

# NextGate — PONA Auth Flow V3 (Progressive · Onboarding · Native · Access)

“ Version 3.0 — The Complete Authentication Specification

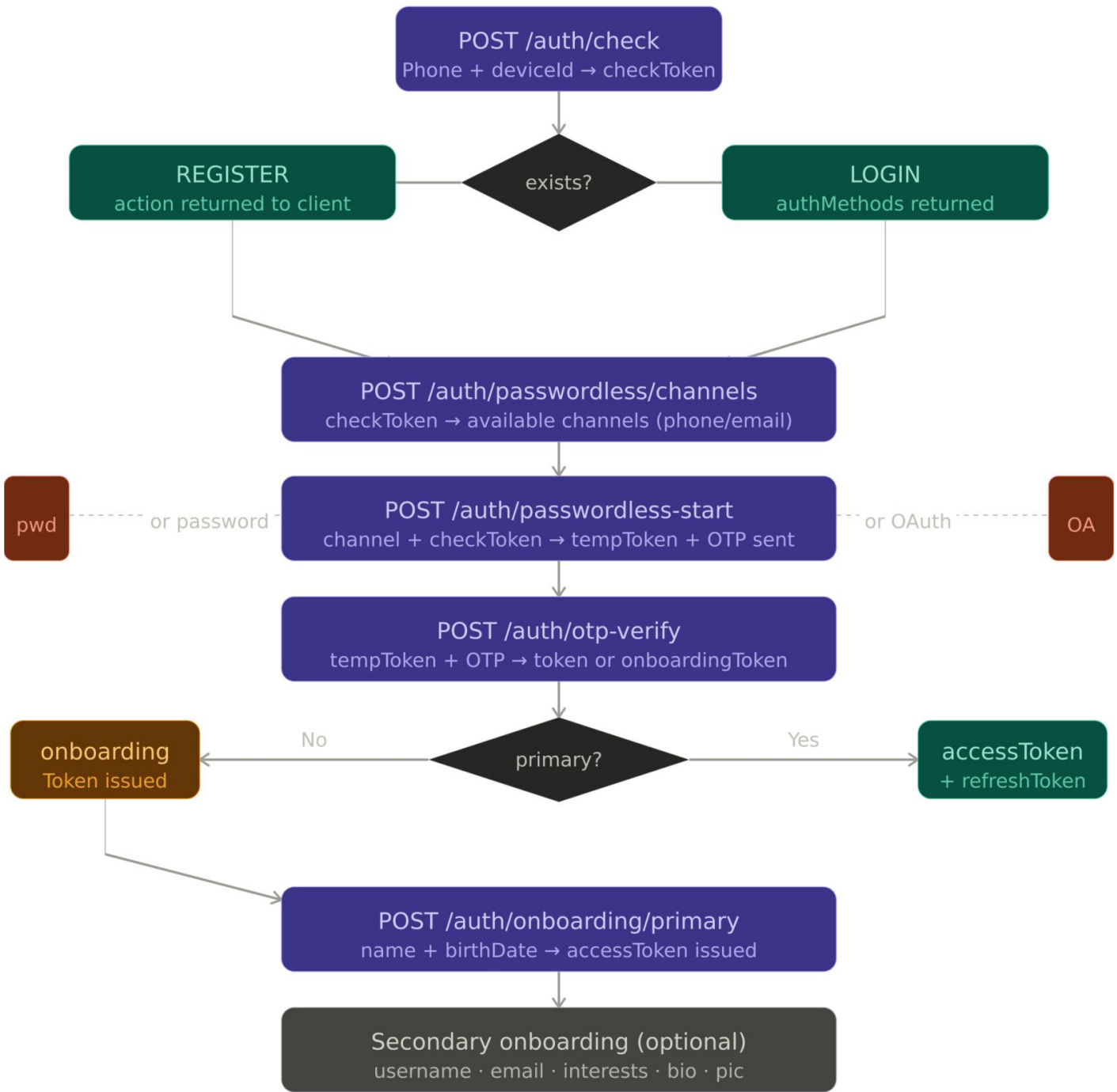
Phone-first. Passwordless by default.  
One flow. No walls. Trust earned progressively.

## Philosophy

- **One entry point** — phone number only, always
- **One auth system** — no separate lite or hard auth flows
- **Passwordless by default** — password is an optional enhancement set later
- **Progressive onboarding** — primary is mandatory, secondary collected only when a resource needs it
- **One token type** — access token carries onboarding flags
- **Persistent identity** — device remembers who you are, you never type your number twice
- **Channel choice** — passwordless users pick where they receive their OTP

# PONA Auth — Progressive Onboarding Native Access

Phone-first · Passwordless by default · One unified flow



Auth endpoints Client actions Token types Alt login methods Progressive steps

Click any node to learn more

## Token Types

Token	Lifespan	Purpose	Issued At
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<code>checkToken</code>	5 mins	Signed phone carrier — binds all auth actions to one account	<code>/auth/check</code>
<code>tempToken</code>	10 mins	OTP handshake only	<code>/auth/start</code> , <code>/onboarding/email/initiate</code>
<code>onboardingToken</code>	7 days	Primary flow only — unlocks name and age steps only	After OTP verified, primary incomplete
<code>accessToken</code>	1hr (no password) / 7 days (with password)	Full session, carries onboarding flags	After primary complete
<code>refreshToken</code>	30 days	Silent refresh, password users only, rotated on use	After password login

## What "Primary Complete" Means

Three requirements. All three done before access token is issued. No skip. No cancel.

- Phone verified via OTP
- First name + Last name set
- Date of birth set (age calculated → account tier assigned)

## Account Tiers — Set at Age Step

Age	Tier	What It Means
Under 13	Blocked	Account deleted. Phone blocklisted. Cannot return until 13th birthday.
13 — 17	Restricted	Age-restricted content hidden. Some commerce limited.
18+	Full	No restrictions.

## Onboarding Flags (Inside Access Token)

Derived from actual account data. No separate database column needed.

Flag	Means
primaryComplete	Phone verified + name set + date of birth set
username	Real username chosen — not a system temp one
email	Email submitted AND verified via OTP
profilePic	At least one profile picture uploaded
interests	At least 3 interests selected
bio	Bio text written

## Access Token Shape

```
{
  "sub": "su_uuid",
  "flags": {
    "primaryComplete": true,
    "username": false,
    "email": false,
    "profilePic": false,
    "interests": false,
    "bio": false
  },
  "exp": "2026-04-01T12:00:00Z"
}
```

## Resource Permission Matrix

Feature	Needs Primary	Needs Secondary
Browse events / listings	<input type="checkbox"/> No auth	—
React / like	<input type="checkbox"/>	nothing extra
Buy ticket or product	<input type="checkbox"/>	nothing extra
Share listing	<input type="checkbox"/>	nothing extra
Comment publicly	<input type="checkbox"/>	username
Follow someone	<input type="checkbox"/>	username
Send a message	<input type="checkbox"/>	username
Create an event	<input type="checkbox"/>	username + email

Feature	Needs Primary	Needs Secondary
Open a shop	<input type="checkbox"/>	<input type="text" value="username"/> + <input type="text" value="email"/>
Sell a product	<input type="checkbox"/>	<input type="text" value="username"/> + <input type="text" value="email"/>
Withdraw money	<input type="checkbox"/>	<input type="text" value="username"/> + <input type="text" value="email"/> + <input type="text" value="profilePic"/>
Age-restricted content	<input type="checkbox"/> must be 18+	nothing extra

## Secondary Field Priority Order

Backend returns missing fields one at a time in this order. User never sees all missing fields at once.

