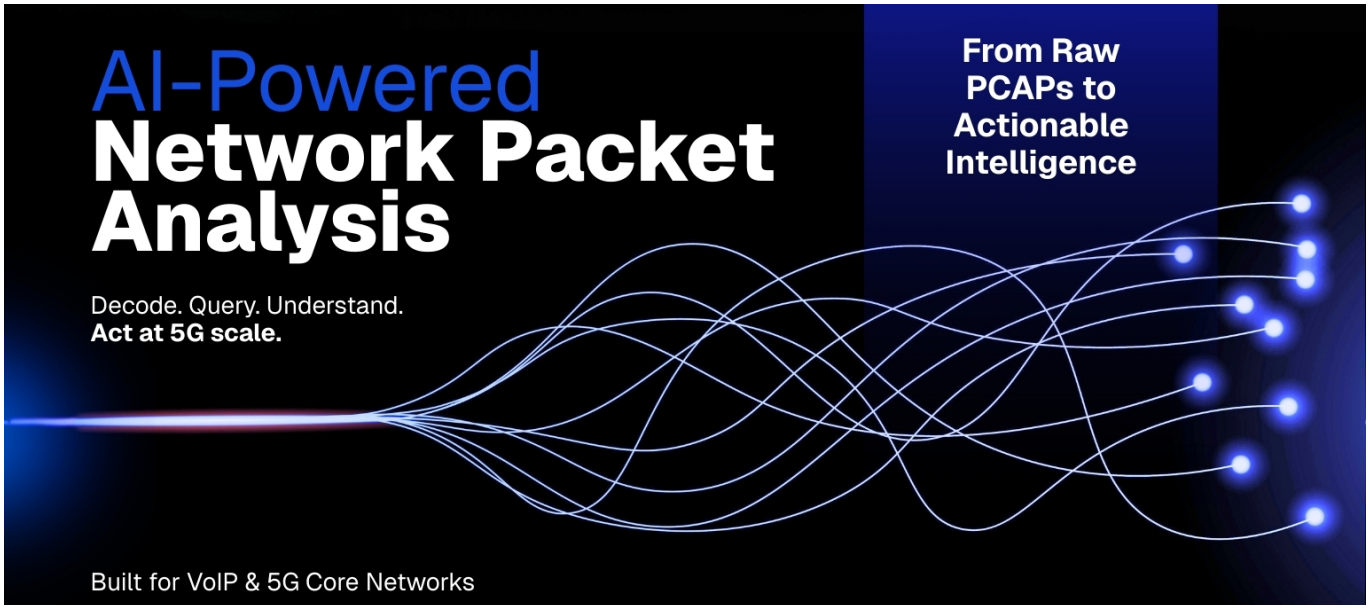
