ATOMBEAM

ALHAMRANI UNIVERSAL

AU DR Cluster Replication – Case Study

Atombeam Transforms VM Replication for Saudi Fintech Leader Alhamrani Universal — Accelerating Transfer Times by 2×



About Alhamrani Universal

Alhamrani Universal (AU) is Saudi Arabia's largest fintech solutions provider, specializing in self-service banking technologies. Founded in 1981 and headquartered in Jeddah, AU has spent more than four decades building and operating the financial technology infrastructure that powers everyday commerce and banking across the Kingdom.

AU is a pioneer in payment technologies for banks, serving hundreds of thousands of retailers and consumers across Saudi Arabia. The company is a regional leader in ATM hardware, bank kiosks, and point-of-sale (POS) payment acceptance — with innovations spanning highly secure industrial EMV payment cards to global payment wallets including Apple Pay, Samsung Pay, and AliPay. Each day, AU processes millions of transactions across its platforms and growing customer base.

Who AU Serves

AU's solutions sit at the center of a three-sided ecosystem:

- **Banks and financial institutions** — relying on AU for ATM fleets, kiosk deployments, and secure transaction processing infrastructure
- **Retailers and merchants** — from multinational brand-name chains to small businesses — using AU's POS terminals, tablets, and mobile payment devices to accept electronic payments at the point of sale
- **Consumers** — interacting daily with AU-powered self-service banking and payment touchpoints throughout their lives

Challenges at a glance

- The volume of replication data was consuming the network, resulting in congested links and insufficient bandwidth.
- Replication throughput could not keep pace with the primary database, resulting in out-of-sync conditions.
- Stale failover data under congestion conditions
- Increases in data volume would require additional bandwidth or hardware upgrades to the network with significant capital expenditures, long procurement cycles, and ongoing operational costs.

Key Transport Challenge

AU operates a dedicated WAN link between its primary and secondary data centers for VM replication, keeping its disaster recovery environment continuously synchronized with live production systems.

Unlike shared enterprise WAN scenarios, AU's replication link is purpose-built for DR traffic. The challenge, though, has been the fundamental constraint of the link's capacity relative to the volume and velocity of data that needed to cross it.

AU VM replication is executed as a continuous stream of changed data blocks. Every modification to a live database must reach the secondary site as quickly as possible and within the acceptable compliance tolerance.

As AU's transaction volumes grew, the replication stream increasingly stressed the link's throughput capacity — with direct consequences for the two metrics that define DR readiness:

RPO (Recovery Point Objective): How current is the secondary site when failover occurs? A slower replication stream means the secondary VM falls further behind the primary, increasing the potential data loss in a disaster scenario.

RTO (Recovery Time Objective): How quickly can AU fail over and restore full operations? A secondary site that is significantly behind the primary requires additional reconciliation before it can take over, lengthening the recovery window.

The Atombeam Neurpac Solution – DR Accelerator

After thorough testing and validation, AU selected the Atombeam Neurpac solution, a software data compaction solution built on Atombeam's proprietary Data-as-Codewords™ platform. They are deploying the solution as a DR accelerator on its dedicated replication link.

Neurpac deploys entirely in software with no hardware changes, and no modifications to AU's VM product. Before replication leaves the primary data center, Neurpac compacts it to 25% of its original size. The secondary site decompacts transparently for full data integrity and zero latency added.