- 1 – username (needed for almost all social features)
- 2 – email (needed for commerce and trust)
- 3 – profilePic (needed for high-trust actions)
- 4 – bio (rarely hard-required)
- 5 – interests (feed personalization, almost never hard-required)

## Auth Method Validation

Every auth endpoint validates the user has the method they are trying to use.

Endpoint	Validation
<input type="text" value="/auth/login/password"/>	Account must have password set
<input type="text" value="/auth/login/oauth"/> Google	Google must be linked to this account
<input type="text" value="/auth/login/oauth"/> Apple	Apple must be linked to this account
<input type="text" value="/auth/password/forgot/initiate"/>	Account must have password set
<input type="text" value="/auth/passwordless/channels"/>	Always allowed
<input type="text" value="/auth/start"/> OTP	Always allowed — passwordless available to everyone

## OTP Channel Selection

Passwordless users with email set can choose where to receive their OTP. Frontend never passes the raw email or phone — only the channel type enum.

## Channel Availability Rules

Channel	Available When
PHONE	Always — phone is primary, always verified
EMAIL	Only when email is set AND verified on the account

## Action Codes — Complete Reference

Action Code	What Frontend Does
REGISTER	New user — show registration intro
CONTINUE_ONBOARDING	Returning user, primary incomplete — resume
LOGIN	Account ready — show auth method options
RESTART_AUTH	Token expired — back to phone entry
SELECT_CHANNEL	Multiple OTP channels — show picker
PROCEED_TO_OTP	Single channel only — skip picker, go straight to OTP
USE_OTP	Wrong auth method chosen — switch to OTP
RETRY_OTP	Wrong OTP — error on same screen
RESEND_OTP	OTP expired — activate resend
WAIT	Rate limited — show countdown
ACCOUNT_BLOCKED	Under 13 — show blocked screen
COLLECT_USERNAME	Username needed
COLLECT_EMAIL	Email needed — submit then OTP verify
COLLECT_PROFILE_PIC	Profile picture needed
COLLECT_INTERESTS	Interests needed
COLLECT_BIO	Bio needed
PROCEED	All steps done — retry original action

## Response Shapes

# Success

```
{
  "success": true,
  "message": "Human readable message",
  "action": "NEXT_ACTION_OR_NULL",
  "data": { }
}
```

# Error — HTTP 422

```
{
  "success": false,
  "message": "Human readable message",
  "action": "NEXT_ACTION_CODE",
  "context": "what_user_was_trying_to_do",
  "data": { }
}
```

# Response Examples

## /auth/check — New User

```
{
  "success": true,
  "message": "Phone number not registered",
  "action": "REGISTER",
  "data": { "exists": false, "checkToken": null }
}
```

## /auth/check — Existing User Ready

```
{
  "success": true,
  "message": "Welcome back",
}
```

```
"action": "LOGIN",
"data": {
  "exists": true,
  "checkToken": "eyJ...",
  "primaryComplete": true,
  "maskedPhone": "... ..78",
  "authMethods": {
    "passwordless": true,
    "password": true,
    "google": true,
    "apple": false
  }
}
```

## /auth/check — Primary Incomplete

```
{
  "success": true,
  "message": "Continue setting up your account",
  "action": "CONTINUE_ONBOARDING",
  "data": {
    "exists": true,
    "checkToken": "eyJ...",
    "primaryComplete": false,
    "maskedPhone": "... ..78"
  }
}
```

## /auth/passwordless/channels — Multiple Channels

```
{
  "success": true,
  "message": "Choose where to receive your code",
  "action": "SELECT_CHANNEL",
  "data": {
    "channels": [
```

```
{ "type": "PHONE", "masked": "... ..78", "isPrimary": true },
  { "type": "EMAIL", "masked": "j.....@g.....com", "isPrimary": false }
]
}
}
```

## /auth/passwordless/channels — Single Channel Only

```
{
  "success": true,
  "message": "Sending code to your phone",
  "action": "PROCEED_TO_OTP",
  "data": {
    "channels": [
      { "type": "PHONE", "masked": "... ..78", "isPrimary": true }
    ]
  }
}
```

## /auth/start — OTP Sent

```
{
  "success": true,
  "message": "Verification code sent",
  "action": null,
  "data": {
    "tempToken": "eyJ...",
    "maskedDestination": "... ..78",
    "channel": "PHONE",
    "expiresInSeconds": 120,
    "resendAvailableAfterSeconds": 60
  }
}
```

## /auth/verify — Primary Incomplete

```
{
  "success": true,
  "message": "Phone verified. Let us set up your account.",
  "action": "COLLECT_PRIMARY",
  "data": {
    "onboardingToken": "eyJ...",
    "nextStep": "name"
  }
}
```

## /auth/verify — Primary Already Complete

```
{
  "success": true,
  "message": "Welcome back!",
  "action": null,
  "data": {
    "accessToken": "eyJ...",
    "onboarding": {
      "primaryComplete": true,
      "username": true,
      "email": false,
      "profilePic": false,
      "interests": false,
      "bio": false
    }
  }
}
```

## /auth/onboarding/age — Blocked Underage

```
{
  "success": false,
  "message": "You must be at least 13 years old to use NextGate",
  "action": "ACCOUNT_BLOCKED",
  "context": "underage",
  "data": { "unlockDate": "2027-06-15" }
}
```

# /auth/onboarding/age — Primary Complete

```
{
  "success": true,
  "message": "Welcome to NextGate!",
  "action": null,
  "data": {
    "accessToken": "eyJ...",
    "accountTier": "FULL",
    "onboarding": {
      "primaryComplete": true,
      "username": false,
      "email": false,
      "profilePic": false,
      "interests": false,
      "bio": false
    }
  }
}
```

## OTP Wrong

```
{
  "success": false,
  "message": "Incorrect OTP code",
  "action": "RETRY_OTP",
  "context": "otp_verify",
  "data": { "attemptsRemaining": 2 }
}
```

## OTP Expired

```
{
  "success": false,
  "message": "OTP has expired",
  "action": "RESEND_OTP",
  "context": "otp_expired",
  "data": { "resendAvailable": true, "resendCooldownSeconds": 0 }
}
```

```
}
```

## Rate Limited

```
{
  "success": false,
  "message": "Too many attempts. Please wait.",
  "action": "WAIT",
  "context": "rate_limited",
  "data": { "retryAfterSeconds": 120 }
}
```

## Wrong Auth Method

```
{
  "success": false,
  "message": "This account does not use password login",
  "action": "USE_OTP",
  "context": "password_login",
  "data": { "availableMethods": ["passwordless", "google"] }
}
```

## Secondary Gate — Multiple Missing

```
{
  "success": false,
  "message": "A couple of things needed before you can create events",
  "action": "COLLECT_USERNAME",
  "context": "create_event",
  "data": {
    "currentMissing": "username",
    "allMissing": ["username", "email"],
    "stepsRemaining": 2
  }
}
```

## Secondary Step Done — Next Signalled

```
{
  "success": true,
  "message": "Username set. One more step.",
  "action": "COLLECT_EMAIL",
  "context": "create_event",
  "data": {
    "accessToken": "eyJ...",
    "nextMissing": "email",
    "stepsRemaining": 1,
    "onboarding": {
      "primaryComplete": true,
      "username": true,
      "email": false,
      "profilePic": false,
      "interests": false,
      "bio": false
    }
  }
}
```

