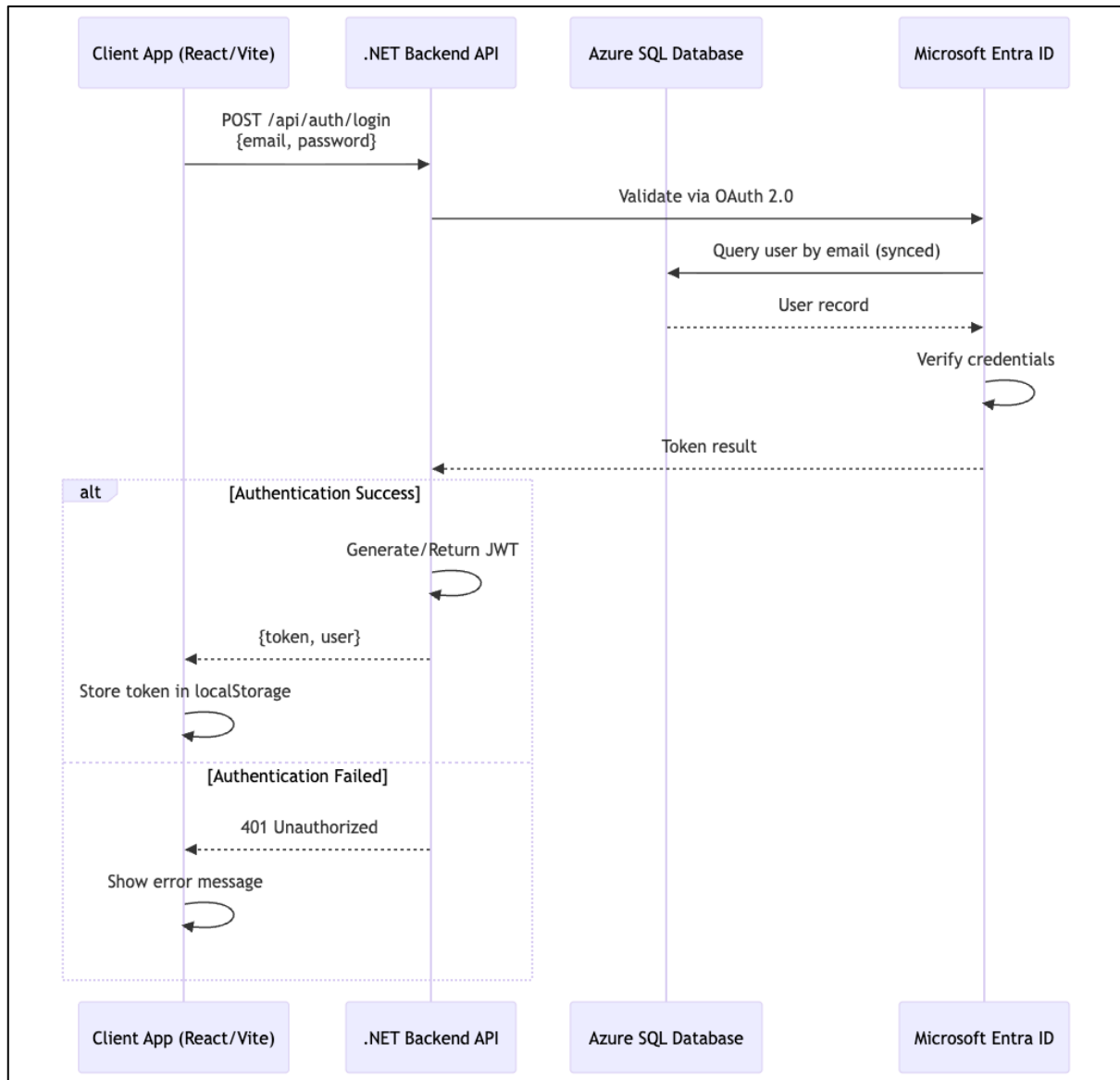
