

Enhancing Data Resilience with Kubernetes-Native Solutions



Database Backup & Recovery Platform Modernizing Mission-Critical Data Protection with Kubernetes-Native Architecture

Posted on September 7, 2025 by Admin

Database Backup & Recovery Platform

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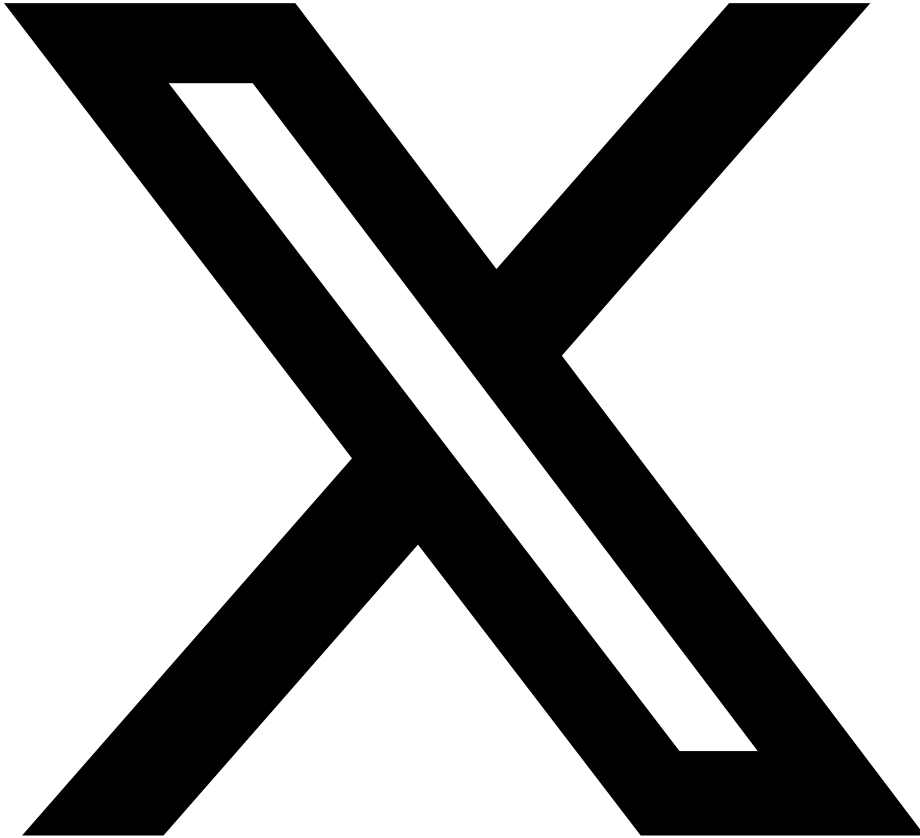


Case Study



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Database Backup & Recovery Platform Modernizing Mission-Critical Data Protection with Kubernetes-Native Architecture

Client

A global IoT solutions provider managing massive smart city and industrial deployments across hybrid cloud environments. With a complex infrastructure consisting of MySQL, MongoDB, and Elasticsearch clusters deployed on Kubernetes, they needed a unified backup and recovery system that was fast, flexible, and compliant.

Platform Highlights & Tech Stack

Cloud-Native Architecture for Mission-Critical Data Protection

Platform Highlights



Kubernetes-Native Architecture

Containerized DB utilities
Horizontal



Unified Backup Utility

Full, incremental, and
PITR backups across
MySQL



Secure Web-Based GUI Dashboard

AngularJS and NodeJS,
backups in real-time



Modular Automation Triggers

Used Crontab for
schedules, LDAP for user-
role authentication

Tech Stack

Backup Tools

msql



XtraBackup

PBM Agent

SLM

SLM (Elasticsearch)

Orchestration & Data



Kubernetes via Rancher

MinIO (HA)

