

Phase 7: Integration & External Access

In this phase, integration capabilities were enabled for the Corporate Loan Management System (CLMS) to securely communicate with external systems (Loan Provider APIs, reporting systems, and real-time subscribers). Salesforce features such as Named Credentials, Callouts, Platform Events, Change Data Capture, and OAuth authentication were configured to ensure secure, scalable, and real-time access.

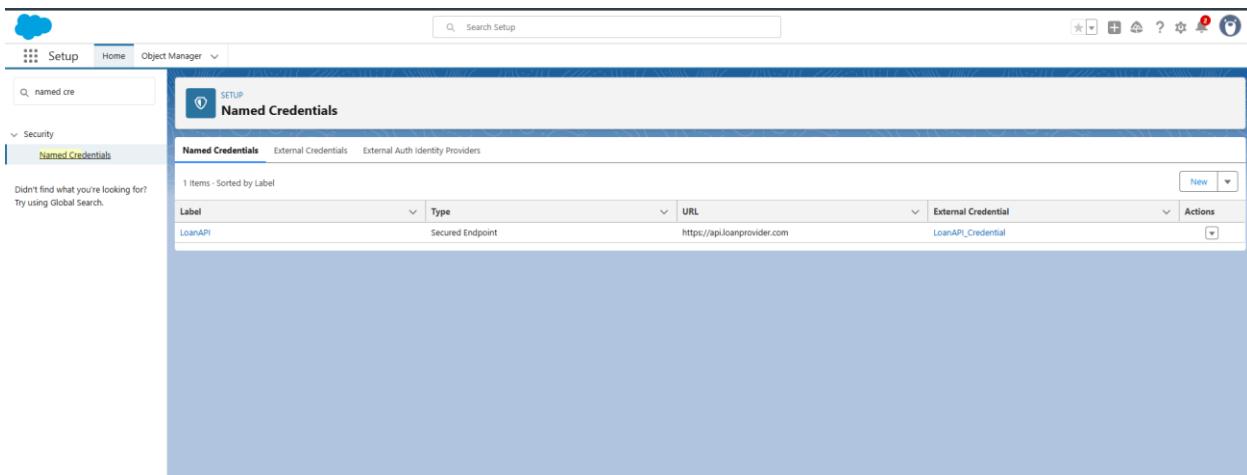
Named Credentials

Purpose: Store external API endpoints and authentication securely, avoiding hardcoding credentials in Apex.

Configuration:

- Label: LoanAPI
- URL: <https://api.loanprovider.com>
- External Credential: LoanAPI_Credential (with username/password principal).
- Enabled for Callouts:

Outcome: Allows CLMS to securely call external Loan Provider APIs for loan validation and processing.



The screenshot shows the Salesforce Setup interface with the 'Named Credentials' page open. The left sidebar shows 'Security' and 'Named Credentials' selected. The main area has a header 'SETUP' and 'Named Credentials'. Below it is a table with one row:

Label	Type	URL	External Credential	Actions
LoanAPI	Secured Endpoint	https://api.loanprovider.com	LoanAPI_Credential	[Edit]

The screenshot shows the Salesforce Setup interface with the following details:

- Setup** tab selected.
- Object Manager** dropdown set to **Named Credentials**.
- LoanAPI** is the selected Named Credential.
- Label**: LoanAPI
- URL**: <https://api.loanprovider.com>
- Enabled for Callouts**: Checked.
- Authentication** section includes **External Credential** and **LoanAPI_Credential**.
- Callout Options** section includes **Generate Authorization Header** (checked), **Allow Formulas in HTTP Header**, **Allow Formulas in HTTP Body**, and **Outbound Network Connection**.
- Managed Package Access** section shows it was created by the **Namespace**.

