BRISKDATA ENGINEERING TEMPLATE | DOC ID: BD-OPS-BKO-004 | ADAPTABLE TEMPLATE

Production Backout and Rollback Plan Template

Abort Thresholds, Point-of-No-Return Gates, Tested Reversal Steps, and Data Reconciliation

OPERATIONAL PRINCIPLE

Redeploying a previous container image or application package is only sufficient when database schemas, message-queue payloads, infrastructure state, and DNS records remain backward-compatible. Complete and test this plan in a staging environment before opening the production maintenance window.

1. Change Window and Decision Ownership

Parameter	Change Entry	Pre-Window Verification
Change Ticket & Service	[Ticket ID] | Service: [Application / Workload]	[Linked PR / Release Tag]
Maintenance Window (UTC)	[YYYY-MM-DD HH:MM UTC to HH:MM UTC]	[Confirm outside peak business window]
Hard Abort Clock (UTC)	[YYYY-MM-DD HH:MM UTC - latest minute to begin clean reversal]	[Enough time left in window to verify backout]
Implementation Lead	[Name / Role / Phone or On-Call Handle]	[Production deploy permissions verified]
Backout Decision Owner	[Name / Role authorized to call abort]	[Present on change bridge]
Pre-Change Recovery Point	[DB Snapshot ID / PITR Timestamp / Prior Image Digest]	[Snapshot status verified COMPLETED]

2. Stop Conditions and Point-of-No-Return (PONR) Matrix

Gate / Trigger	Threshold & Observation Window	Action Required
Error Rate / Latency Trigger	[e.g., HTTP 5xx > 1% for 3 min or p95 latency > 2x baseline]	Halt rollout immediately; execute Pre-PONR stateless reversal.
Database Lock / Queue Trigger	[e.g., Lock wait queue > N sessions or dead-letter spike]	Cancel blocking statement; revert consumer/app deployment.
Abort Decision Deadline	[Timestamp UTC]	If post-deploy smoke checks have not passed by this minute, initiate backout rather than debugging live.
Point of No Return (PONR)	[Identify exact step where incompatible writes or external side effects begin]	Before PONR: stateless artifact revert. After PONR: execute approved forward-recovery or approved PITR plan.

3. Ordered Reversal Procedure

Order	Subsystem	Tested Reversal Action (Replace Placeholders)	Owner	Verification Check
1	Traffic / Flags	[Disable feature flag or shift canary weight back to prior target group]	[SRE / App Lead]	[100% traffic on prior stable pool]

Order	Subsystem	Tested Reversal Action (Replace Placeholders)	Owner	Verification Check
2	Application	[Deploy pinned prior release digest/tag and wait for healthy pods/instances]	[App Lead]	[Health endpoint returns 200 + prior build SHA]
3	Database (Phase 1)	[Cancel blocked migration session if active; detach shadow trigger/index if needed]	[Database Lead]	[Zero active DDL locks; app queries healthy]
4	DNS / Edge	[Revert DNS record or origin pool; requires TTL lowered 24-48h prior]	[Network Lead]	[Authoritative DNS resolves prior endpoint]
5	Workers / Cron	[Resume or revert background workers after confirming payload compatibility]	[App Lead]	[Queue depth draining; zero deserialization errors]

ILLUSTRATIVE COMMAND PATTERNS (ADAPT TO YOUR STACK AND TEST IN STAGING BEFORE USE)

```
# Example A: Pin exact prior container digest rather than a mutable :latest tag
kubectl set image deployment/<APP_DEPLOYMENT> <CONTAINER>=<REGISTRY>/<IMAGE>@sha256:<PRIOR_DIGEST>
-n <NAMESPACE>
kubectl rollout status deployment/<APP_DEPLOYMENT> -n <NAMESPACE> --timeout=180s

# Example B: Inspect and cancel a single specific blocked PostgreSQL migration PID (verify PID
first)
SELECT pid, state, wait_event_type, query_start, left(query, 80) FROM pg_stat_activity WHERE state
<> 'idle';
SELECT pg_cancel_backend(<SPECIFIC_MIGRATION_PID>);
```

4. Post-Change Data Reconciliation and Closure Checklist

Document how database writes, payment captures, emails, or webhook deliveries processed between deployment start and backout completion will be reconciled. Restoring a database snapshot discards transactions committed after the snapshot timestamp and requires explicit business-owner sign-off.

- [ ] **Prior Build Confirmed:** Verify production health endpoints report the intended previous release SHA across all nodes.
- [ ] **Queue and Webhook Compatibility:** Confirm background consumers process queued messages without schema or serialization failures.
- [ ] **Diagnostic Evidence Preserved:** Export logs, query plans, and error traces from failed instances before terminating or scaling them down.
- [ ] **Stakeholder Closure Sent:** Record backout completion time in the change ticket and notify affected internal and external stakeholders.

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