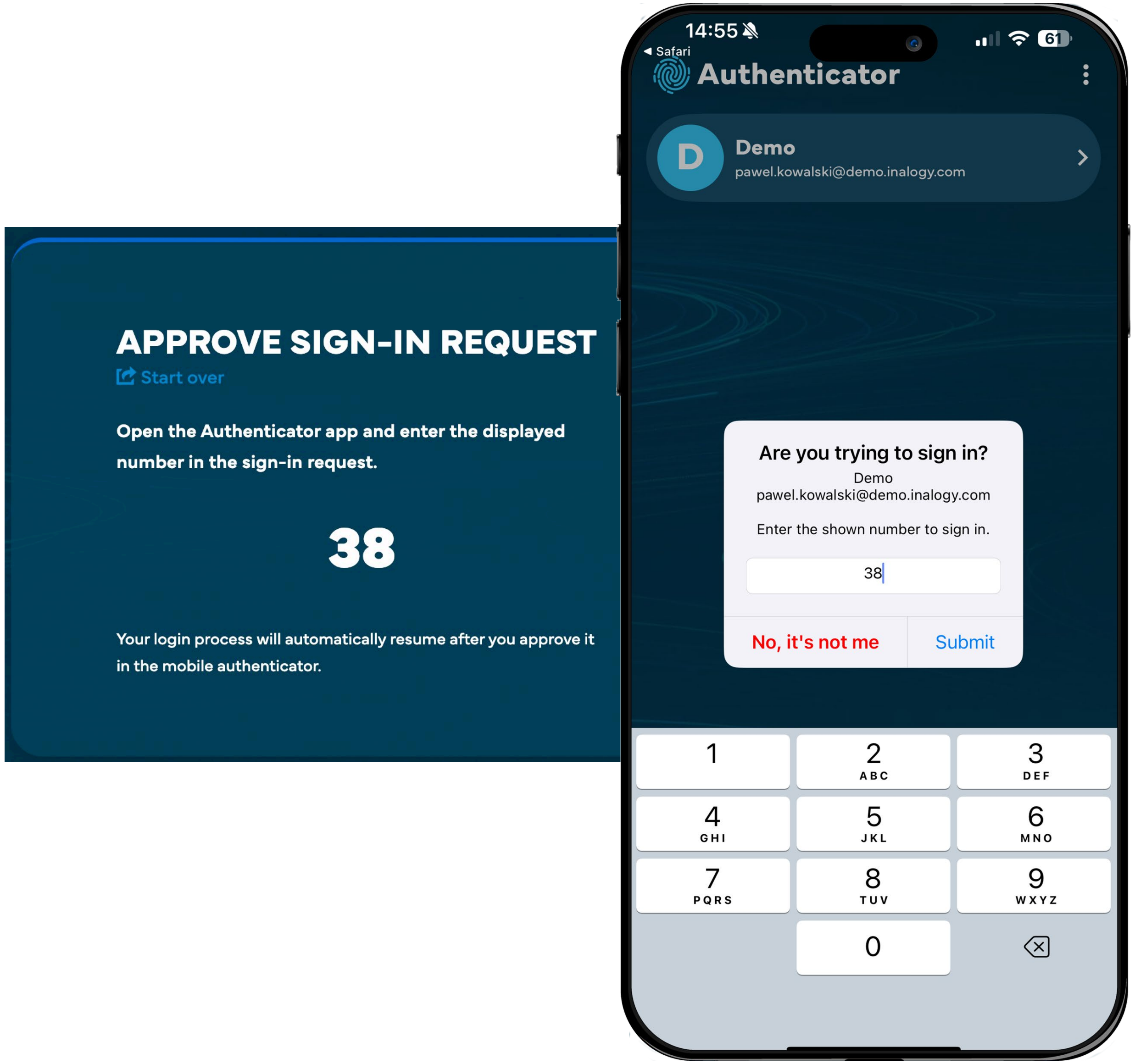


Push Type * ⓘ

CHALLENGE_WRITE

- CHALLENGE_APPROVE
- CHALLENGE_WRITE ✓
- CHALLENGE_CHOOSE

- Inalogy Authenticator available for free



APPROVE SIGN-IN REQUEST

Start over

Open the Authenticator app and enter the displayed number in the sign-in request.

38

Your login process will automatically resume after you approve it in the mobile authenticator.

14:55

Safari

Authenticator

Demo
pawel.kowalski@demo.inalogy.com

Are you trying to sign in?
Demo
pawel.kowalski@demo.inalogy.com

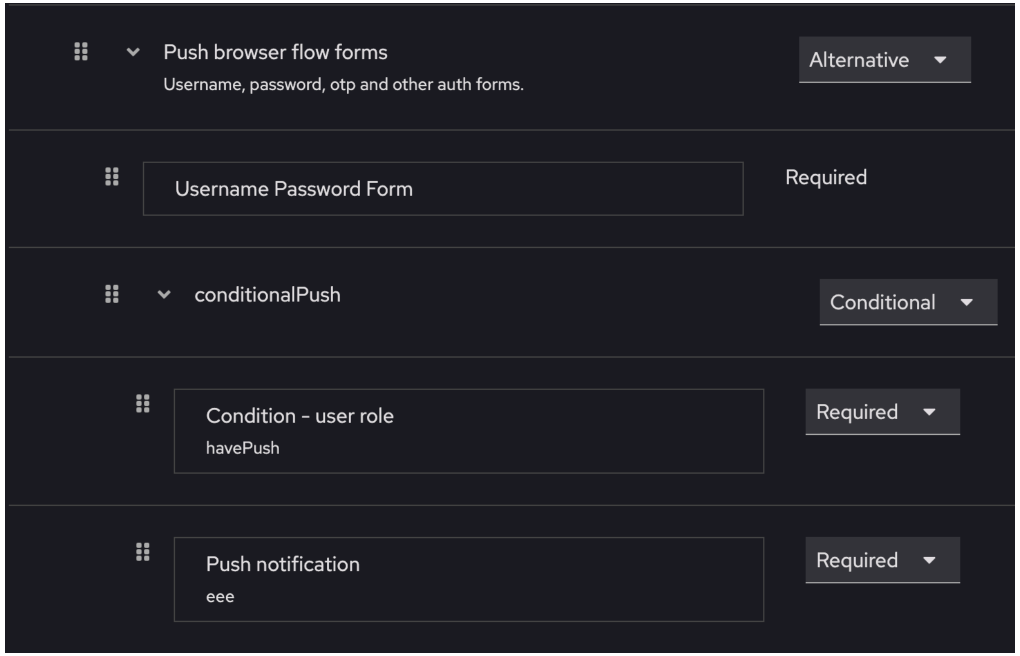
Enter the shown number to sign in.

38

No, it's not me | Submit

Under the hood

- Keycloak extension
  - Configurable directly in Keycloak auth flow wizard
- IMS
  - Cloud messaging service providing a bridge between Keycloak instances and Mobile Authenticators
  - Communicates with Keycloak non-admin API
- Inalogy authenticator
  - Native iOS application
  - Native Android application



Push browser flow forms
Username, password, otp and other auth forms.
Alternative

Username Password Form
Required

conditionalPush
Conditional

Condition - user role
havePush
Required

Push notification
eee
Required

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Demo

- demo.inalogy.com
    - Password change
    - Role driven MFA
    - MFA via push notification

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Thank you for your attention

Inalogy Authenticator