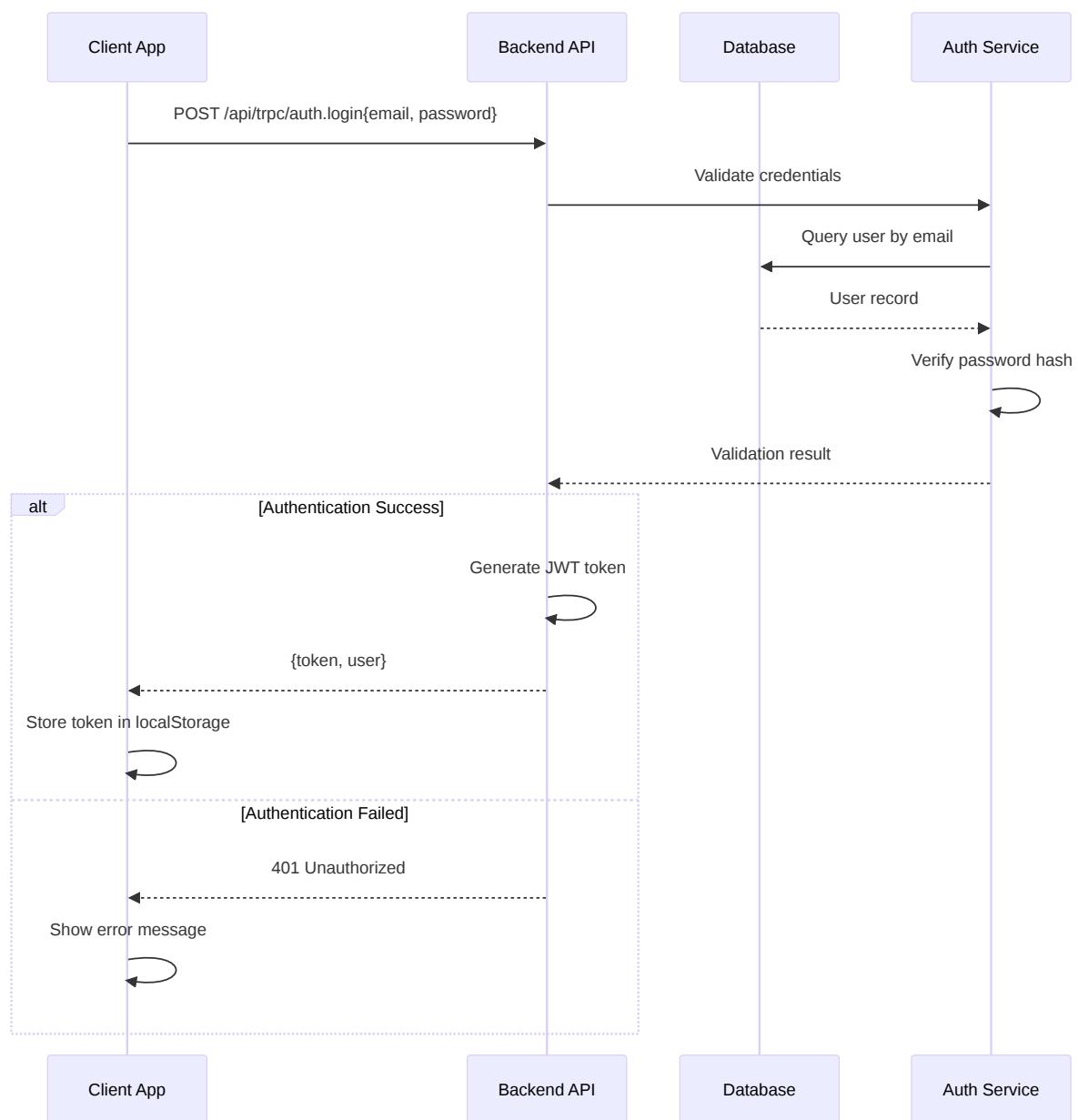
