

Bilko Stage?Demo?Prod Cutover Runbook

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Purpose

This runbook documents the promotion path from Bilko `stage` environment to `demo` and eventually `prod`. It incorporates all changes delivered in Rounds 11-27, including massive test coverage expansion, 7+ production bug fixes, RBAC enforcement, permanent CORS configuration, and database migrations V14-V20.

Context: Bilko now runs on Azure Container Apps in `rg-bilko-demo`. The apps named `bilko-web-demo` and `bilko-api-demo` are customer-facing production; `app.bilko.cloud` and `api.bilko.cloud` route to them. Stage uses `bilko-web-stage` and `bilko-api-stage`. Both environments currently share the production Azure PostgreSQL server `bilko-demo-pg`, so every database action in this runbook is production-sensitive. *Sources: live read-only Azure query 2026-08-15; BookStack pages 3305 and 3121; `DEPLOY-MAP.md` at azdo/main 3db716d7.*

1. Pre-Cutover Checklist

Complete ALL items before proceeding with cutover:

Item	Verification Command	Success Criteria	Status
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High/Blocker MCs Resolved	<pre>node ~/system/tools/mc.js list --project bilko -- priority H,BLOCKER --status open</pre>	0 open tasks, or all explicitly waived by CEO	☐
Azure DevOps Pipeline Health	<pre>az pipelines runs list -- org https://dev.azure.com/alai- holding --project Bilko -- pipeline-ids 1 --branch main --top 5 --query "[{.id:id,status:status,re sult:result,sourceBranch:so urceBranch,sourceVersion:so urceVersion,finishTime:fini shTime}]" -o table</pre> Source: verified read-only az query on 2026-08-15; pipeline definition azure-pipelines.yml at azdo/main 3db716d7.	Last 5 completed runs on main = SUCCESS, or every failure is explicitly adjudicated before promotion	☐
Coverage Gate	<pre>cd apps/api && ./gradlew koverVerify</pre>	Exit code 0 (current threshold $\geq 60\%$)	☐
E2E Regression Tests	Open the exact Azure DevOps run for the source commit and inspect E2E_UAT plus its published Playwright results. <pre>az pipelines runs list -- org https://dev.azure.com/alai- holding --project Bilko -- pipeline-ids 1 --branch main --top 5 -o table</pre> Source: live azure-pipelines.yml stage E2E_UAT at azdo/main 3db716d7.	E2E_UAT succeeded and the published Playwright results contain no failures for the exact promoted commit	☐
Database Backup	<pre>pg_dump "host=bilko-demo- pg.postgres.database.azure. com port=5432 dbname=bilko user=bilko_admin sslmode=require" -- format=custom --no-acl -- no-owner --file="bilko- backup-\$(date +%Y%m%d- %H%M%S).dump"</pre> Source: BookStack page 3305, §5d “Database Backup and Restore”. Supply the password through the approved secure mechanism; never paste it into this page or shell history.	Dump exits 0 and pg_restore --list <dump-file> exits 0; backup path and checksum recorded in the cutover evidence	☐
CEO Sign-Off	MC task comments or Slack approval	Explicit approval captured with timestamp	☐

2. Database Migration Plan (V14-V20)

Flyway migrations are applied by the `Flyway_Migrate` stage in the canonical Azure DevOps pipeline, after `Build` and before `Deploy_Stage`. This section preserves the migration order and critical dependencies. *Source:* `azure-pipelines.yml` at `azdo/main 3db716d7`, stage `Flyway_Migrate`.

Migration Sequence

Version	Description	MC Reference	Critical Notes
V14	Demo + CI test seed	Round 12.7	Creates demo@bilko.rs user + test tenant for CI
V15	Trial fields (plan_tier, trial_start, trial_end)	MC #100326	Adds subscription trial mechanic to organizations table
V16	RLS column widening (country constraint)	MC #100406	Expands country VARCHAR to support TaxJurisdiction enum values
V17	RLS PERMISSIVE policies	MC #100387	REQUIRES: bilko_app role exists. V17 includes idempotent <code>CREATE ROLE IF NOT EXISTS bilko_app</code> block (Round 25 fix)
V18	InvoiceStatus enum	MC #100406 (drugi agent)	Creates PostgreSQL ENUM for invoice states (DRAFT, SENT, PAID, etc.)
V19	ExpenseStatus enum	MC #100406 (drugi agent)	Creates PostgreSQL ENUM for expense states (DRAFT, APPROVED, PAID, etc.)
V20	Demo org name fix	Round 25	Updates demo organization name to "Bilko Demo Firma" (Croatian/Serbian localization)