Secure File System

Messaging & Security

API



REST APIs

Crontab

SSL/TLS, IAM

Secrets Management

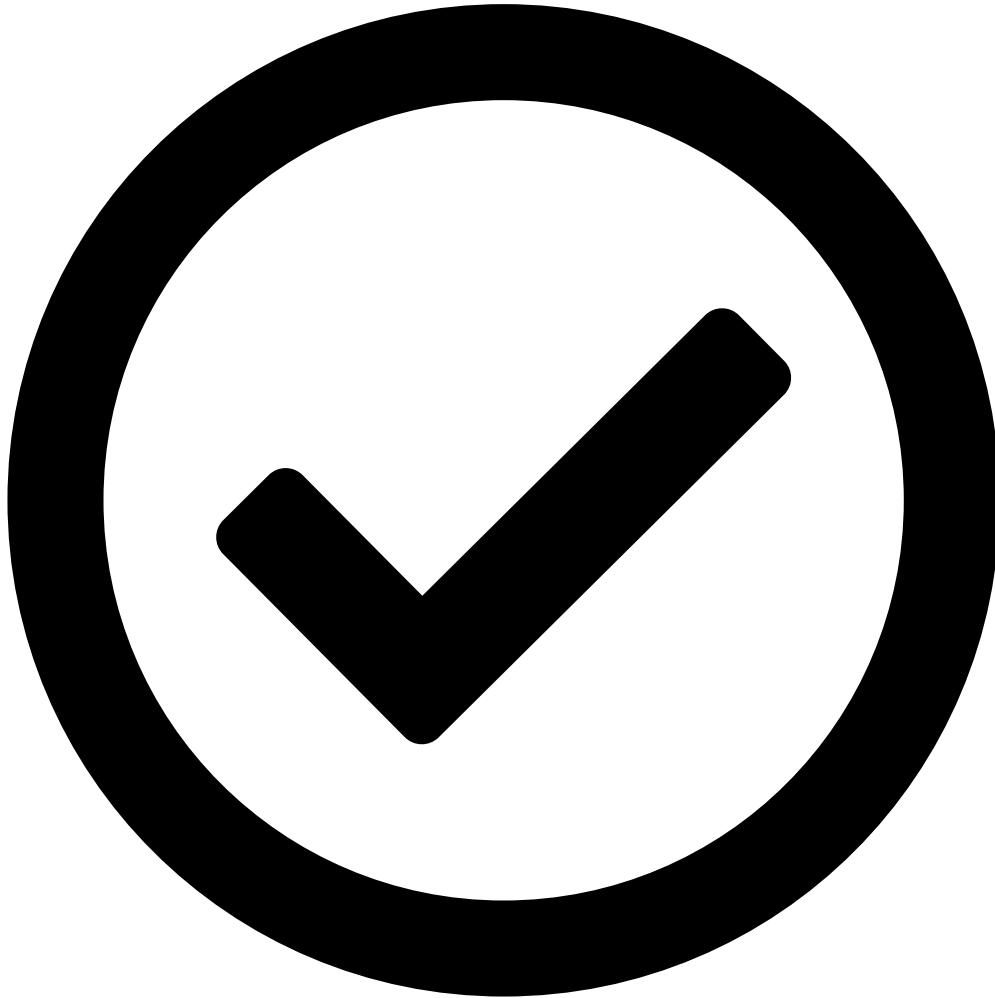
The Challenge

In a data-intensive ecosystem, backing up and restoring mission-critical systems is often fragmented, slow, and error-prone. The client faced:



- backup management across databases

No centralized



- times and manual failover interventions

High recovery



- risks due to lack of point-in-time restore (PITR)