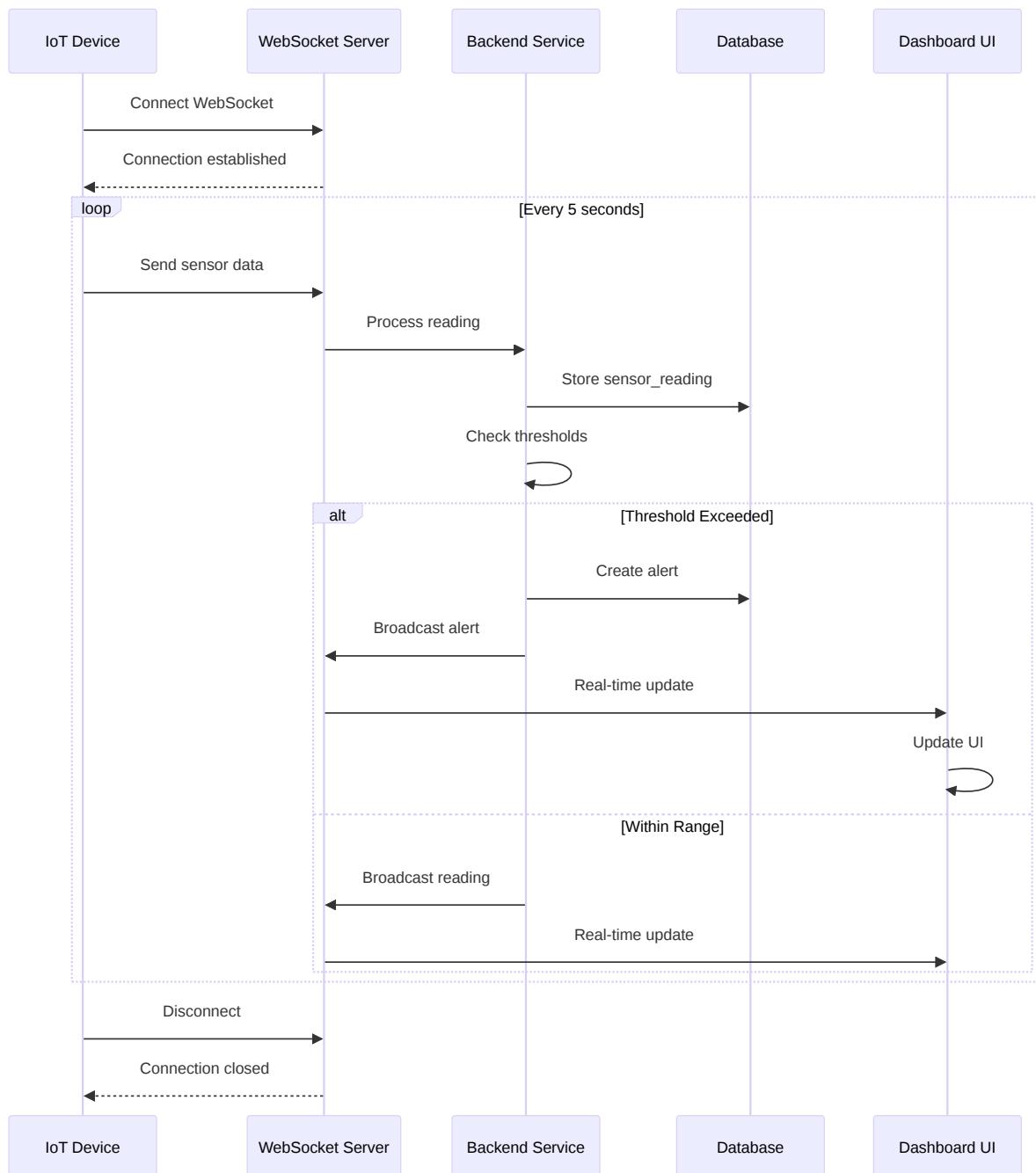


