

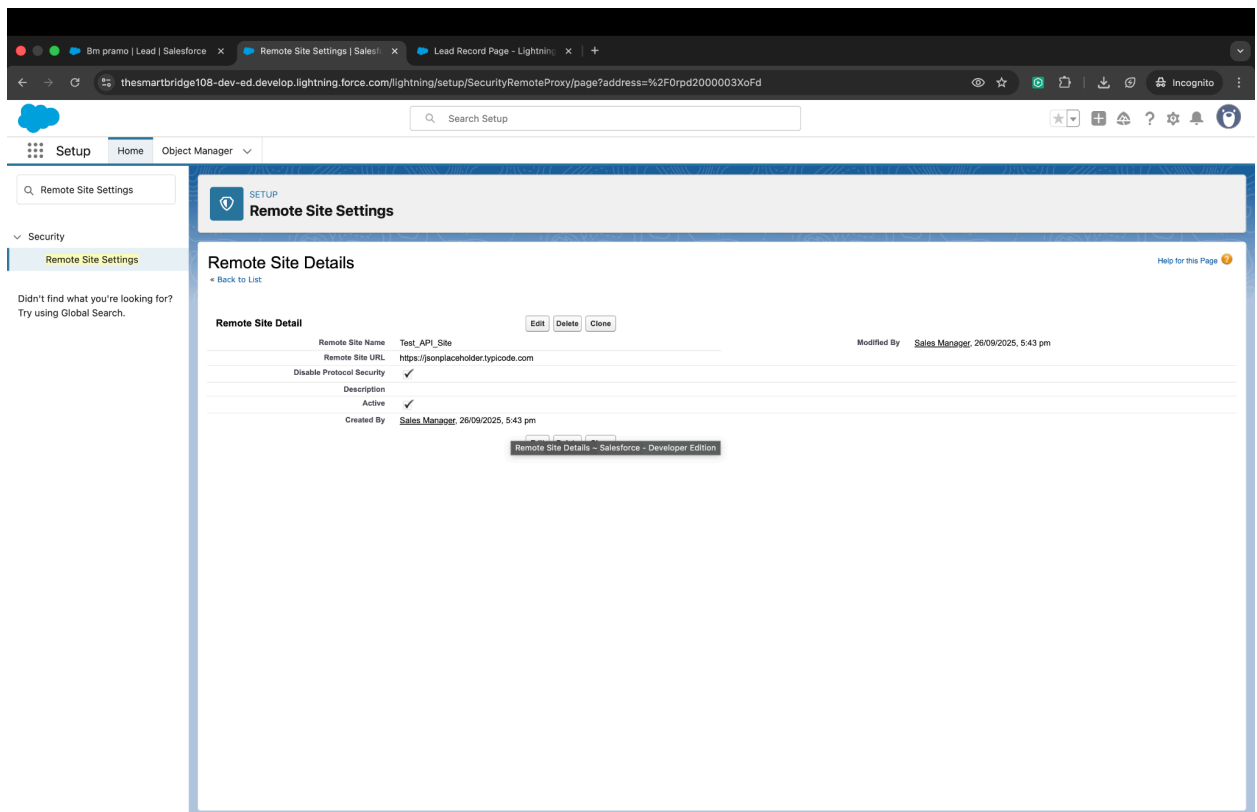
# Phase 7 Report

## Integration & External Access

### Remote Site Settings

**Remote Site Settings** are a security feature that allows Salesforce to communicate with external APIs. By whitelisting specific URLs, you prevent unauthorized callouts to external services.

