**Color Legend:**

- Blue = People/Actors
- Dark Blue = NovaRetail Systems
- Grey = External Systems
- Light Blue = Data/Event Platforms

C1 - Current System Context

Version: 1.0 | Creator: Nithin Mohan T K | Date: 2025-11-22

- Pain Points
- 1. No unified identity
 - 2. Manual product ops
 - 3. Batch latency
 - 4. High ops cost

- Customers & Channels**
- Web browsers
 - Mobile apps
 - Partner portals

Country-Specific Commerce Platforms

Monoliths per market (Java, PHP, .NET, Node.js)

Country 1
Java monolith

Country 2
.NET Framework

Country 3
PHP monolith

Countries 4-12
Mixed stacks

Point-to-Point Integrations
Tightly coupled REST/SOAP calls

8 Customer Databases
Isolated schemas
No master record

Product Data
Spreadsheets & manual uploads

Shared Batch Services

- Order consolidation (nightly)
- Payment reconciliation

Legacy Infrastructure

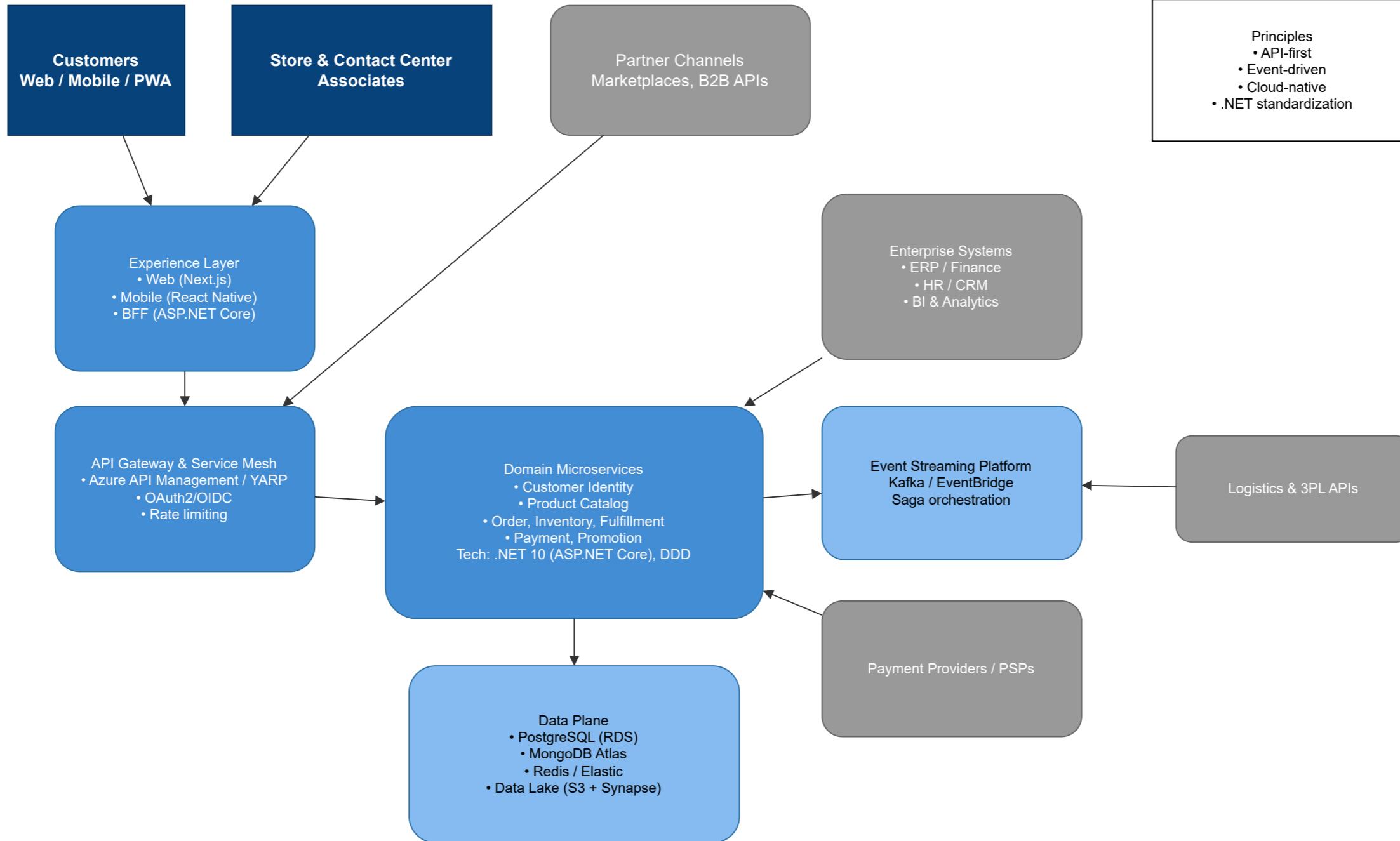
- On-prem servers
- AWS + Azure (non-standard)
- Manual deployments

Color Legend:

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- Dark Blue = NovaRetail Systems
- Grey = External Systems
- Light Blue = Data/Event Platforms