Migration Execution

Migrations are applied by Flyway 11 in the pipeline against `bilko-demo-pg.postgres.database.azure.com:5432/bilko` as `bilko_admin`. The pipeline fails closed if the database contains an applied migration newer than the checked-out source tree. *Source:* `azure-pipelines.yml` at `azdo/main 3db716d7`, stage `Flyway_Migrate`.

Manual Verification After Deployment:

Production warning: `bilko-demo-pg` serves customer-facing production. Use a read-only transaction for verification and do not run ad-hoc DDL/DML.

```
# Connect to Azure PostgreSQL Flexible Server
psql "host=bilko-demo-pg.postgres.database.azure.com port=5432 dbname=bilko user=bilko_admin
sslmode=require"

# In psql, enter a read-only transaction before checks
BEGIN READ ONLY;

SELECT version, description, success, installed_on
FROM flyway_schema_history
ORDER BY installed_rank DESC
LIMIT 10;

SELECT id, name FROM organizations WHERE name = 'Bilko Demo Firma';
ROLLBACK;
```

Source: BookStack page 3305, §5b and §7a; database identity re-verified by read-only Azure query on 2026-08-15.

3. Azure Container Apps Image Promotion Sequence

Stage ? Demo (Production) Promotion

Environment classification: the resources with `-demo` in their names are production. The canonical pipeline promotes API and Web together from one commit; do not copy a stage tag into production or call `az containerapp update` manually from this runbook.

- **Stage API:** `bilko-api-stage` — `bilkodemo.azurecr.io/bilko-api:stage-{SHA}@sha256:{digest}`
- **Production API:** `bilko-api-demo` — `bilkodemo.azurecr.io/bilko-api:demo-{SHA}@sha256:{digest}`
- **Stage Web:** `bilko-web-stage` — `bilkodemo.azurecr.io/bilko-web:stage-{SHA}@sha256:{digest}`
- **Production Web:** `bilko-web-demo` — `bilkodemo.azurecr.io/bilko-web:demo-{SHA}@sha256:{digest}`

Sources: live read-only ACA/ACR query 2026-08-15; `DEPLOY-MAP.md` and `azure-pipelines.yml` at `azdo/main` `3db716d7`.

Promotion Commands

API Service

```
# Queue the canonical pipeline from main. It builds, scans, migrates, deploys stage,
# runs E2E UAT, then waits for the bilko-demo environment approval.
az pipelines run --org https://dev.azure.com/alai-holding --project Bilko --branch main --id 1

# Monitor recent main runs; record the run ID and sourceVersion in cutover evidence.
az pipelines runs list --org https://dev.azure.com/alai-holding --project Bilko --pipeline-ids 1 --branch main --top 5 -o table
```

Do not approve `Promote_Demo` until `CI_Gates → Build → Flyway_Migrate → Deploy_Stage → E2E_UAT` are green and the pre-cutover checklist is complete. Approval is performed in Azure DevOps under `Pipelines → Environments → bilko-demo`. The approved stage rebuilds `demo-{SHA}` images from the same commit, scans them, deploys digest-pinned images, and shifts `bilko-api-demo` to the new revision.

Source: BookStack page 3305 §3b and live `azure-pipelines.yml` `Promote_Demo` at `azdo/main` `3db716d7`.

Web Service

There is no separate Web promotion command. The same approved `Bilko-CI-CD` run builds and deploys `bilko-api-demo` and `bilko-web-demo` from the same source commit. A split API/Web manual promotion would bypass the canonical release contract.

Source: live `azure-pipelines.yml` `Promote_Demo` deployment job at `azdo/main` `3db716d7`.