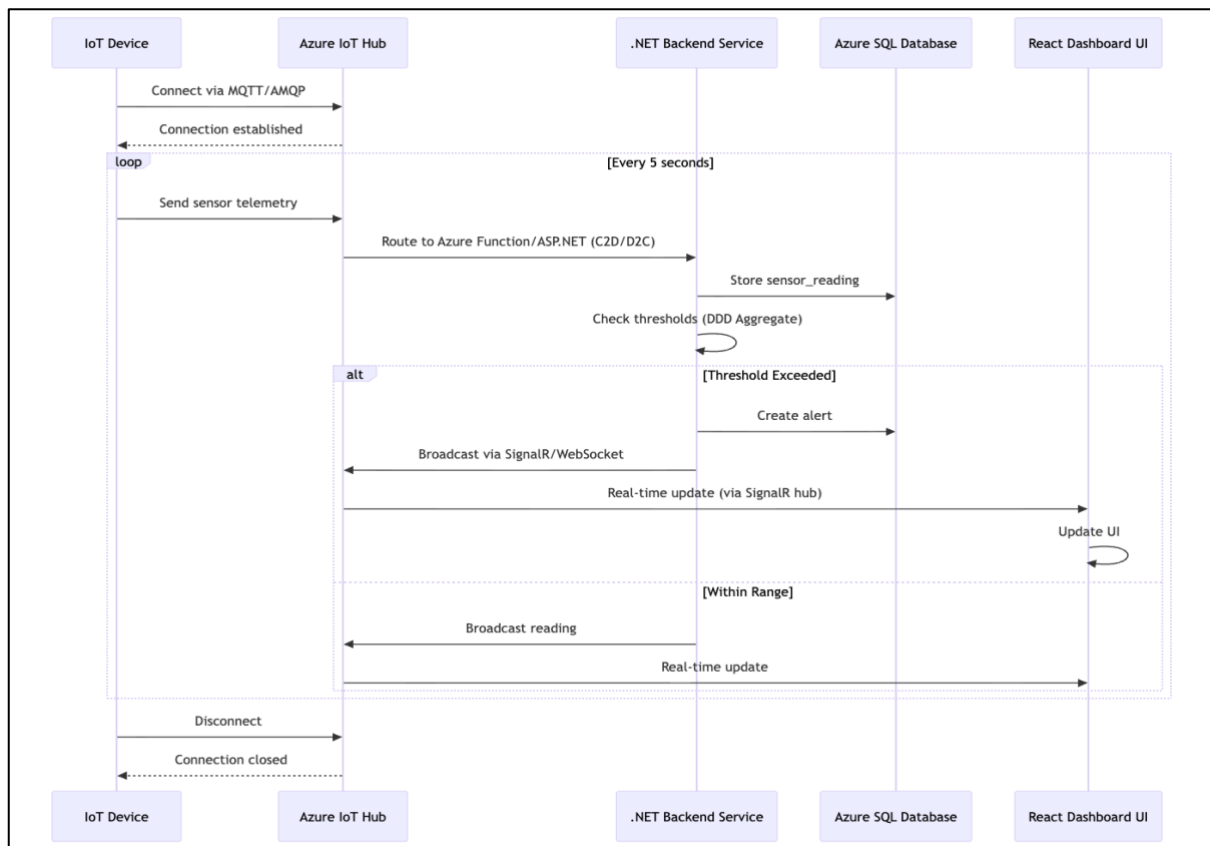