C1 - Target System Context

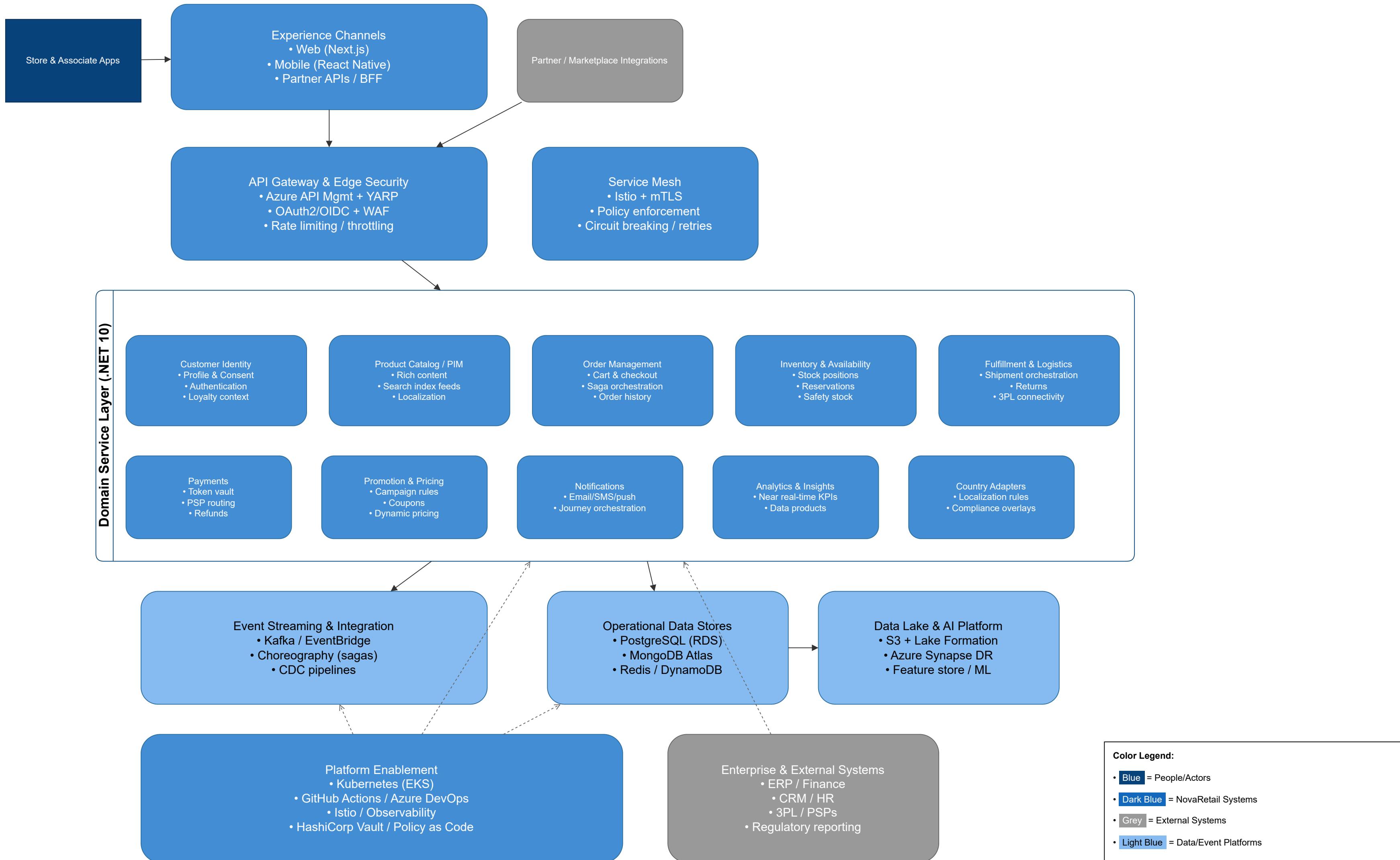
Version: 1.0 | Creator: Nithin Mohan T K | Date: 2025-11-22

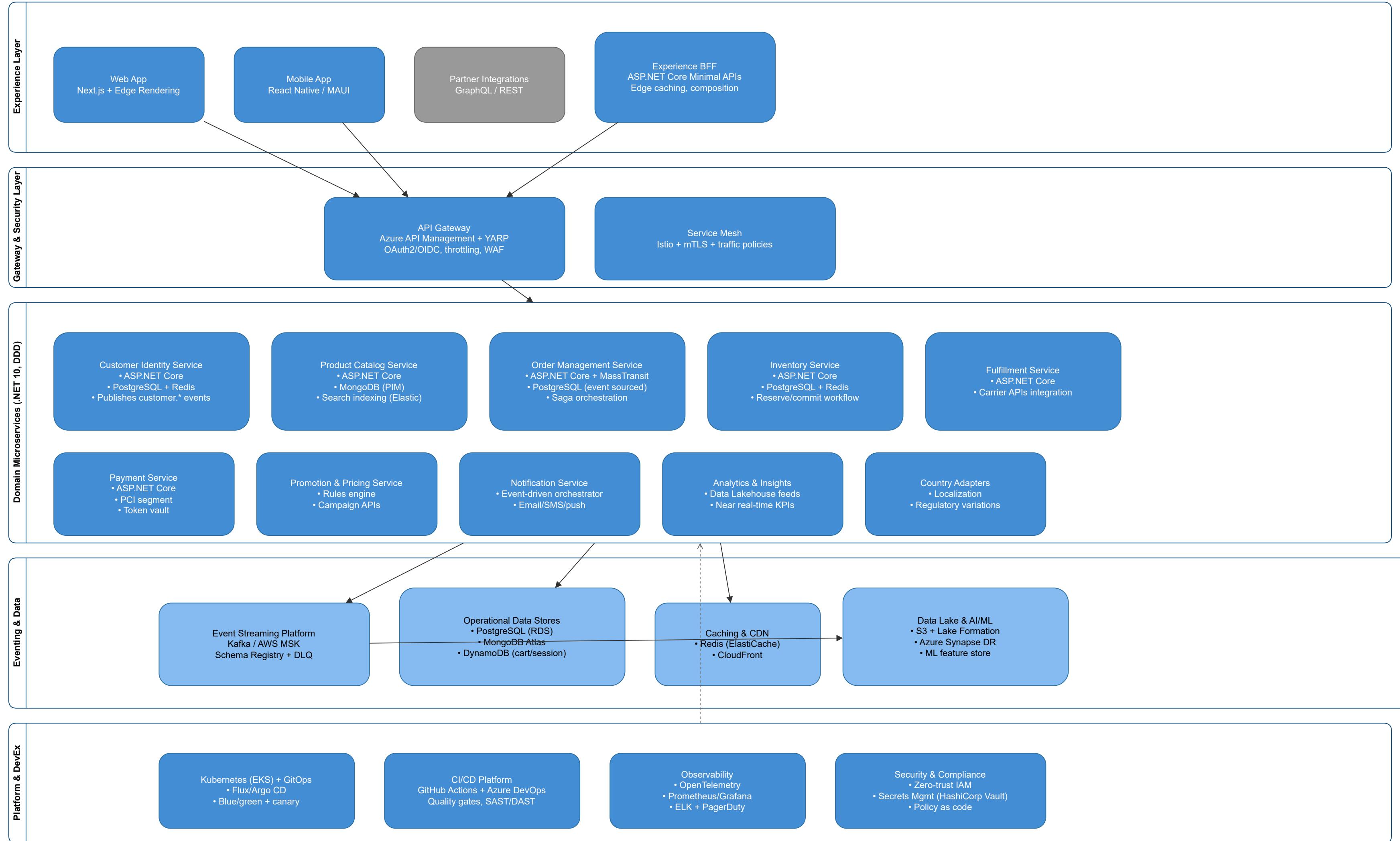


NovaRetail OmniCommerce Platform
.NET 10 Microservices on AWS + Azure DR
Event-driven, API-first