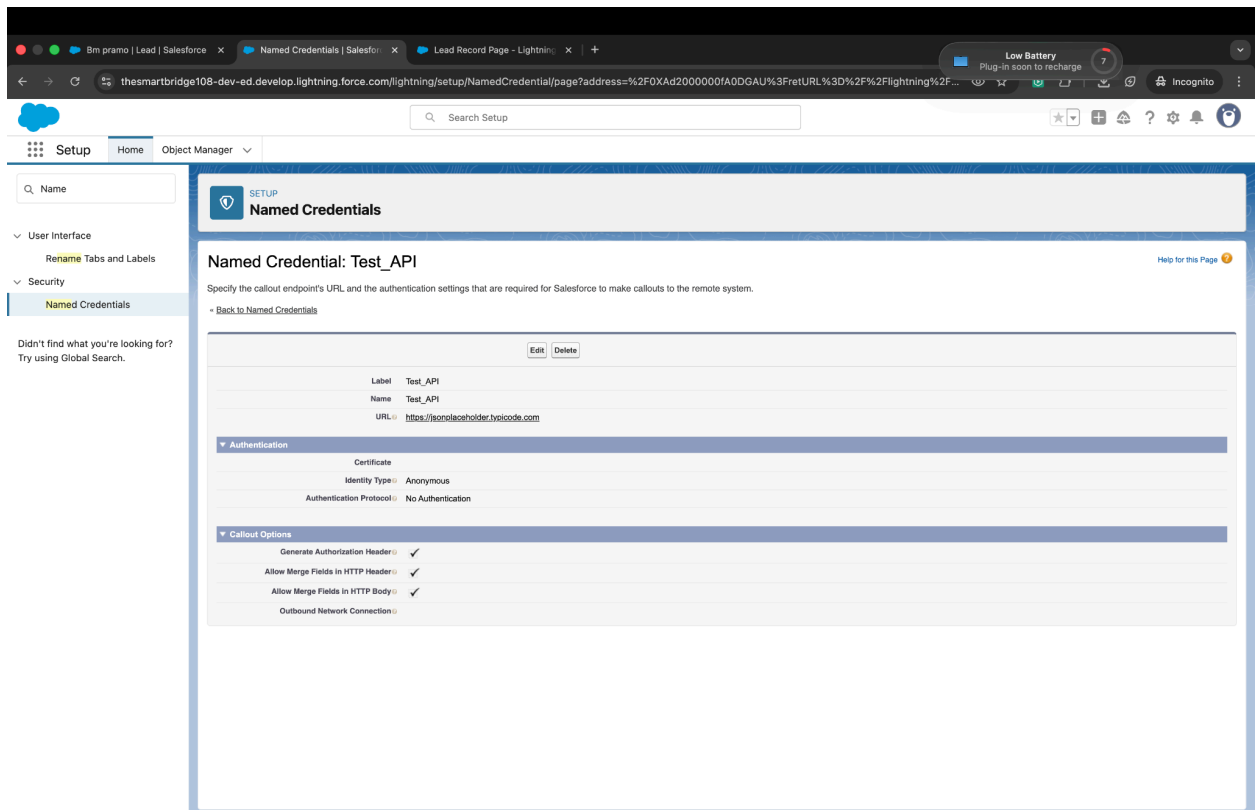
- **Example for your project:** To enrich lead data, you could use an external lead intelligence API. By adding `https://api.leadintel.com` to **Remote Site Settings**, you enable Salesforce to make a secure API call to fetch details like company size or industry, then update the lead record.



# Named Credentials

**Named Credentials** securely store the API endpoints and authentication details required for integrations. This prevents hardcoding sensitive information, such as API keys, directly into your code.

- **Example:** For automated lead follow-up, you could use a marketing automation tool. Instead of embedding its credentials in an Apex class, you would store them as a **Named Credential**, allowing a secure and reusable connection for automated email campaigns.



## External Services

**External Services** allow you to integrate with third-party REST APIs using their OpenAPI specifications. Once registered, these services can be used directly in low-code tools like **Flows** or called from Apex, without needing to write manual integration code.

- **Example:** You could integrate a lead scoring API. When a new lead is created, a **Flow** could call the external service to automatically evaluate the lead's potential and suggest follow-up actions to the sales team, streamlining the qualification process.

