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CHAPTER 01

Immudb 1.11 Adds Immutable PostgreSQL Audit: News & Updates

What Happened

Codenotary announced the release of **immudb 1.11** on May 5, 2026, introducing native immutable audit logging capabilities and expanded compatibility with PostgreSQL workloads. This update allows organizations to establish verifiable, tamper-proof audit trails for data changes and activity within their PostgreSQL environments.

Key Features of Immudb 1.11

Immudb 1.11 focuses on enhancing data integrity and compliance for critical systems through its core immutable ledger technology.

- **Native Immutable Audit Logging:** The primary new feature is built-in immutable audit logging. When enabled, immudb records every server operation, including gRPC operations, creating a permanent, verifiable record. This moves beyond traditional mutable logs, offering a higher guarantee against tampering.
- **Expanded PostgreSQL Compatibility:** Immudb 1.11 extends its support for PostgreSQL. While immudb has previously offered PostgreSQL wire protocol compatibility, this release specifically targets the integration of immutable audit trails for PostgreSQL data. This enables PostgreSQL users to leverage immudb as a secure, secondary store for audit data.
- **Tamper-Proof Records:** Leveraging immudb's underlying cryptographic verification, all audit records are cryptographically protected. This ensures that once an entry is committed, it cannot be altered or deleted without detection.

Benefits for PostgreSQL Workloads

Integrating immudb 1.11 for PostgreSQL audit trails addresses critical needs in data integrity, regulatory compliance, and security.

- **Enhanced Data Integrity:** By storing audit data in an immutable ledger, organizations gain an unalterable record of all changes and accesses to their PostgreSQL databases. This establishes an undeniable chain of custody, providing irrefutable evidence of data provenance and integrity.
- **Simplified Compliance:** Many regulatory frameworks (e.g., GDPR, HIPAA, PCI DSS, SOX) mandate robust audit trails. Immudb's tamper-proof nature directly supports these requirements by providing cryptographically verifiable evidence of data provenance and activity.
- **Improved Security Posture:** Immutable audit logs are crucial for forensic analysis during security incidents. They ensure that malicious actors cannot cover their tracks by altering or deleting log entries, providing an accurate timeline of events.
- **Verifiable Audit Trails:** The cryptographic verification inherent in immudb allows for easy and rapid proof that audit data has not been tampered with, streamlining internal and external audits.

Integration Details

Immudb's integration with PostgreSQL for audit purposes leverages its existing support for the PostgreSQL wire protocol.

- **Wire Protocol Support:** Immudb can listen on the PostgreSQL wire protocol. This allows applications or tools designed to connect to PostgreSQL to potentially direct audit-related traffic to immudb.
- **Audit Data Storage:** The intention is to use immudb as a secure, immutable repository for audit data generated from PostgreSQL. This often involves configuring PostgreSQL's own logging or audit extensions (like `pgAudit`) to forward relevant events to immudb.

- **SQL Dialect Distinction:** It is important to note that while immudb supports the PostgreSQL wire protocol, its SQL dialect is distinct. Developers should refer to the immudb SQL reference for supported queries when interacting directly with immudb for audit data analysis. This distinction is crucial: immudb serves as a specialized, immutable repository for audit storage, complementing PostgreSQL's transactional capabilities rather than replacing it as a general-purpose database. This ensures that the integrity of audit trails is maintained independently of the primary database.

Getting Started with Immudb Audit for PostgreSQL

For developers and organizations looking to implement immutable audit trails for their PostgreSQL workloads, here are the initial steps and resources:

- **Immudb Installation and Setup:** Begin by installing immudb 1.11. Refer to the official immudb documentation for installation instructions and basic server configuration.
- **Configure PostgreSQL Logging:** Utilize PostgreSQL's native logging capabilities or extensions like `pgAudit` to capture the desired audit events. Configure these to output logs in a format that can be consumed by immudb.
- **Integrate with Immudb:** Configure immudb to listen on the PostgreSQL wire protocol. This allows PostgreSQL's audit output (potentially via a custom connector or log forwarder) to be directed to immudb for immutable storage.
- **Consult Official Documentation:** The most comprehensive guidance, including detailed configuration examples for `pgAudit` integration and specific SQL dialect usage for querying audit data within immudb, can be found in the official immudb documentation.
- **Explore Examples:** Look for reference architectures and code examples provided by Codenotary or the immudb community, particularly those demonstrating end-to-end integration with PostgreSQL.

What To Watch Next

- **Developer Tooling and Examples:** Expect Codenotary and the community to release more detailed guides, connectors, and reference architectures for seamlessly integrating `pgAudit` or similar PostgreSQL logging mechanisms with immudb 1.11.
- **Performance Benchmarks for Audit Workloads:** As adoption grows, watch for community and vendor benchmarks specifically evaluating the overhead and throughput of using immudb for high-volume PostgreSQL audit logging.

References

- Open Source Tamper-Proof Database Adds Immutable Audit Logging and Expands PostgreSQL Compatibility
- Immudb Upgrade Brings Immutable Audit Trails To PostgreSQL Workloads
- immudb - immutable database based on zero trust, SQL/Key-Value
- Pgsql protocol compatibility - immudb
- Bringing PostgreSQL audit to a new level