Smart Factory IoT - API Flows & Sequences

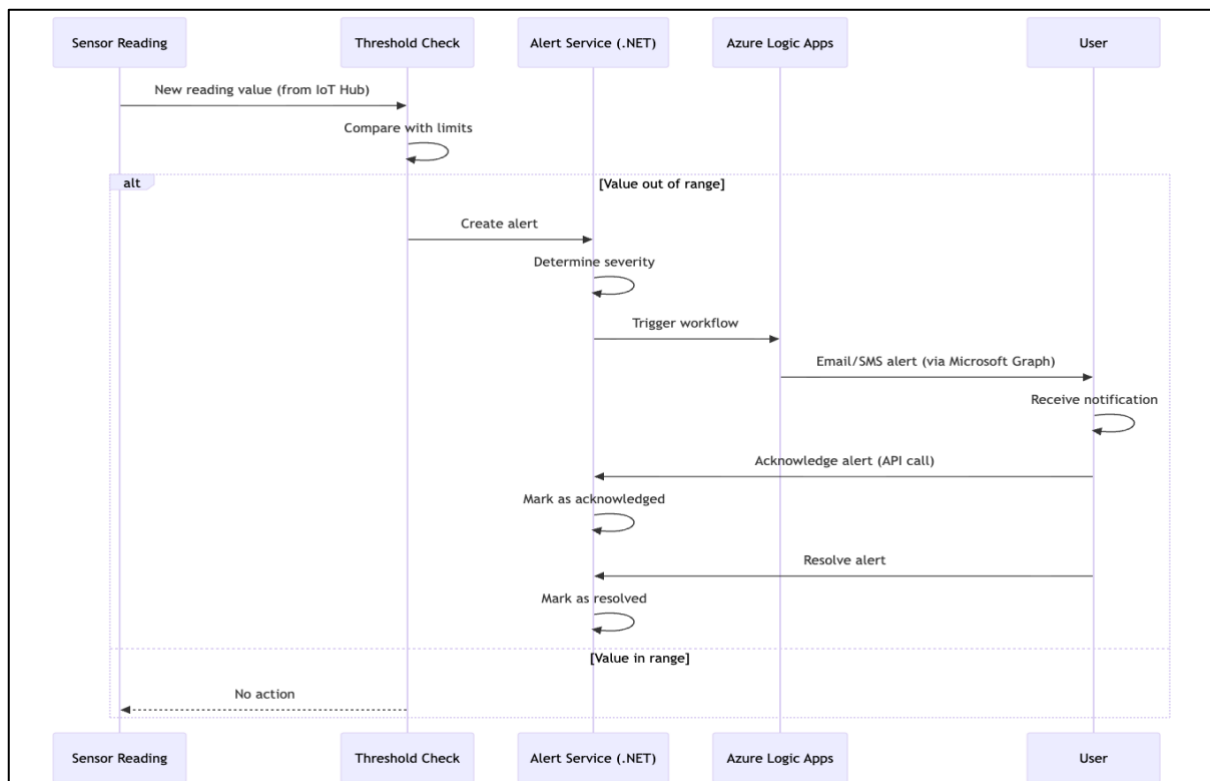
Authentication Flow



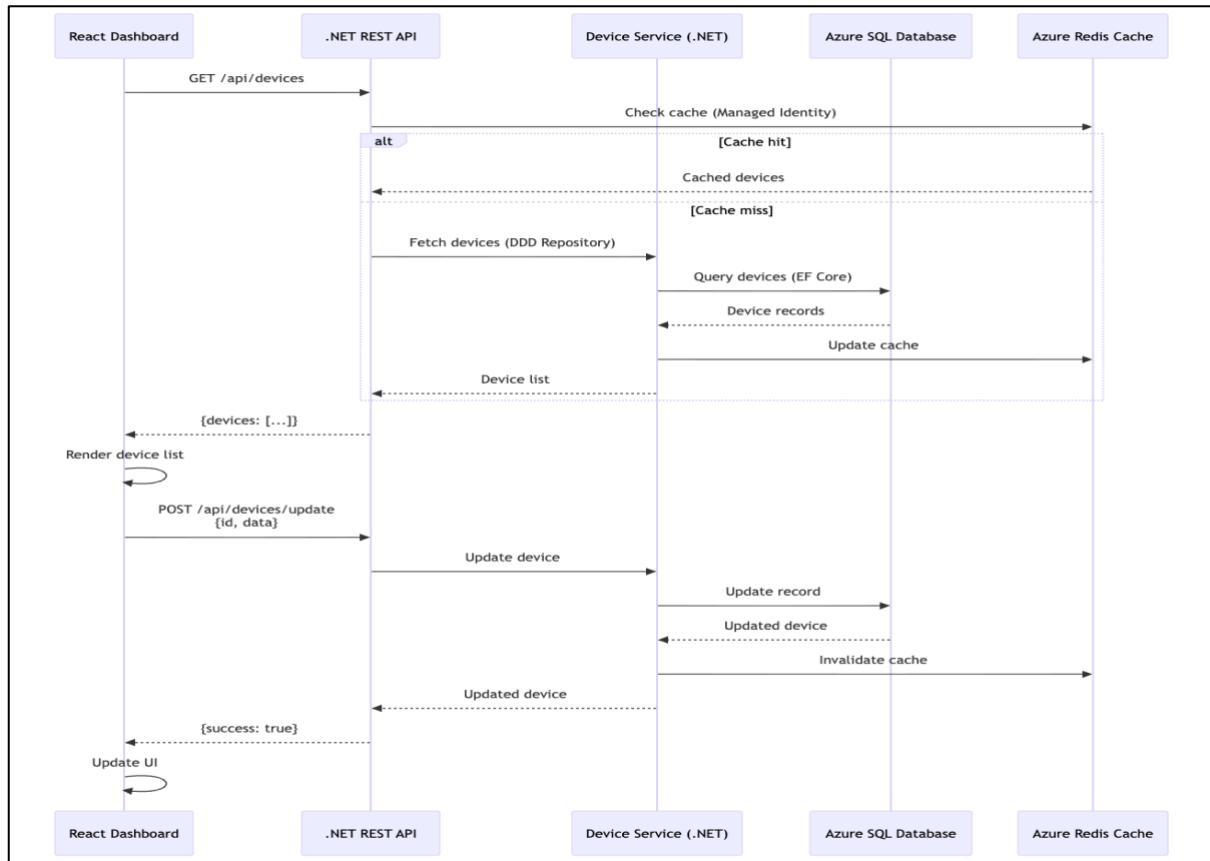
Real-time Device Monitoring Flow



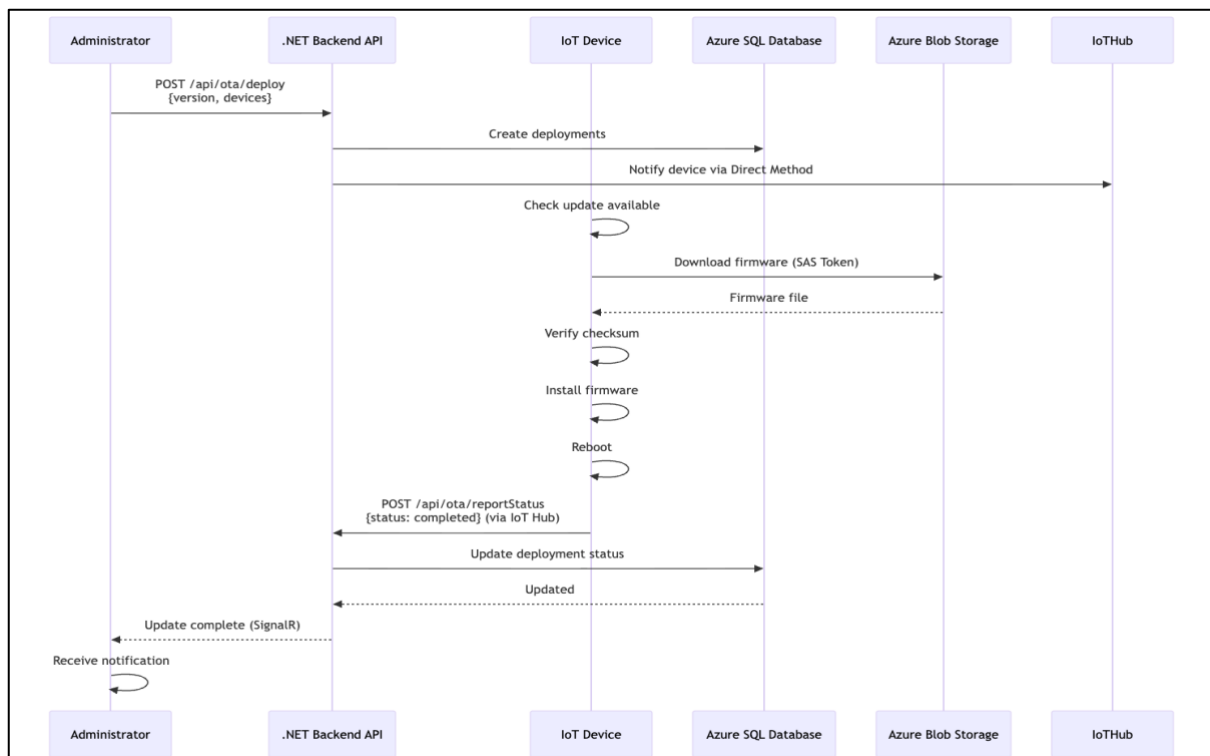
Alert Management Flow