## All Secondary Done — Proceed

```
{
  "success": true,
  "message": "All done. Creating your event now.",
  "action": "PROCEED",
  "context": "create_event",
  "data": {
    "accessToken": "eyJ...",
    "stepsRemaining": 0,
    "onboarding": {
      "primaryComplete": true,
      "username": true,
      "email": true,
      "profilePic": false,
      "interests": false,
      "bio": false
    }
  }
}
```

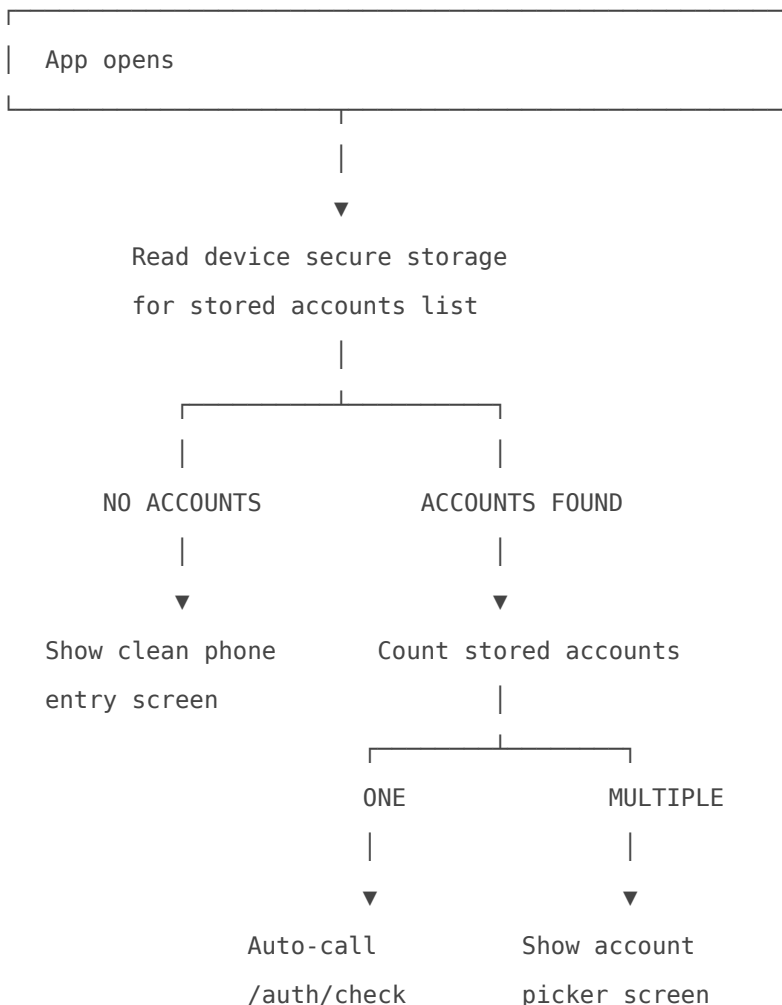
```
}
```

## Forgot Password — Reset Complete

```
{  
  "success": true,  
  "message": "Password updated. All other sessions signed out.",  
  "action": null,  
  "data": { "accessToken": "eyJ..." }  
}
```

## Flow Diagrams

### FLOW 1 — App Open with Stored Accounts



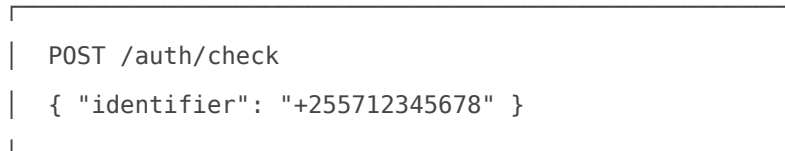
in background      User taps one



▼  
/auth/check called  
for that identifier

▼  
Show personalized  
welcome screen with  
auth method buttons

## FLOW 2 — Auth Check (Entry Point)



Valid phone format?



NO

YES



▼  
422  
Invalid  
phone

Look up in database

NOT FOUND

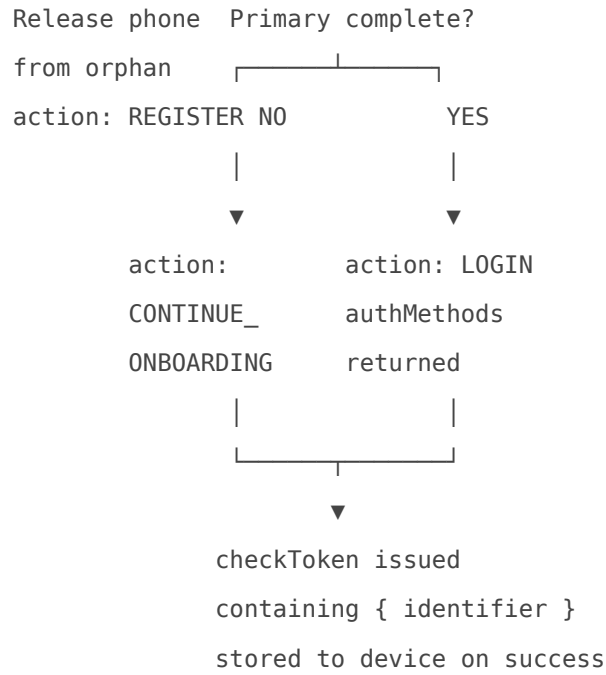
FOUND

▼  
action: REGISTER  
checkToken: null

Phone verified?

NO      YES





## FLOW 3 — New User Registration

action: REGISTER from /auth/check

.....

```

| POST /auth/start
| { "checkToken": "eyJ...", "channel": "PHONE" }
  
```

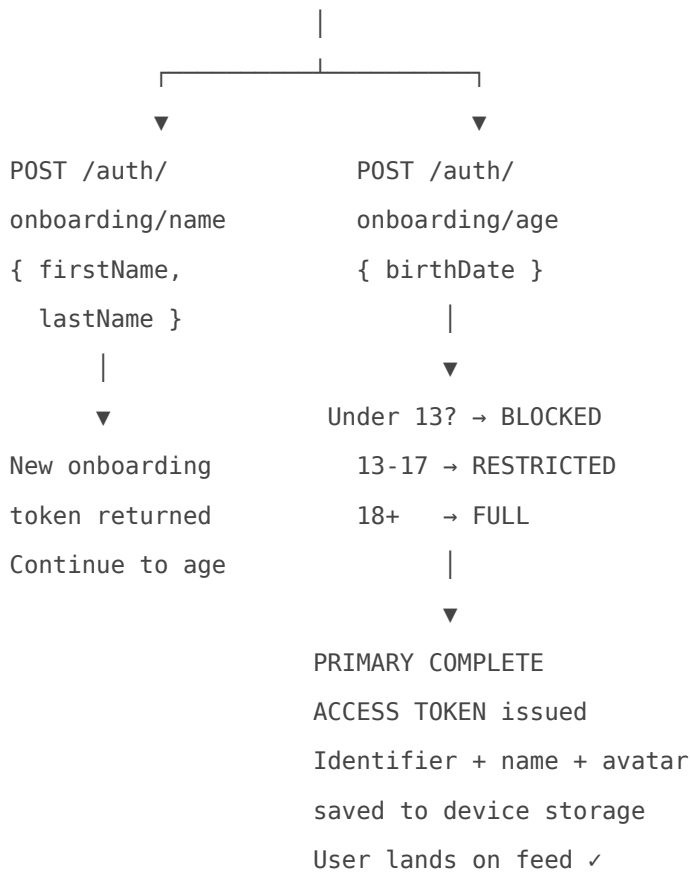
Phone extracted from checkToken  
 Partial account created  
 OTP sent via SMS  
 tempToken issued

```

| POST /auth/verify
| { "tempToken": "eyJ...", "otp": "123456" }
  