Color Legend:

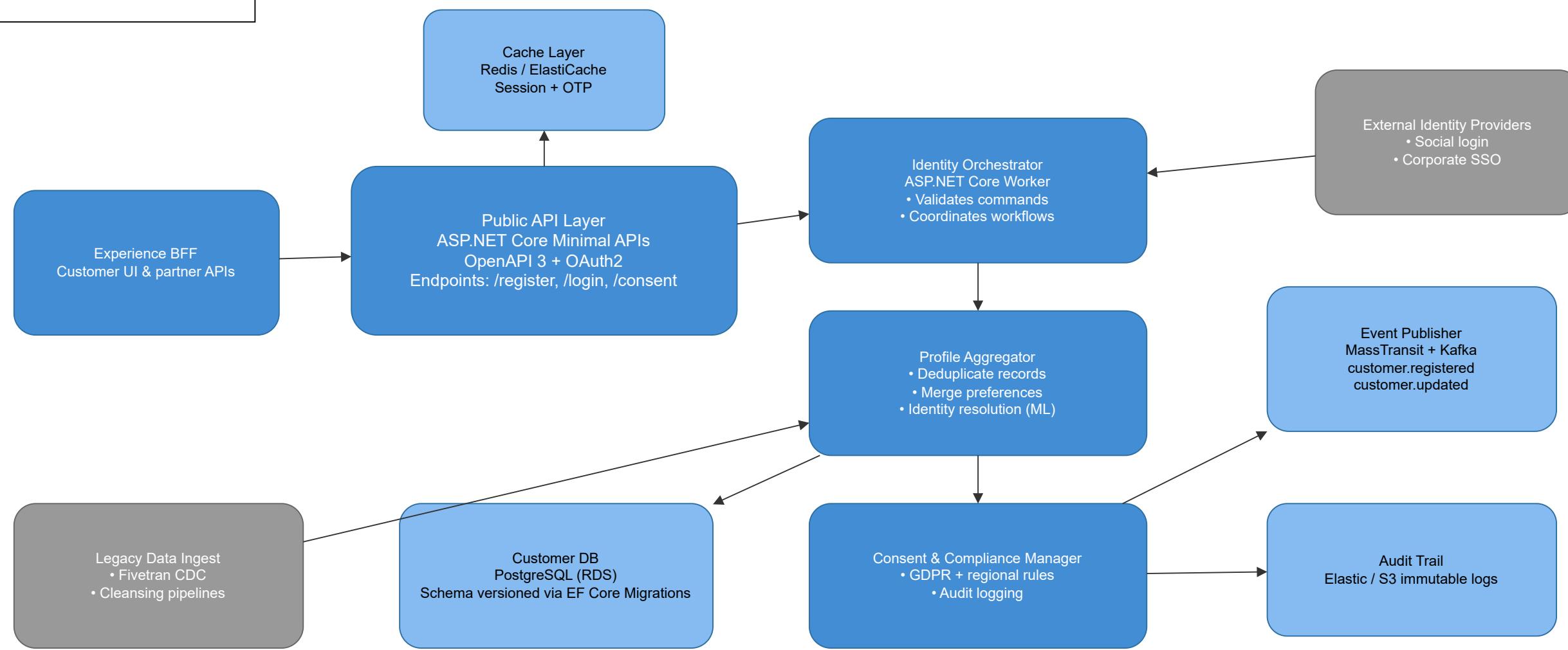
- Blue = People/Actors
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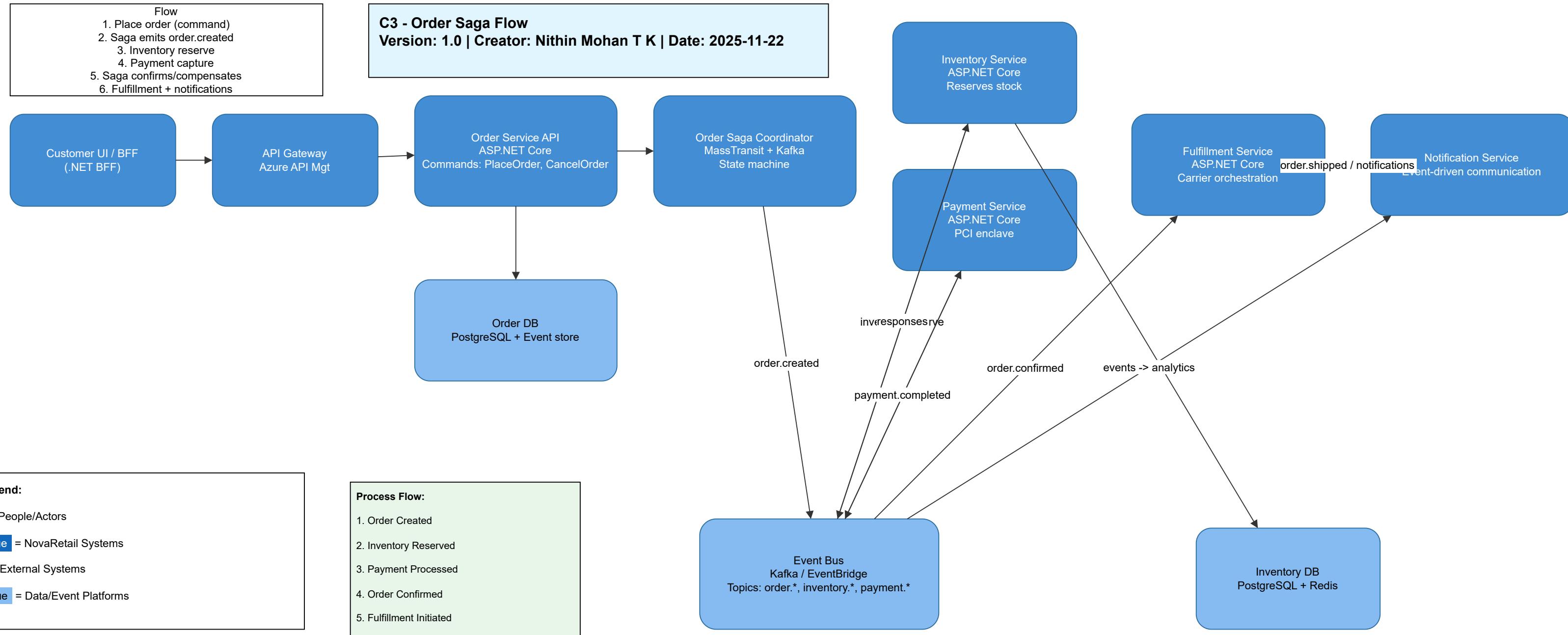
Quality Attributes
• Availability 99.9%
• P95 latency <150ms
• Geo-fenced data residency