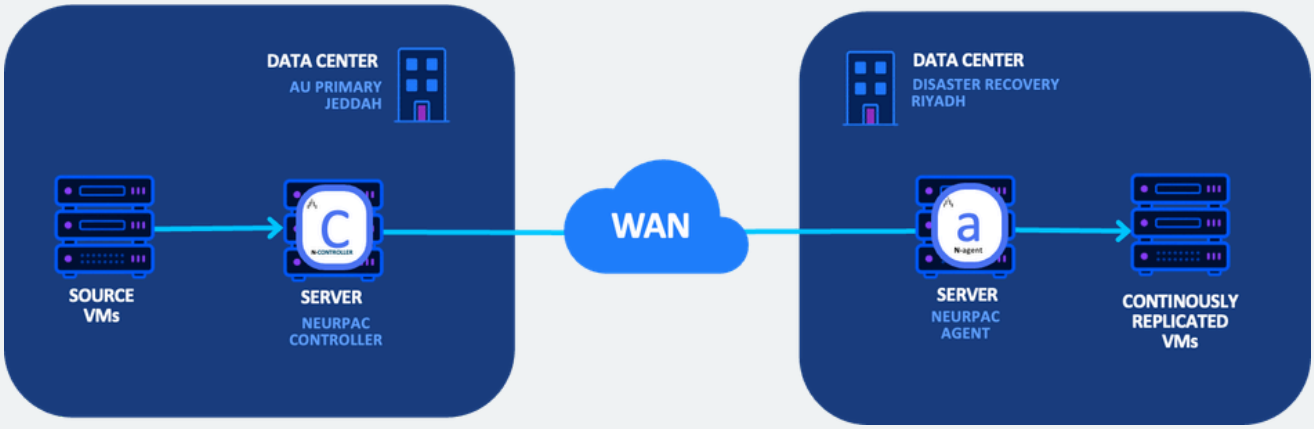
The Result:

- **2× faster replication**: the same physical link now moves 2× the data volume, completing its replication cycle in half the time
- **Secondary VM stays current**: Faster replication means the backup data center tracks the primary more closely at all times, tightening the effective RPO window.
- **Faster failover**: A more current secondary site requires less reconciliation at failover, directly improving RTO speed and recovery.
- **SLA headroom**: With 75% of the link's capacity freed, AU can absorb future data volume growth without bandwidth upgrades or procurement cycles.

Key Characteristics

- Bi-directional, compacted, and encrypted tunnel
- Transmission protocol agnostic
- Operates entirely within the user's existing network infrastructure
- Remote management of sites from one location

AU ALHAMRANI



DR Performance: Before and After Neurpac

DR Metric	Without Neurpac	With Neurpac
Replication Speed	Baseline — link at capacity	2× faster on same dedicated link
RPO (Data Currency)	Larger gap — secondary VM lags primary during peak loads	Up to 50% tighter — secondary stays near-current at all times
RTO (Failover Speed)	Slower — secondary site may be hours behind at failover	Faster — more current secondary means cleaner, faster switchover
SLA Confidence	At risk — replication degrades under load	Guaranteed — dedicated link has 75% headroom to absorb spikes
Bandwidth Headroom	None — link saturated by replication stream	75% freed — room to grow without adding circuits
Infrastructure Changes	Bandwidth upgrades or hardware required to improve RTO/RPO	Zero — software-only, deployed on existing infrastructure

Results



2x
Faster VM Replication



75%
Bandwidth Reduction



0ms
Added Latency

"The implementation achieved total disaster recovery compliance by ensuring data replication stays strictly within acceptable operational tolerances. While RPO and RTO targets varied from 2 to 4 hours based on business criticality and data churn rates, this optimization safeguards both RPO and RTO metrics without requiring costly physical upgrades to the WAN edge."

— **Mr. Abdullah Bajaber**, GM IT Infrastructure, Alhamrani Group

Summary

Atombeam's Neurpac platform has transformed AU's disaster recovery operations. By deploying Neurpac as a DR accelerator on its dedicated replication link, AU achieved 2× faster VM synchronization between data centers — keeping its secondary site perpetually current and dramatically strengthening its RTO and RPO posture.

For a fintech leader whose uptime obligations underpin Saudi Arabia's payment infrastructure, Neurpac delivered something conventional bandwidth upgrades cannot: guaranteed DR readiness at scale, with zero infrastructure changes and the flexibility to grow without adding circuits or hardware.