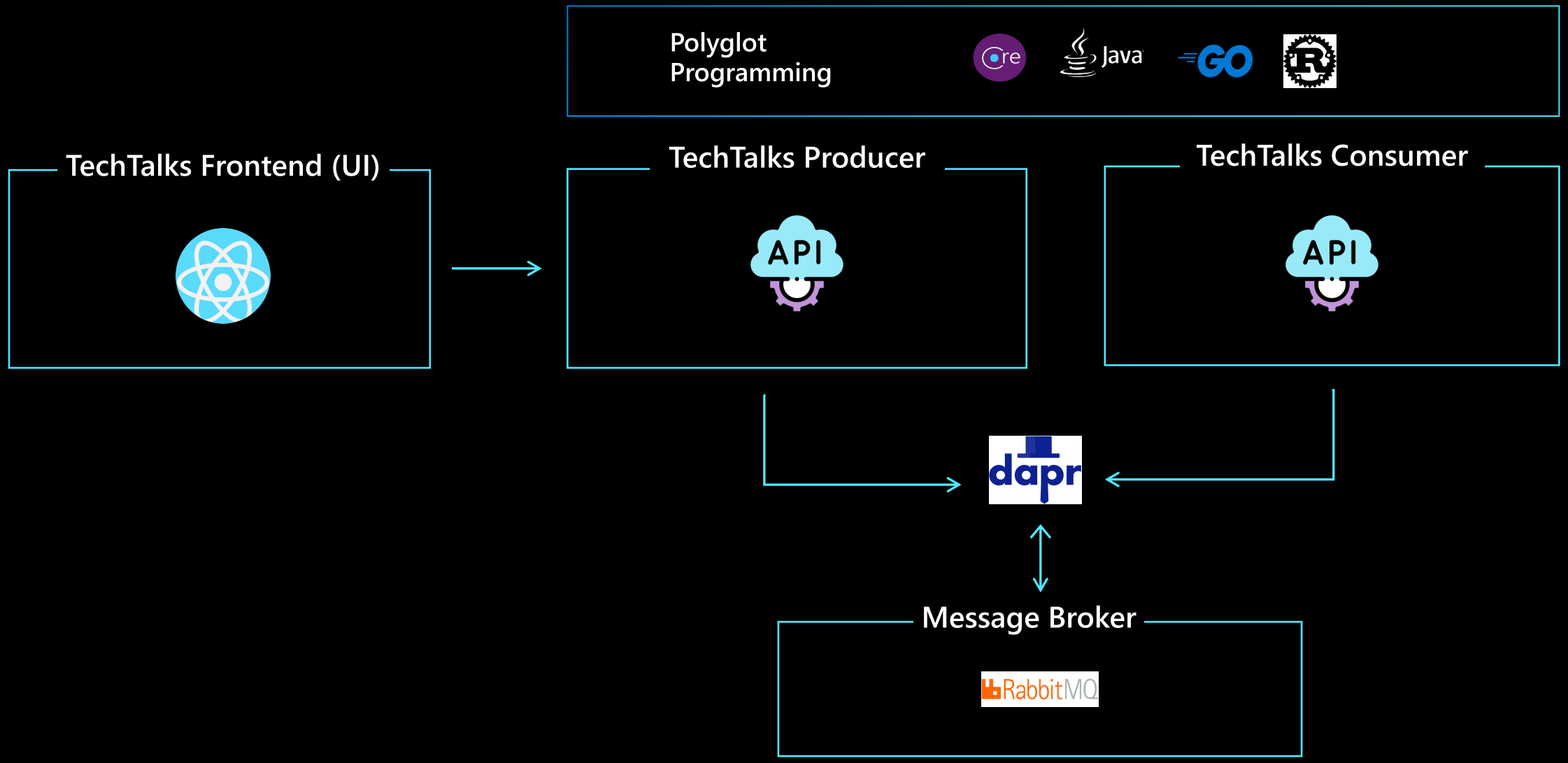
# Cloud Native Ninja

# Kubernetes Ingress

Nilesh Gule @nileshgule

# TechTalks Application Architecture



# What is Kubernetes Ingress?

## Ingress

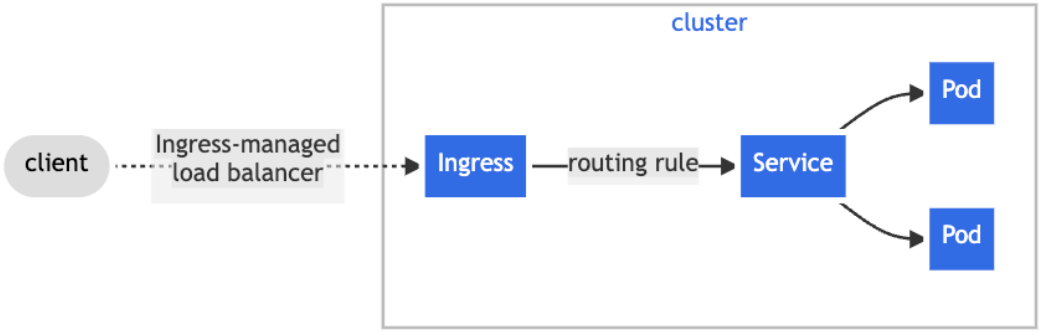
**FEATURE STATE:** `Kubernetes v1.19 [stable]`

An API object that manages external access to the services in a cluster, typically HTTP.

Ingress may provide load balancing, SSL termination and name-based virtual hosting.