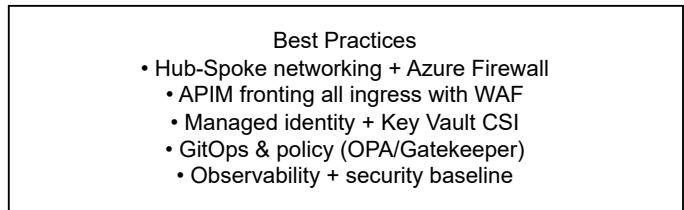
C3 - Customer Identity Service
Version: 1.0 | Creator: Nithin Mohan T K | Date: 2025-11-22



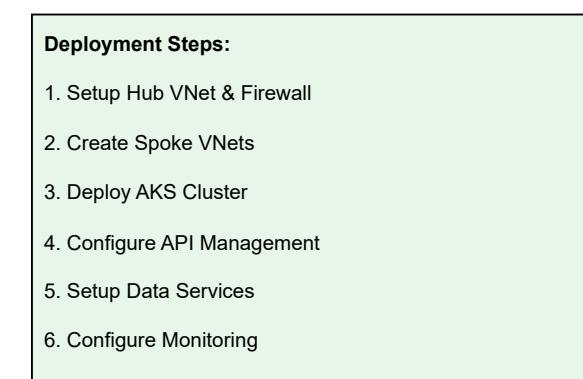
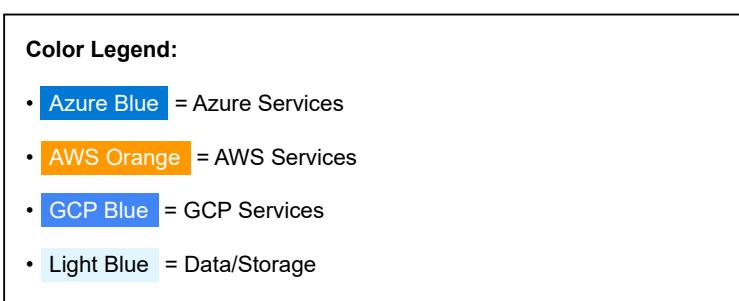
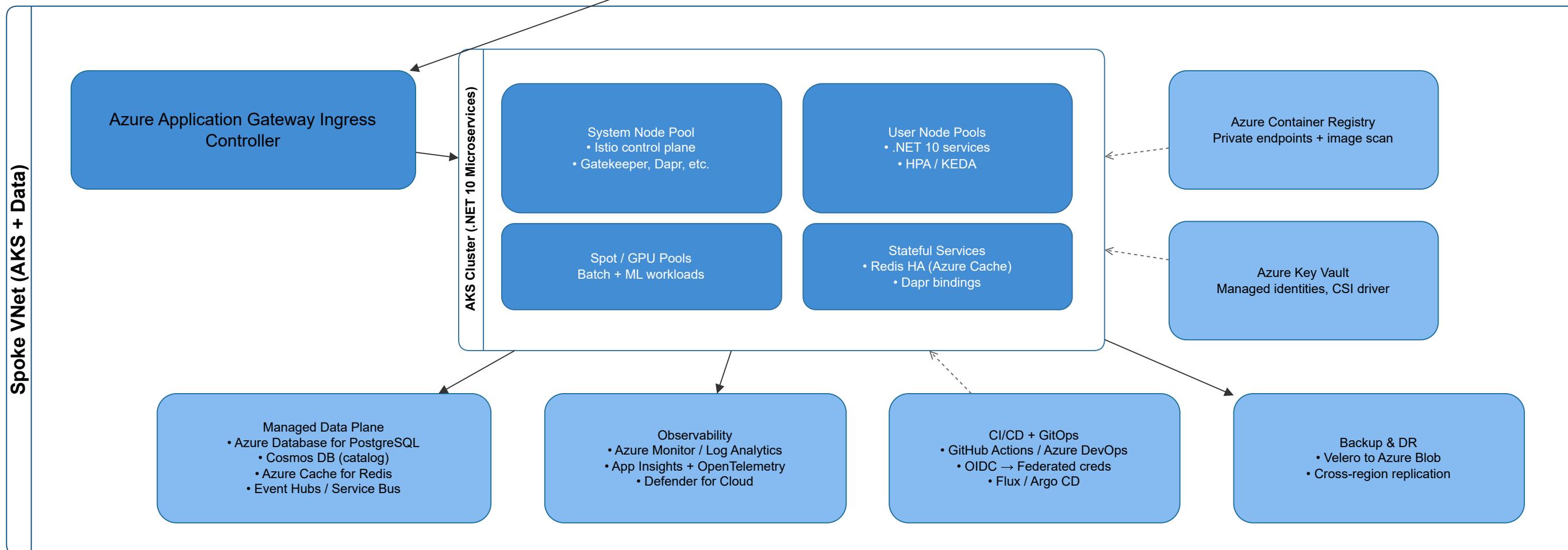
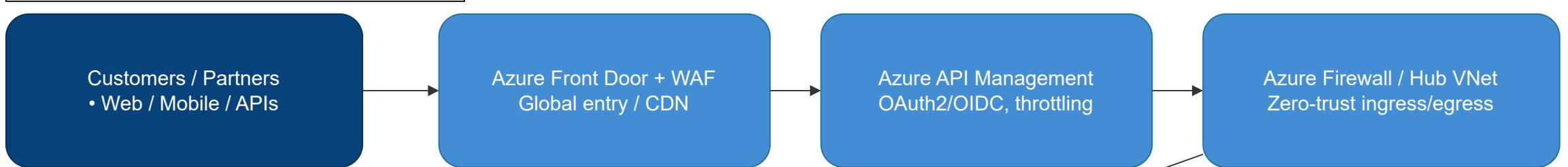
Color Legend:

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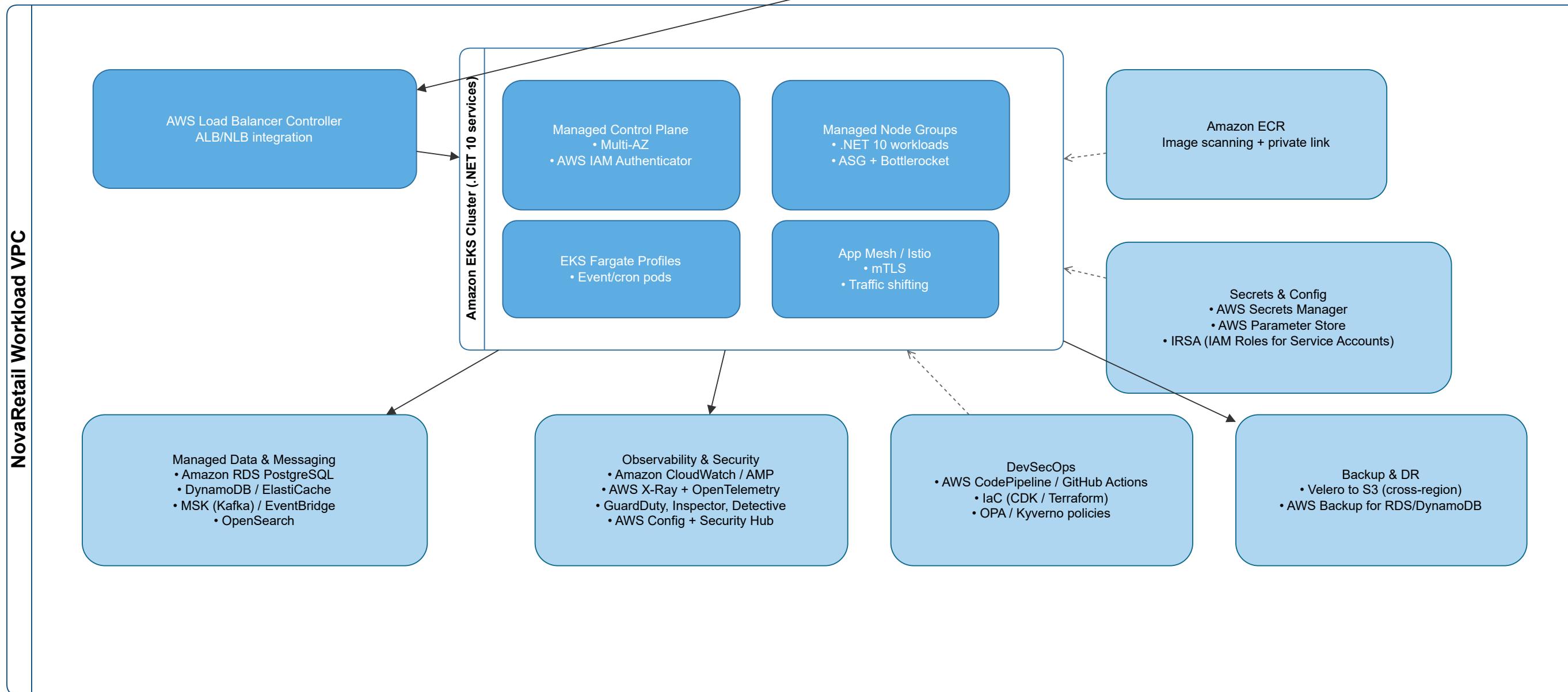
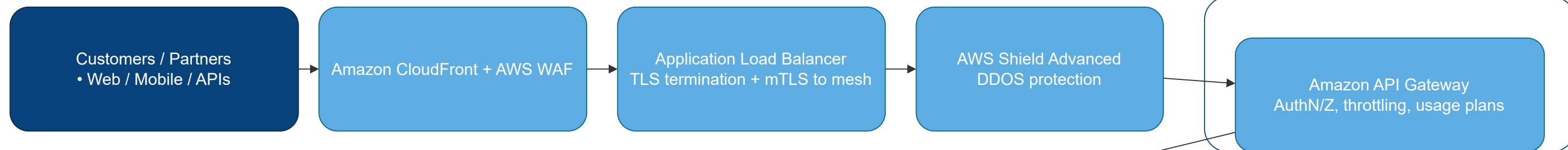
D1 - Azure AKS Deployment
Version: 1.0 | Creator: Nithin Mohan T K | Date: 2025-11-22



- AWS Best Practices
- Multi-AZ EKS + private subnets
 - CloudFront+WAF+Shield for edge
 - API Gateway + App Mesh + IRSA
 - GitOps/IaC + policy guardrails
 - Full observability & backup