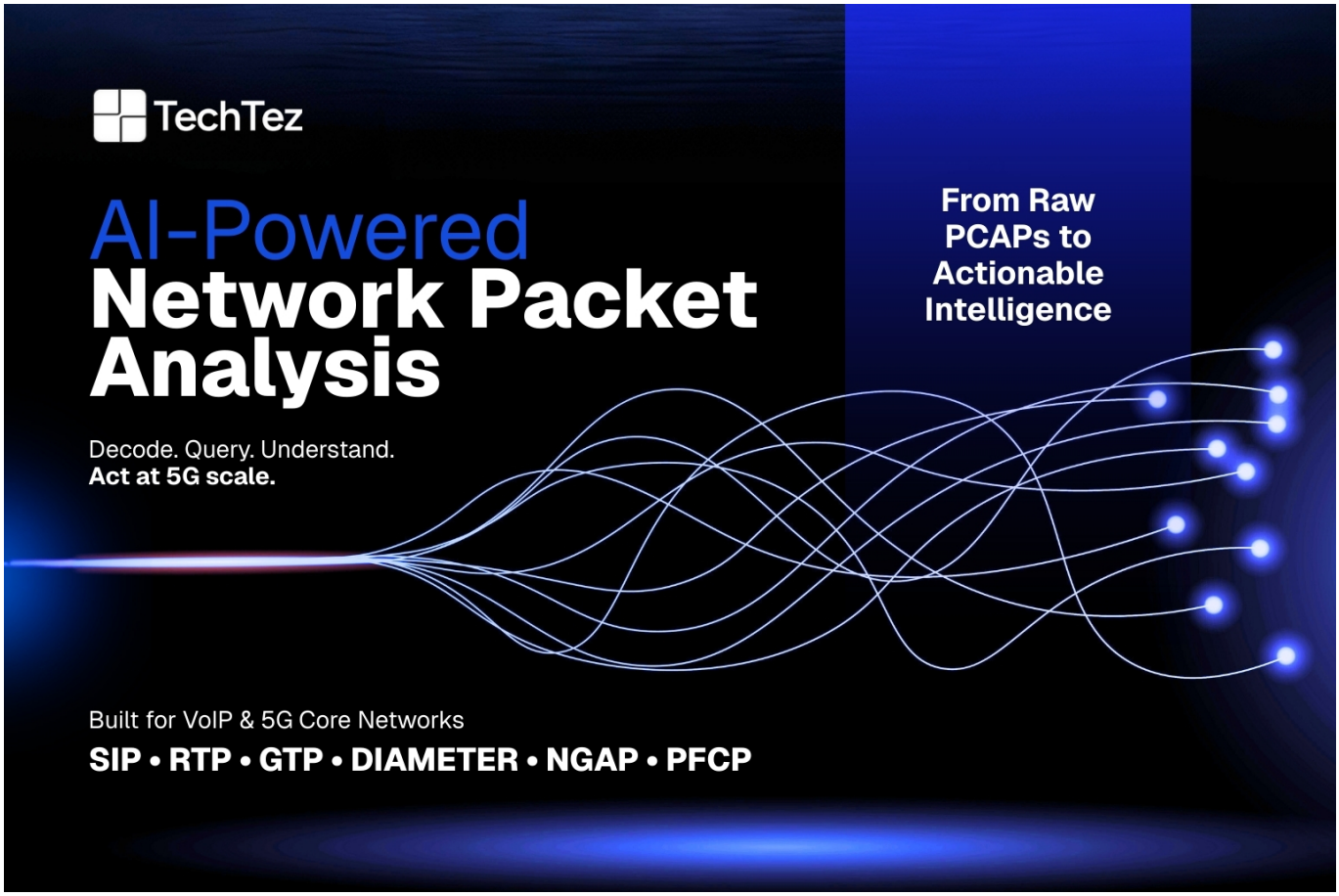