Traffic Shift (Gradual Rollout)

TODO/UNKNOWN — intentional safety stop: no reviewed gradual 10/90 production rollout command exists in the allowed current sources. The canonical pipeline shifts `bilko-api-demo` 100% to its latest revision; live state shows API in `Multiple` revision mode and Web in `Single` mode. If gradual rollout is required, stop here and obtain a FlowForge-authored, revision-specific procedure. Do not translate the retired traffic-weight commands by analogy.

Source for current behavior: live `azure-pipelines.yml` `Promote_Demo` and read-only ACA query 2026-08-15.

4. Cloudflare Routing + CORS Verification

DNS / Routing Configuration

Customer-facing production URLs:

- **API:** `https://api.bilko.cloud` → Cloudflare Worker `bilko-edge-proxy` → ACA `bilko-api-demo`
- **Web:** `https://app.bilko.cloud` → Cloudflare Worker `bilko-edge-proxy` → ACA `bilko-web-demo`
- **Stage API:** `https://api-stage.bilko.cloud` → direct ACA custom-domain binding on `bilko-api-stage`
- **Stage Web:** `https://web-stage.bilko.cloud` → direct ACA custom-domain binding on `bilko-web-stage`

The retired `*.alai.no` demo hosts are not release targets and must not be used in health checks or browser tests.

Sources: BookStack page 3121; `DEPLOY-MAP.md` at `azdo/main` `3db716d7`; live read-only ACA query 2026-08-15.

CORS Configuration

CORS is set by the canonical pipeline, not by a standalone operator update:

- **Stage API:** `https://bilko-web-stage.purplebeach-f004d490.swedencentral.azurecontainerapps.io`, `https://web-stage.bilko.cloud`, and localhost for development.
- **Production API:** `https://app.bilko.cloud`, `https://app.bilko.io`, `https://app.bilko.company`, and localhost for development.

Source: live `azure-pipelines.yml` `Deploy_Stage` and `Promote_Demo` environment updates at `azdo/main` `3db716d7`.

CORS / Route Verification

```
# Public production health (current brand domains)
curl -s https://api.bilko.cloud/api/v1/health
curl -sI https://app.bilko.cloud/ | head -1
```

```
# Pipeline evidence: E2E_UAT performs browser-level CSP/CORS-sensitive flows on stage.
az pipelines runs list --org https://dev.azure.com/alai-holding --project Bilko --pipeline-ids 1 --branch main --top 5 -o table
```

Success requires HTTP 200 on both public routes and a green `E2E_UAT` stage for the exact commit being promoted. The retired password-login preflight is invalid because Bilko is Entra/demo-session based; do not recreate it.

Sources: BookStack page 3305 §3c/§4d and live `azure-pipelines.yml` E2E/PI2 checks at azdo/main `3db716d7`.

5. Rollback Procedure

Azure Container Apps Rollback

Live state verified 2026-08-15: `bilko-api-demo` uses `Multiple` revision mode; `bilko-web-demo` uses `Single`. Record the current revision and image before any rollback.

```
# API: list revisions and their state
az containerapp revision list --name bilko-api-demo --resource-group rg-bilko-demo --query "[].{name:name,created:properties.createdTime,active:properties.active}" -o table

# API: after explicit rollback authorization, shift 100% to the reviewed known-good revision
az containerapp ingress traffic set --name bilko-api-demo --resource-group rg-bilko-demo --revision-weight <previous-revision-name>=100
```

Source: BookStack page 3305 §6a and `DEPLOY-MAP.md` “Rollback (Azure)”; revision mode re-verified by read-only ACA query 2026-08-15.

TODO/UNKNOWN — production Web rollback: the live Web app is in `Single` revision mode, while one related wiki page still shows a traffic-weight command that is only valid for multiple-revision handling. No approved production Web rollback command consistent with live state was found in the allowed sources. Stop and escalate to FlowForge; do not reuse the API command or the stage-only rollback pipeline.

Database Rollback

CRITICAL: Flyway migrations are forward-only. Prefer a new compensating migration. Do not run ad-hoc policy drops or destructive SQL on `bilko-demo-pg`; it is production and shared with stage.

