VETRISYS

Veterinary Clinic Management System

PREPARED BY

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Priority Roadmap

Phase 1: MVP Launch (Must-Have Core)

- Client Management (owner profiles, contact info)
- Patient Management (animal profiles, medical history notes)
- Appointment Scheduling (basic booking, calendar view)
- Billing and Invoicing (create and track payments)
- Basic Reporting (revenue reports, appointment counts)
- User Access Control (staff accounts, permission handling)
- Data Security (encrypted cloud storage, regular backups)
- Database Setup

Goal: *Allow a clinic to fully manage day-to-day appointments, patient/client records, and payments*

Phase 2: Core Expansion

- Inventory Management (track meds and supplies, low stock alerts)
- Vaccination and Medical Reminders (automated SMS/emails)
- Task Management (assign tasks to staff)
- Basic Analytics Dashboard (clinic KPIs in one place)
- Customizable Appointment Types
- Controlled Substance Logs (for DEA compliance)
- Made-Easy Database Transfer Process
- Cloud Hosting

Goal: Streamline operations, add compliance and communications to clinic workflow

Phase 3: Advanced Features

- Client portal (owners can book appointments, view invoices, see vaccine status)
- Telemedicine Appointments (secure video consults)
- Electronic Forms (intake, surgery consents, etc)
- Payment Plans/Installments
- Insurance Claims Assistance

Goal: Deepen client engagement and build a full-service experience

Phase 4: Premium Add-Ons

- Mobile Application for staff (tablet & phone optimized)
- Multi-location Support (for clinic groups/chains)
- Integrated Online Pharmacy
- Loyalty and Rewards Programs

Goal: Broaden VetriSys into a premium brand offering for larger or specialty practices

Proposal

1. Executive Summary

VetriSys is a comprehensive cloud-based Veterinary Clinic Management System designed to streamline operations, improve client retention, ensure legal compliance, and enhance patient care outcomes. This system will support all core clinic activities – from medical record keeping to billing, scheduling, and communications – in a secure, scalable platform.

2. Purpose and Scope

The goal of VetriSys is to provide an **all-in-one** platform that replaces fragmented workflows typically handled by paper records, outdated legacy systems, and manual processes. VetriSys will enable:

1. Efficient patient and client management
2. Seamless appointment booking and tracking
3. Accurate billing and inventory management
4. Automated communications and compliance tracking
5. Comprehensive data security and reporting

The initial target audience includes independent veterinary clinics and small clinic chains.

3. Core Functional Requirements

1. Client Management
    - Owner profiles (contact, billing, multiple pets per owner)
    - Emergency contact fields
    - Communication history
2. Patient Management
    - Detailed patient records (species, breed, DOB, weight, vaccination records, allergies)
    - Visit history and treatment notes (Subjective Objective Assessment Plan - SOAP format preferred)
    - Media attachment (X-rays, lab reports, etc)

3. Appointment Scheduling
    - Calendar view by doctor, room, or service
    - Online and manual appointment creation/edit/cancel
    - Appointment reminder system (email/SMS)
4. Billing and Payments
    - Estimate generation and invoice creation
    - Payment tracking (cash, card, financing)
    - Tax and discount handling
    - Partial payments and payment plans
5. Inventory Management
    - Product database (meds, vaccines, food, supplies)
    - Stock level monitoring
    - Expiration tracking
    - Purchase order generation
6. Reporting and Analytics
    - Revenue reporting
    - Inventory usage reports
7. Staff and User Management
    - Role-based access (admin, doctor, technician, receptionist)
    - Staff schedule tracking
8. Compliance
    - Secure controlled substance logging
    - GDPR/HIPAA compliant data handling
    - Data encryption

