Phase 7: Integration & External Access

Introduction

EcoCart Logistics CRM not only manages internal shipment processes but also needs to **connect with external courier services, customer portals, and third-party apps**. This phase focuses on enabling **secure integrations**, handling **real-time data synchronization**, and ensuring **seamless external access**. Salesforce provides tools such as **Named Credentials, REST/SOAP APIs, Platform Events, and Change Data Capture** to make these integrations reliable and secure.

Objectives

- Configure **Named Credentials** to securely store external API keys.

- Connect to courier services through **REST API Callouts**.

- Enable **External Services & Salesforce Connect** for outside databases.

- Implement **Platform Events** for real-time event-driven communication.

- Use **Change Data Capture (CDC)** to notify external systems of record changes.

- Enforce **API Limits & Authentication policies** for secure usage.

- Allow customers to access shipments via **portal login or external app integration**.

1. Named Credentials

- Path: **Setup → Named Credentials → New**.

- Created:

  - Label: CourierAPI

  - URL: https://api.courier.com/v1/

  - Authentication: API Key / OAuth 2.0.

2. REST API Integration (Callouts)

- Example: Fetch shipment status from courier provider.

```apex
public class CourierIntegration {

@AuraEnabled

public static String getCourierStatus(String trackingId) {

    Http http = new Http();

    HttpRequest req = new HttpRequest();

    req.setEndpoint('callout:CourierAPI/track/' + trackingId);

    req.setMethod('GET');

    HttpResponse res = http.send(req);

    if(res.getStatusCode() == 200) {

        return res.getBody();

    }

    return 'Error fetching courier status';

}
```

3. External Services

- Used **Schema Definitions (Swagger / OpenAPI)** from courier provider.

- Imported API schema into Salesforce → Auto-generated Apex actions.

- Now shipments can call courier APIs directly via declarative tools.

4. Platform Events

- Created Platform Event: **Shipment_Exception_Event__e**

  - Fields: Shipment ID, Error Type, Message.

- Trigger: When a shipment is delayed or fails delivery → publish event.

- External apps can **subscribe** to this event via CometD (streaming API).

5. Salesforce Connect (Optional)

- If EcoCart's **Orders database** exists outside Salesforce, use **Salesforce Connect**:

  - Connect via **OData Adapter**.

  - Orders are displayed inside Salesforce without duplication.

6. OAuth & Authentication

- Configured **OAuth Authentication** for customer login via portal/mobile app.

- Example: Customers log in with Google/Email → View Order & Shipment Status.

Results Achieved

- Securely integrated Salesforce with external courier APIs via Named Credentials.

- REST callouts provide real-time shipment status updates.

- Platform Events enable event-driven updates for delays & exceptions.

- Change Data Capture synchronizes Order & Shipment updates with external apps.

- Salesforce Connect allows viewing external data without duplication.

- Customers can securely access shipment updates via login portal.

- API governance ensures reliable, scalable integrations.

Next Steps

- Move to **Phase 8: Data Management & Deployment**.

- Import sample Order/Shipment data for testing.

- Configure **Duplicate Rules, Backups, and Data Loader**.

- Set up **deployment tools** (Change Sets, VS Code, SFDX) for migration.