```

Phone verified

Primary incomplete  
ONBOARDING TOKEN issued  
App locked to primary screens



## FLOW 4 — Existing User, Passwordless Login

action: LOGIN, authMethods.passwordless: true

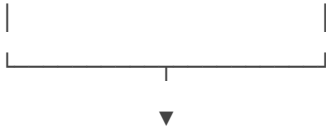
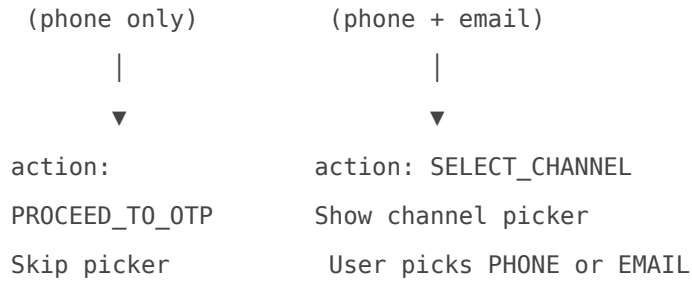
User picks OTP option

.....

```
POST /auth/passwordless/channels  
{ "checkToken": "eyJ..." }
```

Backend checks account channels

ONE CHANNEL      MULTIPLE CHANNELS



```

| POST /auth/start |
| { "checkToken": "eyJ...", "channel": "PHONE" } |
| or { "checkToken": "eyJ...", "channel": "EMAIL" } |

```



Backend extracts actual phone or email internally from account  
 Sends OTP to chosen channel  
 tempToken issued



```
POST /auth/verify { tempToken, otp }
```



OTP valid. Primary complete.  
 ACCESS TOKEN issued.  
 Device storage entry updated.  
 User lands on feed ✓

# FLOW 5 — Existing User, Password Login

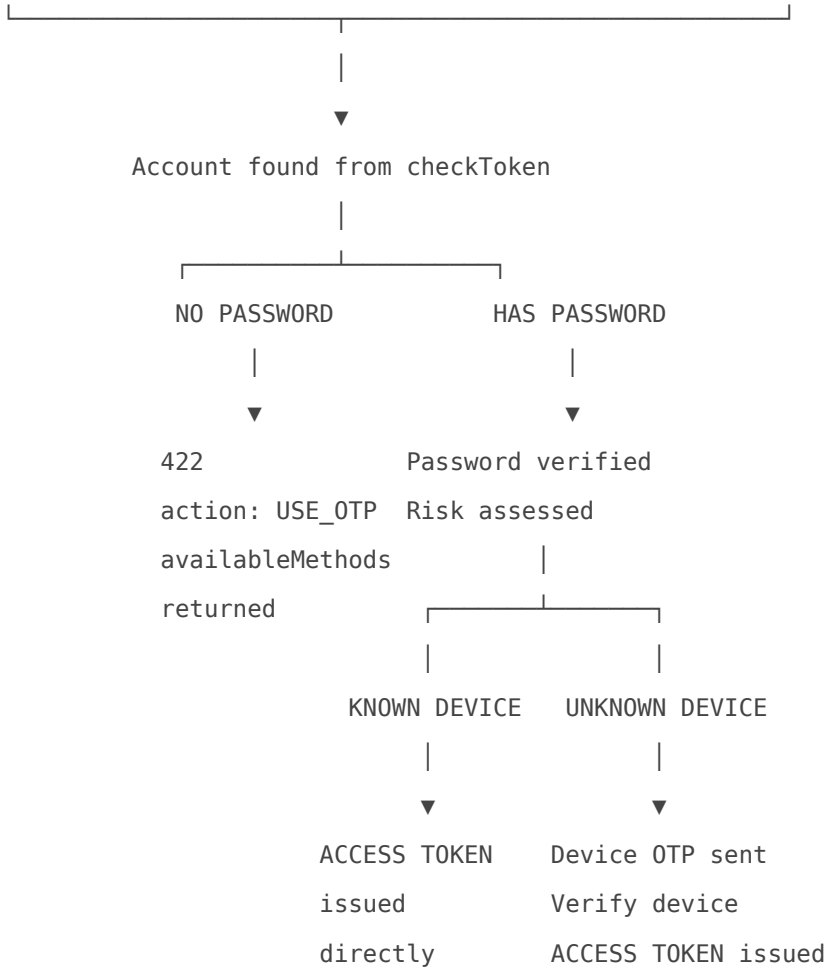
action: LOGIN, authMethods.password: true  
 User picks password option

.....

```

| POST /auth/login/password |
| { "checkToken": "eyJ...", "password": "..."} |

```

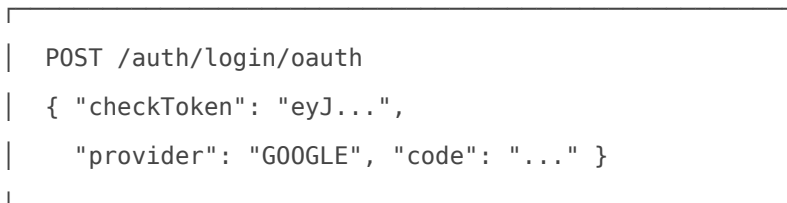


## FLOW 6 — OAuth Login

action: LOGIN, authMethods.google: true

User picks Google

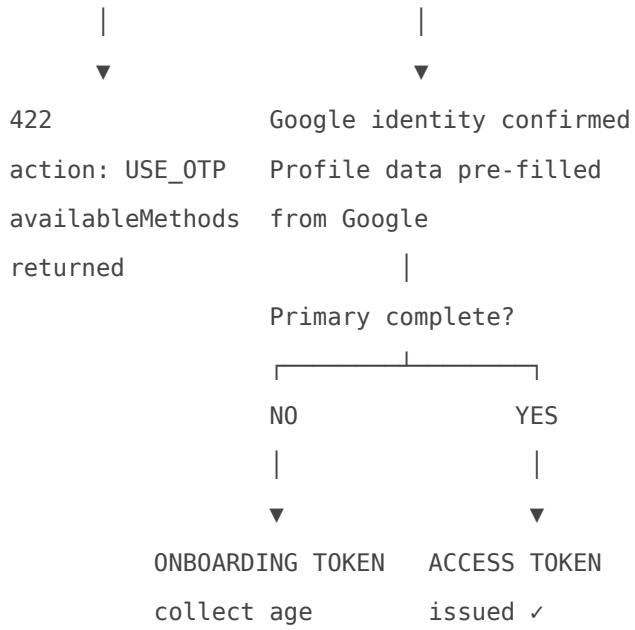
.....



Account found from checkToken

Google linked to account?