Smart Factory IoT - API Flows & Sequences

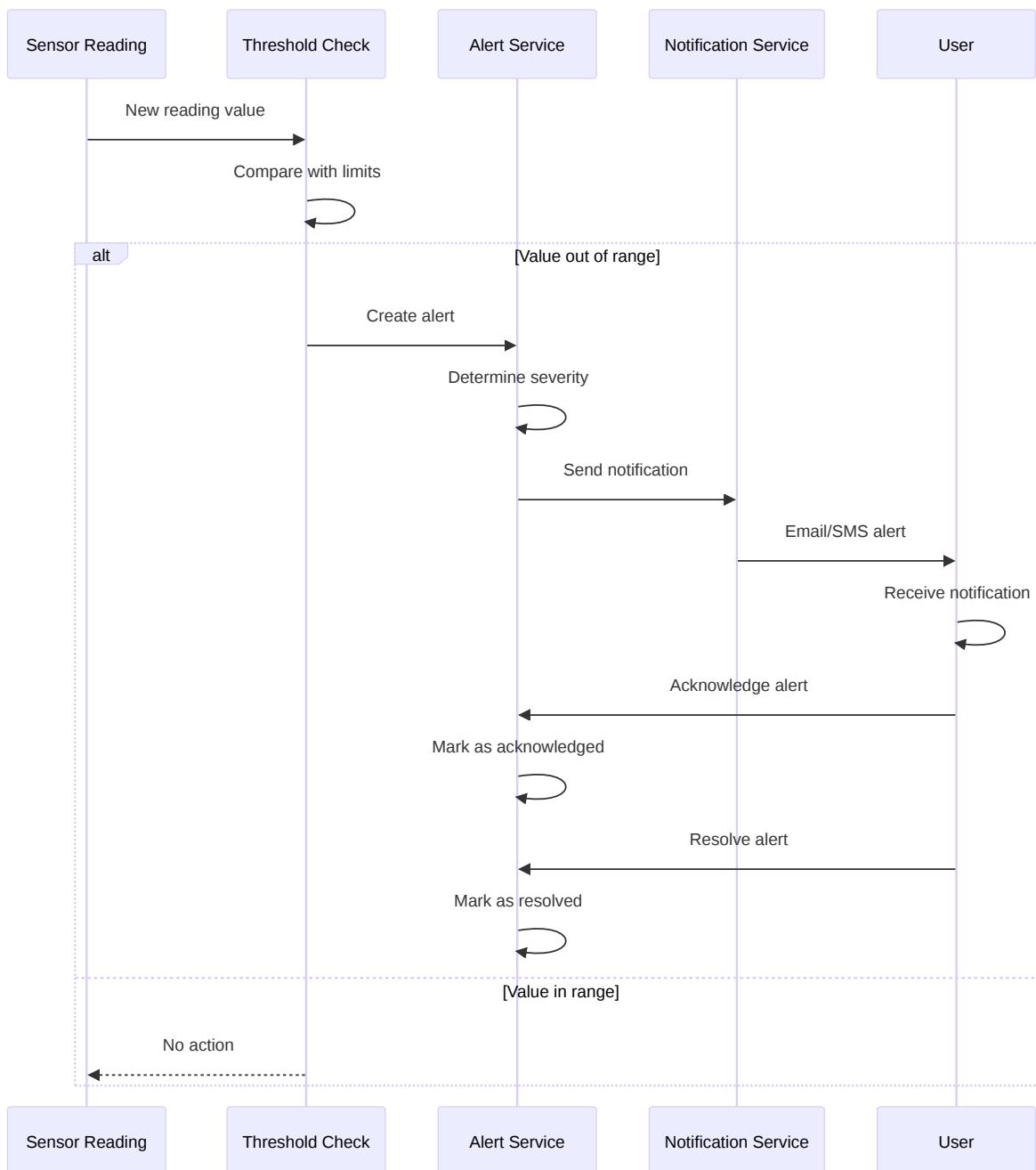
Authentication Flow



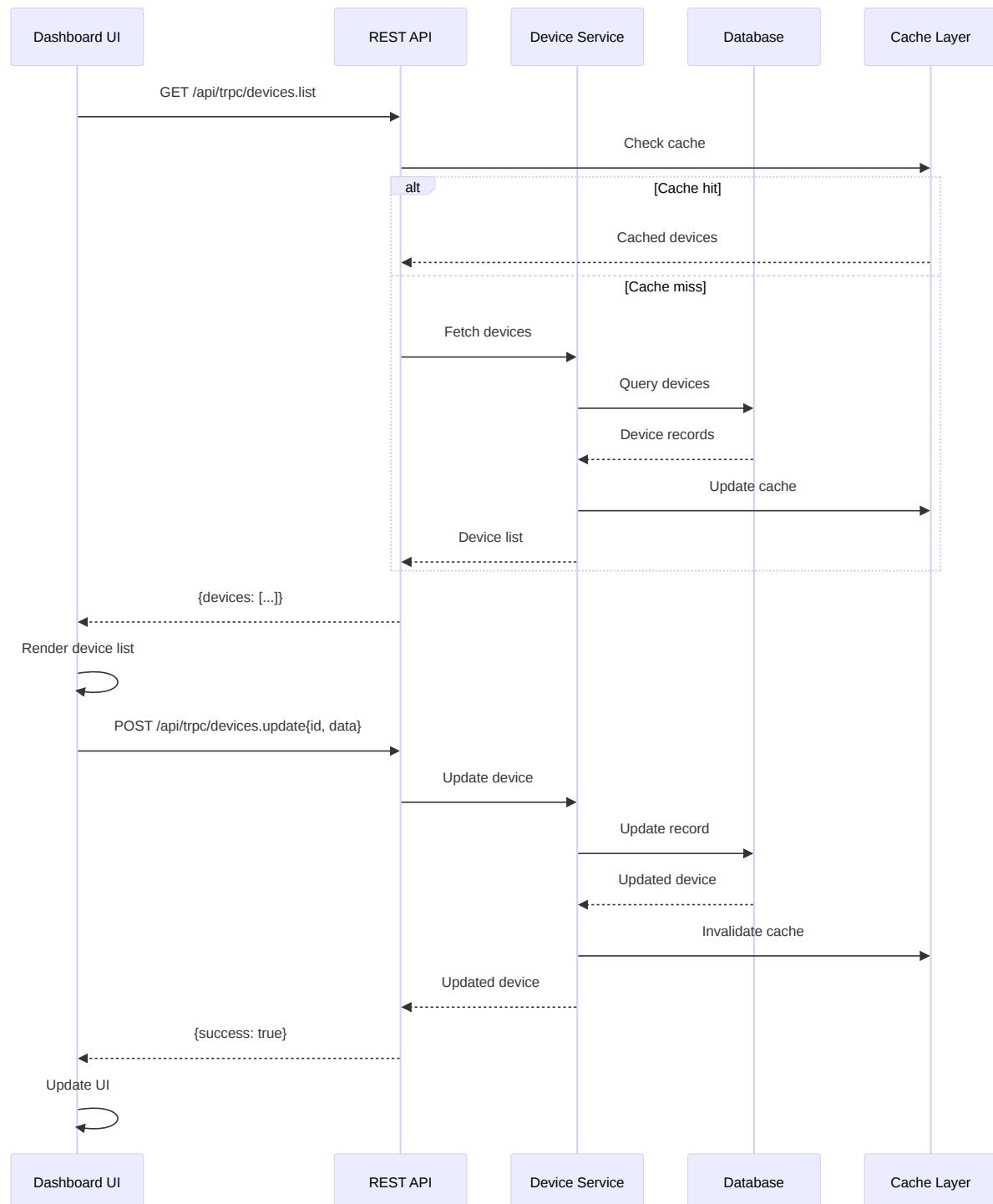
Real-time Device Monitoring Flow