D2 - AWS EKS Deployment

Version: 1.0 | Creator: Nithin Mohan T K | Date: 2025-11-22

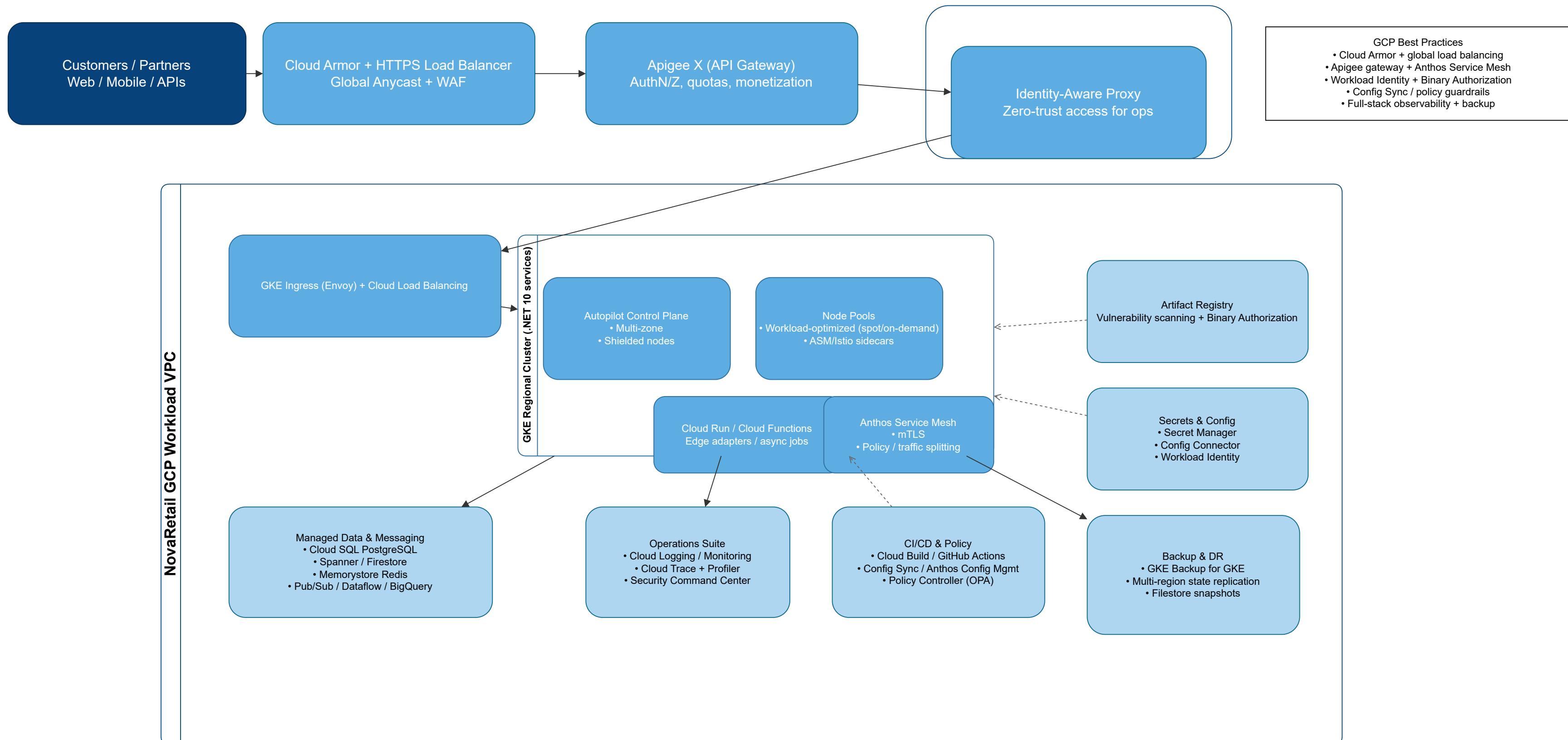


Color Legend:

- Azure Blue = Azure Services
- AWS Orange = AWS Services
- GCP Blue = GCP Services
- Light Blue = Data/Storage

Deployment Steps:

1. Create VPC & Subnets
2. Setup CloudFront & WAF
3. Deploy EKS Cluster
4. Configure API Gateway
5. Setup RDS & Data Services
6. Configure CloudWatch



Color Legend:

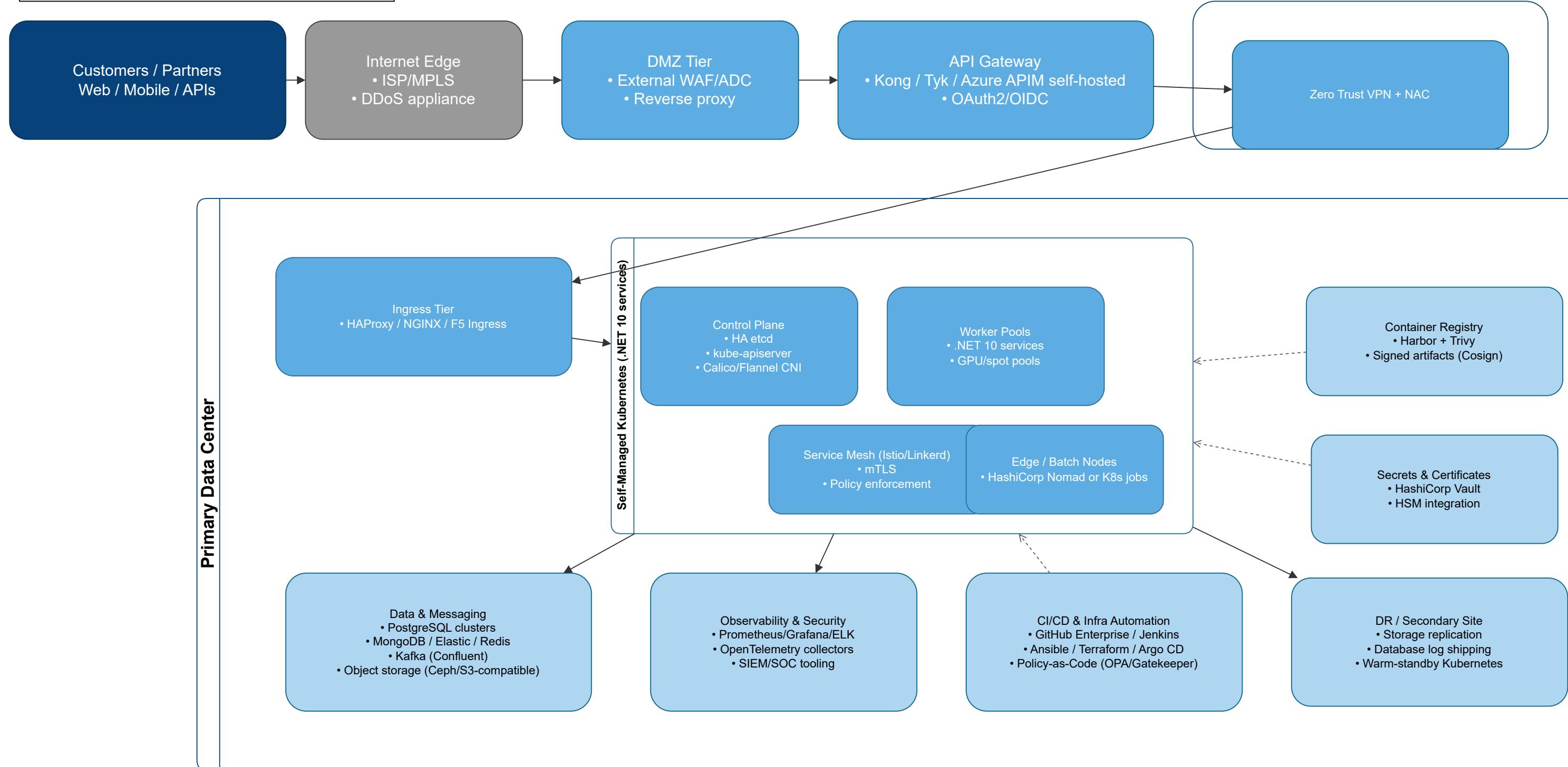
- Azure Blue = Azure Services
- AWS Orange = AWS Services
- GCP Blue = GCP Services
- Light Blue = Data/Storage

Deployment Steps:

1. Setup VPC Network
2. Configure Cloud Armor
3. Deploy GKE Cluster
4. Setup Apigee X
5. Configure Data Services
6. Setup Operations Suite

- Self-Hosted Best Practices**
- Layered DMZ / core segmentation
 - Hardened Kubernetes + mesh security
 - Vault-backed secrets & image signing
 - Automated CI/CD + IaC + policy guardrails
 - Dual-site DR with data replication