Compliance



- handling access and encryption

Security gaps in



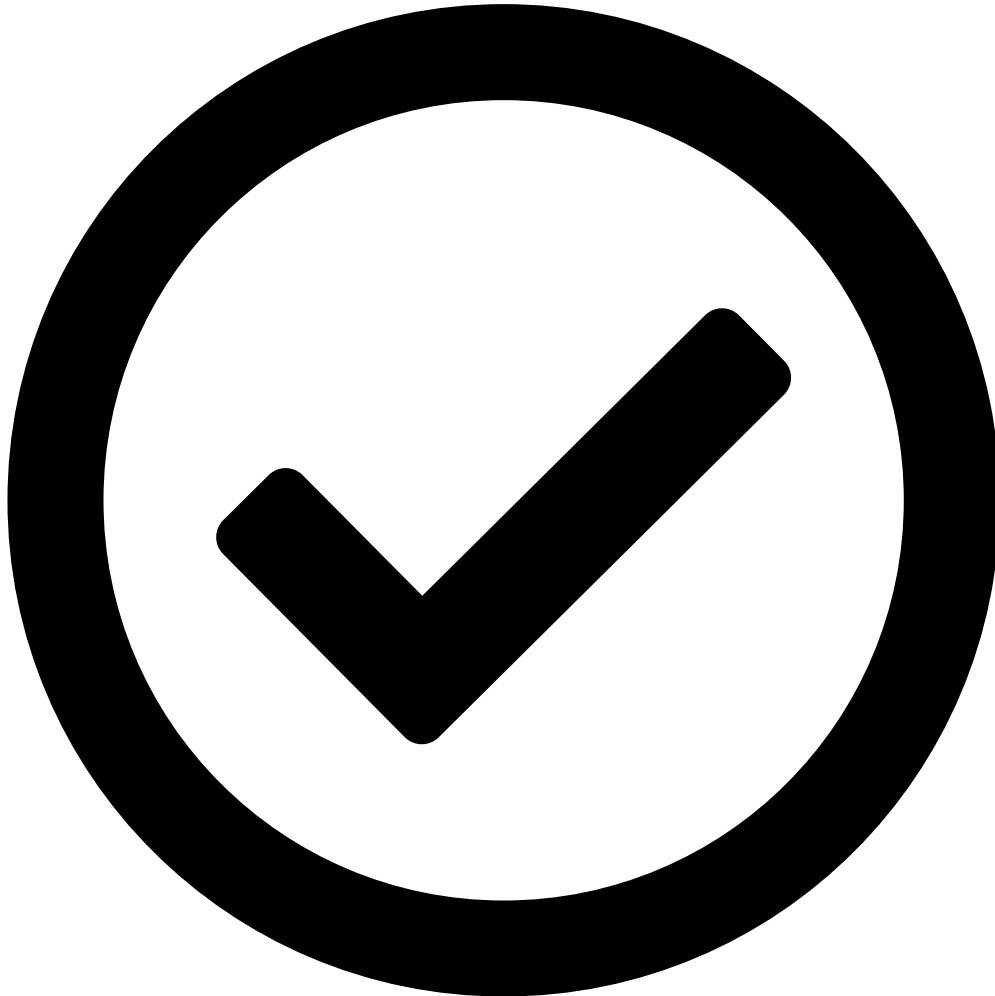
- tooling across Kubernetes workloads

Inconsistent

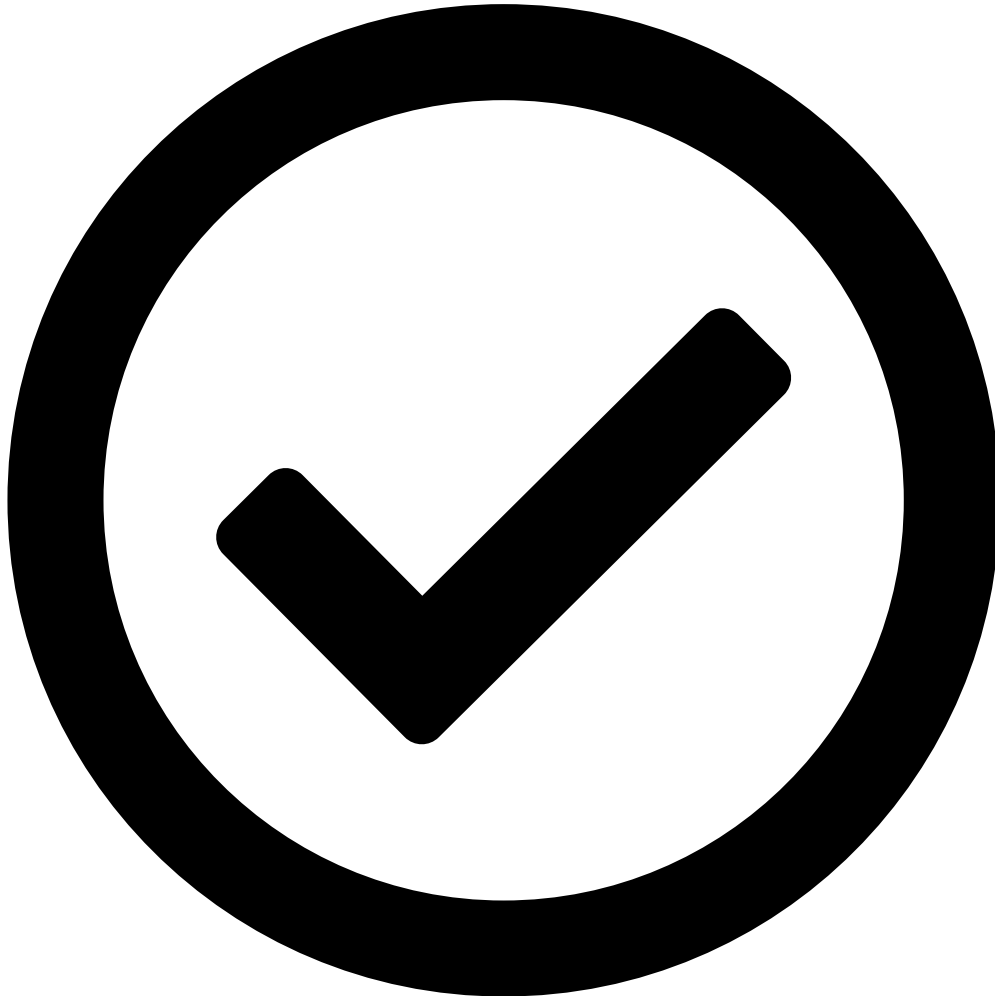
Our Strategy

We engineered a cloud-native backup platform designed specifically for Kubernetes and modern enterprise data stacks. It's modular, open-source-first, and highly automated and built for scale.

Platform Highlights:



- **Kubernetes-Native Architecture:** Containerized DB utilities deployed on Kubernetes with support for horizontal scaling and fault tolerance via Rancher.



- **Unified Backup Utility (DB Utility):** Handles full, incremental, and PITR backups across MySQL, MongoDB, and Elasticsearch.



- **Secure Web-Based GUI Dashboard:** Built using AngularJS and NodeJS, allowing users to trigger, schedule, and monitor backups in real-time.

