

# ATIX

The Linux & Open Source Company

# Welcome



# Ingress NGINX retirement and your migration roadmap

# Agenda

- Welcome & Introduction
- About Ingress NGINX and why is it becoming EOL
- What is Gateway API?
- Traefik
- Live demo
- Q&A



# About me

- Amir Zahirovic
- IT-Consultant
- DevOps, Kubernetes, Automation
- CKS, CKA, CKAD, AWS certified



# What is Ingress NGINX?

- De-facto standard ingress controller for Kubernetes for many years
- Simple, reliable way to expose HTTP/HTTPS services
- Widely adopted due to:
  - Familiar NGINX behavior
  - Easy annotations-based configuration
  - Strong early community adoption

# Why are we talking about retirement?

- Upstream lifecycle changes
- Kubernetes networking has evolved
- Annotation sprawl and complexity
- Security and policy requirements increased
- Gateway API is the future direction

# Why is Ingress NGINX Becoming EOL?

Key reasons for retirement:

- Unsustainable maintenance & low staffing
- Security vulnerabilities (CVE-2025-1974)
- Technical debt
- Shift to Gateway API

# Kubernetes is moving on...

- Introduction of the Gateway API
- Clear separation of platform and application concerns
- Better validation and extensibility
- Designed for modern traffic patterns

# Gateway API

## Architecture benefits:

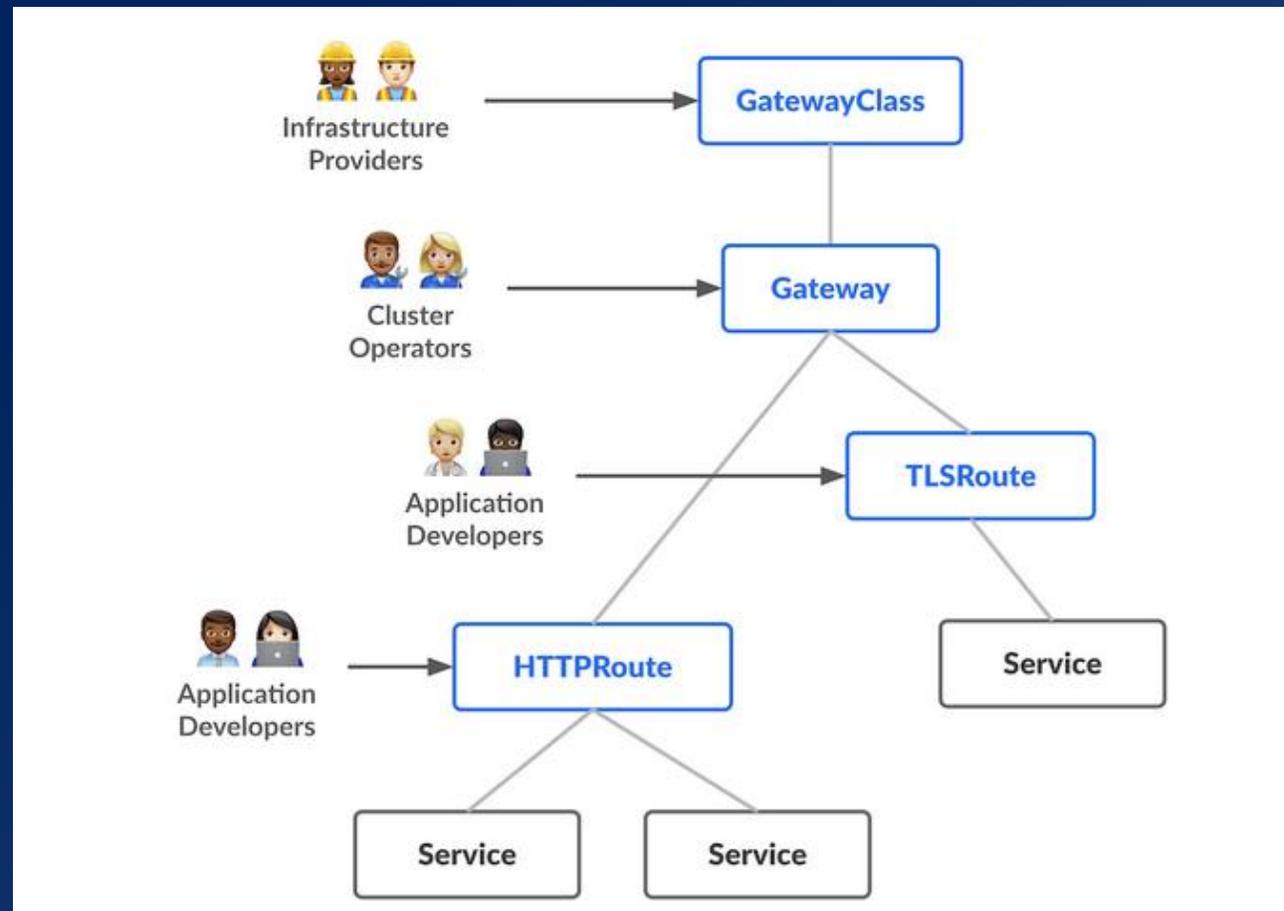
- Portable – same HTTPRoute works across different implementations
- Expressive – More routing capabilities than Ingress
- Type-safe – Structured resources, not annotation strings
- Role separation – Platform teams manage Gateway, dev team manage routes

