# Project Documentation

**Hospital Appointment & Health Tracker System on Salesforce**

## Phase 7: Integration & External Access

### 1. Introduction

In this phase, we enable the system to interact with **external applications, services, and devices**. Integrations ensure that Salesforce can **exchange patient and hospital data** with lab systems, wearable devices, and external hospital portals.

The goal is to provide **seamless data flow, secure authentication, and real-time communication** across platforms.

### 2. Preparation

Before building integrations, we must:

Enable **API access** in Salesforce.

Configure **Named Credentials** for external endpoints.

Set up **Remote Site Settings** for external API callouts.

Review **Salesforce API limits** to optimize integration performance.

### 3. Integration Components

#### A. Named Credentials

Purpose: Store authentication and endpoint details for external systems.

**Examples:**

Lab\_System\_API → Connects to hospital laboratory system for test results.

Wearable\_Device\_API → Connects to fitness/wearable apps (Fitbit, Apple Health).

Hospital\_Partner\_API → Connects to partner hospitals for referral management.

#### B. External Services

Purpose: Import service definitions and use them declaratively.

**Examples:**

Import REST API for external pharmacy services to check **drug availability**.

Import SOAP API for insurance providers to **verify patient insurance coverage**.

#### C. Web Services (REST/SOAP)

Purpose: Allow Salesforce to call external APIs or expose Salesforce data as APIs.

**Examples:**

**REST Callout to Lab System:** Fetch patient test results from an external lab.

**SOAP Web Service Exposure:** Allow external clinics to fetch appointment details from Salesforce.

#### D. Callouts

Purpose: Exchange data with external systems.

**Examples:**

Outbound callout to lab when new test is requested from an Appointment record.

Inbound call from patient mobile app to retrieve appointment availability.

#### E. Platform Events

Purpose: Enable **real-time, event-driven communication**.

**Examples:**

When Appointment is booked → Platform Event triggers notification to external patient app.

When lab results are uploaded externally → Platform Event updates HealthRecord\_\_c.

#### F. Change Data Capture (CDC)

Purpose: Stream changes from Salesforce to external systems.

**Examples:**

Capture changes in Appointment\_\_c (e.g., rescheduled, cancelled) and push to patient mobile app.

Capture HealthRecord updates and sync with external hospital EHR system.

#### G. Salesforce Connect

Purpose: Allow **read-only access** to external data without importing it into Salesforce.

**Examples:**

View **real-time insurance claims** from external insurance system.

View **lab reports** stored in external databases.

#### H. API Limits

Purpose: Monitor API usage and optimize performance.

**Examples:**

Set batch callouts for wearable data sync to avoid exceeding limits.

Use **Bulk API** for large health data uploads (e.g., 10,000+ records from hospital systems).

#### I. OAuth & Authentication

Purpose: Provide **secure external access** for patient and doctor portals.

**Examples:**

Patients log in via **OAuth-based authentication** to view appointments.

Doctors access mobile app securely using **OAuth tokens** linked with Salesforce users.

#### J. Remote Site Settings

Purpose: Authorize Salesforce to connect with specific external domains.

**Examples:**

Add api.hospital-lab.com for lab report integration.

Add api.fitness-device.com for wearable device data sync.

### 4. Benefits of Integration & External Access

**Seamless hospital operations** by connecting lab, pharmacy, insurance, and wearable systems.

**Improved patient experience** with real-time updates on appointments, prescriptions, and health records.

**Scalability** to support multiple hospitals and clinics.

**Secure access** through OAuth and controlled API exposure.

**Phase 7 Deliverable:**

Configured Named Credentials and Remote Site Settings.

Integrated external APIs (Lab, Pharmacy, Wearable Devices).

Implemented Platform Events and CDC for real-time sync.

Secured external access via OAuth authentication.

Enabled Salesforce Connect for viewing external data.

This sets the stage for **Phase 8: Data Management & Deployment**.