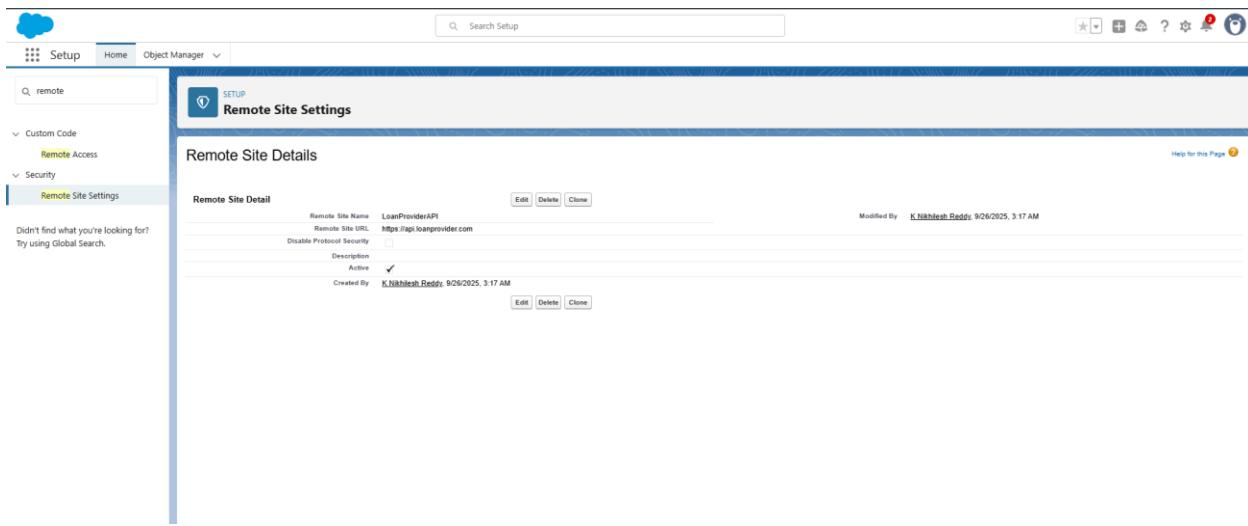
The screenshot shows the Salesforce Setup interface with the following details:

- Setup** tab selected.
- Object Manager** dropdown set to **Named Credentials**.
- LoanAPI_Credential** is the selected External Credential.
- Label**: LoanAPI_Credential
- Name**: LoanAPI_Credential
- Authentication Protocol**: Basic Authentication.
- Managed Package Access** section shows it was created by the **Namespace**.
- Related Named Credentials** table shows a single entry for **LoanAPI** with URL <https://api.loanprovider.com>.
- Principals** table shows a single principal named **LoanAPI_Principal** with **Identity Type** as **Named Principal**, **Authentication Status** as **Configured**, and **Username** as **loan_user_123**.
- Custom Headers** section is empty.

External Services & Remote Site Settings

- **External Services:** Configured to connect Salesforce with REST endpoints using schema (if available).
- **Remote Site Settings:** Added <https://api.loanprovider.com> for API access.

Outcome: Ensures Salesforce can make outbound callouts to the loan provider system.



Apex REST Callouts

Class: LoanAPIService.cls

- Apex class created to fetch loan data from external APIs using the Named Credential.

Outcome: CLMS can fetch or validate loan details from external APIs in real-time.

A screenshot of the CLMS Project in the BlackBox IDE. The left sidebar shows the project structure with 'CLMS_PROJECT' expanded, containing 'force-app', 'main', 'aura', and 'classes'. Under 'classes', several files are listed, including 'CLMSConstants.cls', 'CLMSConstants.cls-meta.xml', 'CLMSConstantsTest.cls', 'CLMSConstantsTest.cls-meta.xml', 'EMIOverdueBatch.cls', 'EMIOverdueBatch.cls-meta.xml', 'LoanAPI.cls', 'LoanAPI.cls-meta.xml', 'LoanAPIService.cls', 'LoanAPIService.cls-meta.xml', and 'LoanAPIServiceTest.cls'. The 'LoanAPIServiceTest.cls' file is currently selected. The main editor window shows the Apex code for the test class. Below the editor is a terminal window with the command 'sf apex get test -i 707gK0000E6fhx -o nikhileshreddy.k157@agentforce.com' and the output 'LoanAPIServiceTest.testSendDisbursement Pass 2111'. At the bottom, a 'PROBLEMS' tab is open, showing a summary of the test execution: 'NAME' and 'VALUE' columns include 'Outcome Passed', 'Tests Ran 2', 'Pass Rate 100%', 'Fail Rate 0%', 'Skip Rate 0%', 'Test Run Id 707gK0000E6fhx', 'Test Setup Time 0 ms', 'Test Execution Time 2160 ms', 'Test Total Time 2160 ms', 'Org Id 000gK0000BBtkSUAT', and 'Username nikhileshreddy.k157@agentforce.com'. The bottom status bar shows 'PS C:\Users\Nikhilesh\Downloads\CLMS_Project>' and various tool icons.

Platform Events

- Event Created: LoanApprovalEvent__e
- Fields: LoanId__c, Status__c, ApprovedBy__c, ApprovalDate__c
- Trigger Update: Publishes event when a loan is approved.

Outcome: External systems (e.g., MuleSoft, CometD subscribers) receive real-time notifications when loans are approved.