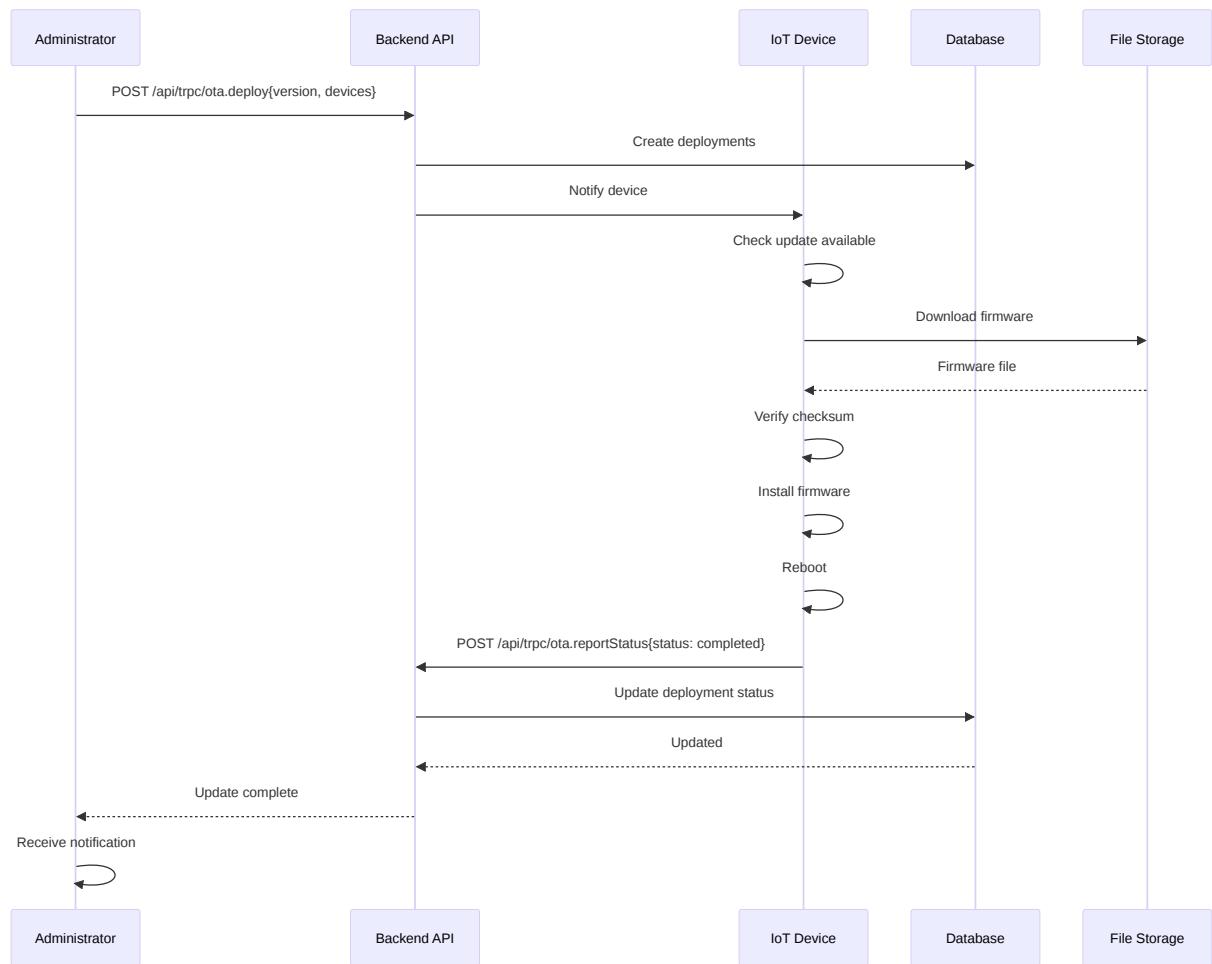
Alert Management Flow



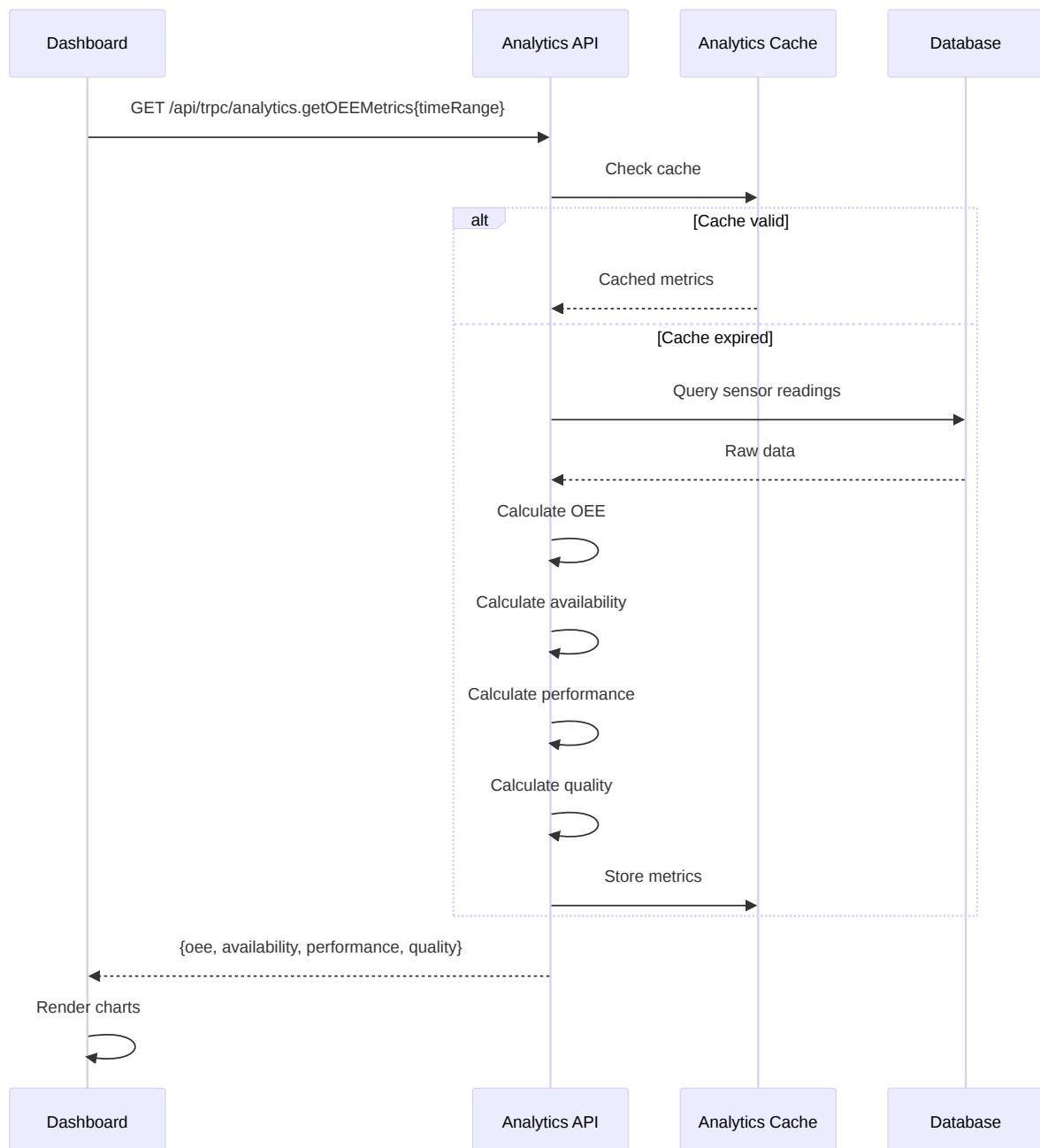
Device Management Flow



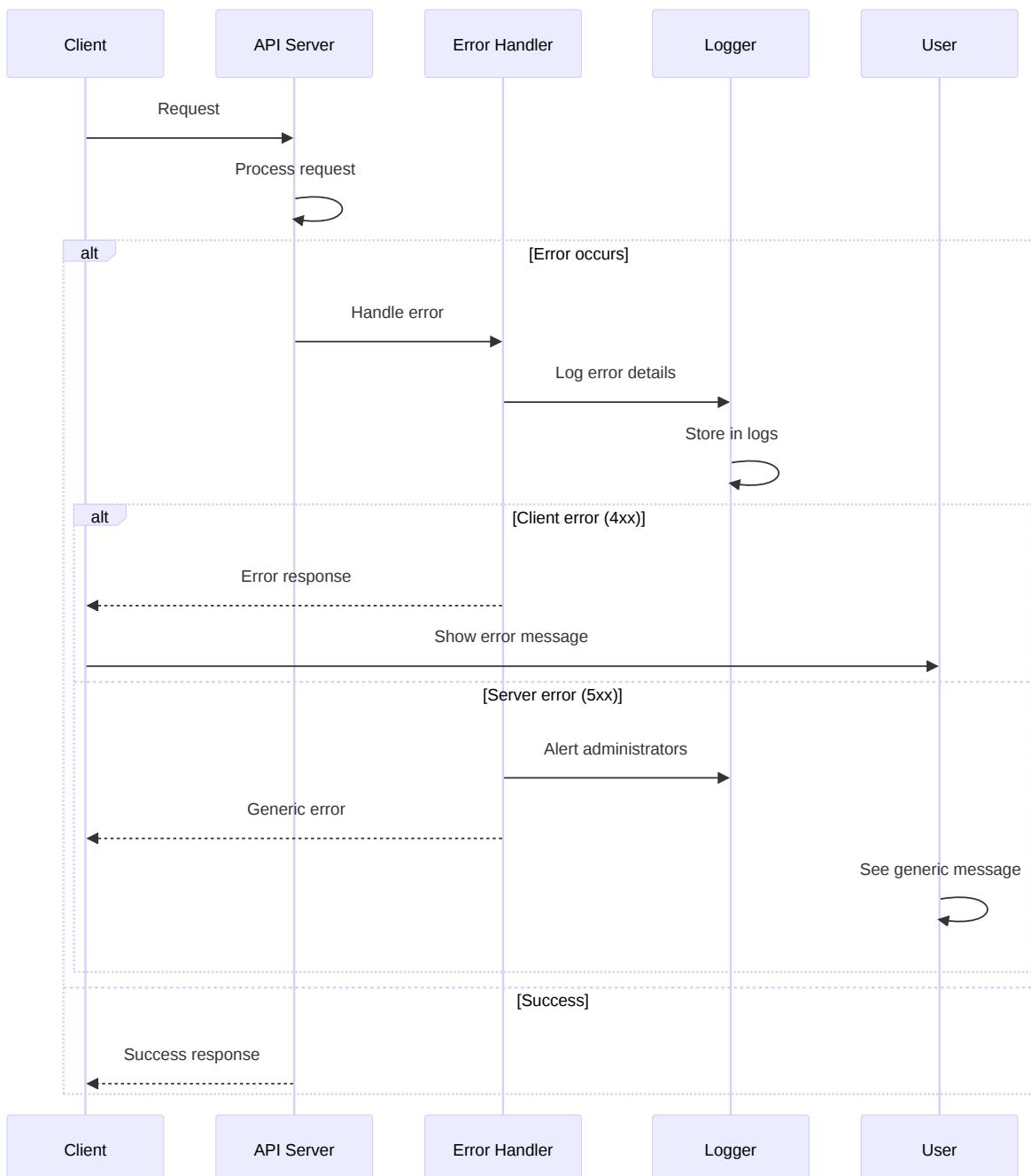
OTA Update Flow



