[CVE-2026-125652] Client-level mandatory PKCE is not applied to authorization codes from the login-actions entry point

[CVE-2026-125652] Client-level mandatory PKCE is not applied to authorization codes from the login-actions entry point - abstractj, GitHub.

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Content

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- Repository: keycloak/keycloak
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Body

Describe the bug

Client-level mandatory PKCE (`pkce.code.challenge.method`) is not enforced for authorization codes issued through the `/realms/{realm}/login-actions/reset-credentials` entry point.

`GET /realms/{realm}/login-actions/reset-credentials?client_id=X&redirect_uri=Y` needs no credential or cookie. It builds a complete OIDC `response_type=code` authentication session for client X without going through the authorization endpoint. The client's PKCE

setting is checked only on the authorization-request path, so no `code_challenge` is stored for such a session. The "Back to Login" link on that page leads to the normal login form. The code issued after login can be redeemed at the token endpoint without a `code_verifier`. This happens because `AuthorizationCodeGrantType` decides whether to require a verifier from the code's stored challenge, not from the client's configuration.

The default `account-console` and `security-admin-console` clients are both public clients with `pkce.code.challenge.method=S256`, and both are affected. The code is delivered to the client's registered redirect URI in the browser that performed the login, so an attacker needs to intercept or obtain the code to exploit this. A realm that enforces PKCE through the `pkce-enforcer` client policy is not affected.

Version

Keycloak 26.8.1 (`quay.io/keycloak/keycloak:26.8.1`, `start-dev`, default features). The affected code is also present in `main` and `release/26.8`. The realm must have "Forgot password" (`resetPasswordAllowed`) enabled.

Expected behavior

When a client sets `pkce.code.challenge.method`, the token endpoint requires a valid `code_verifier` for every authorization code issued to that client, regardless of which entry point started the authentication session.

Actual behavior

For codes issued through the `login-actions/reset-credentials` entry point, the token endpoint accepts the code without a `code_verifier`. The client's mandatory PKCE setting is not applied, so an intercepted or leaked code can be exchanged for access and refresh tokens by whoever holds it. The authorization endpoint and the documented direct-entry aliases correctly reject the same request with `Missing parameter: code_challenge_method`.

Acknowledgement

Thank you to Adel Assakaf (Oteria) for reporting this issue.

This issue was originally tracked in the private repository. Migrated by @abstractj.

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