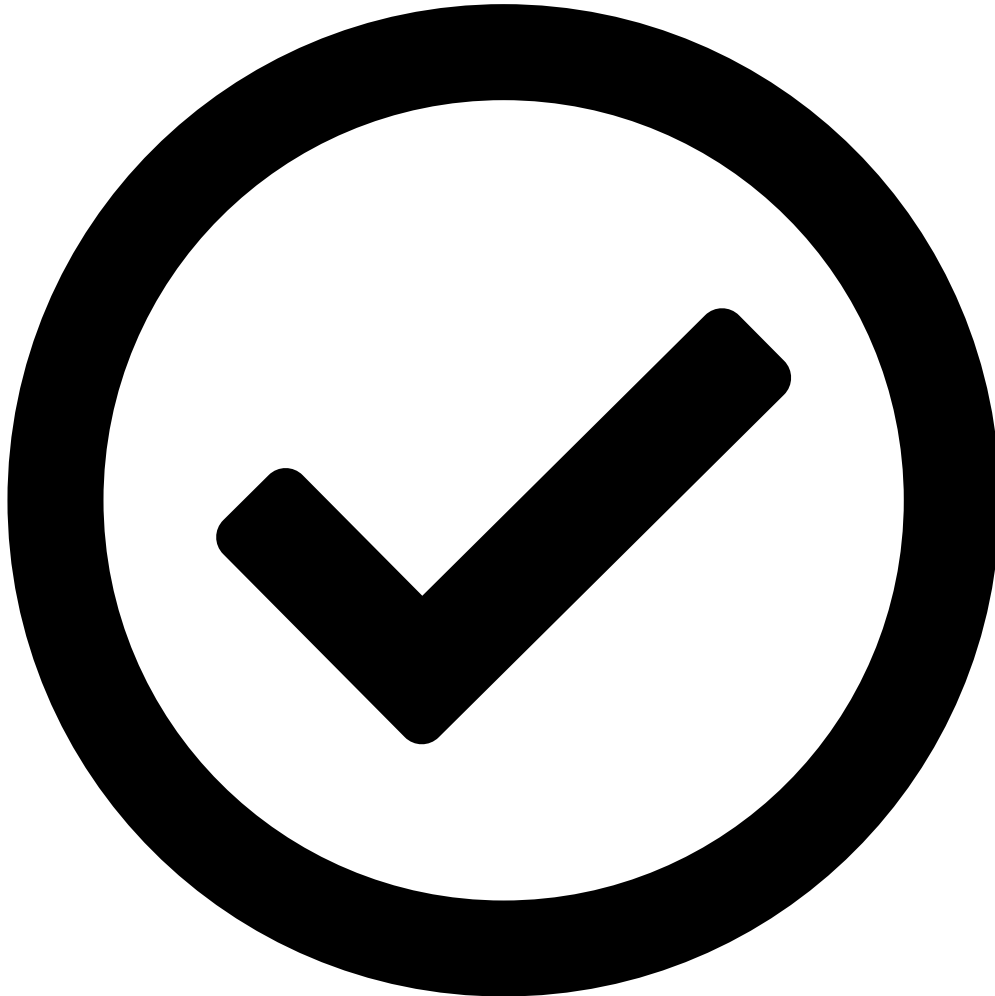


- **Automation Triggers:** Used Crontab for scheduled backups and LDAP for user-role authentication. **Modular**



- **Cloud Storage**
Integration: Backups stored via MinIO (S3-compatible) with encryption and redundancy.

Tech Stack:



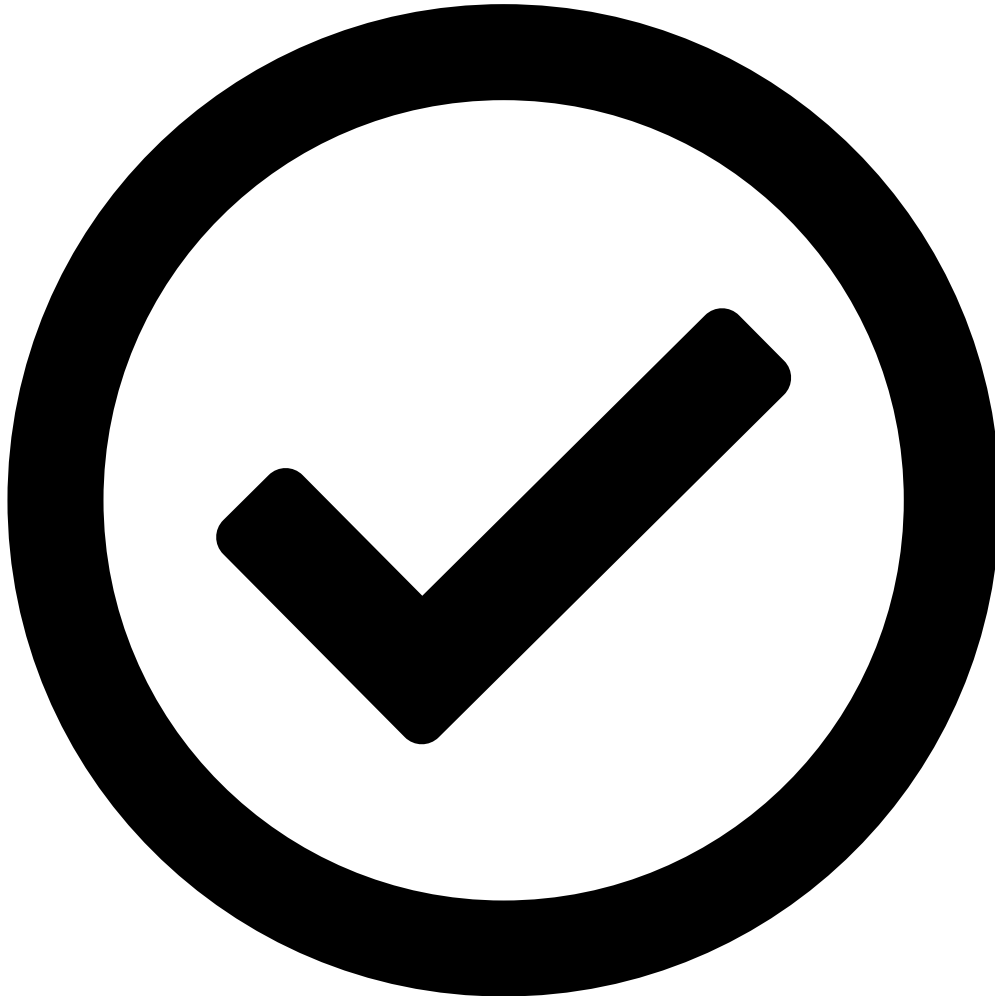
- XtraBackup (MySQL), PBM Agent (MongoDB), SLM (Elasticsearch)

