

ByPassing Withdrawal Approval

```
function approveWithdrawRequest(address user) public onlyOwner nonReentrant {
    PrimeStakedXDCStorage storage s = _getPrimeStakedXDCStorage();
    mapping(address => bool) storage _canWithdraw = s.canWithdraw;
    _canWithdraw[user] = true;
    emit WithdrawRequestApproved(user);
}
```

Root Cause

- `approveWithdrawRequest()` sets a **per-user boolean** (`canWithdraw[user] = true`).
- This flag is **global for the user**, not linked to:
 - the **amount** staked,
 - the **specific withdrawal request**, or
 - any **time/epoch constraint**.

As a result:

- Once a user is approved **once**, that approval persists until withdrawn.
- The approval can be exploited later with a completely different stake context.

Attack Scenario Walkthrough

1. **Setup:** Attacker stakes a tiny amount (e.g., `1 wei`).
2. **Request Approval:** Calls `requestWithdraw()` → admin/owner approves → `canWithdraw[attacker] = true` .
3. **Upgrade Stake:** Attacker deposits a large amount (e.g., `1000 XDC`).
4. **Exploit:** Calls `withdraw()` . Since approval is still `true` , the attacker is allowed to withdraw the *entire large stake*, without requiring new approval.

Result: **Bypasses intended per-withdrawal approval logic.**

Impact

- Approval no longer reflects the *current* stake or context.
 - Admin loses control over withdrawals: attacker can “front-load” approval on a trivial deposit, then later drain a much larger stake.
 - Effectively reduces the system’s approval model from “per-withdrawal” to “once per user, forever,” which is a **broken trust assumption**.
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Fix Recommendations

1. Tie approval to request ID or amount

```
mapping(address => uint256) public approvedAmount;
```

- Store the specific amount (or max) approved.
- `withdraw()` must not exceed the approved amount.

2. Time-bound approvals

- Expire approval after N blocks or a timestamp.
- Forces re-approval for later withdrawals.

3. Invalidate on new stake

- Reset `canWithdraw[user] = false` whenever user deposits again.
- Prevents reuse of old approval.

4. Event-driven enforcement

- Approval should be linked to a **specific request hash** (address + amount + timestamp).
- Prevents replay or context change.