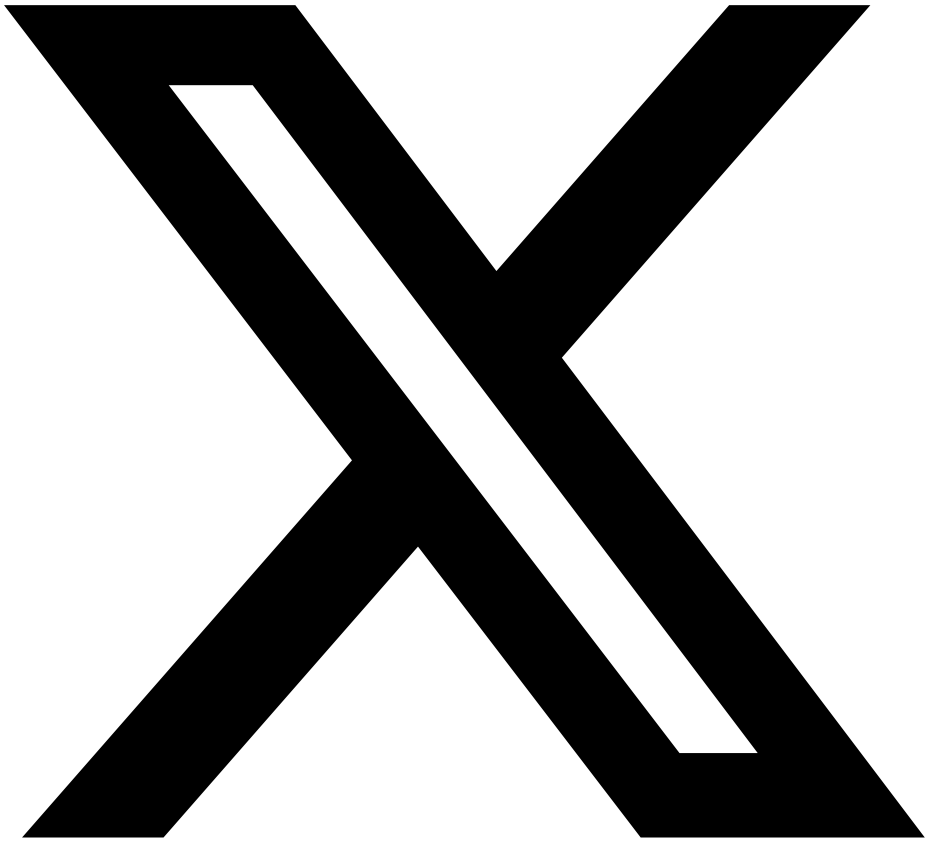
AI-Powered Network Packet Analysis for Enhanced Insights

