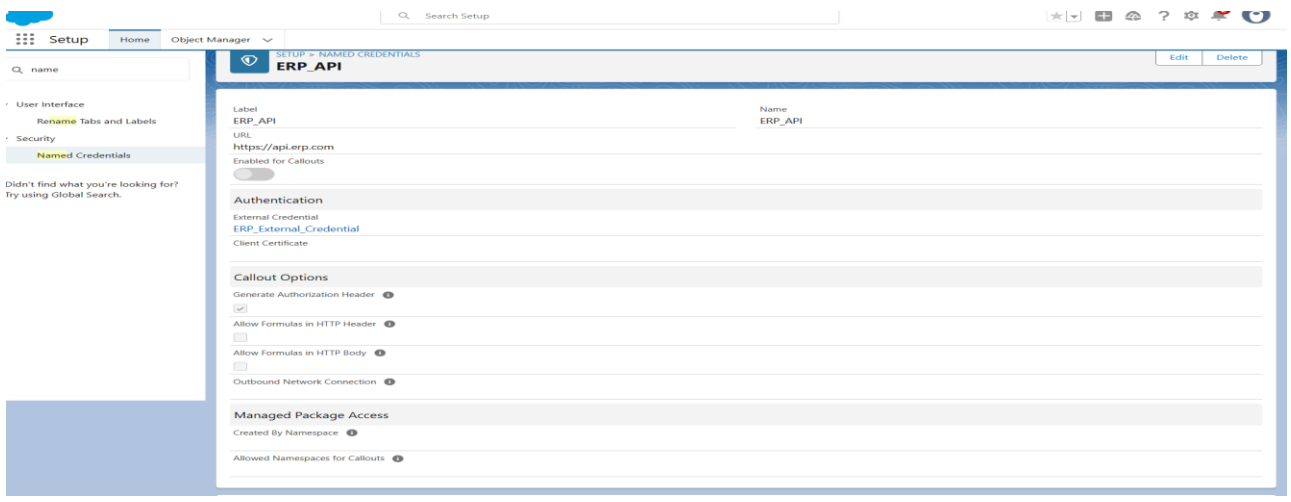
Problem statement : “CPQ & Order Visibility Hub forIndustrial Manufacturing”

Phase7: Integration & External Access

- Named Credentials

Used for secure authentication to ERP (SAP/Oracle) and shipping carriers.

- Why: So Apex callouts don’t store raw usernames/passwords.
- Steps:
  1. Setup → Named Credentials → New.
     - Label: ERP_API
     - URL: https://api.erp.com/
     - Authentication: Basic

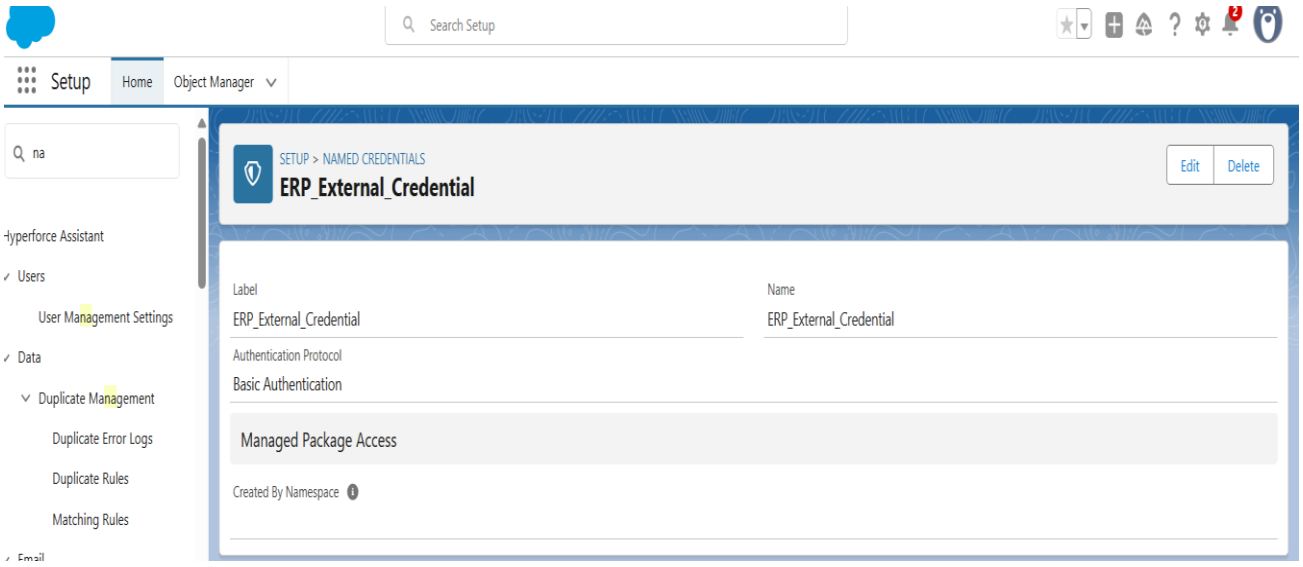


- External Services

Step 1: Create an External Credential

- Setup → External Credentials → New.
- Label: ERP_External_Credential

- Authentication Protocol: Basic Authentication.
- Save.