NO YES



## FLOW 7 — Forgot Password

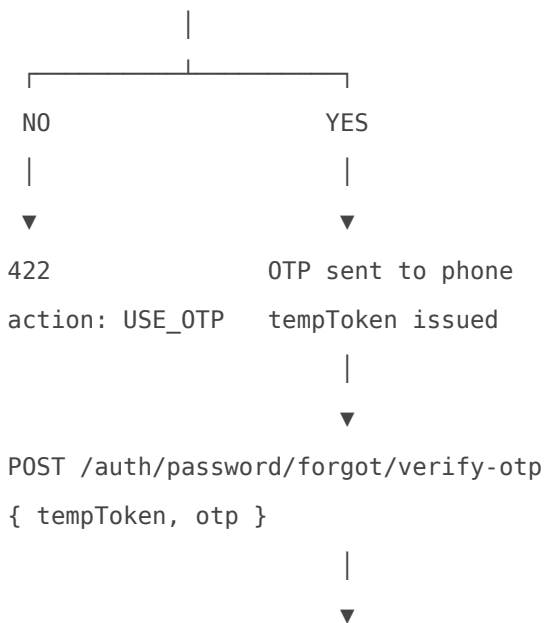
Only shown when authMethods.password: true

.....

```

POST /auth/password/forgot/initiate
{ "checkToken": "eyJ..." }
  
```

Account has password?



```
OTP verified
resetToken issued (10 mins, single use)
```

|



```
POST /auth/password/forgot/reset
{ resetToken, newPassword, confirmPassword }
```

|



```
Password updated
All other sessions revoked
ACCESS TOKEN issued
User logged in ✓
```

## FLOW 8 — Secondary Onboarding (Progressive)

```
User tries to create an event
Needs: username + email
username: false ← first missing
email: false
```

.....

```
422 from resource guard
action: COLLECT_USERNAME
allMissing: ["username", "email"]
stepsRemaining: 2
```

.....

```
Frontend: "2 steps – Step 1 of 2"
```

```
POST /onboarding/username
Bearer <accessToken>
{ "username": "joshsakweli" }
```

|



```
Username saved
New accessToken issued
action: COLLECT_EMAIL
stepsRemaining: 1
```

.....

Frontend: "Step 2 of 2 – Add email"

POST /onboarding/email/initiate

Bearer <accessToken>

{ "email": "josh@qbitspark.com" }

|

▼

OTP sent to email

tempToken returned

nextAction: VERIFY\_EMAIL

|

▼

POST /onboarding/email/verify

Bearer <accessToken>

{ "tempToken": "eyJ...", "otp": "123456" }

|

▼

Email verified

New accessToken issued

action: PROCEED

stepsRemaining: 0

|

▼

Frontend retries create event

Passes ✓

## FLOW 9 — Wrong Number, Changing During Registration

User typed wrong number

OTP sent. User clicks "Change number"

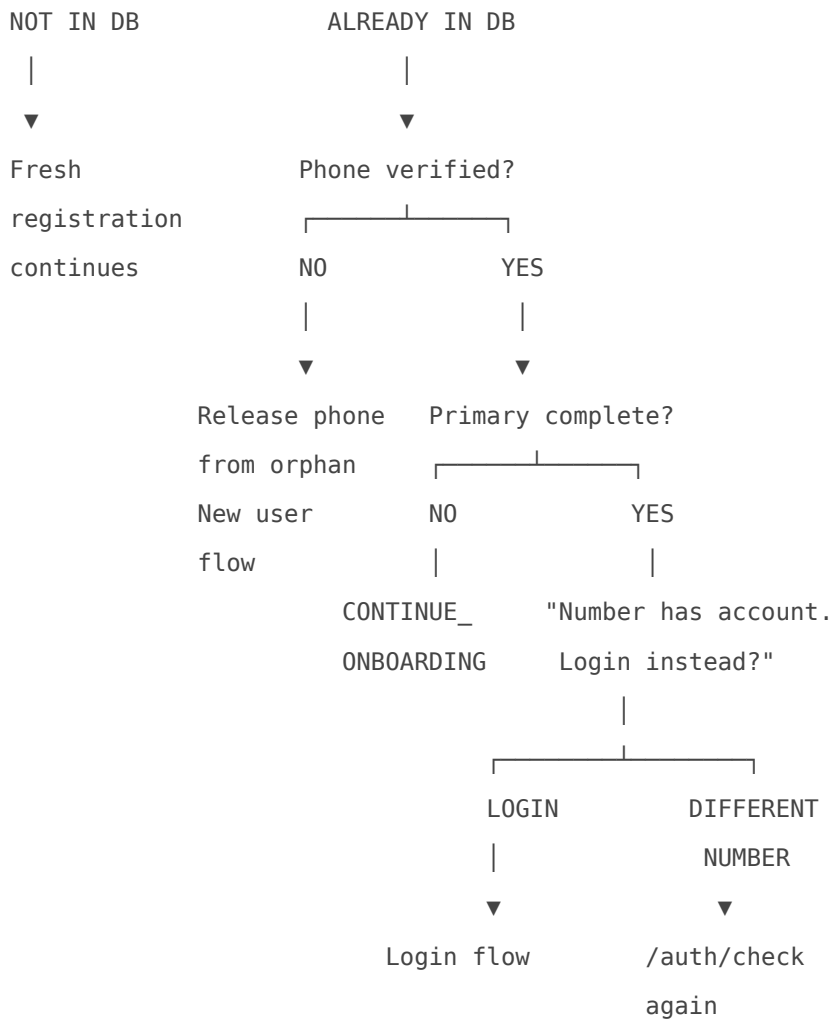
Before OTP verified – just restart

.....

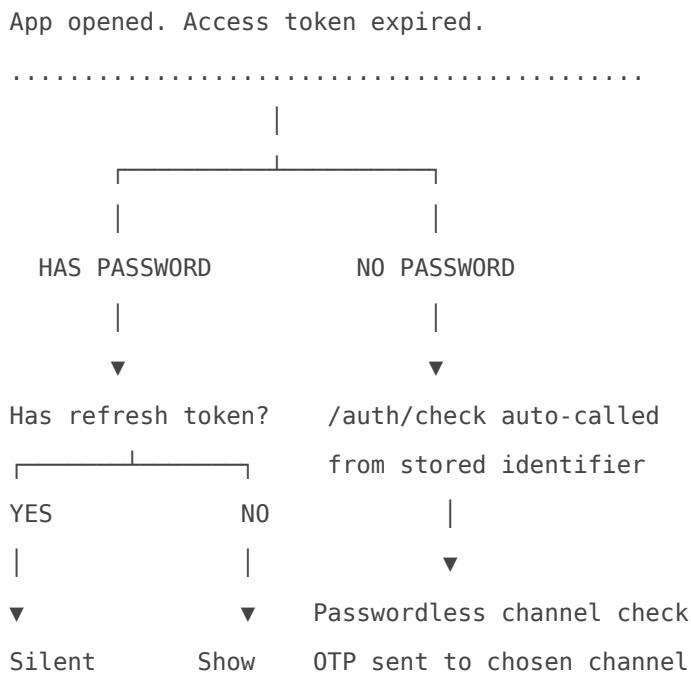
POST /auth/check { correct number }

|





## FLOW 10 — Returning User, Token Expired



```
refresh      login  /auth/verify
ACCESS      screen Primary complete → ACCESS TOKEN
TOKEN
issued ✓    directly, no onboarding shown ✓
```

# Client-Side Persistent Identity

This is a frontend-only feature. Zero backend changes required.