Posted on September 7, 2025 by Admin


TechTez
AI-Powered
Network Packet
Analysis
From Raw
PCAPs to
Actionable
Intelligence
Decode. Query. Understand.
Act at 5G scale.
Built for VoIP & 5G Core Networks
SIP • RTP • GTP • DIAMETER • NGAP • PFCP

Case Study

Linkedin X-twitter

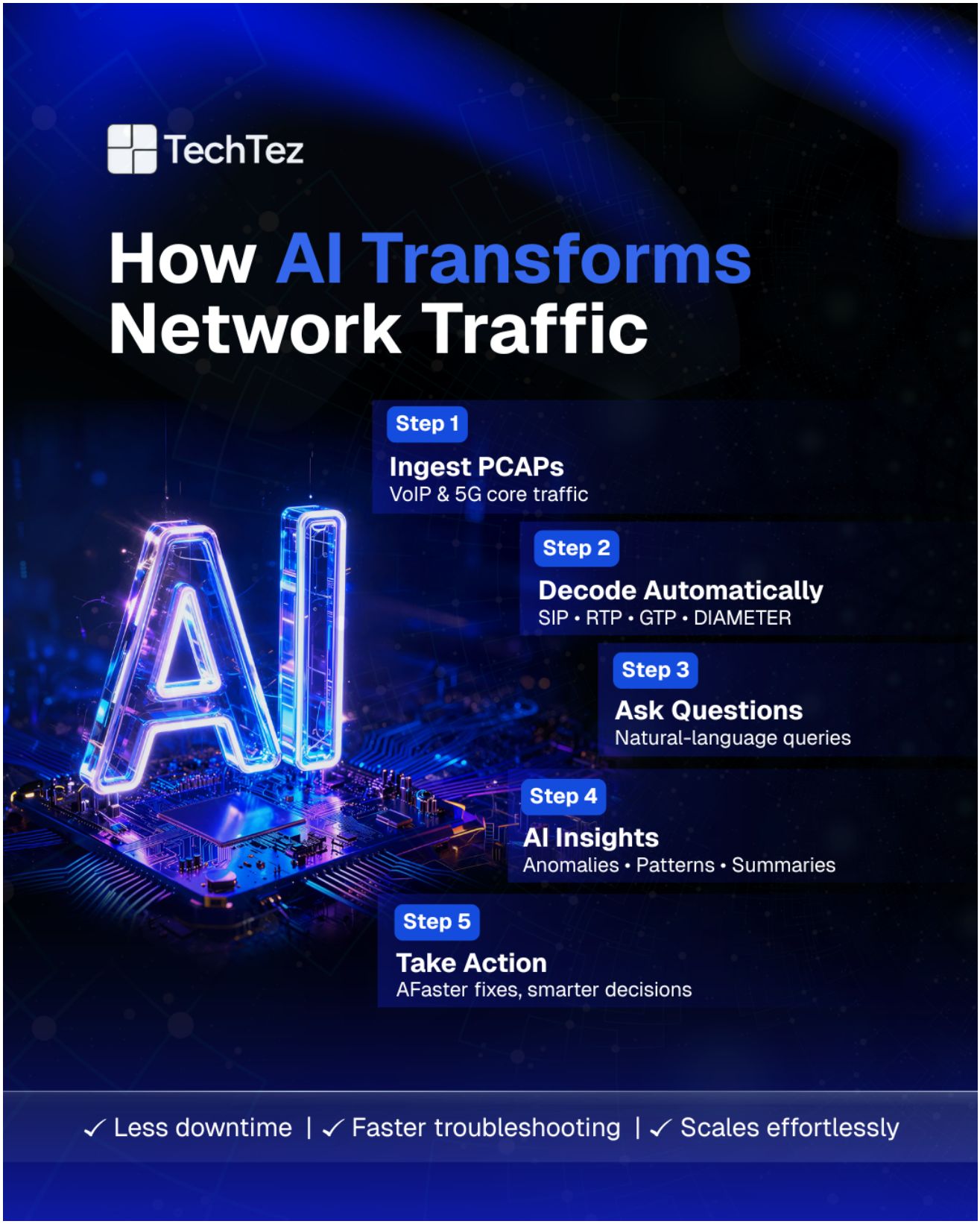


Facebook

AI-Powered Network Packet Analysis for Enhanced Insights

Client

A telecom provider managing VoIP and 5G core traffic sought to modernize packet analysis across their operations and engineering teams.


TechTez
How AI Transforms Network Traffic
Step 1
Ingest PCAPs
VoIP & 5G core traffic
Step 2
Decode Automatically
SIP • RTP • GTP • DIAMETER
Step 3
Ask Questions
Natural-language queries
Step 4
AI Insights
Anomalies • Patterns • Summaries
Step 5
Take Action
AFaster fixes, smarter decisions
✓ Less downtime | ✓ Faster troubleshooting | ✓ Scales effortlessly

Challenges

Conventional network analysis tools face significant limitations in handling the volume and complexity of modern network packet capture (PCAP) files.

- **Lack of Native AI Capabilities:** Traditional tools lack built-in AI for direct analysis of PCAP files, relying on manual inspection or rule-based systems. This makes identifying subtle patterns or anomalies time-consuming and prone to error.

- **Data Complexity and Decoding:** Raw packet data is complex and requires extensive decoding prior to analysis. This adds time and complexity, hindering real-time insights or rapid incident response.

- **Difficulty in Deriving Actionable Insights:** Merely viewing packet data is insufficient; the real value lies in actionable insights like identifying threats or diagnosing performance issues. Traditional methods struggle to automatically glean these insights, demanding significant manual effort and domain expertise, leading to delayed responses.

- **Scalability and Time Consumption:** With increasing network traffic, PCAP files become enormous, and conventional methods often struggle to scale efficiently. Manually sifting through vast amounts of data is inefficient, increasing Mean Time To Respond (MTTR).

- **Limited Querying Capabilities:** Existing tools offer rigid filtering, restricting nuanced, context-aware investigations. Complex queries like "Show all SIP 401 Unauthorized responses with nonce values" are difficult to perform.

Our Solution:

TechTez addressed these pain points by developing an advanced, AI-powered packet analysis platform, placing automated intelligence and flexible query power directly into usKey Features:

