PERCONA

INDEPENDENT FAILOVER VALIDATION CHECKLIST

Independent Failover Validation Checklist

Modern resilience standards, including DORA and NIS2, emphasize the importance of operational continuity in the event of supplier failure or disruption. Organizations must prove that continuity is possible using only customer-controlled components to satisfy regulators.

This checklist provides a structured protocol for verifying that your database stack is self- contained and can maintain availability even when a primary cloud control plane is unreachable. Whether you use operators, use servers, or use both, this test ensures your data remains accessible.

Pre-Test Infrastructure Verification

Before simulating a failure, ensure the environment meets the technical requirements for independent operation.

- [ ] **Automation Sovereignty:** Confirm your database automation (such as a Kubernetes Operator or server-side Ansible/Orchestrator stack) is running within your managed infrastructure, not as a vendor-managed service.
- [ ] **Local Quorum Configuration:** Verify that the database cluster has a sufficient number of nodes to reach a quorum without external orchestration.
- [ ] **Backup Accessibility:** Ensure that the most recent backups are stored in customer- governed storage and are accessible via local network paths.
- [ ] **Percona Advantage:** Percona provides declarative, automated lifecycle management that replicates DBaaS benefits while keeping the control layer entirely within your authority. You can use operators, use servers, or use both to achieve this level of self- contained logic.

Phase 1: Control Plane Isolation Test

This test verifies that the database remains operable when the link to the cloud provider's proprietary management logic is severed.

- [ ] **Simulate Connectivity Loss:** Sever network egress to the cloud provider's management endpoints and APIs.
- [ ] **Administrative Access:** Confirm that named individuals can still perform administrative actions using local, customer-managed identity (SSO/OIDC).
- [ ] **Query Availability:** Verify that applications can still read and write to the database without latency spikes caused by control plane timeouts.
- [ ] **Percona Advantage:** Percona distributions are designed to operate in air-gapped or restricted environments. This ensures that the full stack functions without requiring communication with external vendor systems.

Phase 2: Independent Failover Validation

This test ensures that self-healing mechanisms trigger without the need for provider-mediated orchestration.

- [ ] **Induce Primary Node Failure:** Terminate the primary database instance or the server node hosting it.
- [ ] **Election Monitoring:** Measure the time required for your local automation (Operator or HA manager) to detect the failure and elect a new primary from the remaining replicas.
- [ ] **Data Integrity Check:** Verify that the newly promoted primary is consistent and that no data loss occurred during the transition.
- [ ] **Percona Advantage:** Percona automation handles automated failover and self-healing using open source code that runs independently of the cloud vendor's internal systems. Whether managing pods or bare-metal servers, the failover logic remains under your control.

Phase 3: Restoration in Isolation

This final test demonstrates the ability to recover the system from scratch using only independent artifacts.

- [ ] **Total Environment Tear-Down:** Delete the existing database cluster while preserving your governed backups and keys.
- [ ] **Bootstrap from Backup:** Use the documented exit runbook to restore the database to a fresh environment using only local backups and customer-managed encryption keys.
- [ ] **Time-to-Recovery (TTR) Audit:** Record the duration of the restoration process to validate it meets the Recovery Time Objectives (RTO) defined in your compliance policy.
- [ ] **Percona Advantage:** Percona supports portable, open backup formats and provides migration-compatible binaries. This ensures you can restore to any neutral environment, regardless of your original architecture choice.

Strategic Outcome: Evidence of Sovereignty

By successfully completing this checklist, organizations provide Evidence of Technological Sovereignty. It proves that the business can continue to operate if a provider becomes unavailable or if legal circumstances change. This shift from paper-based assurance to evidence-based governance is a central requirement for modern regulatory audits.

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Visit Percona's Sovereignty Resource Center or contact us.

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