## Web Services (REST/SOAP)

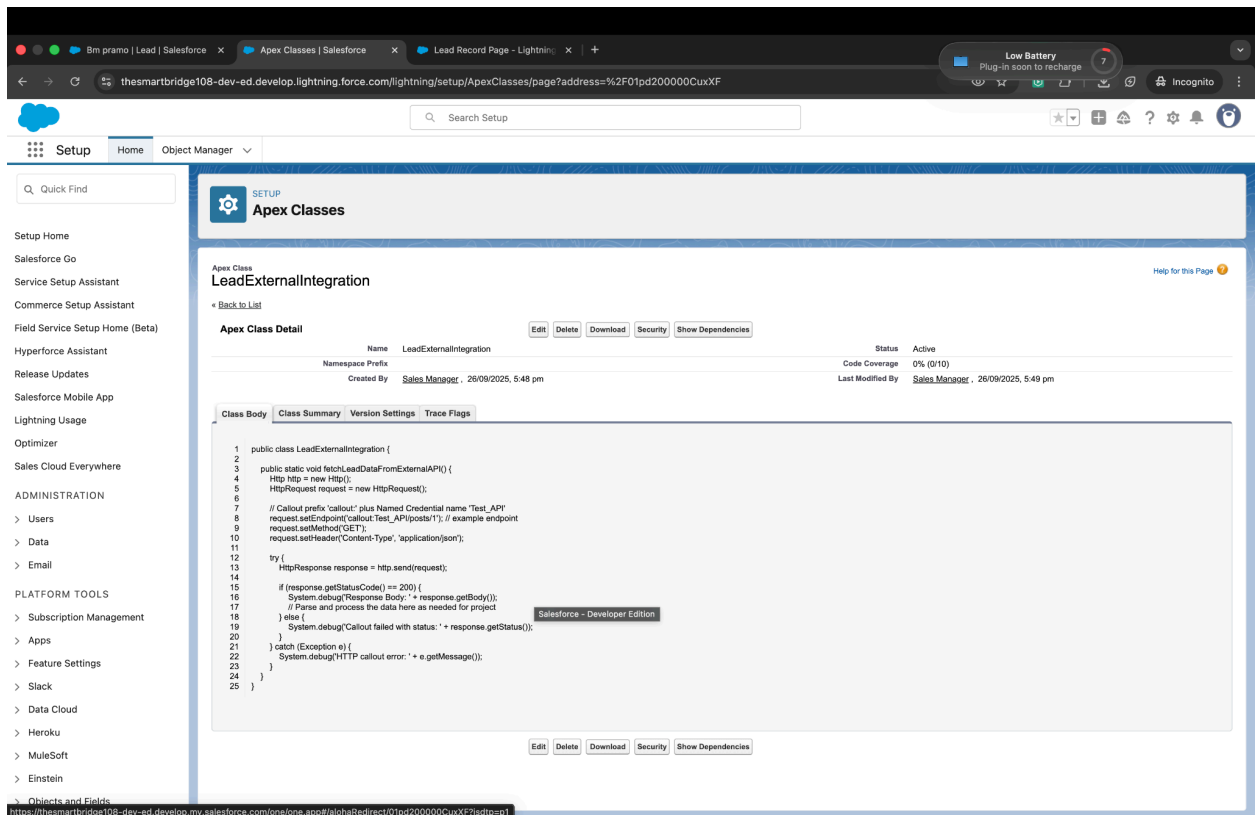
Salesforce can both **expose its own data** to and **consume data from** external systems using standard web service protocols like **REST** and **SOAP**.

- **Example:** To provide real-time reporting, an external business intelligence tool could use the Salesforce REST API to securely access lead data. This would allow the sales team to view live dashboards and monitor lead pipeline health without logging into Salesforce.

## Apex Callouts

**Apex callouts** are used to make requests to external systems and retrieve data dynamically. This is a core method for building custom integrations within Salesforce.

- **Example:** When a sales representative enters a lead's company website, an **Apex callout** could be triggered to fetch public company information from a third-party data provider, automatically populating fields on the lead record and saving the user from manual data entry.



## Platform Events & Change Data Capture (CDC)

**Platform Events** and **Change Data Capture (CDC)** are event-driven communication models that allow for asynchronous integration. **Platform Events** are custom messages that can be sent or received by Salesforce and external systems, while **CDC** automatically publishes changes to Salesforce records as events.

- **Example for Platform Events:** When a lead is converted into an opportunity, a **Platform Event** could notify an external ERP or an internal invoicing system to trigger downstream actions, such as creating a new customer record.
- **Example for CDC:** If a lead's status is changed from 'New' to 'Contacted', **CDC** can publish this event to an external analytics tool, which could then automatically update a dashboard or log the change for reporting purposes.

## Salesforce Connect

**Salesforce Connect** enables real-time access to data stored in external systems without needing to migrate it into Salesforce. This is useful for large datasets that don't need to reside in Salesforce.

- **Example:** Sales reps could view live lead assignments stored in an external sales database directly within Salesforce. This would prevent data duplication and ensure everyone is working with the most current information.

## API Limits Management

All API calls in Salesforce are subject to **governor limits**. Monitoring and managing API usage is critical to ensure integrations remain stable and do not cause service disruptions.

- **Example:** To avoid hitting daily limits, an integration that processes a high volume of leads could be designed to **batch API calls**, ensuring smooth operation even during peak usage.

## OAuth & Authentication

**OAuth 2.0** is an industry-standard protocol for secure, token-based authorization. It allows Salesforce to access external systems without exposing sensitive user credentials in the code.

- **Example:** Connecting Salesforce to a marketing automation platform using **OAuth** would allow for automated lead nurturing workflows, while providing a secure and compliant method of access.

## Summary

While not yet implemented, understanding these integration capabilities is key to the future development of the Lead Management system. Leveraging these tools will allow the project to:

- Enhance lead data with external information.
- Automate complex follow-up workflows securely.
- Synchronize Salesforce with external databases in real time.
- Maintain secure and compliant access to external systems.