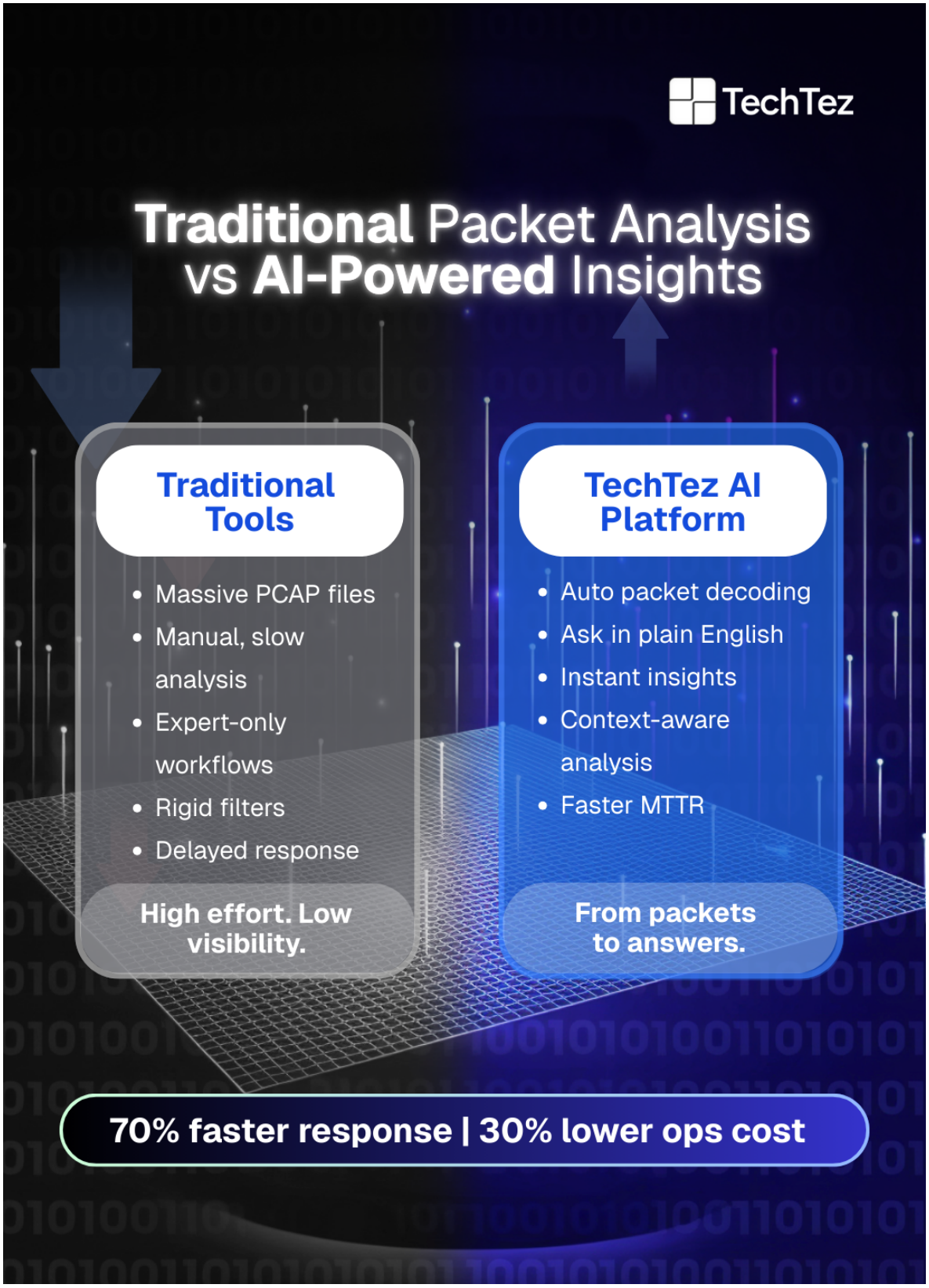
- **Intelligent Packet Decoding:** Fully automated decoding transforms raw packet data into clean, structured records—removing manual complexity and speeding up analysis.

- **Natural Language AI Query Engine:** Users simply ask questions in plain English (“Which packets contain Call-ID 12345?” “Show me all RTP streams with payload type 96”), and the platform delivers actionable results instantly.

- **Actionable Insights via LLMs:** Leveraging leading Large Language Models (ChatGPT, Ollama, Mistral, Gemini), the system identifies patterns, detects anomalies, and generates insights beyond traditional tool capabilities.

- **Comprehensive Protocol Support:** Deep analysis across all major protocols (SIP, RTP, DIAMETER, HTTP, GTP, TCP, UDP, IPv4/6, TLS/SSL, SCTP, NGAP, PFCP, and more).

- **Scalable & User-Friendly:** Optimized for performance with large datasets, the interface empowers both experts and non-specialists—democratizing access to critical network intelligence.


TechTez
Traditional Packet Analysis vs AI-Powered Insights
Traditional Tools
Massive PCAP files
Manual, slow analysis
Expert-only workflows
Rigid filters
Delayed response
High effort. Low visibility.
TechTez AI Platform
Auto packet decoding
Ask in plain English
Instant insights
Context-aware analysis
Faster MTTR
From packets to answers.
70% faster response | 30% lower ops cost

Results & Impact

- Faster, More Accurate Diagnostics: Automated decoding and AI insights cut incident response time and reduced manual effort, freeing teams to focus on high-value tasks.

