

# CHG0030013 — [TITAN] Critical — security on sqldb-phi-members

Severity	Critical	Priority	1 - Critical
Cloud	Azure	State	New
Resource	sqldb-phi-members	Group	database_operations
Resource type	Microsoft.Sql/servers/databases	Change type	Normal
Opened	2026-04-21 15:26:56	Closed	2026-04-21 15:26:56
CAB required	Yes	Close code	—

## Security Finding

SQL database 'sqldb-phi-members' containing PHI has TDE (Transparent Data Encryption) disabled. Unencrypted PHI at rest is a direct HIPAA §164.312(a)(2)(iv) violation.

## Justification

Severity assessment: CRITICAL – active exploit path, 0-day or internet-exposed asset. Meets ITIL 'security emergency' threshold.  
 Regulatory driver: HIPAA obligation.  
 Risk if deferred: Per industry telemetry, mean time to exploit a publicly-reachable misconfiguration of this class is measured in hours. Delaying this change extends exposure window and increases breach cost per IBM Cost of a Data Breach Report (avg \$4.45M per incident).

Detected by: TITAN AI agent unknown (scan titan-killer-20260421T222654Z).  
 Finding: SQL database 'sqldb-phi-members' containing PHI has TDE (Transparent Data Encryption) disabled. Unencrypted PHI at rest is a direct HIPAA §164.312(a)(2)(iv) violation.

## Implementation Plan

- PRE-CHANGE VERIFICATION (5 min)
  - Confirm TITAN pre-scan snapshot captured; snapshot ID in work notes.
  - Confirm no blocking dependencies (check 'Affected CIs' below).
  - Announce change start in #ops-change Slack channel.
- APPLY FIX (primary command, auto-generated by TITAN):
 

```
az sql db tde set --database sqldb-phi-members --server sql-titan-prod --resource-group rg-titan-demo --status Enabled
```
- POST-CHANGE VERIFICATION (5 min)
  - Re-run TITAN targeted scan on the affected resource.
  - Confirm finding cleared (scan returns 0 matches for this finding\_id).
  - Smoke-test dependent applications (see Test plan).
- CLOSE
  - Update ticket state to Review -> Closed.
  - Attach scan-diff evidence (pre vs post).
  - If verification fails at step 3, execute Backout plan immediately.

## Risk & Impact Analysis

Change risk level: HIGH (change risk: severity overrides defer-ability)

Blast radius: The change is scoped to a single cloud resource (SQL database 'sqldb-phi-members')

containing PHI has TDE (Transparent Data Encryp...). Downstream dependencies (if any) are listed under 'Affected CIs'.

Applying this fix during business hours is acceptable given exploit exposure.

Worst-case failure mode: Change is rejected by the cloud API (network partition or permission drift). Impact: no state change on target resource; Backout plan is a no-op. Time to detect: immediate (non-zero exit code from fix command).

Residual risk after successful fix: zero – the finding no longer exists. TITAN verifies this via post-change scan (see Implementation plan step 3).

## Backout / Rollback Plan

If post-change verification fails or the fix causes a service disruption:

1. IMMEDIATE: Revert the resource to its pre-change state using the TITAN pre-scan snapshot (snapshot ID recorded in work notes at scan time).
2. Azure: az <resource-type> update ... (inverse of the apply command) OR az deployment group create --template-uri <pre-change ARM URI>
3. AWS: aws <service> ... (restore from snapshot or inverse IAM policy)
4. GCP: gcloud <service> ... update --rollback
5. Confirm rollback succeeded by re-running TITAN scan – the original finding should reappear (confirming the state was fully reverted).
6. Document the failure mode in 'Close notes' for the post-incident review.
7. Re-open this change with 'Rejected' disposition and spawn a parent Problem ticket for root-cause analysis.

## Test Plan

Acceptance criteria (must all PASS to close this change):

- [ ] TITAN targeted re-scan of SQL database 'sqldb-phi-members' containing PHI has TDE (Tra... returns ZERO matches for this finding\_id.
- [ ] Resource remains in provisioning\_state=Succeeded (Azure) / available (AWS) / RUNNING (GCP) immediately after change.
- [ ] Dependent applications pass smoke tests (HTTP 200 on health endpoints, auth still works for service accounts, DB connection-strings unchanged).
- [ ] No new alerts raised in Azure Monitor / CloudWatch / Cloud Monitoring in the 30 minutes following the change.
- [ ] Audit chain entry written: agent.change.applied event with pre/post hashes.

Any FAIL triggers the Backout plan above. Evidence attached to 'Closure Information' tab.

## Recommended Fix Command

```
az sql db tde set --database sqldb-phi-members --server sql-titan-prod --resource-group rg-titan-demo --status Enabled
```

## Compliance Mapping

HIPAA §164.312(e)(1), PCI DSS 3.4, SOC 2 CC6.1

## AI Close Notes

(empty)