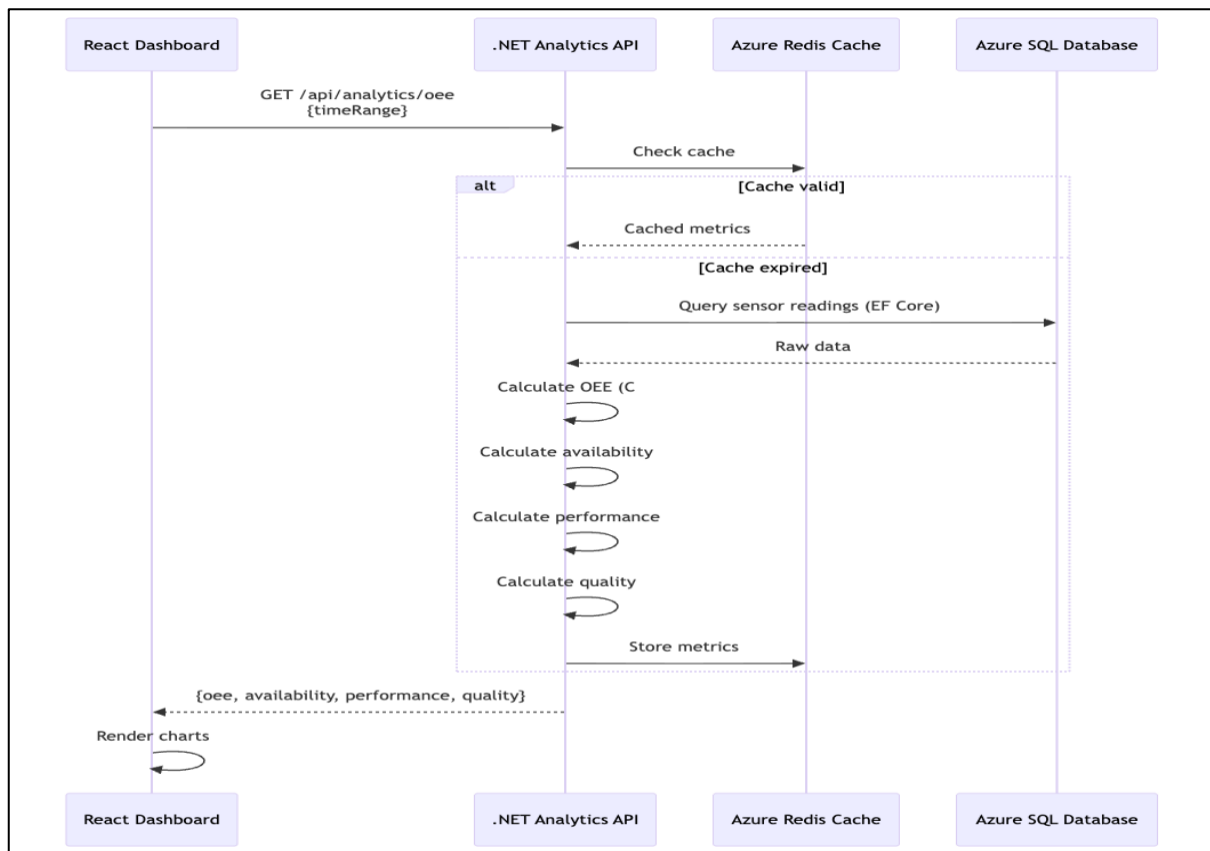
Device Management Flow



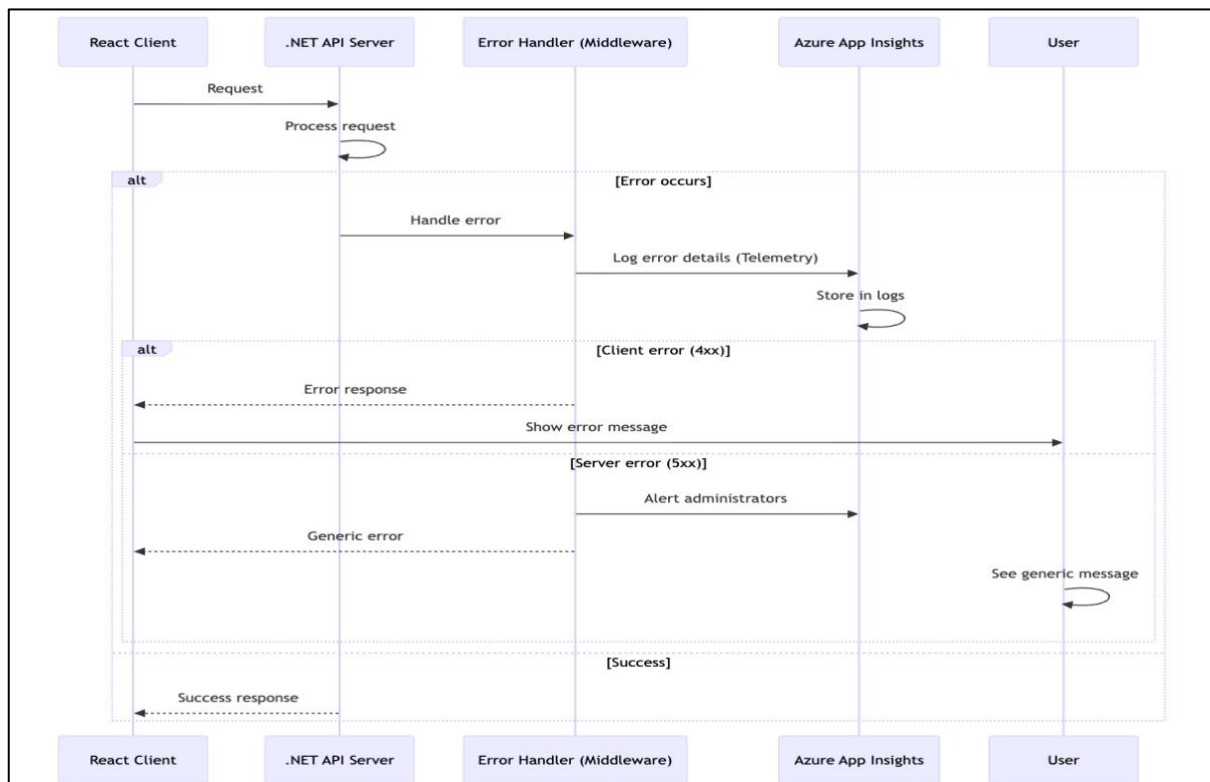
OTA Update Flow



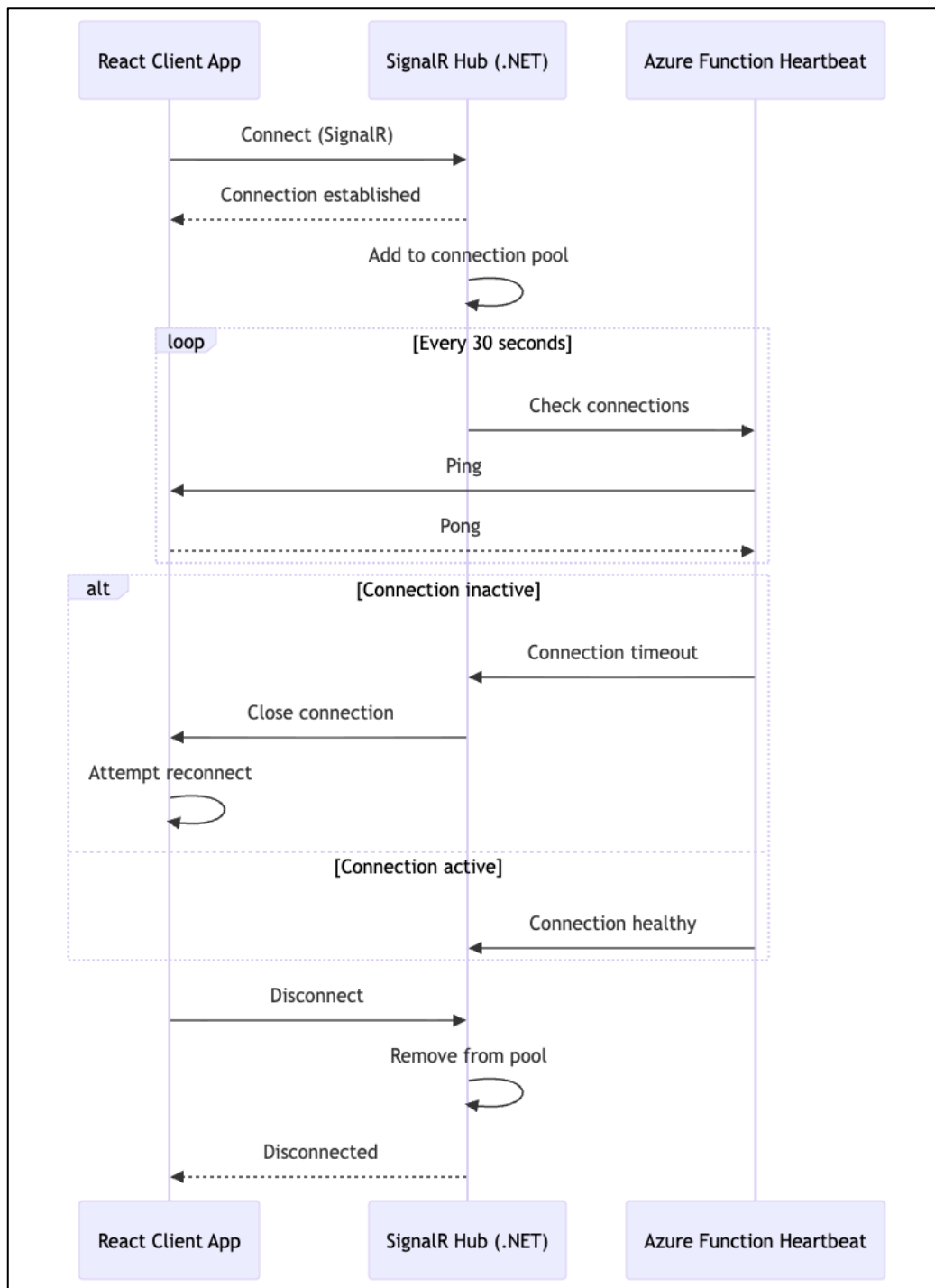
Analytics & Reporting Flow



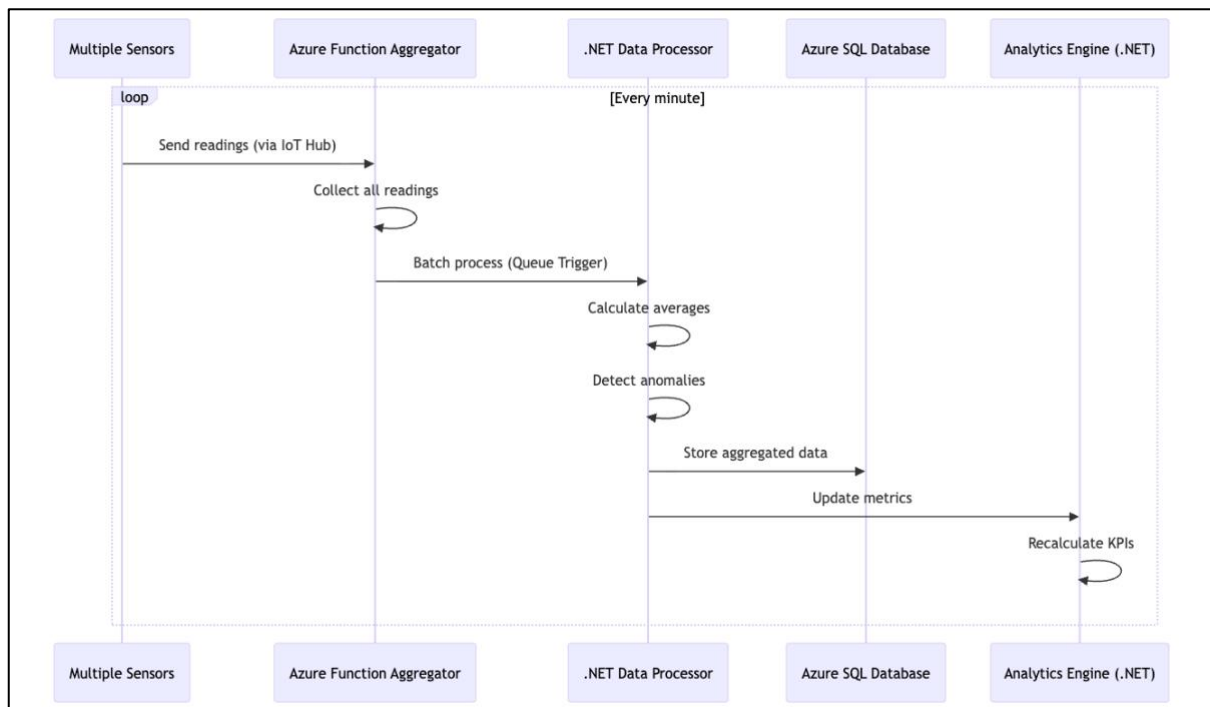
