

CHG0030018 — [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 15:28:21	Closed	2026-04-21 15:28:21
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-20260421T222819Z).
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

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