D4 - On-Premise Deployment
Version: 1.0 | Creator: Nithin Mohan T K | Date: 2025-11-22



Color Legend:	
• 	= Azure Services
• 	= AWS Services
• 	= GCP Services
• 	= Data/Storage

Deployment Steps:	
1.	Setup DMZ & Firewall
2.	Deploy Kubernetes
3.	Configure Service Mesh
4.	Setup Vault & Secrets
5.	Configure Data Stores
6.	Setup Monitoring Stack

Internet / Global Users

Azure Front Door + WAF
Global CDN, DDoS Protection
SSL/TLS Termination

Azure API Management
OAuth2/OIDC, Rate Limiting
API Versioning, Analytics

Deployment Steps:

1. Setup Hub VNet & Firewall
2. Create Spoke VNets
3. Deploy AKS Cluster
4. Configure API Management
5. Setup Data Services
6. Configure Monitoring

Hub Virtual Network
Azure Firewall Premium
Azure Bastion, VPN Gateway

Azure Firewall Premium
Threat Intelligence
IDPS, TLS Inspection

Azure Bastion
Secure RDP/SSH Access

Application Gateway
WAF v2, SSL Offload
URL-based Routing

Spoke VNet 1: AKS Production

Azure Kubernetes Service
.NET 10 Microservices System + User Node Pools

Istio Service Mesh
mTLS, Traffic Policies
Circuit Breakers

Domain Services (.NET 10)
Customer, Order, Product
Inventory, Payment, etc.

Dapr Sidecars
State Management
Pub/Sub, Bindings

HPA / KEDA
Auto-scaling
Event-driven scaling

Spoke VNet 2: Data Services

Azure Database for PostgreSQL
Flexible Server, HA
Read Replicas, Backup

Azure Cosmos DB
MongoDB API
Global Distribution

Azure Cache for Redis
Premium Tier, Clustering
Persistence, Geo-replication

Azure Event Hubs
Kafka API, Capture
Schema Registry

Azure Storage Accounts
Blob, Data Lake Gen2
Lifecycle Management

Azure Synapse Analytics
Data Warehouse
Spark Pools, Pipelines

Azure Monitor + Log Analytics
Application Insights
OpenTelemetry Integration

Microsoft Defender for Cloud
Threat Protection
Security Posture Management

Azure DevOps
Pipelines, Repos
Artifacts, Test Plans

Azure Container Registry
Private Endpoints
Image Scanning, Geo-replication

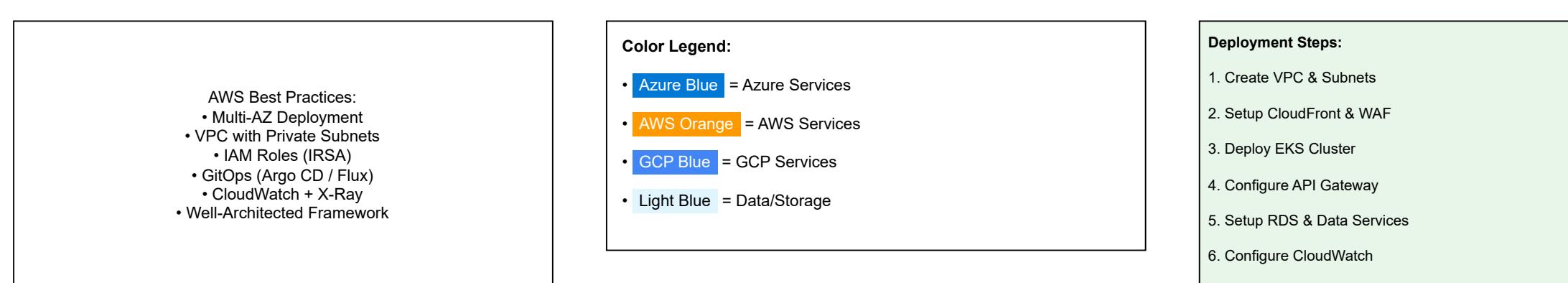
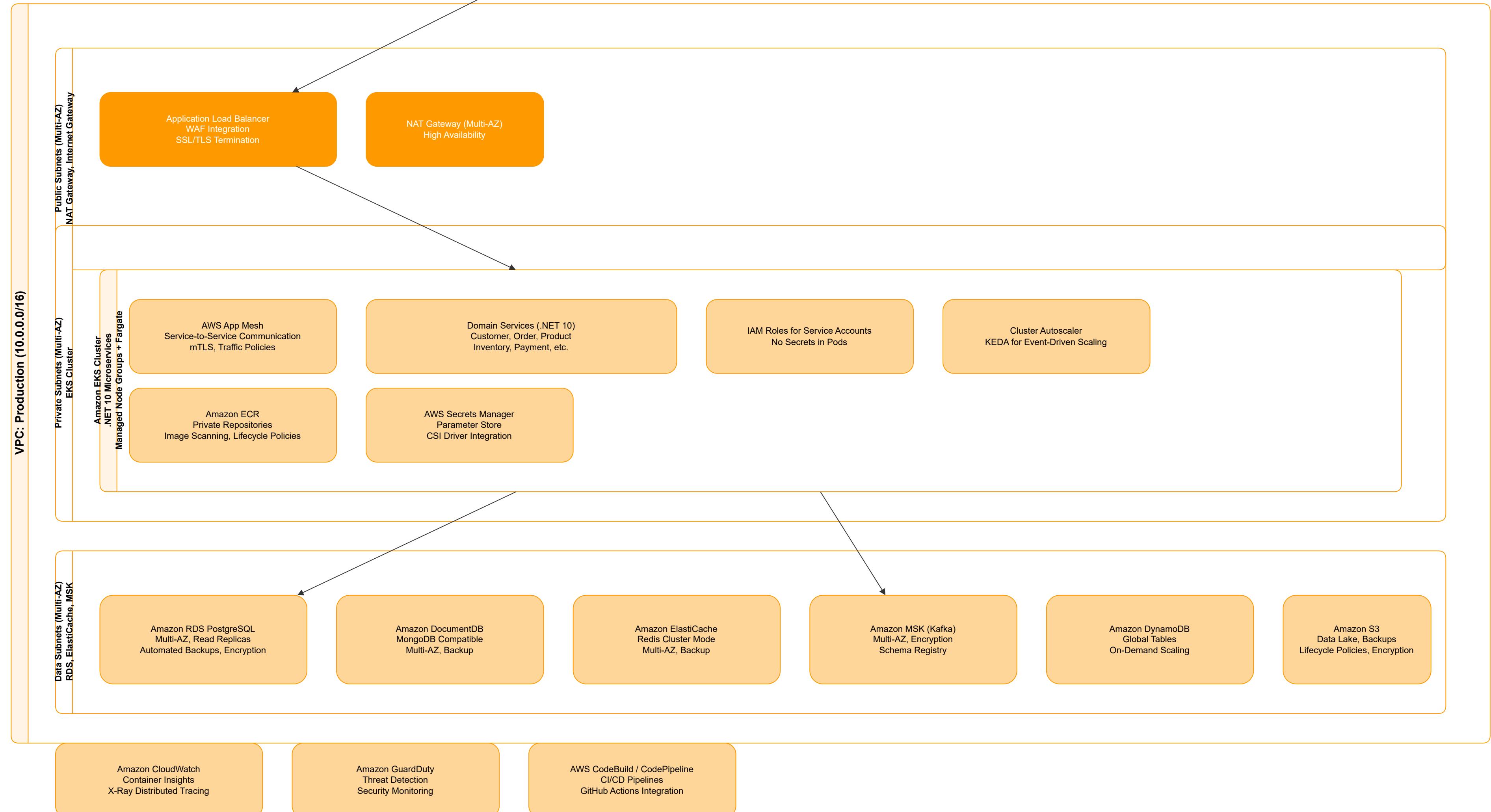
Azure Key Vault
Managed Identities
CSI Driver Integration