Point-in-time restore is a last resort: Azure PostgreSQL restore creates a new server; it does not overwrite the source. A separate, explicitly authorized application/edge cutover is required afterward.

```
az postgres flexible-server restore --resource-group rg-bilko-demo --name bilko-demo-pg-restored --source-server bilko-demo-pg --restore-time "<verified-UTC-timestamp>"
```

Source: BookStack page 3305 §5c and §7e. Live server `bilko-demo-pg`, PostgreSQL 16, state `Ready`, backup retention 7 days verified read-only on 2026-08-15.

6. Post-Deploy Smoke Tests

Run immediately after the approved production promotion. Record the pipeline run ID, commit SHA, deployed image digests, and every result.

Manual Smoke Tests

Test	Command/Action	Expected Result	Status
1. Demo Auth Bootstrap	<code>curl -s -o /dev/null -w "%{http_code}\n" "https://bilko-api-demo.purplebeach-f004d490.swedencentral.azurecontainerapps.io/api/v1/auth/demo?country=HR"</code>	HTTP 200	☐
2. Real-Browser Login	TODO/UNKNOWN: no approved standalone authenticated user-info command was found without reintroducing retired password/JWT handling. Confirm the <code>Real-browser MSAL login smoke (DEMO artifact) step</code> in the exact <code>Promote_Demo</code> run instead.	Pipeline login smoke succeeds for <code>app.bilko.cloud</code>	☐
3. Invoice PDF	TODO/UNKNOWN: the current allowed sources do not identify a safe production fixture ID and authenticated PDF probe. Do not invent a customer ID or token. Add a sourced probe before treating this row as automated.	Explicitly waived by CEO or a sourced, tenant-safe probe passes	☐
4. Health Check	<code>curl -s https://api.bilko.cloud/api/v1/health</code>	HTTP 200 with the healthy Bilko API response	☐

Test	Command/Action	Expected Result	Status
5. RBAC Enforcement	Open the exact Azure DevOps run and confirm <code>E2E_UAT</code> plus its published Playwright results succeeded before <code>Promote_Demo</code> .	No failed E2E tests; approval evidence ties to the same source commit	☐

Sources: live `azure-pipelines.yml` *PI2* and real-browser login gates at `azdo/main` `3db716d7`; BookStack page *3305* `$3c/$4d`.

Automated E2E Tests (Playwright)

The canonical suite runs in `E2E_UAT` against `api-stage.bilko.cloud` and `web-stage.bilko.cloud`. After promotion, the pipeline reruns `tests/login-dashboard.spec.ts` against `https://app.bilko.cloud`. Do not run the retired `apps/web` command against a dead demo hostname.

```
az pipelines runs list --org https://dev.azure.com/alai-holding --project Bilko --pipeline-ids 1 --branch main --top 5 -o table
```

Source: live `azure-pipelines.yml` stages `E2E_UAT` and `Promote_Demo` at `azdo/main` `3db716d7`.

Coverage Verification

```
# Verify backend coverage threshold is maintained
cd apps/api
./gradlew koverVerify
```

Expected: exit 0. Keep this local quality gate separate from infrastructure promotion.

7. Rounds 11-27 Deliverables Manifest

This section provides traceability for all changes delivered in Rounds 11-27.

Coverage Progression

Round	MC ID	Coverage Delta	Final Threshold	Test Count
Round 16	#100336	Baseline established	7%	~50 HTTP integration tests

Round	MC ID	Coverage Delta	Final Threshold	Test Count
Round 17	#100336	+4%	11%	+110 service tests (Invoice, Expense, Contact, Report)
Round 18	#100336	+39%	50%	+90 tests (4 streams: Banking, Auth, Stripe, Routes)
Round 19	#100338	+7%	57%	+20 RBAC edge case tests (403 assertions)
Round 20	#100353	+3%	60%	+81 tests (3 streams: RecurringInvoice, Compliance, Archive/Settings/Account)
Round 21	#100359	Threshold held	60%	+75 edge case tests across 17 HttpIntegrationTest files
Round 22	#100382	Threshold held	60%	+33 billing/webhook integration tests
Round 23	—	Threshold held	60%	Auth package coverage push (~30 tests, 4 streams)
Round 24	#100396	Regression suite	60%	Failing-by-design specs for CEO Round 12 bugs
Round 27	#100420	Deep edge coverage	60%	+113 deep edge tests across 8 HttpIntegrationTest files