Error Handling Flow



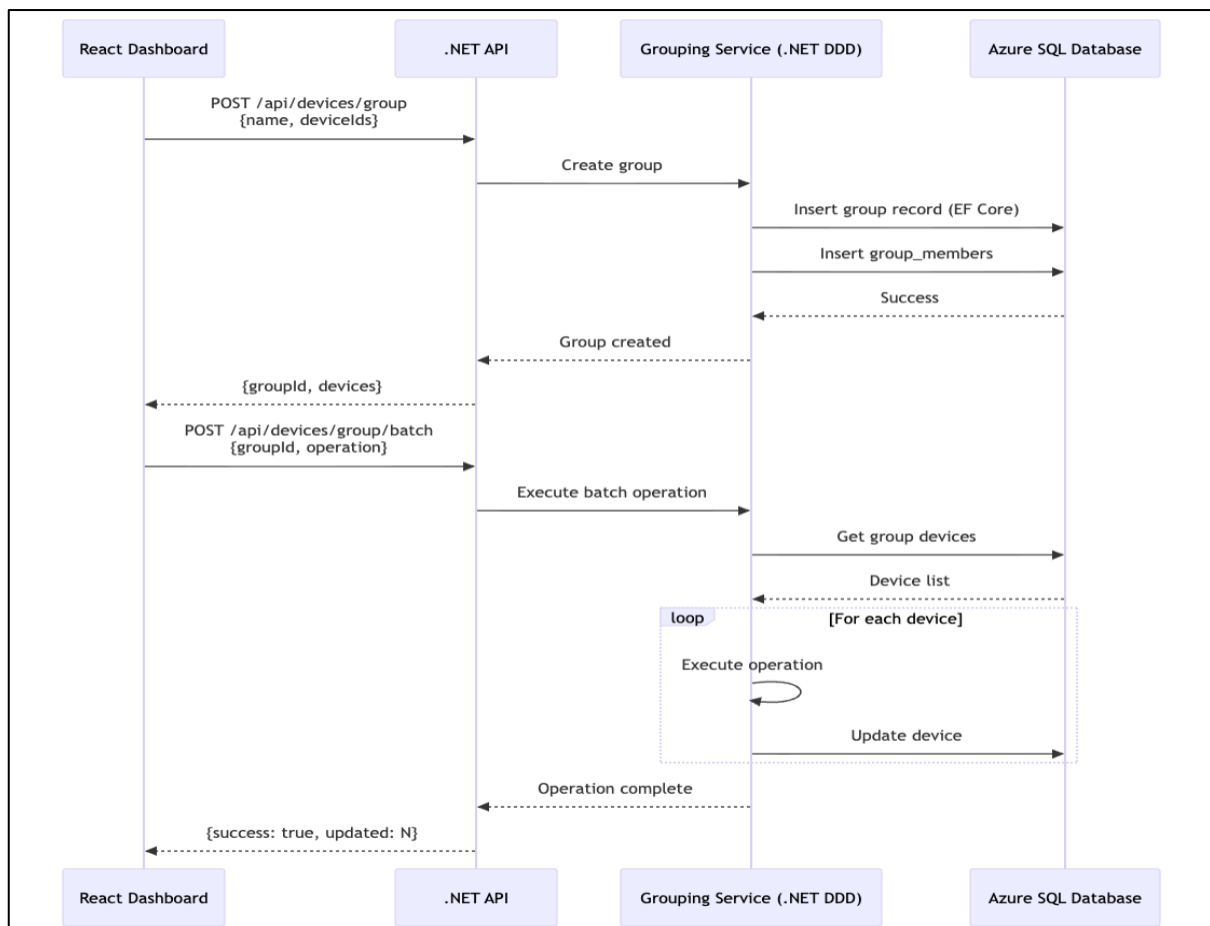
WebSocket Connection Management



Data Aggregation Flow



Multi-Device Grouping Flow



API Response Format

Success Response

JSON

```
{
  "data": {
    "id": 1,
    "name": "Device 1",
    "status": "online"
  }
}
```

Error Response

JSON

```
{
  "error": {
    "code": "UNAUTHORIZED",
    "message": "Invalid credentials"
  }
}
```

Rate Limiting

- **API Endpoints:** 100 requests per minute per user (via Azure API Management)
- **SignalR/WebSocket:** 1000 messages per minute per connection
- **File Upload:** 10 MB per file, 100 MB per day

Timeout Configuration

Operation	Timeout
REST API Call	30 seconds
SignalR Connection	60 seconds
Database Query	10 seconds
File Upload	5 minutes
Device Firmware Download	30 minutes

API Versioning

- Current Version: v1
- Endpoint Pattern: /api/v1/[controller]
- Backward Compatibility: Maintained for 2 major versions
- Deprecation Notice: 6 months before removal