BAC eCommerce — Architecture with Emergence AI, Kafka & Druid (2025)

User Experience

- Web/App Storefronts
- Livestream Commerce
- Social Trust Commerce
- Group Buying
- AR/VR Drops
- Diaspora & Cross-Border

Commerce Microservices (Shopware Headless)

- Catalog / Pricing / Promotions
- Orders / Inventory / Fulfillment
- Group Deals / Livestream / UGC
- Wallet / Loyalty / Referrals
- Payments / BNPL / KYC

Autonomous AI & Decisioning

- Emergence AI (https://www.emergence.ai/) — global decision plane
- Personalized Offers & Next Best Action
- Media Mix Optimization (MMP attribution)
- Auto-remediation, cost & scaling policies

Eventing & Data Mesh

- Apache Kafka (+ Schema Registry, Debezium CDC)
- Streams: orders, carts, group-joins, live-clicks, UGC, wallet, loyalty, logistics

Analytics & Intelligence

- Apache Druid (real-time ingest from Kafka)
- Customer 360, cohorts/CLV, funnels, livestream metrics
- Fraud signals, inventory heatmaps
- Observability: OpenTelemetry → Prometheus/Grafana

State & Storage

- YugabyteDB (global relational)
- ScyllaDB (low-latency read models)
- Aerospike/Dragonfly (sessions, counters, wallet hot)
- MinIO on Block Storage (product media, UGC, AR/VR assets)
- Longhorn/NFS (supporting)

Network & Orchestration

- Kubernetes (Rancher), GitLab CI/CD, ArgoCD
- OpenStack Private Cloud; Anycast GLB (Voxility + Cloudflare)
- Security: Kyverno/CIS; uCaaS (SMS/USSD/IVR)

This update embeds Emergence AI (https://www.emergence.ai/) as the autonomous decision plane. Where appropriate, it replaces closed AIOps stacks, consolidating personalization, media mix optimization, and auto-remediation. Kafka remains the event backbone (with Schema Registry and Debezium), and Apache Druid powers real-time analytics and customer 360. Storage is standardized on block-backed MinIO for media/UGC/AR assets, with Longhorn/NFS supporting. Shopware operates headlessly with microservices for group deals, livestream, UGC, wallet, loyalty, and referrals.