

April 02, 2026

Root Cause Analysis and Mitigation Plan



Agenda

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Root cause analysis

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Piano solutions

Summary

Incident date

April 2–15, 2026

Affected software modules

VX Activation: Site Licensing, schedule periods, scheduled upgrades, grace period metadata, and user access records

Affected environment or location

AP

Incident scope

Partial Outage – Data Corruption

Incident duration

5 days (April 2 evening JST through April 7 hotfix deployment)

Impact

Incident severity

Major

Impact description

During the AP region EC2-to-EKS infrastructure migration (April 2–3), a timezone configuration change caused progressive corruption of date fields in Site Licensing data, schedule periods, scheduled upgrades, grace period metadata, and user access records for AP merchants.

The system remained fully operational throughout — there was no downtime or error responses. However, date values stored in the database were being silently shifted backward each time a schedule or subscription record was loaded and saved through the Publisher Dashboard or background jobs.

Affected data:

- Schedule period dates across small number of apps and merchants — sell dates, begin dates, and end dates were shifted backward
- A small number of scheduled subscription upgrades were affected — some executed prematurely, while others had not yet triggered but had their scheduled dates shifted
- Some user access records received incorrect expiration dates from contract redemptions during the incident window

Root cause

The AP region infrastructure was migrated from EC2 (Elastic Compute Cloud) to EKS (Elastic Kubernetes Service) on April 2–3. The new EKS container environment did not inherit the JVM default timezone setting (*Asia/Tokyo* / JST), defaulting instead to UTC.

This timezone change affected internal date conversion logic used when reading and writing schedule period dates. With UTC instead of JST, dates were shifted backward by up to 9 hours on every read-write cycle.

The corruption was progressive: each time a schedule was accessed through the Publisher Dashboard or processed by a background job, the date fields were re-corrupted. Records accessed multiple times accumulated larger shifts.

Why the issue was not immediately detected:

- **No system errors or exceptions were generated because corrupted data appeared as valid database entries**
- The shift was subtle and only became visible when dates crossed day boundaries
- AP region monitoring did not include date-value integrity checks

Incident timeline

Minutes	Date / Time (UTC)	Description
0	Apr 2, 15:00	EC2-to-EKS migration begins in AP region
540	Apr 3, 00:00	Migration complete. New EKS pods start with UTC default timezone (previously JST)
540+	Apr 3 onward	Progressive date corruption begins — each dashboard page load/save shifts period dates backward
~3960	Apr 5	First premature subscription upgrade executed
~5388	Apr 6, 07:48	First client report about date discrepancies. L1 investigation begins
~5474	Apr 6, 09:14	Issue escalated to the next level of Support
~5515	Apr 6, 09:55	Issue escalated to developers
~5753	Apr 6, 13:53	Root cause identified. Incident posted to status page. Hotfix deployed — explicit timezone configuration applied
~5760	Apr 6, 14:00	Hotfix deployed — explicit timezone configuration applied
~5760+	Apr 6-7	Data restoration and verification: contract period dates restored, grace period metadata and pending upgrade queue restored
~18540	Apr 15	Follow-up correction: expiration for access records redeemed during the corrupted window updated to the restored period end dates. Scope identified from subsequent client reports.

Piano solutions and corrective measures

1) EKS container timezone configuration

Status

Done

2) Timezone-aware infrastructure migration checklist

Status

Done

3) Explicit timezone in date conversion utilities in order to improve date related operations

Status

Planned

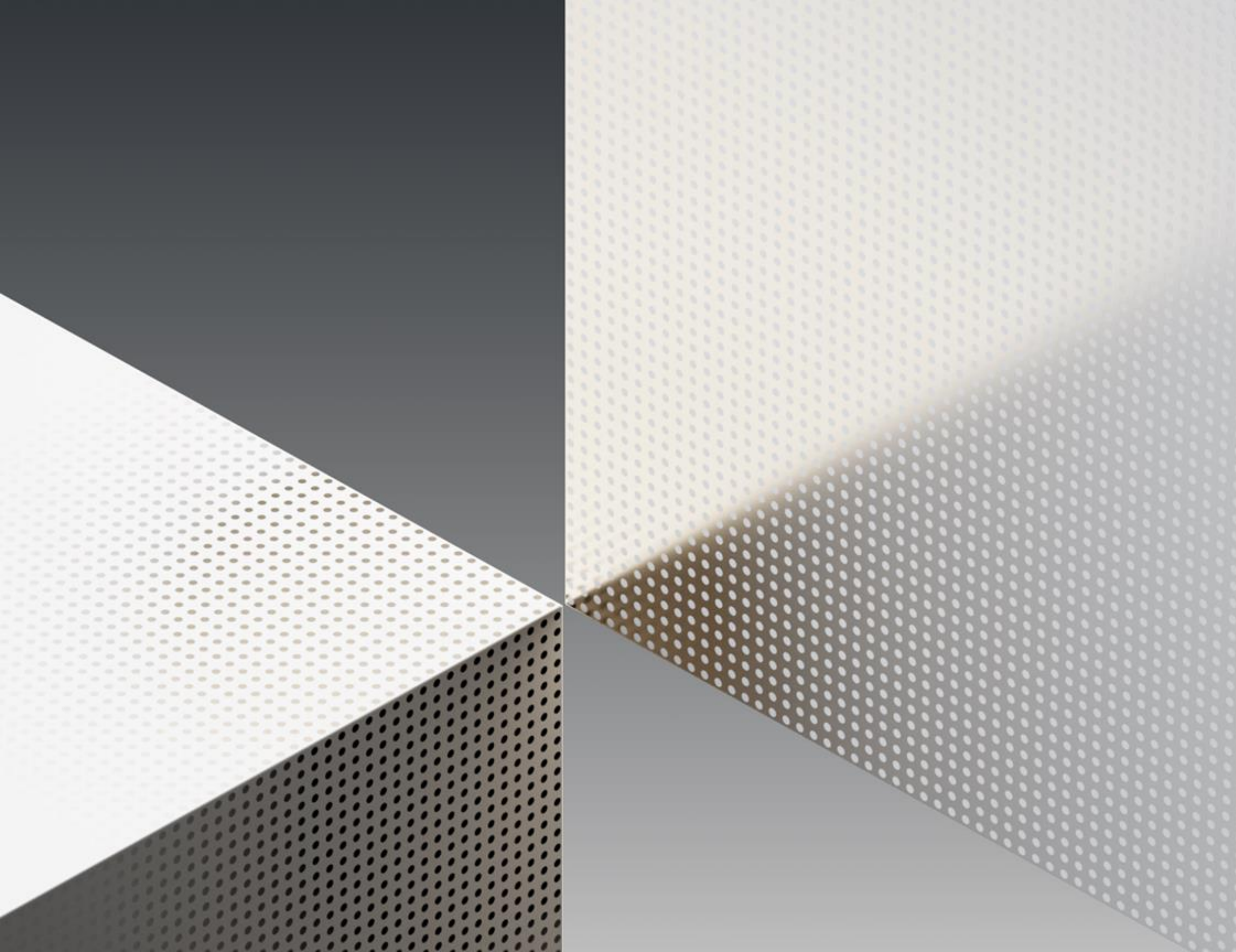
Estimated delivery date

Q3

4) Fix corrupted data

Status

Done



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