Callouts

Used to fetch and update live data from ERP & Shipping APIs.

InventoryScheduler.cls

```
public with sharing class InventorySyncService {
    @future(callout=true)
    public static void syncInventory() {
        Http http = new Http();
        HttpRequest req = new HttpRequest();

        // Endpoint for ERP API
        req.setEndpoint('https://api.erp.com/inventory');
        req.setMethod('GET');

        // Basic Authentication Header
        String username = 'demoUser';
        String password = 'demoPassword';
        String auth = username + ':' + password;
        Blob headerValue = Blob.valueOf(auth);
        String authorizationHeader = 'Basic ' + EncodingUtil.base64Encode(headerValue);
        req.setHeader('Authorization', authorizationHeader);

        try {
            HttpResponse res = http.send(req);

            if (res.getStatusCode() == 200) {
                List<Object> records = (List<Object>) JSON.deserializeUntyped(res.getBody());
                List<Inventory__c> updates = new List<Inventory__c>();
```

```
                List<Inventory__c> updates = new List<Inventory__c>();

                for (Object obj : records) {
                    Map<String, Object> rec = (Map<String, Object>) obj;

                    Inventory__c inv = new Inventory__c();
                    inv.ERP_Reference_ID__c = (String) rec.get('ERP_Id'); //new external ID field
                    inv.Stock_Level__c = (Decimal) rec.get('Stock_Level__c');
                    inv.Location__c = (String) rec.get('Location__c');

                    updates.add(inv);
                }

                if (!updates.isEmpty()) {
                    // Upsert using ERP_Reference_ID__c
                    upsert updates ERP_Reference_ID__c;
                }
            } else {
                System.debug('ERP API Error: ' + res.getStatusCode() + ' ' + res.getBody());
            }
        } catch (Exception e) {
            System.debug('Callout failed: ' + e.getMessage());
        }
    }
}
```

Anonymous Window:

Enter Apex Code

```
InventorySyncService.syncInventory();
```

Open Log | Execute | Execute Highlighted

Apex Class: Shipment Tracking Integration

InventoryScheduler.cls

Code Coverage: None | API Version: 64

```
public with sharing class ShipmentTrackingService {
    @future(callout=true)
    public static void fetchShipmentStatus() {
        Http http = new Http();
        HttpRequest req = new HttpRequest();

        String shipmentId = '12345'; // example shipment ID
        req.setEndpoint('https://api.shipping.com/track/' + shipmentId);
        req.setMethod('GET');

        String username = 'demoUser';
        String password = 'demoPassword';
        String auth = username + ':' + password;
        Blob headerValue = Blob.valueOf(auth);
        String authorizationHeader = 'Basic ' + EncodingUtil.base64Encode(headerValue);
        req.setHeader('Authorization', authorizationHeader);

        try {
            HttpResponse res = http.send(req);

            if (res.getStatusCode() == 200) {
                System.debug('Shipping API Response: ' + res.getBody());

                Map<String, Object> record = (Map<String, Object>) JSON.deserializeUntyped(res.getBody());
```

```
        req.setHeader('Authorization', authorizationHeader);

        try {
            HttpResponse res = http.send(req);

            if (res.getStatusCode() == 200) {
                System.debug('Shipping API Response: ' + res.getBody());

                Map<String, Object> record = (Map<String, Object>) JSON.deserializeUntyped(res.getBody());

                Shipment__c ship = new Shipment__c();
                ship.Name = (String) record.get('shipmentId');
                ship.Status__c = (String) record.get('status');
                ship.Estimated_Delivery__c = Date.valueOf((String) record.get('estimatedDelivery'));

                upsert ship Name; // match by shipmentId
            } else {
                System.debug('Shipping API Error: ' + res.getStatusCode() + ' ' + res.getBody());
            }

        } catch (Exception e) {
            System.debug('Callout failed: ' + e.getMessage());
        }
    }
}
```

Anonymous Window:

Enter Apex Code

```
ShipmentTrackingService.fetchShipmentStatus();
```

Open Log | Execute | Execute Highlighted

◆ Platform Events

Used for real-time notifications between Sales, Service, and Production.

- Example: When a Quote is Approved → publish event → Service Console gets notified→ starts order fulfillment.

- Steps:

  Setup → Platform Events → New Event: Order_Approved_Event__e.

  Fields: QuoteId, Status.