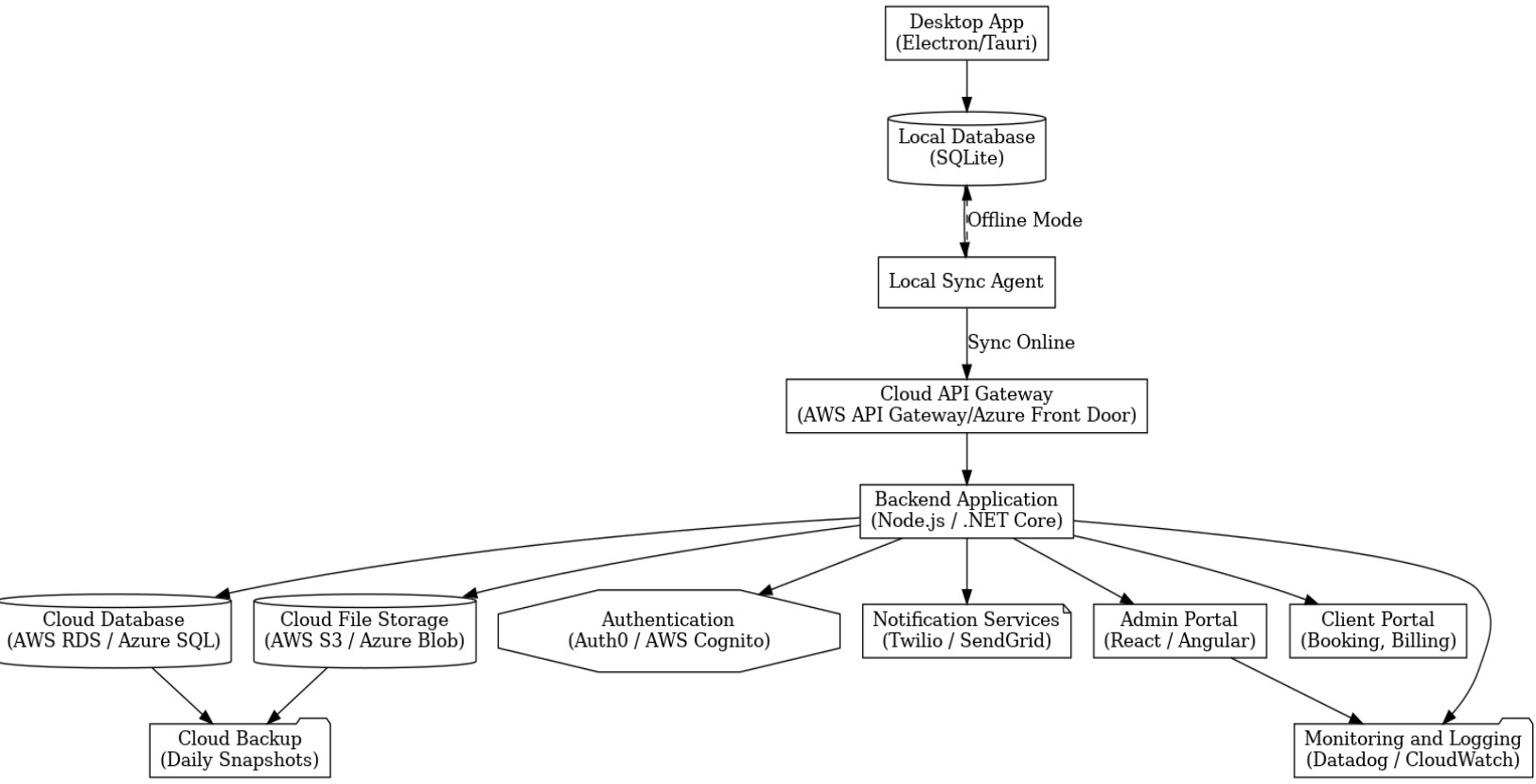
4. Advanced Functional Requirements

1. Client Portal
    - Appointment scheduling
    - Invoice payment
    - Access to pet health records
    - Reminders and follow ups
2. Electronic Forms
    - Digital new client forms
    - Surgical consents
    - Medical history updates
3. Multi-location Management (Phase 4)
    - Cross-location inventory
    - Group practice scheduling
    - Consolidated reporting