Backup Tools:



- **Triggering:** REST APIs, Crontab

Messaging &



- MinIO (HA), Secure File System

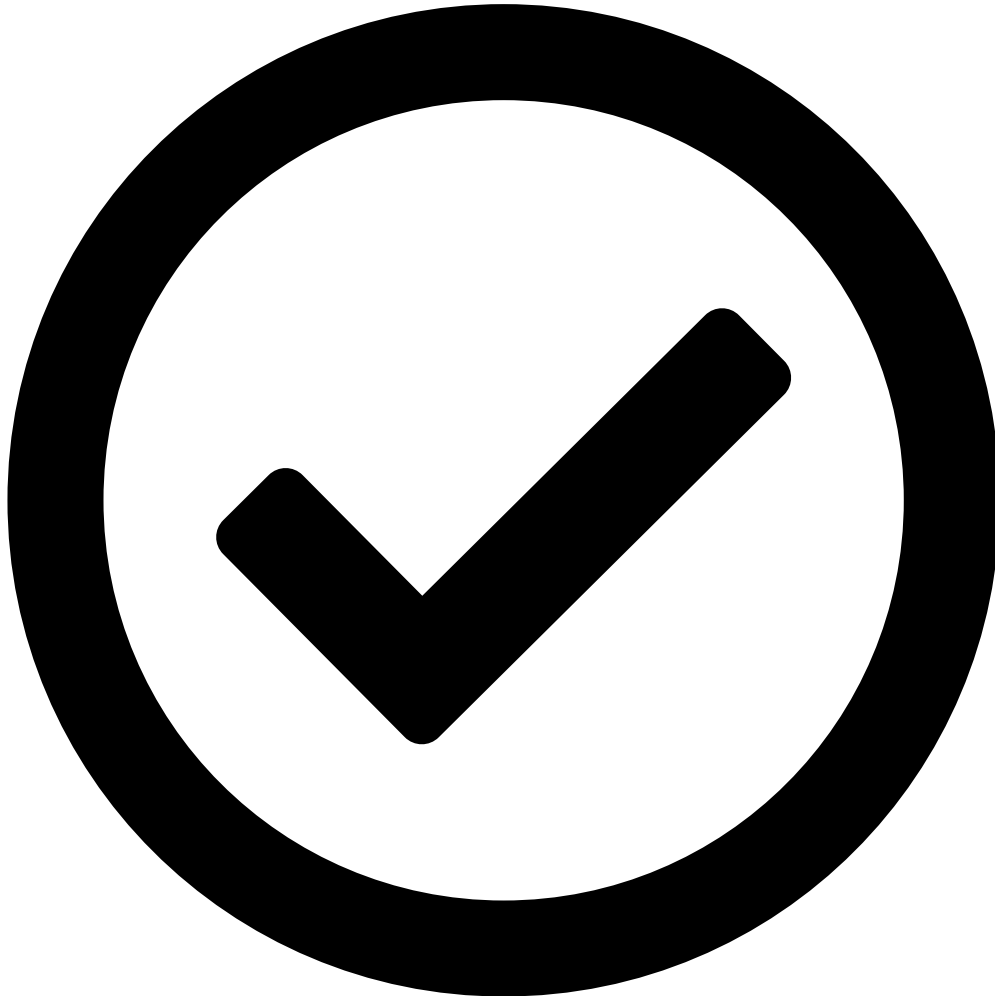
Data Layer:



-

& Platform: Kubernetes via Rancher (Multi-master, Multi-node)

Orchestration



- NodeJS (Non-HA mode), LDAPS authentication

UI: Angular +



- SSL/TLS, Secrets Management

Security: IAM,

Impact & Results

Metric	Before TechTez	After TechTez Implementation
Backup Time	~3 hours (manual)	<30 minutes (automated)
Recovery Time	~6 hours	<1 hour (with PITR)
Admin Overhead	High (script-based)	80% reduction (central dashboard)
Data Loss	Frequent critical cases	Zero critical loss post-deployment
Total Cost (TCO)	High (proprietary tools)	40% reduction (open-source stack)

Why It Matters

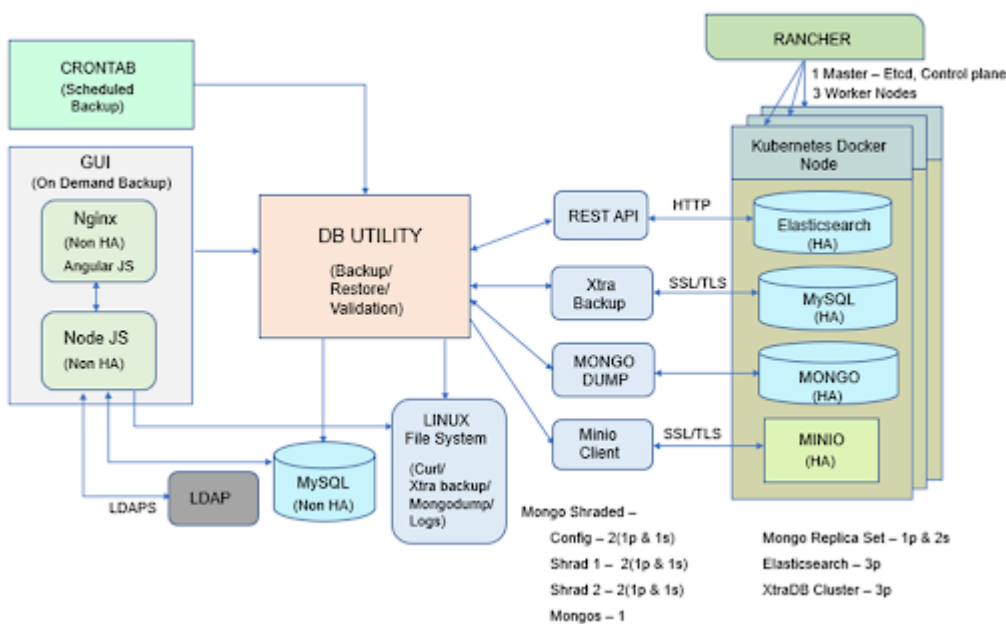
With TechTez, the client moved from a fragmented and fragile backup strategy to a scalable, resilient, and Kubernetes-ready data protection platform. We didn't just automate the backups, we redefined reliability.

Built for compliance ,Designed for observability,Delivered with precision

Your Data with TechTez

Let's reimagine your backup strategy and make it secure, fast, and built to scale.