-  Actionable Intelligence: Proactive threat detection, performance monitoring, and troubleshooting—made possible in seconds, not hours.

-  Empowered Teams: Anyone can perform complex packet analysis via natural language, eliminating the steep learning curve for new users.

- Scale Without Limits: The platform processes the largest PCAPs effortlessly, ensuring continuous effectiveness as network traffic grows.

- Deeper, Granular Insights: Rich protocol and field support enable precise, context-aware investigations, unlocking a complete view of network events.

Outcomes

Reduction in incident response time
70%
Lower operational costs
30%
Less unplanned downtime
45%
jump in customer satisfaction

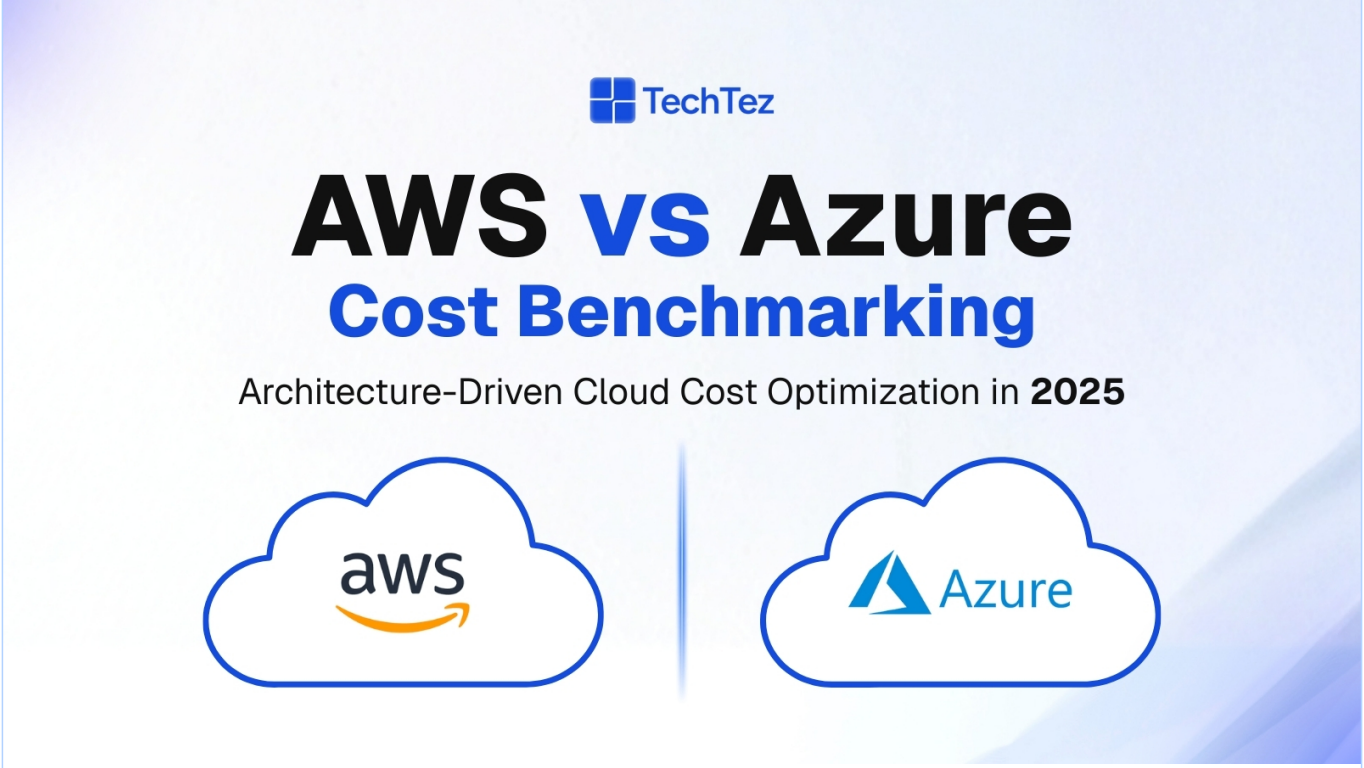
25%
improvement in bandwidth utilization
Up to 15%

Our Thought Leadership Guides

- Case Study

AWS vs Azure Cost Benchmarking: Architecture-Driven Cloud Cost Optimization in 2026