Production Bug Fixes (Rounds 12-26)

Fix	MC ID	Commit SHA	Description
CORS Permanent	#100297	3943837	Historical pre-Azure CORS fix (PR #110); current release configuration is in <code>azure-pipelines.yml</code> (see §4)
Double Login	#100367	ef1ed07	Eliminate double /auth/login call on registration (PR #111)
RLS Column Widening	#100406	660795d	V16 column widening + V17 line 50 ALTER DATABASE removal

Fix	MC ID	Commit SHA	Description
bilko_app Role	Round 25	30d2de4	V17 idempotent CREATE ROLE IF NOT EXISTS bilko_app before RLS policies (PR #113)
Demo Org Name	Round 25	dbbd80d	V20 migration ensures demo org name is "Bilko Demo Firma"
Wizard Save Draft	Round 25	9319d02	Step 5 "Save kao nacrtn" shows localized toast + redirect
Refresh Token	Round 26	b55c8dd	Eliminate refresh token consumption on login
HR L10n Critical	#100355	e3ede8e	OIB 11 digits, VAT 25/13/5%, locale routing, register language dynamic (Lexicon audit)
Demo API Rebuild	#100400	9ffe3c4	Historical pre-Azure demo build path (PR #116); superseded by <code>Promote_Demo</code> in <code>azure-pipelines.yml</code>

Feature Deliveries

Feature	MC ID	Commit SHA	Description
RBAC HTTP Layer	#100338	2a933d8	Enforce role-check at HTTP layer on all CRUD route handlers (Round 19)
RLS Permissive	#100387	6712fcd	Phase 2A PERMISSIVE RLS migrations + OrgScope middleware
Trial Mechanic	#100326	d20cb13, e0d200b	D1+D2+D4 backend + D3 frontend trial countdown banner
TaxJurisdiction Expansion	#100386	e346e9b	Expand TaxJurisdiction {BA_FED, BA_RS} + CountryPlugin interface (ADR-015)
ADRs 015-019	#100362	d17f0ce	Write ADR-015/016/017/019 per Plan v3 Phase 0

Infrastructure Changes

Change	MC ID	Commit SHA	Description
GCP Deploy Dormant Fix	#100110	b1ddecf	gcp-deploy.yml service name targets bilko-{web,api}-demo (ADR-023 gap closure)
V14-V20 Migrations	Various	—	7 Flyway migrations (demo seed, trial, RLS, enums, org name fix)

8. Escalation Contacts

Issue Type	Contact	Channel
Azure Container Apps Outage	Kelsey Hightower (FlowForge)	MC task assignment via John
Database Corruption	Bruce Momjian (CodeCraft)	MC task assignment via John
RBAC/Auth Issues	Parisa Tabriz (Securion)	MC task assignment via John
Frontend Errors	Lee Robinson (CodeCraft)	MC task assignment via John
CEO Approval	Alem Basic	Email: alem@alai.no, Slack: @alem

9. Appendix: Key File Locations

File	Path
Canonical CI/CD + promotion	azure-pipelines.yml
Live topology and operator commands	DEPLOY-MAP.md
Stage rollback rehearsal only	azure-pipelines-stage-rollback.yml
Flyway Migrations	apps/api/src/main/resources/db/migration/
Application Config	apps/api/src/main/kotlin/no/alai/bilko/Application.kt
CORS Config	azure-pipelines.yml (Deploy_Stage and Promote_Demo)
Playwright Tests	apps/e2e/
Kover Config	apps/api/build.gradle.kts

Source: BUILD-BLUEPRINT.md, DEPLOY-MAP.md, and azure-pipelines.yml at azdo/main 3db716d7.

Document Revision History:

- **v1.1 (2026-08-15):** MC #107170 — replaced retired deployment, database, registry, hostname, smoke-test, and rollback commands with sourced Azure/ADO procedures; retained explicit safety stops where no current command could be established.

- **v1.0 (2026-05-10):** Initial runbook creation covering Rounds 11-27 deliverables (MC #100424)
-

Revision #4

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