5. Recommended Tech Stack

Layer	Technology Choice	Why?
Desktop App	**Tauri** (with React.js frontend)	Lighter, faster, more secure than Electron for clinics.
Web Frontend	**React.js** (for Admin Portal & Client Portal)	Massive ecosystem, fast dev time, great for web SaaS UX.
Backend API	**Node.js** with **NestJS**	Enterprise-grade Node framework, fast, modular.
Cloud Database	AWS RDS PostgreSQL	Stable, HIPAA-compliant, highly scalable.
Local Database	SQLite	Simple, reliable embedded database for local offline ops.
Data Sync	**Custom Sync Service** (using Indexed change queue)	PouchDB model optional, but custom simpler at first.
Authentication	Auth0	Easy OAuth2, enterprise SSO-ready, secure.
File Storage	AWS S3	Ubiquitous, simple storage of media, documents.
Notifications	**Twilio** (SMS) + **SendGrid** (Email)	Standard reliable choices, integrate quickly.
Hosting	AWS ECS (Elastic Container Service)	Scalable app hosting via containers, less ops headaches.
Monitoring/Logging	**Datadog** (or AWS CloudWatch cheaper)	Good for spotting sync, server, and user activity issues.
Backup	**AWS automated RDS backups** + local SQLite snapshots	Safe, compliant backups for disaster recovery.
Deployment	**GitHub Actions** + **AWS CodePipeline** (optional later)	Easy CI/CD pipeline straight from GitHub repo.

6. Architecture Overview (Cloud + Local Hybrid):



7. Build Order:

Phase	Focus	Features	Tools
1	MVP Core (Internal System)	Local desktop app + basic backend + cloud DB sync	Tauri + React + Node.js + SQLite + PostgreSQL
2	Admin Web Portal	Online calendar, billing, patient records management UI	React.js Web App
3	Cloud Infrastructure	Deploy backend to AWS ECS, RDS Postgres, S3 file bucket	AWS ECS, RDS, S3
4	Authentication and Security	Secure login, roles (Admin, Vet, Tech, Receptionist)	Auth0
5	Sync Engine	Queue offline changes locally, auto-push on reconnect	Custom service in Tauri + backend API handlers
6	Client Portal	Booking appointments online, pay invoices, reminders	React.js Client Portal + Twilio + SendGrid
7	Notifications & Reminders	SMS and Email alerts for appointments, vaccine due dates	Twilio, SendGrid
8	Monitoring and Recovery	App uptime alerts, auto-backup, error monitoring	Datadog / AWS CloudWatch
9	Advanced Features (Post-Launch)	Inventory management, controlled substances log, mobile apps	Expand modularly

8. Project Timeline Estimate

Month	Deliverables
0-3	Local Clinic App MVP (appointments, billing, basic sync)
3-6	Admin Web Portal + Cloud Backend live
6-9	Client Portal live + Reminder Systems
9-12	Inventory, Controlled Substance Tracking, Mobile Apps

9. Why This Stack and Plan?

- **Speed to Market**: React + Node + AWS stack can be built fast.
- **Clinic Friendly**: Local Tauri app ensures no downtime in bad weather / outages.
- **Scalability**: AWS gives you no-stress scaling when customers grow.
- **Security & Compliance**: HIPAA, GDPR achievable with Auth0, RDS snapshots, S3.
- **Cost Control**: Pay-as-you-grow cloud model; SQLite is free for local.
- **Developer Hiring**: Easy to find React, Node.js, PostgreSQL engineers.

10. Conclusion

Vetrisys aims to modernize veterinary clinic operations with a comprehensive, intuitive, and scalable management platform. It will be a tool that enables clinics to provide **better care, retain more clients,** and **operate more profitably** while minimizing administrative burden.