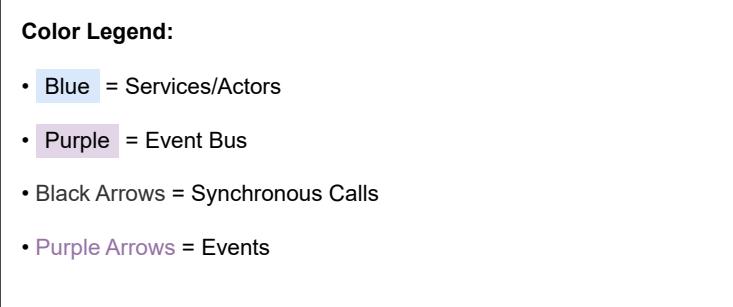
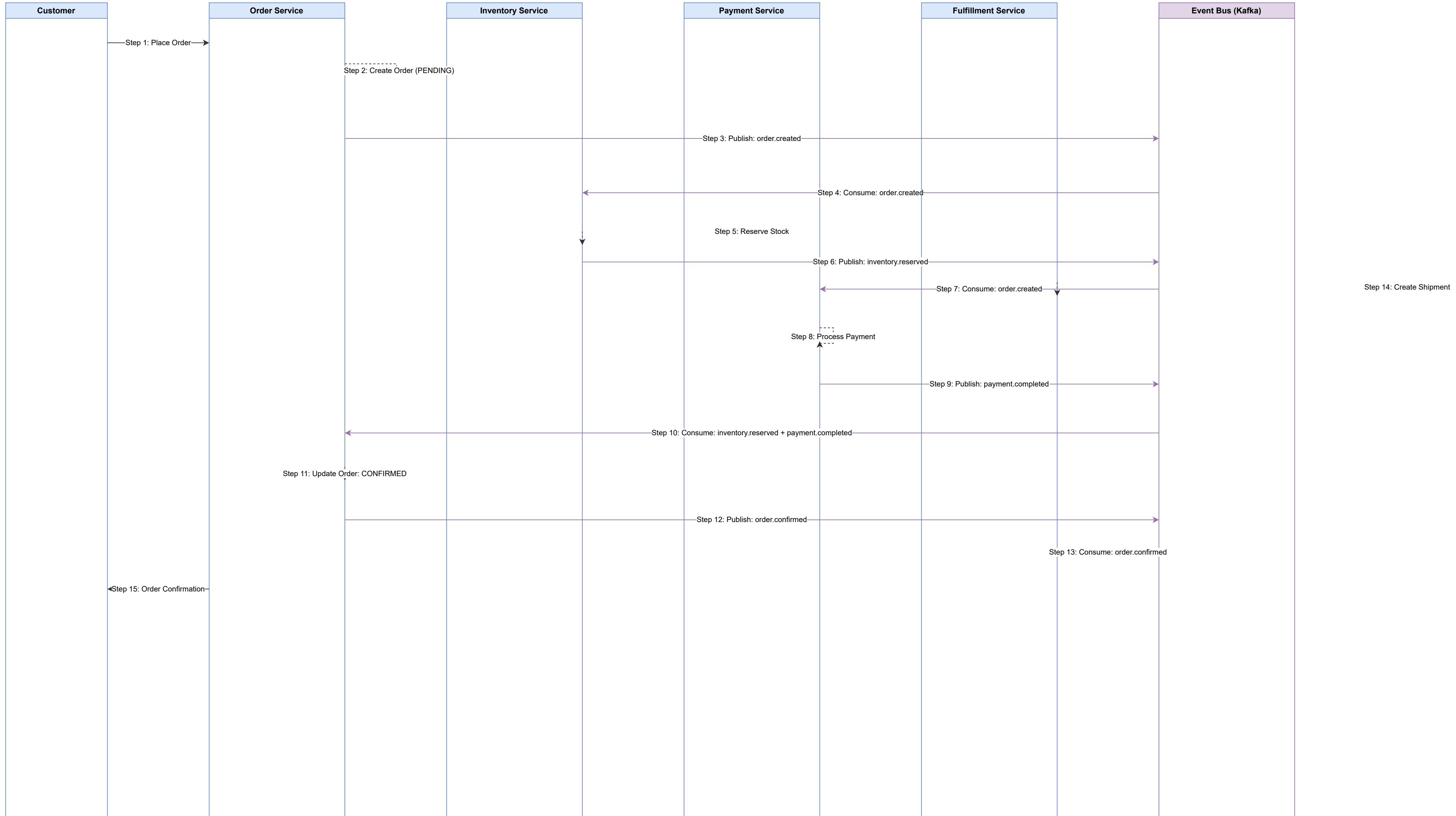
Azure Best Practices:

- Hub-Spoke Network Topology
- Private Endpoints for PaaS
- Managed Identities (no secrets)
 - GitOps (Flux/Argo CD)
 - Multi-region DR
- Azure Policy + Blueprints

Color Legend:

- Azure Blue = Azure Services
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SORRY COULDN't COMPLETE IT FULLY, just a draft.