DigiEmu Core Deployment & Operational Guidelines v1.0

Status: Supporting Framework – Enterprise Edition
Scope: Deployment Architecture & Operational Controls
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1. Purpose

This document defines deployment and operational guidelines for enterprise-grade DigiEmu Core implementations. It establishes recommended architecture patterns, environment separation rules, and operational monitoring requirements.

2. Reference Deployment Architecture

The recommended deployment model includes:
• Stateless Core API layer
• Deterministic Snapshot Engine
• PostgreSQL or equivalent transactional storage
• Secure network segmentation between layers.

3. Environment Separation

Development, staging, and production environments SHALL be strictly separated. Production snapshot data MUST NOT be exposed in lower environments. Access credentials SHALL be environment-specific.

4. Infrastructure Requirements

Enterprise deployments SHOULD implement:
• Redundant storage layers
• Encrypted data-at-rest
• Encrypted data-in-transit (TLS)
• Secure secrets management.

5. Snapshot Verification Operations

Operational procedures SHOULD include periodic snapshot recomputation to validate ongoing determinism. Verification logs MUST be retained for audit purposes.

6. Backup & Recovery

Immutable entities and snapshot data MUST be included in backup strategies. Recovery procedures SHALL preserve deterministic reconstruction capability.

7. Monitoring & Observability

Implementations SHOULD provide monitoring of:
• Snapshot generation events
• Hash validation routines
• Unauthorized access attempts
• Tenant boundary violations.

8. Multi-Tenant Operational Controls

Tenant isolation SHALL be enforced at both application and database levels. Operational monitoring MUST detect cross-tenant access anomalies.

9. Incident Handling

Operational incidents affecting snapshot integrity MUST trigger formal incident response aligned with enterprise governance standards.

10. Governance & Version Alignment

Deployment practices SHALL remain aligned with the DigiEmu Versioning & Stability Policy. Major architectural changes impacting determinism require governance review.