# Gateway API – Core concepts

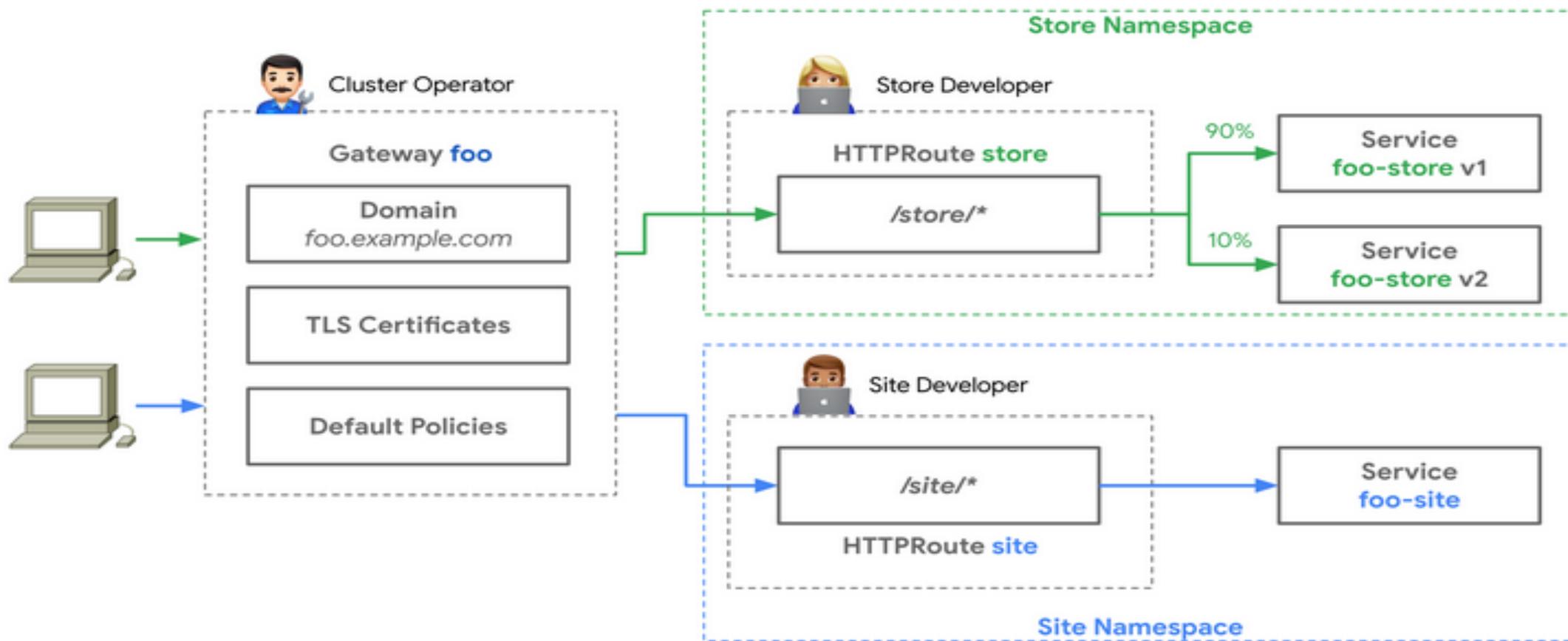
- GatewayClass
- Gateway
- HTTPRoute
- TCPRoute
- TLSRoute
- ReferenceGrant

## Key roles and personas

- Ian the infrastructure provider
- Chiriro the cluster operator
- Ana the application developer



Source: <https://gateway-api.sigs.k8s.io/>



# Traefik

What it is:

- Cloud-native edge router and load balancer
- Dynamic configuration (watches Kubernetes resources)
- Built-in middleware system for request processing
- Native support for both Ingress and Gateway API

# Core concepts - Traefik

- Middleware
- IngressRoute
- TraefikService

# Key features

- Automatic TLS/Let's Encrypt integration
- Built-in dashboard and real-time visibility
- Native Prometheus metrics
- TCP and UDP routing support
- Multiple provider support

# What will we cover?

- Triage: Check if you're affected
- Options: Where can we migrate?
- Live migration:
  - NGINX > Traefik > Gateway API

# Migration options

- Gateway API
- Traefik
- F5 Nginx Ingress
- HAProxy
- Envoy-based

# Hands-on – current state (Ingress NGINX)

- Sample multi-service application (frontend + backend API)
- Ingress resource with common NGINX annotations
- TLS termination with cert-manager
- Path-based routing

# Hands on – target state (Traefik)

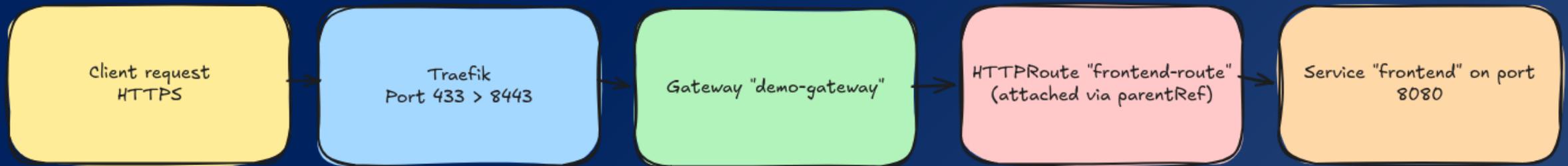
- Same application, migrated to Traefik
- Show annotations compatibility
- Demonstrate middleware approach
- Validate zero downtime migration

# Hands on – future state (Gateway API)

- Convert one route to HTTPRoute
- Show the Gateway API approach

- Traffic flow:

- https listener matches hostname demo.team-caas.atix-training.de
- TLS terminated using cert from "demo-gateway-tls"



- path "/" matches everything
- adds X-Served-By header

# Thank You



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