

Church Media Server - Desktop Application

mediaunboxed

Specifications

Product Overview

The Church Media Server is a desktop application that serves as the central hub for managing and distributing digital media resources within a church environment. Built as an intranet solution using Electron, React, and SQLite, it enables seamless media distribution to mobile clients through a credit-based system.

Core Purpose

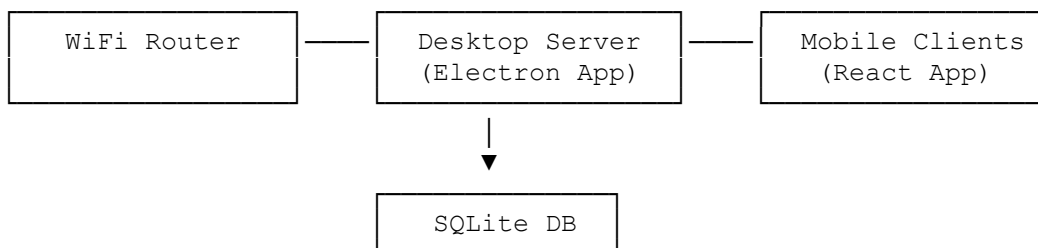
Simplify the sales and distribution of church media resources (audio, video, images, documents) by providing a local server that mobile clients can connect to for browsing and downloading content using a credit-based payment system.

Technology Stack

- **Framework:** Electron (Cross-platform desktop application)
- **Frontend:** React (User interface)
- **Database:** SQLite (Local data storage)
- **Networking:** Local network/Intranet only
- **Additional:** QR Code generation for network sharing

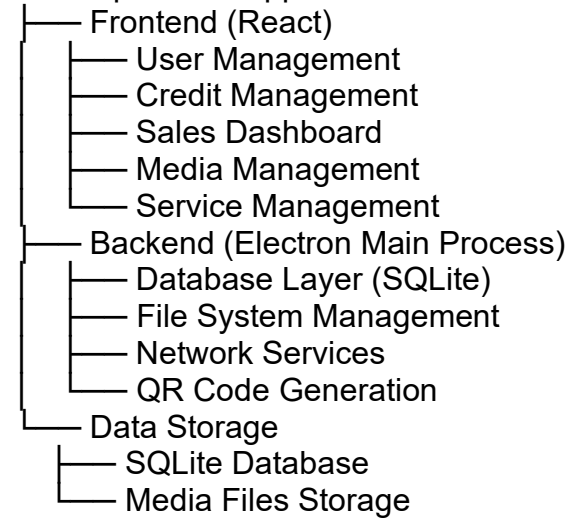
System Architecture

Network Architecture



Application Components

Desktop Server Application



Core Features & Modules

1. User Management Module

Purpose: Manage different types of users and their permissions

User Types:

- **Admins:** Full system access, user management, credit allocation
- **Sales Representatives:** Limited access to sales data and user management
- **Client Users:** Mobile app users who consume media

Functionalities:

- Create, edit, delete users
- Role-based access control
- User authentication and session management
- User activity tracking

2. Credit Management Module

Purpose: Handle the credit-based payment system

Core Features:

- Credit package creation and pricing
- Credit allocation to user accounts
- Credit transaction tracking
- Credit balance monitoring
- Refund and adjustment capabilities

Reports:

- Credit usage analytics

- Revenue from credit sales
- User spending patterns

3. Sales Analytics Module

Purpose: Provide comprehensive sales reporting and analytics

Key Metrics:

- Revenue per service
- Top-selling media items
- User engagement statistics
- Sales trends over time
- Service performance comparison

Dashboard Components:

- Real-time sales overview
- Interactive charts and graphs
- Exportable reports
- Date range filtering

4. Media Management Module

Purpose: Organize and manage all digital media resources

Supported Media Types:

- Audio files (MP3, WAV, AAC)
- Video files (MP4, AVI, MOV)
- Images (JPG, PNG, GIF)
- Documents (PDF, TXT)

Features:

- Bulk media upload
- Media categorization
- Metadata management (title, description, tags)
- Media preview capabilities
- Storage usage monitoring
- Media assignment to multiple services

5. Service Management Module

Purpose: Create and manage service collections with associated media

Service Components:

- Service information (name, description, theme)
- Custom banner/cover image
- Media resource collections
- Pricing configuration

- Service scheduling and availability

Examples of Services:

- "Covenant Day of Prosperity"
- "Sunday Worship Series"
- "Youth Conference 2024"

6. Network & Connectivity Module

Purpose: Facilitate client connections and network management

Features:

- Automatic IP address detection
- Port configuration and management
- QR code generation with connection details
- WiFi credential sharing
- Client connection monitoring

Database Schema (can be modified to meet requirement)

Users Table

```
CREATE TABLE users (
  id INTEGER PRIMARY KEY AUTOINCREMENT,
  username VARCHAR(50) UNIQUE NOT NULL,
  email VARCHAR(100) UNIQUE NOT NULL,
  password_hash VARCHAR(255) NOT NULL,
  role ENUM('admin', 'sales_rep', 'client') NOT NULL,
  credits DECIMAL(10,2) DEFAULT 0.00,
  created_at DATETIME DEFAULT CURRENT_TIMESTAMP,
  updated_at DATETIME DEFAULT CURRENT_TIMESTAMP
);
```

