

## 1. Technology Choices & Drivers

Backend: Java + Spring Boot

Frontend: React

API Gateway: Kong / AWS API Gateway

Messaging: Kafka / AWS SNS-SQS

Authentication: Keycloak / Cognito

DevOps: Docker + Kubernetes + ArgoCD

Cache: Redis

Search: Elasticsearch

Observability: Prometheus + Grafana, ELK stack

## 2. Database, Transactions & Data Modeling

- Database: PostgreSQL for transactions, Redis for caching, Elasticsearch for search
- Transaction Pattern: Saga pattern for distributed consistency
- ERD Key Entities: User, Movie, Theatre, Screen, Show, Seat, Booking, Payment, Offer

## 3. COTS Enterprise Systems

- JIRA, Confluence: Project tracking and documentation
- Salesforce / Zoho CRM: Theatre onboarding
- Stripe, Razorpay, PayU: Payment gateways
- Keycloak / Okta: Authentication and IAM

## 4. Hosting & Sizing

- App Layer: AWS EKS or ECS
- DB Layer: AWS RDS PostgreSQL (Multi-AZ)
- Cache: ElastiCache Redis
- CDN: AWS CloudFront
- Storage: AWS S3
- Sizing: 2 vCPUs per service, db.m5.large for DB, Redis t3.medium

## 5. Release Management & Internationalization

- Versioning: Semantic (v1, v2)
- CI/CD: GitHub Actions + ArgoCD
- Feature Flags: Unleash / LaunchDarkly
- Deployment: Canary deployments
- i18n: Spring & React locale support, currency & timezone formatting

## 6. Monitoring & Logging

- Metrics: Prometheus + Grafana

- Logs: ELK stack
- Tracing: OpenTelemetry + Jaeger
- Alerts: CloudWatch, Datadog

## **7. Key KPIs**

- API Latency: < 200ms (95th percentile)
- Booking Conversion Rate: Bookings / Visitors
- Seat Utilization Rate: Booked seats / Total
- Booking Failure Rate: < 0.1%
- Payment Success Rate: > 98%
- Uptime: >= 99.99%

## **8. Project Plan & Estimates**

Phase 1 (3 weeks): Core APIs

Phase 2 (2 weeks): Offers, Redis, Auth

Phase 3 (2 weeks): Payments, Analytics

Phase 4 (2 weeks): Logging, Monitoring, CI/CD

Phase 5 (1 week): Perf Testing, Compliance

Total Estimate: ~10 weeks