## What Gets Stored on Device

```
| Stored after every successful login |
|                                     |
| identifier   → "+255712345678"     |
| maskedPhone  → "... ..78"         |
| displayName  → "Joshua Sakweli"    |
| avatarUrl    → "https://..."     |
| lastLoginAt  → "2026-04-01T10:00:00Z"
```

NEVER store:

- x Access tokens
- x Refresh tokens
- x Passwords or OTPs
- x Full unmasked phone number in plain text

## Storage Location by Platform

Platform	Storage Method
Android	<code>EncryptedSharedPreferences</code> — hardware-backed encryption
iOS	<code>Keychain</code> — secure enclave
Web	<code>localStorage</code> — for non-sensitive display data only, never tokens

# Stored Accounts List Rules

Maximum 5 accounts stored per device

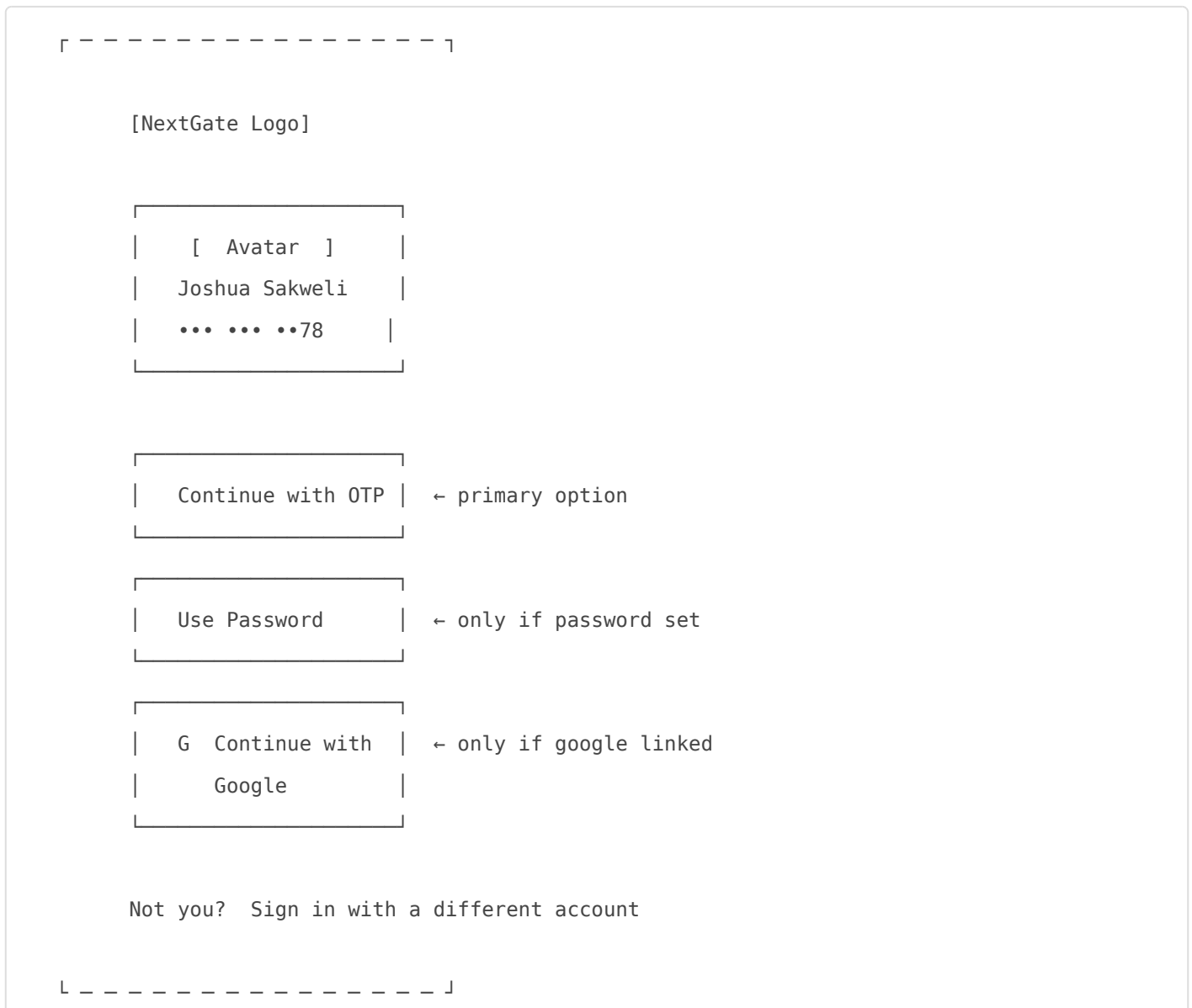
Sorted by lastLoginAt – most recently used first

Updated after every successful login (name, avatar may change)

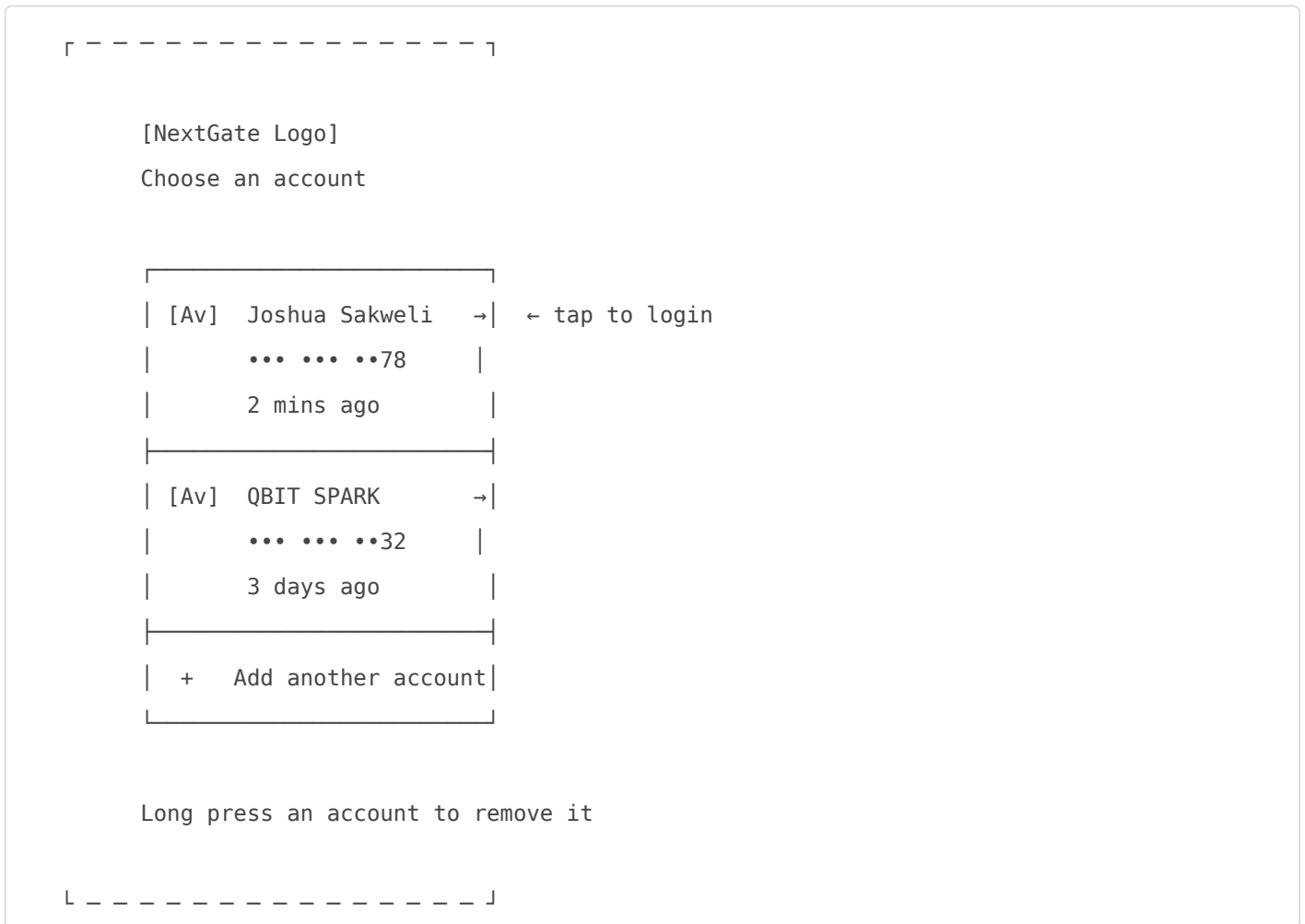
If 6th account added → prompt user to remove one first