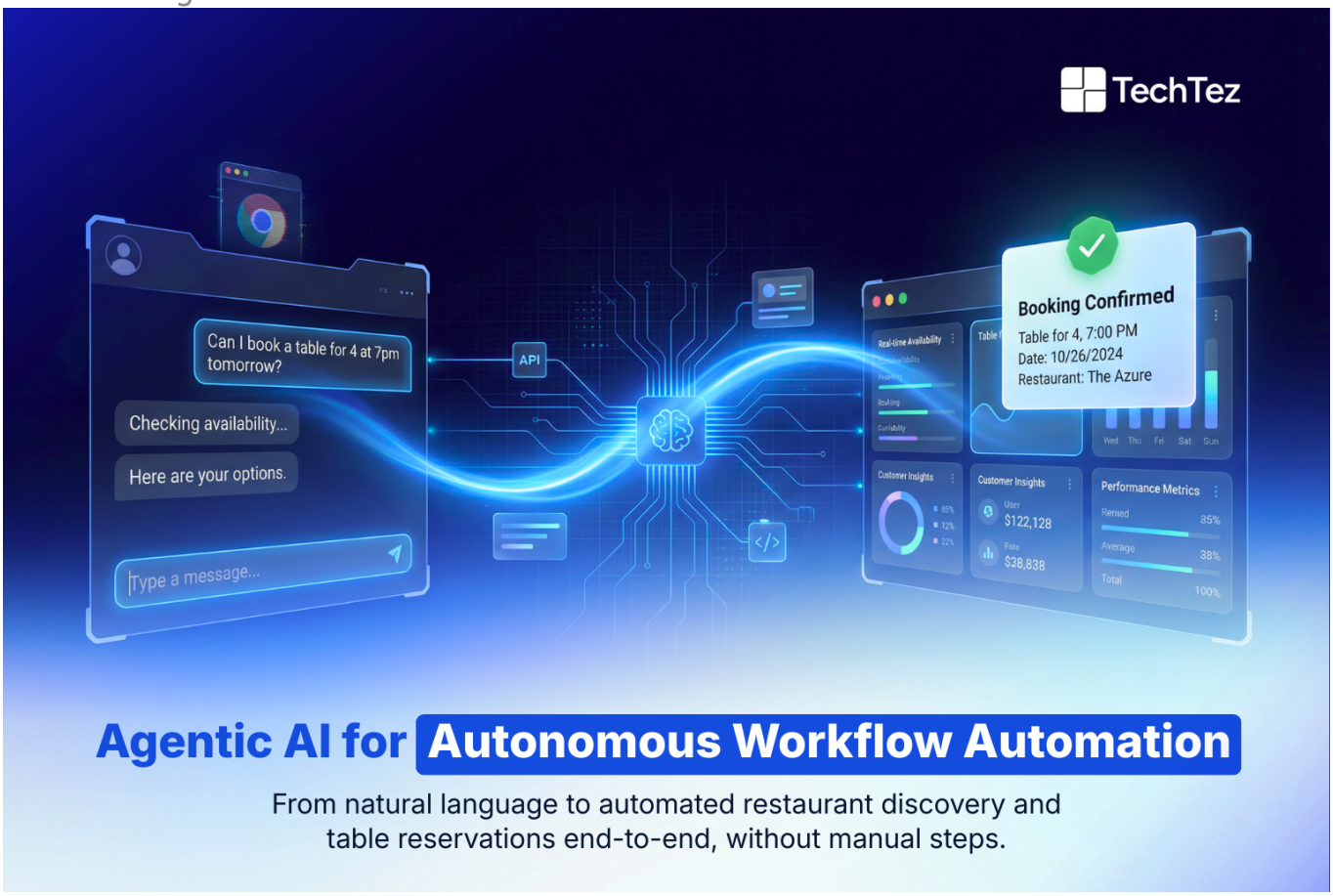
Compare AWS and Azure cloud costs and learn why architecture, automation, and governance matter more than pricing for long-term efficiency.



- 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.



- 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:


TechTez
Patient Intake
AI Analysis
AI Dermatology
Expert Validation
Dermatologist
Pharmacy & Prescription
Reports & Follow-Up
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