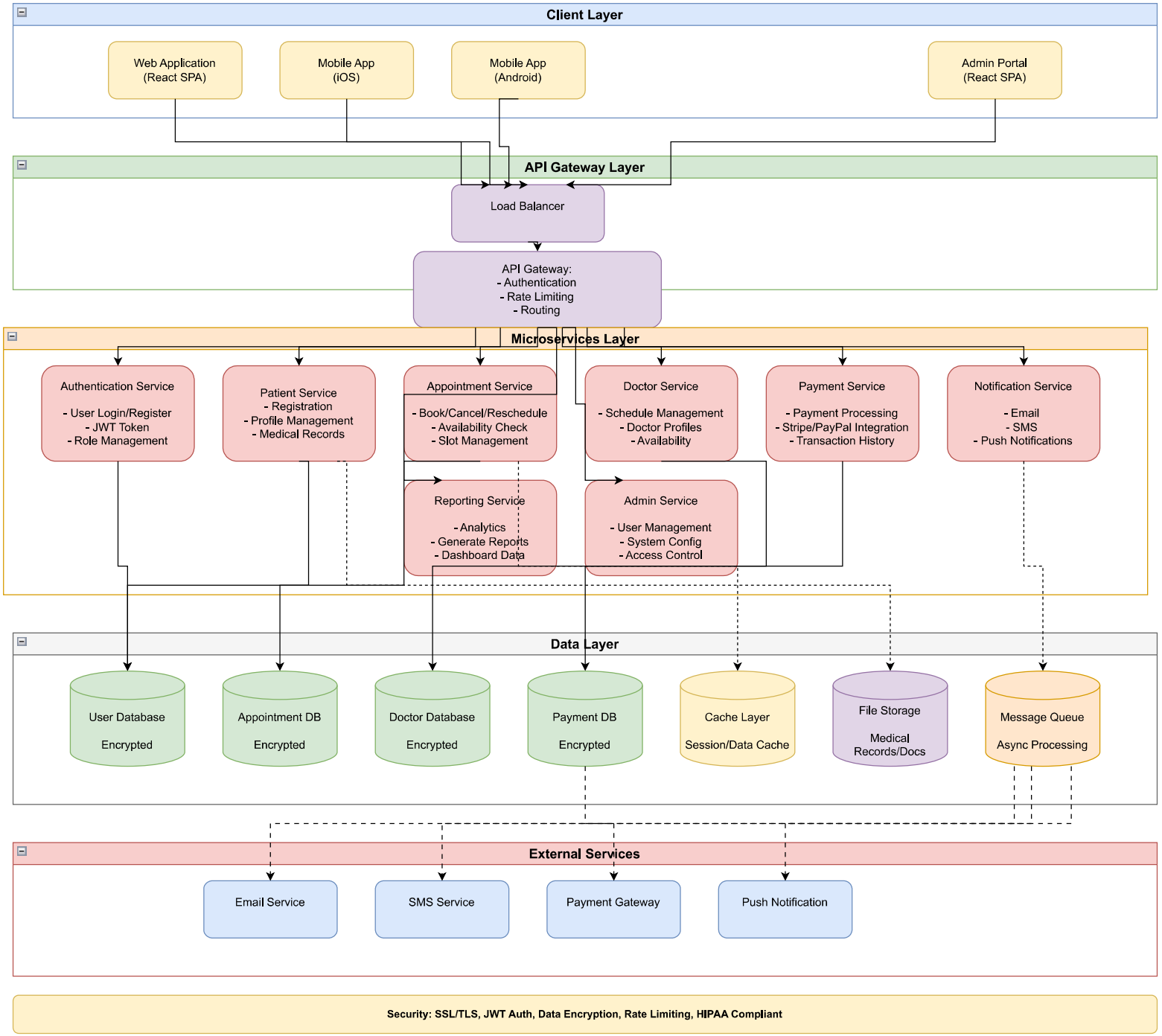
Smart Medical Appointment & Payment Management System



Legend

- Solid Line = API Call
- Dashed Line = Async/Cache
- Dotted Line = External Service
- *All databases are encrypted*
- *Supports 2000+ concurrent users*
- *Real-time notifications enabled*

Architecture Notes

- ✓ Scalable microservices
- ✓ Load balancer for HA
- ✓ Separate DBs per service
- ✓ Redis for caching
- ✓ Message queue for async
- ✓ S3 for file storage
- ✓ API Gateway security
- ✓ Multi-channel notifications
- ✓ Fault isolation
- ✓ Independent scaling

Monitoring & Logging: ELK Stack (Elasticsearch, Logstash, Kibana), Prometheus, Grafana, CloudWatch

CI/CD: Jenkins/GitLab CI
Container: Docker
Orchestration: Kubernetes
Cloud: AWS/Azure/GCP

Backup & DR:
- **Automated DB backups**
- **Multi-region replication**
- **Disaster recovery plan**
- **99.9% uptime SLA**

Performance:
- **CDN for static assets**
- **Database indexing**
- **Query optimization**
- **Horizontal scaling**