## UI Screens (Dotted)

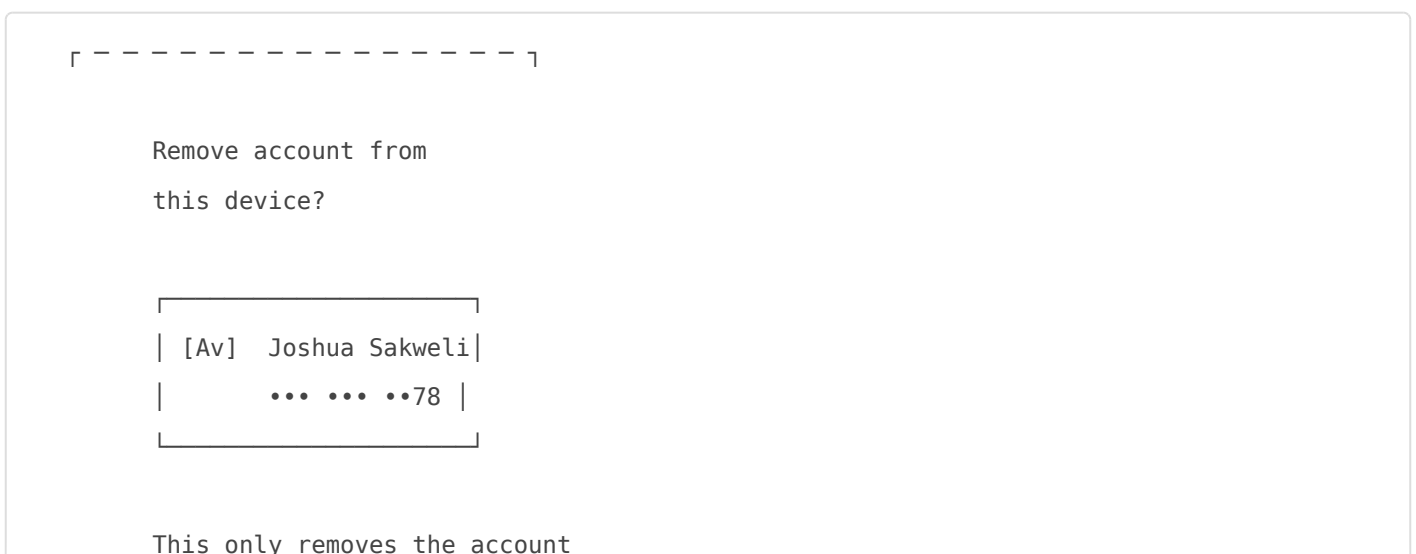
### Screen 1 — App Open, One Stored Account



# Screen 2 — Account Picker (Multiple Stored Accounts)



# Screen 3 — Remove Account Confirmation



from this device. Your NextGate  
account will not be deleted.

Remove

Cancel

┌-----┐

## Screen 4 — Fresh Phone Entry (No Stored Account)

┌-----┐

[NextGate Logo]

Enter your phone number  
to get started

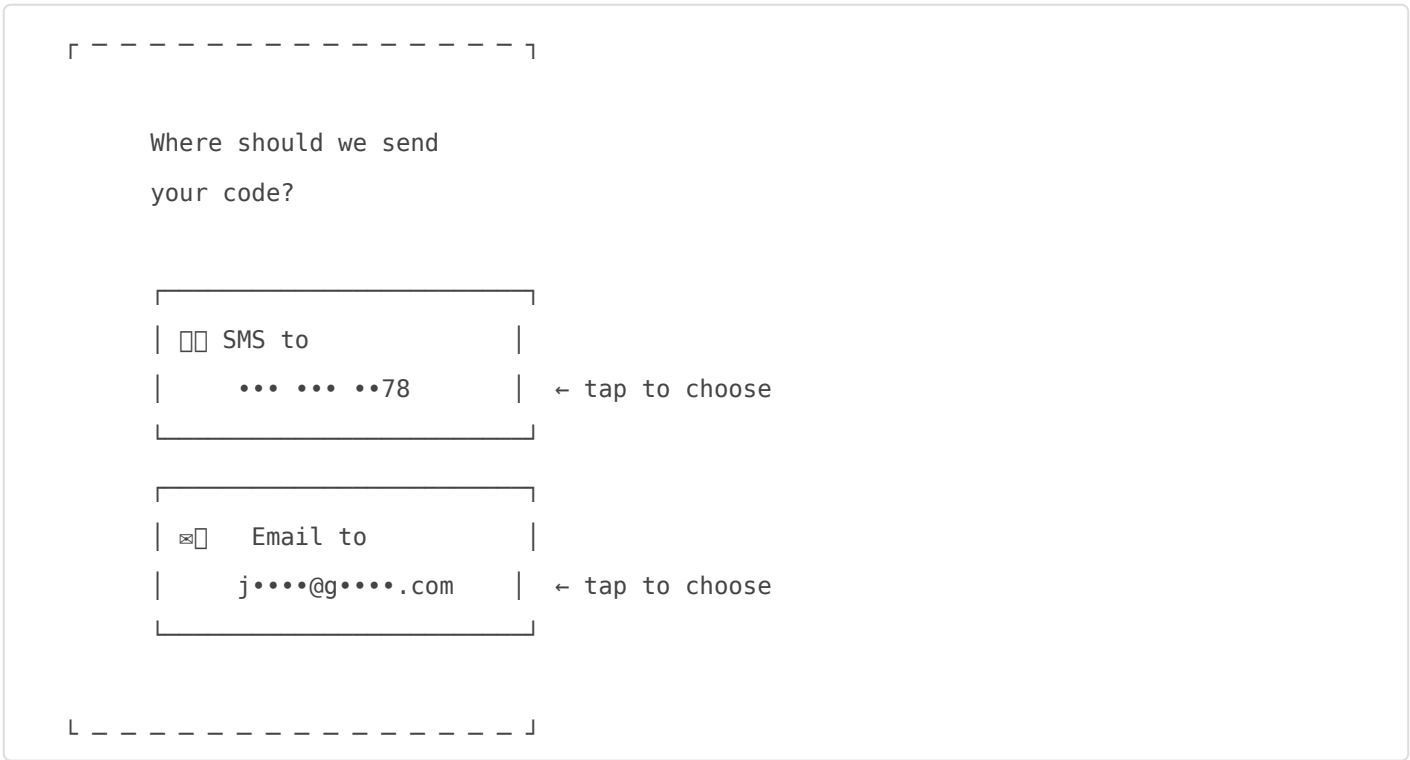
+255 | 7XX XXX XXX

Continue

By continuing you agree to our  
Terms of Service and Privacy Policy

┌-----┐

## Screen 5 — OTP Channel Picker



## Screen 6 — OTP Entry



## Screen 7 — Primary Onboarding, Name Step

┌-----┐



Step 1 of 2

What is your name?

| First name |

| Last name |

| Continue |

This is how you will appear  
on NextGate

└-----┘

---

## Screen 8 — Primary Onboarding, Age Step

┌-----┐



Step 2 of 2

When were you born?

| DD / MM / YYYY |

| Continue |

Your age helps us show you  
the right content.  
We never share your birthday.