Media Table

```
CREATE TABLE media (
  id INTEGER PRIMARY KEY AUTOINCREMENT,
  title VARCHAR(255) NOT NULL,
  description TEXT,
  file_path VARCHAR(500) NOT NULL,
  file_type ENUM('audio', 'video', 'image', 'document') NOT NULL,
  file_size BIGINT NOT NULL,
  price DECIMAL(8,2) NOT NULL,
  created_at DATETIME DEFAULT CURRENT_TIMESTAMP
);
```

Services Table

```
CREATE TABLE services (
  id INTEGER PRIMARY KEY AUTOINCREMENT,
```

```

name VARCHAR(255) NOT NULL,
description TEXT,
theme VARCHAR(100),
banner_image VARCHAR(500),
is_active BOOLEAN DEFAULT 1,
created_at DATETIME DEFAULT CURRENT_TIMESTAMP
);

```

Service_Media Table (Many-to-Many)

```

CREATE TABLE service_media (
  id INTEGER PRIMARY KEY AUTOINCREMENT,
  service_id INTEGER NOT NULL,
  media_id INTEGER NOT NULL,
  FOREIGN KEY (service_id) REFERENCES services(id),
  FOREIGN KEY (media_id) REFERENCES media(id)
);

```

Transactions Table

```

CREATE TABLE transactions (
  id INTEGER PRIMARY KEY AUTOINCREMENT,
  user_id INTEGER NOT NULL,
  media_id INTEGER NOT NULL,
  credits_used DECIMAL(8,2) NOT NULL,
  transaction_date DATETIME DEFAULT CURRENT_TIMESTAMP,
  FOREIGN KEY (user_id) REFERENCES users(id),
  FOREIGN KEY (media_id) REFERENCES media(id)
);

```

Workflow Diagrams

1. Admin Media Upload Workflow

https://mermaid.live/edit#pako:eNo9kMtuwjAQRX_FmkVXAeVB4pBFpZDwgFSqSrSbJixcMk2sJjZyDGqL-PcaE_DKM-feeZ1gJyuEBGrF9g15y0tBzEuLtOq4IM-y5mJLRqNHMite2JHXTCPPrkgyx4oysmWA1dij09uqbWWIWbLDFnSbv-1ay6ioeFJIV5EXWSNkjWfAW-wHIFs2NwQ_1c9SMtzc-t3xRpH3Pa0EyM0otFb_7F5Yvrf9V

2. Service Creation Workflow

https://mermaid.live/edit#pako:eNpVktugzAQRX_FmnUSBuqLYVGJQJJ2kS762BSycPGEWAUbgZM-ovx7jRuidIYez7I3ruwjIlojxFBp1u7Jc1ZIYivJE94ISZKyxK4jT6gPokSyUbyvcUum01uyyFONzCB5wI8R2P6qFw5I8yc0F2mGhom6OxOpI7L8pa0V42TBpERN7htWjR6ZI5bWo8bSkA1ywcqjdqrXNtlZWjpoladK7kTVa7ys

3. Credit Management Workflow

https://mermaid.live/edit#pako:eNpNkMFuwjAMhl8l8hkQ7bo19DCptMAum9A2Lms5RlmhEW1Spak0hni3hayd8CGK83-7fqCXAuEBI6GtRX5zEtFXKRfKhhpSMo5dh3JDAppO_KqRV_jnkynz2RZfGCN3JJdh2b_Z1t6JSuySusOBxvZMn5iRxyYzDN5kWI1kKYZoVS4U2o1ULmnVsXWaD_Bp2GqY_yOWHliXexawSz6KciS1UzxsdPa

4. Client Connection Workflow

Not Applicable

5. Media Download Transaction Flow

https://mermaid.live/edit#pako:eNpdkc1uwjAQhF_F2jMgkkITcmgFCVAOraoWDm3CwblXYkHs1LHVH-Dd6xjooT5IPd_MjuIDMMUREthqWpdkmRWSuDPO071AacgLflhsDHIELuiadLt3ZJKnJbldWTWoSaqdYJr12TbxQHp4tZuNYD7gAtyfzkTaEsc3bl4kyzPklpl_GWfiSR3JNL9uPxNkqequrS9c5nfN8oUURICDJFOfcq8ov-gz

Key Development Considerations

1. **Security:** Implement proper authentication and authorization
2. **Performance:** Optimize media file handling and database queries
3. **Error Handling:** Comprehensive error handling for file operations
4. **Backup:** Implement database backup and restore functionality
5. **Logging:** Comprehensive logging for debugging and monitoring
6. **Testing:** Unit and integration tests for core functionalities

Success Metrics

- Successful media upload and categorization
- Seamless client connection via QR code
- Accurate credit transactions and balance tracking
- Comprehensive sales and analytics reporting
- Stable intranet connectivity for multiple concurrent users