CTA: Schedule a Discovery Session Today

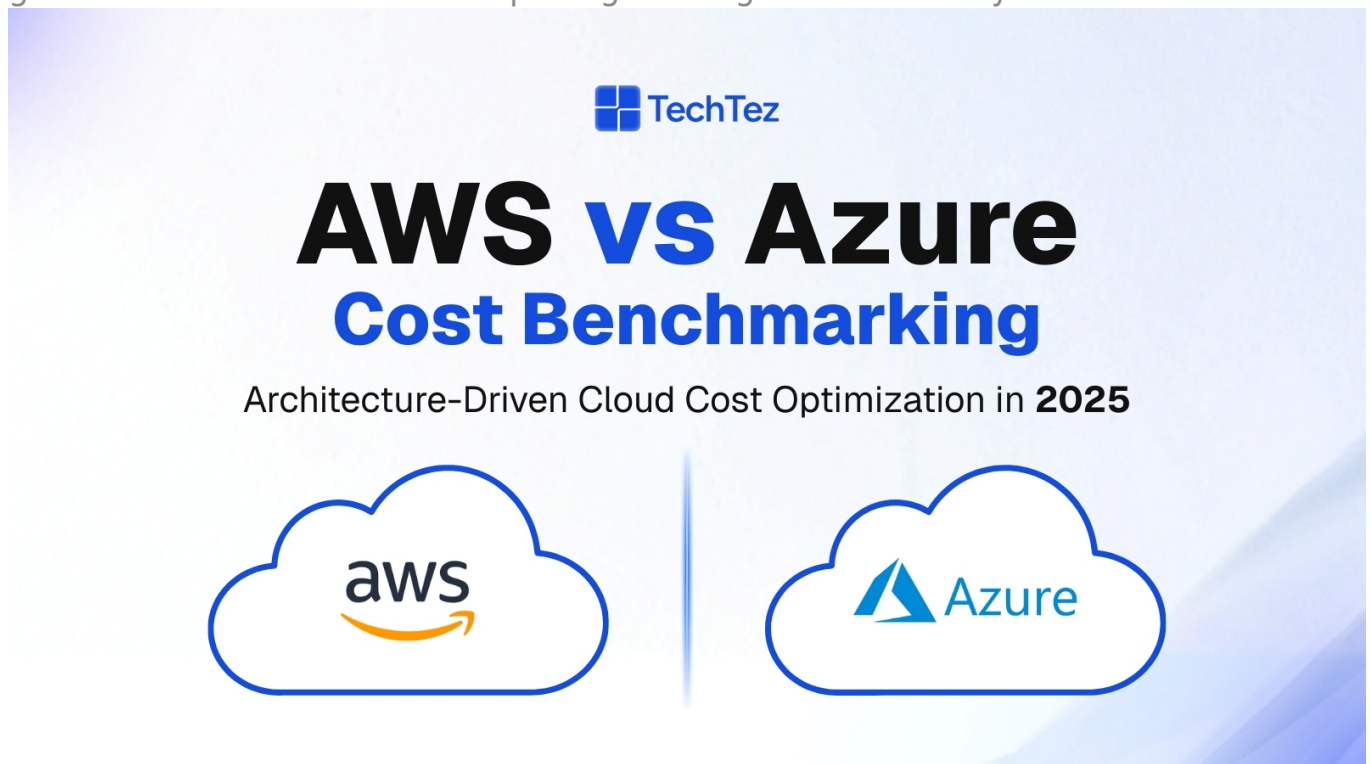


Our Thought Leadership Guides

- Case Study

[AWS vs Azure Cost Benchmarking: Architecture-Driven Cloud Cost Optimization in 2026](#)

Compare AWS and Azure cloud costs and learn why architecture, automation, and governance matter more than pricing for long-term efficiency.



- Case Study

[Agentic AI Assistant Framework for Autonomous Task Execution](#)

An agentic, multi-agent AI assistant that plans, executes, and completes tasks via secure tool orchestration and live APIs turning user prompts into real outcomes like bookings and itineraries.



Agentic AI for **Autonomous Workflow Automation**

From natural language to automated restaurant discovery and table reservations end-to-end, without manual steps.

- Case Study

[AI-Driven Dermatology Platform for Accurate Diagnosis and Secure Digital Care](#)

A mid-sized SaaS company specializing in HR and payroll management faced a growing barrier:



Building an Intelligent AI-Driven Dermatology Platform for Accurate Diagnosis and Digital Care

Secure, AI-Powered Skin Analysis with Human-in-the-Loop Clinical Validation