

What is Zenpulse?






Zenpulse is a real-time multichannel notification simulation platform built using native AWS services and OpenAI intelligence. It generates lifecycle-based notifications across SMS, Email, Slack, and Push in response to user-defined triggers.

What is a Lifecycle in Tech?

In the world of software and systems, a **lifecycle** refers to the **sequence of events or states** that a user, system, or object experiences from start to finish.

It's like the **story arc** of a customer interacting with your app — from the moment they land on the homepage to that final “Thank you for your order” message.

Example: E-commerce Customer Lifecycle:

| Stage | Description |
|--|---------------------------------------|
|  Added to Cart | Customer adds product to cart |
|  Abandoned Cart | No checkout — system follows up |
|  Order Placed | Customer completes purchase |
|  Order Shipped | System notifies shipping status |
|  Delivered | Final confirmation & feedback request |

Zenpulse captures these lifecycle **moments** and **emits them as intelligent, channel-specific events** using OpenAI + AWS.

You define the lifecycle class (*ecom, banking, support*), and Zenpulse brings it to life across SMS, Email, Slack, and Push — in real time.

Why Zenpulse?

Zenpulse: Real-World Use Case Scenarios (For Production)

- **CI/CD Deployment Events**
Instantly notify dev teams across Slack, Email, or WebSocket when deployments succeed, fail, or roll back — without modifying pipeline code.
- **Microservice Health Monitoring**
Trigger alerts when ECS, EKS, or Lambda containers report unhealthy — Zenpulse emits retries + escalations to Slack, SMS, or custom endpoints.
- **E-commerce Transactional Messaging**
Lifecycle-driven notifications for cart abandonment, order confirmations, and shipping updates — enhanced by OpenAI, delivered over SMS, Email, Slack, Push.

- **Banking Transaction Bridge**

Real-time transaction updates (debit, credit, balance alerts, fraud warnings) routed via EventBridge — no backend changes needed.

- **Support Workflow Automation**

Auto-alert agents and users on ticket assignment, escalation, or SLA breaches using channel-based routing (Slack, Email, WebSocket).

Enter Zenpulse: Loosely Coupled, Lambda-Powered Notification Engine

Zenpulse was designed from the ground up to answer every challenge in **Serverless Guru's** notification platform brief — and then go beyond.

100% Serverless — Built using AWS Lambda, EventBridge, DynamoDB, API Gateway, CloudWatch, and S3.

- **Lifecycle-Driven** — OpenAI crafts dynamic messages based on simulation type (ecom, banking, support).
- **Multi-Channel by Default** — SMS (SNS), Email (SES), Slack (Webhook), Push (WebSocket) — all supported natively.
- **Scalable by Design** – Built on Lambda + EventBridge with auto-scaling, global reach, and low latency.
- **Secure and Isolated** – IAM roles scoped per channel; no shared secrets or leaky APIs.
- **Retries? Done.** – EventBridge handles automatic retries and delivery durability.
- **Fully Observable** – Integrated with CloudWatch and DynamoDB for real-time logs, metrics, and replayable history.
- **Extensible by Default** – Add or remove channels (SMS, Email, Push, Slack, WhatsApp) without modifying your backend logic.
- **Loosely Coupled** – Each channel is triggered by an EventBridge rule; no spaghetti code or inter-service dependencies.

Zenpulse is not just a notification engine — it's the future of communication pipelines.

No vendor lock-in. No backend rewrites. Just pure AWS-native velocity, powered by OpenAI.


Zenpulse Dashboard – Tester Guide 101

Include on Page 3 with the screenshot:

Visit: <https://sim.sudharsan17.online>

No login. No setup. Just:

Select lifecycle (ecom, banking, or support)


Zenpulse



Real-time multichannel notifications powered by
EventBridge + Lambda + OpenAI


Type
 Support Ticket

Customer Count
 1


Channels & Test Inputs
☒ SMS
 9894506565
☒ EMAIL
 sudharsan6565@gmail.com
☒ SLACK
 ks.slack.com/services/T08LVK87DR9/B08LL0Z96G6/4iZhPcTK9aPIKxyhlpl9UeH
☒ PUSH
 https://your-test-endpoint.com/notify

Generate Pulse

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 Built with  OpenAI &  Native AWS Stack


 **SMS**

01:34:43 PM
 Dear [Customer Name],
 Thank you for reaching out to us! We have successfully sent a feedback request your way. Your opinion is important to us and we appreciate

 **Email**


01:34:43 PM
 Dear [Customer Name],
 Thank you for reaching out to us! We have successfully sent a feedback request your way. Your opinion is important to us and we appreciate

01:34:40 PM
 Dear [Customer Name],
 We are pleased to inform you that an agent has been assigned to assist you with your support request. Please expect a call or message from our



 **Real-time Push Feed**

Dear [Customer Name],
 We are pleased to inform you that an agent has been assigned to assist you with your support request. Please expect a call or message from our representative shortly to address your concerns and provide you with further assistance.
 Thank you for choosing our services. We are committed to resolving your issue promptly and efficiently.

SMS: 5 Email: 5 Slack: 5 Push: 6





 Pulse Generated

- Fill test input fields for each selected channel (SMS, Email, Slack, Push)







- Click  **“Generate Pulse”**
- Watch:
 - Real-time logs update for each channel (SMS, Email, Slack)
 - Push tab reflects new messages instantly via WebSocket
 - Stats bar updates with latest counts
 -  Export CSV with one click


Zenpulse Technology Stack Summary

Frontend:





-  **React + Tailwind CSS** – Lightning-fast UI, responsive across all devices
-  **Vite** – Super-fast build tool for instant development feedback
-  **WebSocket (API Gateway)** – Real-time push notifications, instant client updates
-  **Custom Metrics + CSV Export** – Live stats tracking and export support

Backend (100% Serverless):

-  **OpenAI (GPT)** – Dynamically generates lifecycle-based notification content
-  **AWS Lambda** – Stateless compute engine powering business logic
-  **Amazon EventBridge** – Core event router, fully decoupled architecture
-  **Amazon SNS + SES** – SMS and Email delivery at scale
-  **Slack Webhooks** – Seamless integration with messaging workflows
-  **DynamoDB** – Stores notification logs per channel for auditing and replay

-  **API Gateway (HTTP + WebSocket)** – Handles REST and live socket connections

Infrastructure:

-  **S3 (Static Web Hosting)** – Frontend deployed securely and globally
 -  **CloudFront** – CDN edge delivery for low-latency dashboard access
 -  **Route53** – DNS routing for custom domain: `sim.sudharsan17.online`
 -  **ACM + HTTPS** – Secure SSL/TLS everywhere, including CloudFront
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