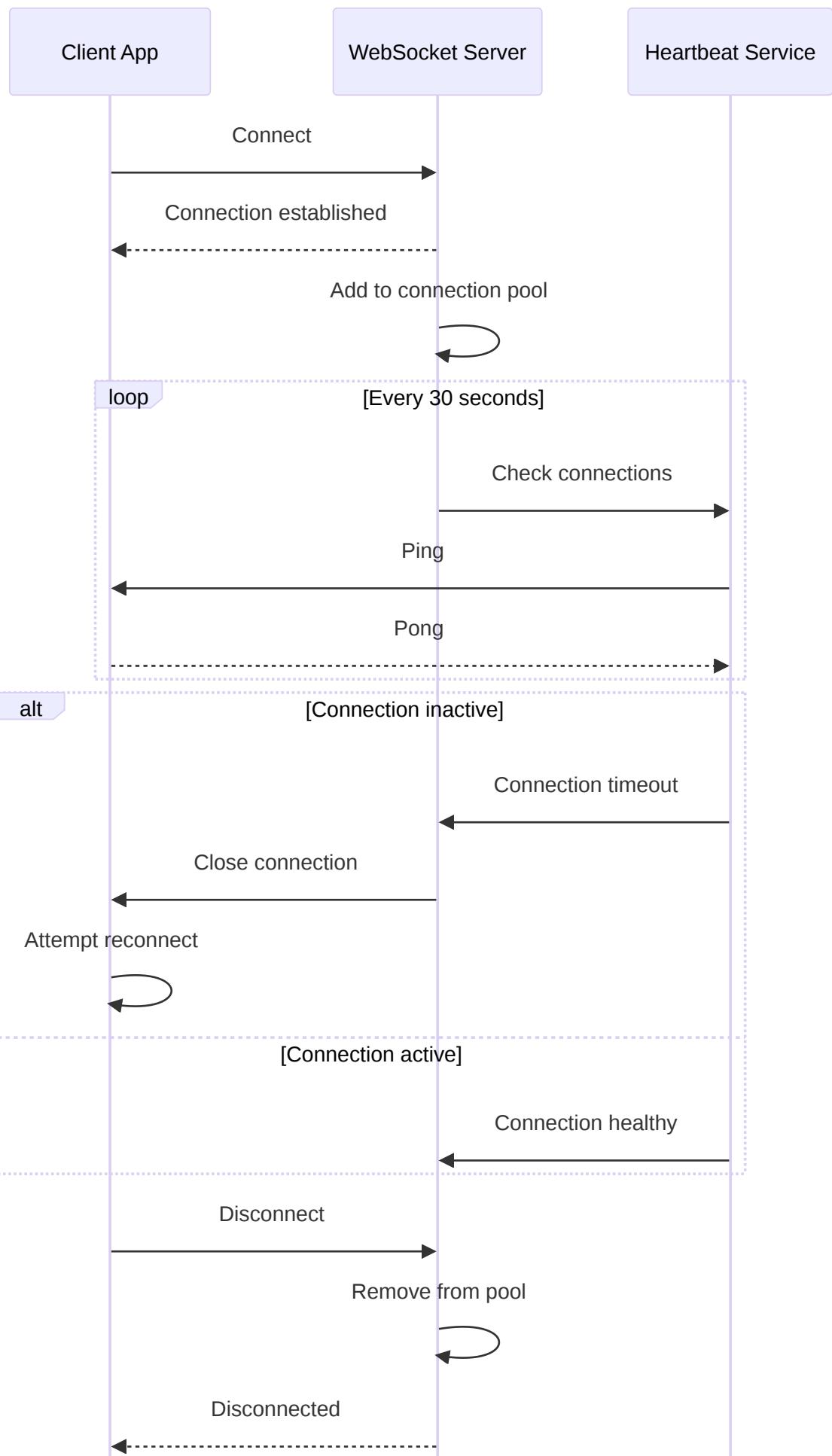
Analytics & Reporting Flow



Error Handling Flow

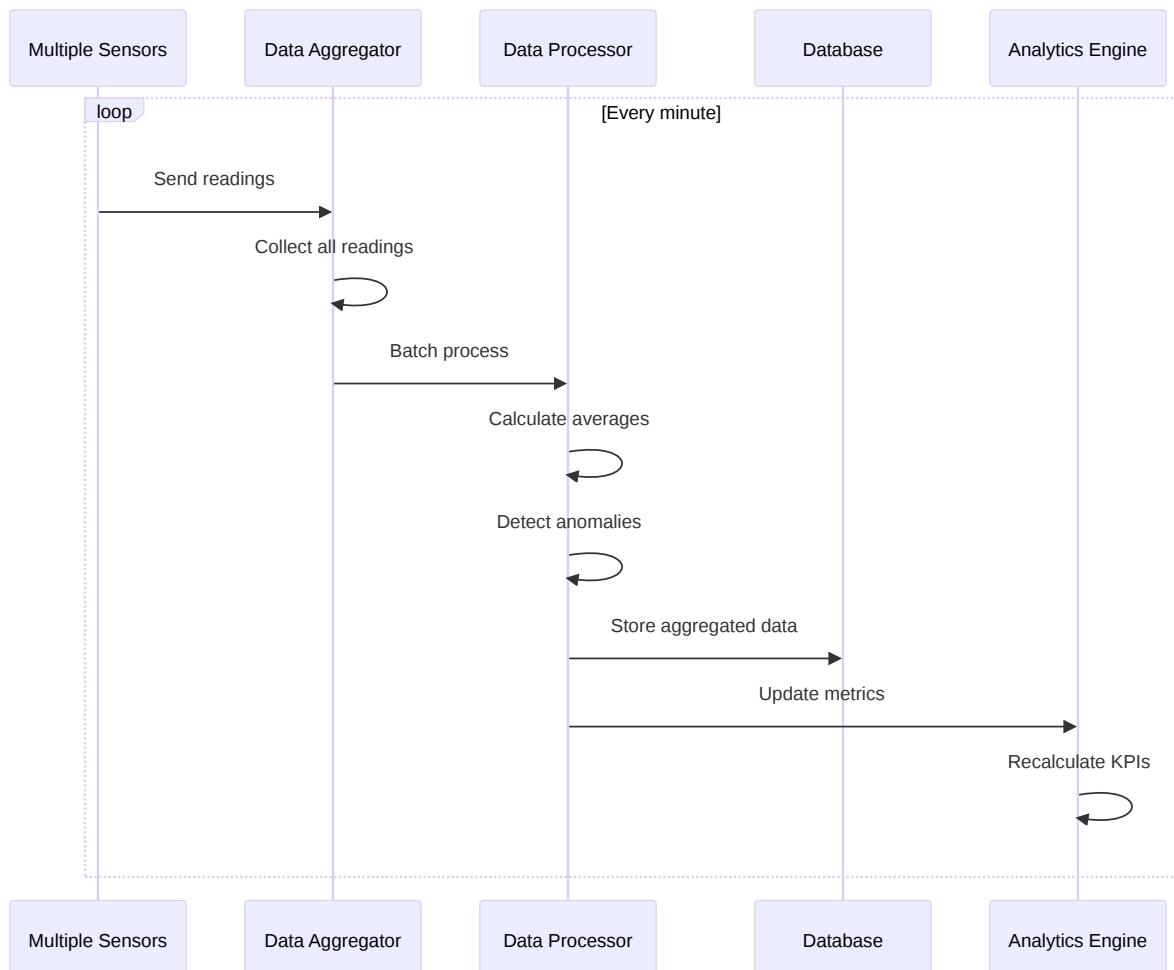


WebSocket Connection Management