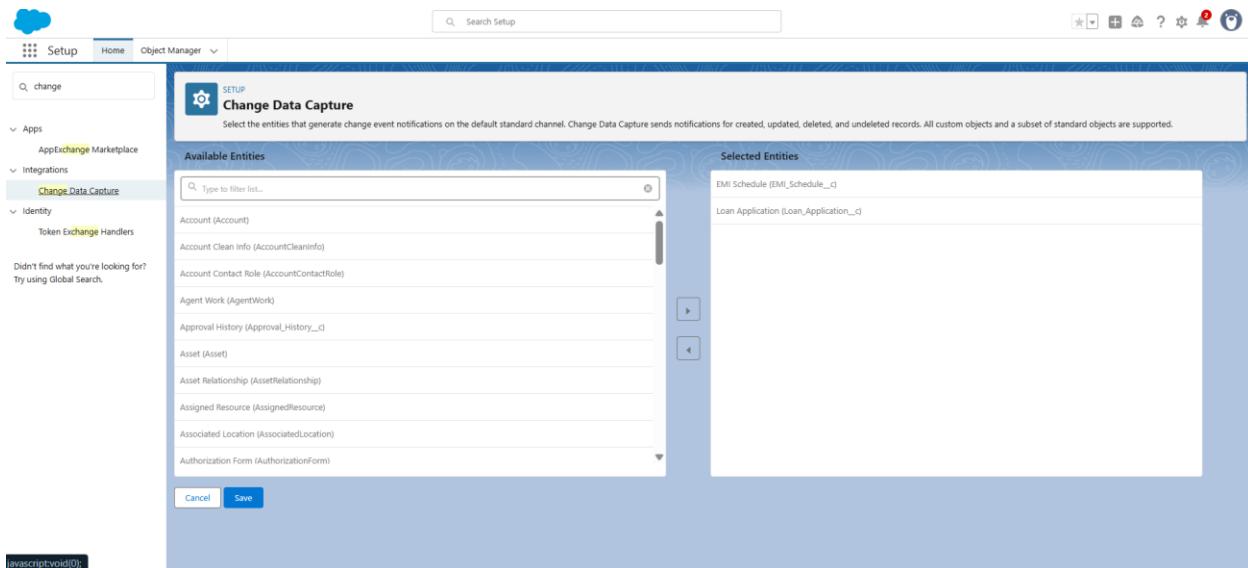
The screenshot shows the Salesforce Setup interface with the 'Platform Events' page open. The left sidebar navigation includes 'Setup', 'Home', 'Object Manager', 'MuleSoft', 'Anypoint Platform Setup', 'Einstein', 'Custom Code', 'Platform Cache', 'Integrations', 'Platform Events', 'Security', 'Platform Encryption', 'Encryption Settings', and 'Key Management'. The main content area displays the 'Platform Event Definition Detail' for 'LoanApprovalEvent'. It shows the singular label 'LoanApprovalEvent', plural label 'LoanApprovalEvents', object name 'LoanApprovalEvent', API name 'LoanApprovalEvent__e', event type 'High Volume', publish behavior 'Publish Immediately', and created by 'K.Nikhilesh.Reddy'. The deployment status is 'Deployed'. Below this, the 'Standard Fields' section lists fields like 'Created By', 'Created Date', 'Event UUID', and 'Replay ID' with their corresponding API names, data types, and descriptions. The 'Custom Fields & Relationships' section lists fields 'ApprovalDate__c', 'ApprovedBy__c', 'LoanId__c', and 'Status__c' with their API names, data types, and descriptions. The 'Triggers' section indicates 'No triggers defined'.

Change Data Capture (CDC)

Enabled for:

- Loan Application (Loan_Application__c)
- EMI Schedule (EMI_Schedule__c)

Outcome: External systems can subscribe to Salesforce data changes (insert/update/delete), ensuring data synchronization.



◆ Salesforce Connect

- Purpose: For accessing external databases without storing data in Salesforce.
- Note: Not implemented yet, but available for future CLMS scaling.

◆ API Limits

- Monitored in: Setup → System Overview → API Usage.
- Ensured: Integration designs respect Salesforce daily limits.

◆ OAuth & Authentication

- Connected App Created for CLMS external API access.
- Configured:
 - OAuth Scopes: api, refresh_token
 - Callback URL: External system endpoint

Outcome: External systems can authenticate securely and call Salesforce APIs.

Phase 7 Outcomes

- CLMS now supports secure external integration with Loan Provider APIs.
- Loan approvals trigger real-time notifications via Platform Events.
- Data synchronization possible with Change Data Capture (CDC).
- OAuth ensures external access is secure and authenticated.
- Integration design respects Salesforce API limits for scalability.