L - - - - - J

## Screen 9 — Secondary Onboarding Gate (Inline, Not Full Screen)

[ - - - - - ]

Choose a username  
to create events

Step 1 of 2

---

@username

Continue

Maybe later

← dismisses modal  
user stays on feed

L - - - - - J

“ Secondary onboarding appears as a **bottom sheet or modal**, not a full page. User can dismiss it and continue browsing. They will be prompted again when they try the same action.

# Screen 10 — Forgot Password



## Endpoint Reference

### Public — No Auth Required

Method	Endpoint	Send	Receive
POST	<code>/auth/check</code>	<code>{ identifier }</code>	checkToken + exists + authMethods
POST	<code>/auth/passwordless/channels</code>	<code>{ checkToken }</code>	available channels masked
POST	<code>/auth/start</code>	<code>{ checkToken, channel }</code>	tempToken
POST	<code>/auth/verify</code>	<code>{ tempToken, otp }</code>	onboardingToken or accessToken
POST	<code>/auth/login/password</code>	<code>{ checkToken, password }</code>	accessToken or device flow
POST	<code>/auth/login/oauth</code>	<code>{ checkToken, provider, code }</code>	accessToken or onboardingToken

Method	Endpoint	Send	Receive
POST	/auth/resend-otp	{ tempToken }	new tempToken
POST	/auth/device/verify	{ deviceVerificationToken, otp }	accessToken
POST	/auth/password/forgot/initiate	{ checkToken }	tempToken
POST	/auth/password/forgot/verify-otp	{ tempToken, otp }	resetToken
POST	/auth/password/forgot/reset	{ resetToken, newPassword, confirmPassword }	accessToken

## Primary Onboarding — Onboarding Token Required

Method	Endpoint	Send	Receive
POST	/auth/onboarding/name	{ onboardingToken, firstName, lastName }	new onboardingToken
POST	/auth/onboarding/age	{ onboardingToken, birthDate }	accessToken

## Secondary Onboarding — Access Token Required

Method	Endpoint	Send	Receive
POST	/onboarding/username	{ username }	new accessToken + next action
POST	/onboarding/bio	{ bio }	new accessToken + next action
POST	/onboarding/interests	{ interestIds[] }	new accessToken + next action
POST	/onboarding/profile-pic	multipart image	new accessToken + next action
POST	/onboarding/email/initiate	{ email }	tempToken + nextAction
POST	/onboarding/email/verify	{ tempToken, otp }	new accessToken + next action

## Session Management — Access Token Required

Method	Endpoint	Send	Receive
POST	/auth/token/refresh	{ refreshToken }	new accessToken + refreshToken
POST	/auth/token/revoke	{ refreshToken }	success
POST	/auth/sessions/sign-out	—	success
GET	/auth/sessions	—	active sessions list
DELETE	/auth/sessions/{id}	—	success

# Client-Side Storage Specification

## Storage Keys

ng\_stored\_accounts → JSON array of stored account objects  
ng\_active\_identifier → identifier of currently active session

## Stored Account Object

```
{
  "identifier": "+255712345678",
  "maskedPhone": "... ..78",
  "displayName": "Joshua Sakweli",
  "avatarUrl": "https://cdn.nextgate.app/avatars/...",
  "lastLoginAt": "2026-04-01T10:00:00Z"
}
```

## Account Management Rules

Action	What Happens
Successful login	Add or update entry in stored list. Update lastLoginAt, name, avatar.
Normal logout	Keep entry in stored list. User sees welcome back on next visit.
"Forget this device" logout	Remove entry from stored list. Clean phone entry shown next visit.

Action	What Happens
Remove from picker	Remove entry from stored list. Account still exists on server.
Add another account	Login flow, auto-added to list on success.
6th account added	Prompt user to remove one existing entry first.
Account deleted on server	Remove entry from stored list automatically after next failed check.

## What to Update After Successful Login

After ACCESS TOKEN received:

- Update displayName from onboarding flags if changed
- Update avatarUrl if changed
- Update lastLoginAt to now
- Sort stored list by lastLoginAt descending

## What Changes vs What Stays

### Being Removed

- Single linear `OnboardingStep` tracking → replaced by independent flags
- `onboardingStep` database column → database migration required
- `isOnboardingComplete()` → replaced by `isPrimaryComplete()`
- Onboarding token for secondary steps → access token handles all of that now
- `refreshOnboardingToken` endpoint → no longer needed
- Email and username as login identifiers → phone only from now on
- Raw identifier passed to `/auth/start` → replaced by `checkToken` + `channel`

### Being Added

- `POST /auth/check` — new entry point
- `POST /auth/passwordless/channels` — new channel check endpoint
- `OnboardingFlagResolver` — derives all flags from existing account data
- Resource guard — checks flags, returns next action automatically
- `checkToken` generation in JWT system
- `channel` field on `/auth/start`
- All secondary onboarding endpoints
- `action` and `context` on all responses

- Client-side persistent identity (frontend only, zero backend changes)

## Staying Exactly as They Are

- All OTP generation, validation, and rate limiting
  - Session creation and management
  - Device trust and registration
  - Risk assessment and scoring
  - Account blocking for underage users and fraud
  - Password change and management
  - Email and phone account linking (post-login)
  - JWT signing infrastructure
  - Security filter chain — minor flag reading addition only
- 

## Security Notes

- `/auth/check` rate limited — max 10 per IP per minute, max 3 per phone per hour
  - `checkToken` single-use — consumed the moment any auth action is taken
  - `checkToken` cryptographically binds the phone to every action — identifier cannot be swapped mid-flow
  - Frontend never passes raw email or phone after `/auth/check` — channel type enum only
  - Orphaned partial accounts cleaned up automatically every night
  - Phone collision with verified account — redirected to login, cannot overwrite
  - Phone collision with unverified account — released and reassigned via OTP proof
  - Primary onboarding — no cancel, no skip, app stays locked until all three steps done
  - Underage — account deleted immediately, phone blocklisted, cannot return until 13th birthday
  - Forgot password link — never shown unless `authMethods.password: true`
  - Wrong auth method — backend validates before doing anything, 422 returned immediately
  - Stored accounts on device — only display data stored, never tokens or passwords
  - "Forget this device" — clears stored identifier, forces fresh phone entry next visit
- 

Revision #4

Created 1 April 2026 00:21:00 by Admin Qbit

Updated 3 April 2026 12:22:53 by Admin Qbit