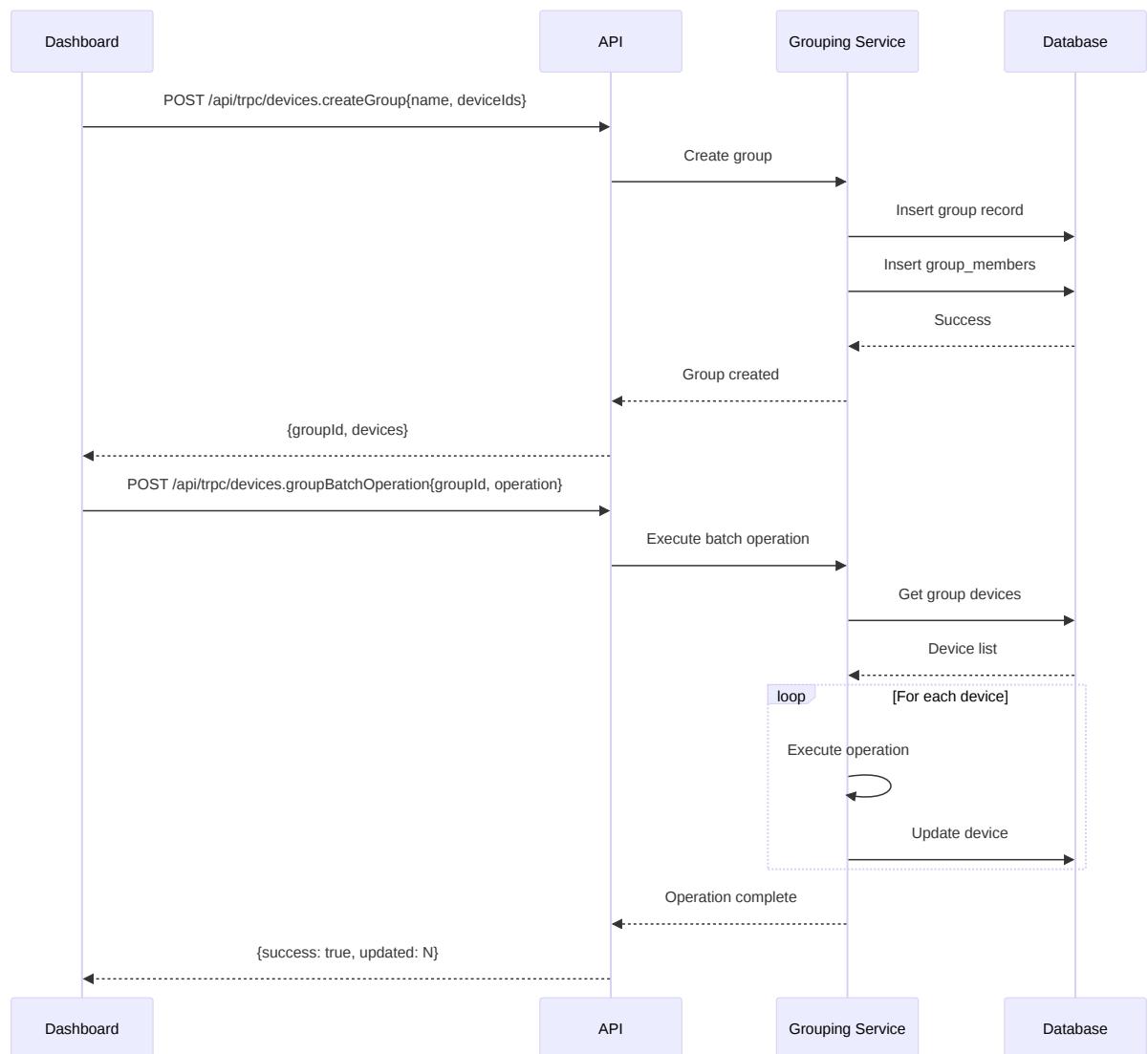




Data Aggregation Flow



Multi-Device Grouping Flow



API Response Format

Success Response

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

Error Response

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

Rate Limiting

- **API Endpoints:** 100 requests per minute per user
- **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
WebSocket Connection	60 seconds
Database Query	10 seconds
File Upload	5 minutes
Device Firmware Download	30 minutes

API Versioning

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