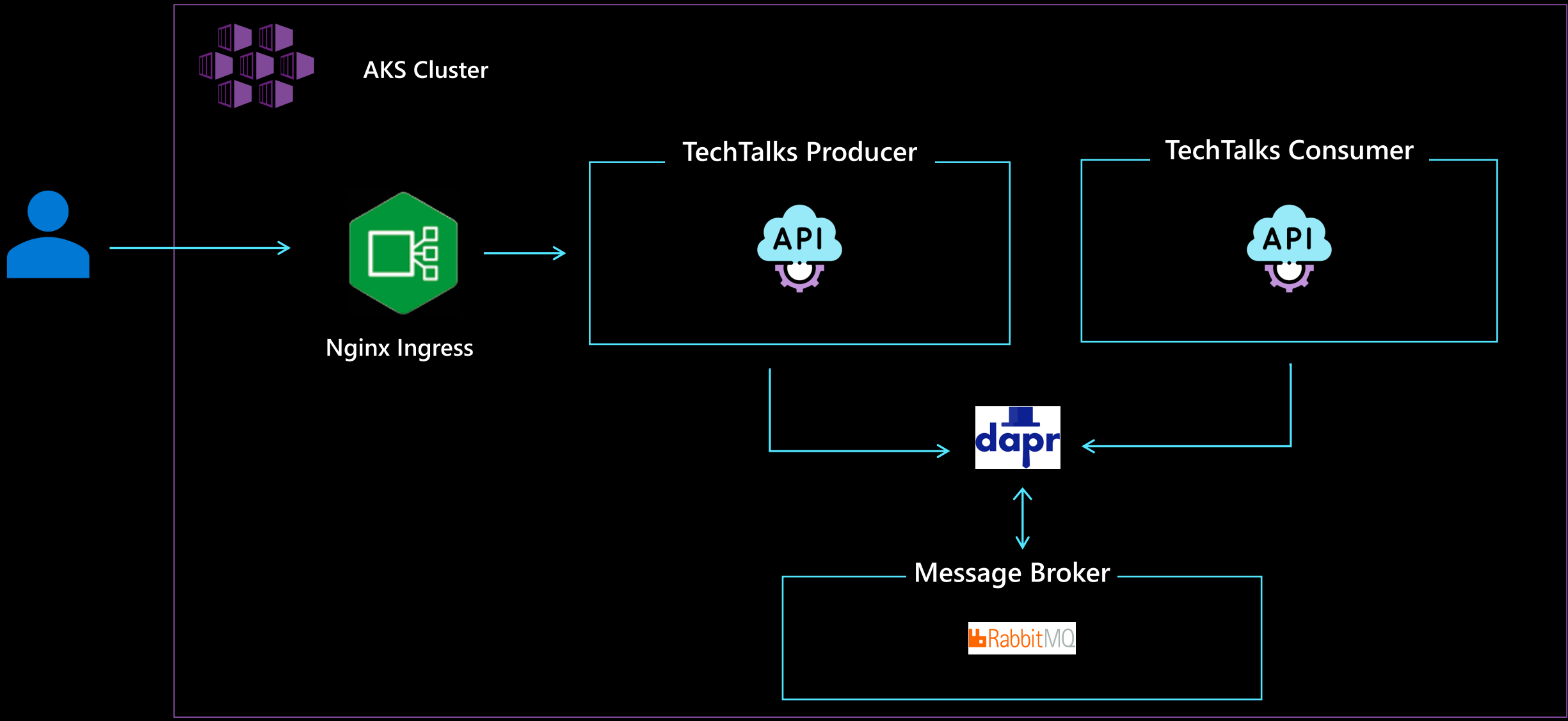
Ingress exposes HTTP and HTTPS routes from outside the cluster to services within the cluster. Traffic routing is controlled by rules defined on the Ingress resource.

Here is a simple example where an Ingress sends all its traffic to one Service:




https://kubernetes.io/docs/concepts/services-networking/ingress/

# TechTalks Application – Nginx Ingress



# Key Features of Kubernetes Ingress

## Ingress Controller

Implements rules defined in Ingress Resource

Manages underlying load balancer and reverse proxy configuration to route traffic to appropriate service

## Rules and Paths

Ingress resources defines rules to specify how traffic should be routed based on requested host and URL paths

## TLS Termination

Ingress resources can configure TLS termination allowing for secure HTTPS connections

## Rewrites & Redirects

Ingress can be used to rewrite or redirect URLs to create custom routing and URL transformations

# Ingress best practices

- ✓ **Use Managed Ingress Controller:** Use well-maintained and community-supported Ingress Controller, such as **NGINX Ingress Controller**, **Traefik**, or **HAProxy Ingress**. These are often updated with security patches and new features.
- ✓ **Define clear naming conventions:** Establish consistent naming convention for Ingress resources
- ✓ **Split Ingress resources:** Avoid creating a single large Ingress resource with many rules and paths. Create multiple Ingress resources, each responsible for a specific application or service
- ✓ **Enable RBAC:** Restrict access to Ingress-related resources and enhance security using RBAC
- ✓ **Implement High Availability:** Deploy Ingress controller with high-availability configuration to ensure reliability and fault tolerance

# Containerize Apps Resources

Cloud Native Ninja GitHub repo: https://github.com/NileshGule/cloud-native-ninja

Commands : https://github.com/NileshGule/cloud-native-ninja/blob/main/docs/12-kubernetes-ingress.md

# Slides

Slideshare: https://www.slideshare.net/nileshgule/

Speaker Deck: https://speakerdeck.com/nileshgule/