  Apex:

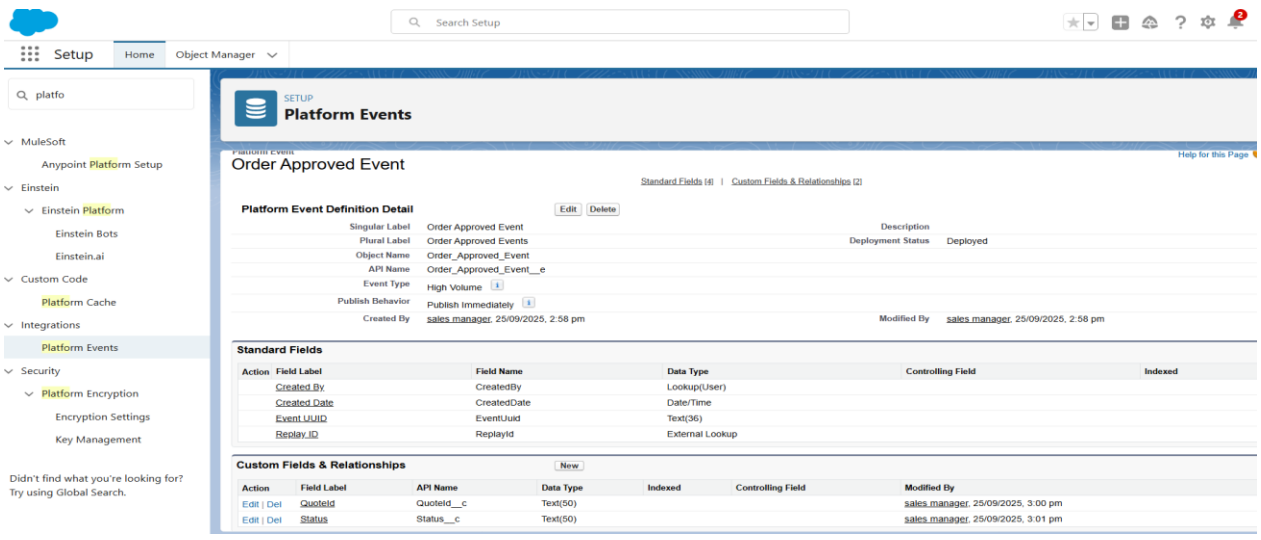
```
Order_Approved_Event__e event = new Order_Approved_Event__e(
    QuoteId__c = quote.Id,
    Status__c = 'Approved'
);
Database.SaveResult result = EventBus.publish(event);
```

Go to Setup → Quick Find → Platform Events → New Platform Event

Fill in the details:

- Label: Order Approved Event
- Plural Label: Order Approved Events
- API Name: Order_Approved_Event__e
- Publish Behavior: Publish Immediately (default)

Click Save



◆ Change Data Capture

Used to sync key object changes to ERP.

- Enable CDC for: Quote, Order, Shipment, Inventory.
- ERP system can subscribe to changes via Salesforce Streaming API.

Used in:

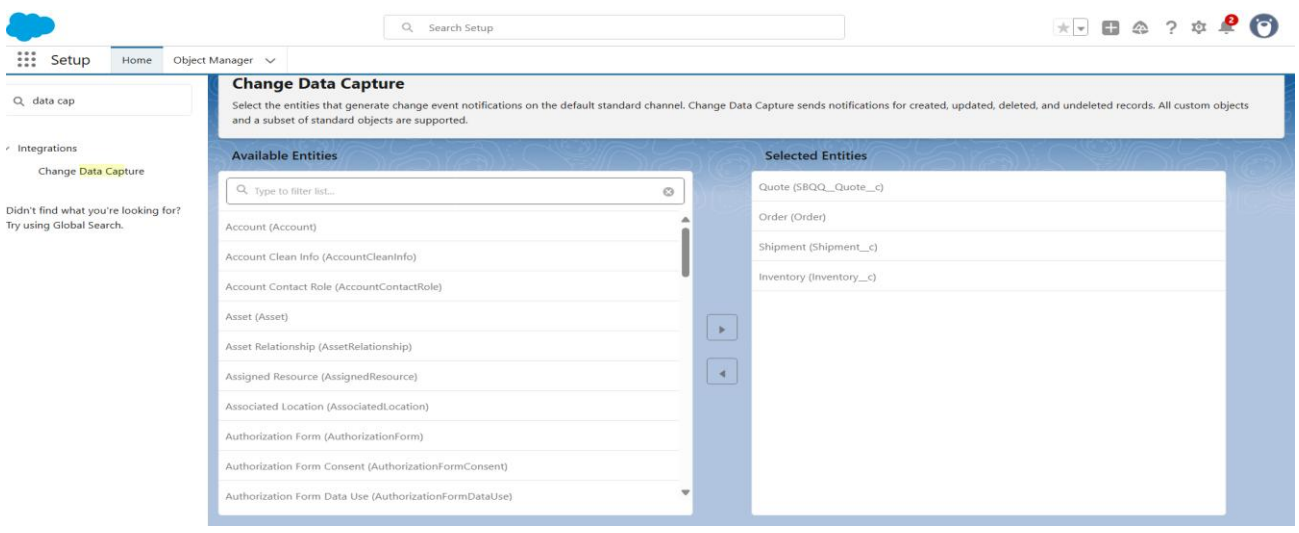
- Keeping ERP in sync with Salesforce when orders/shipments update

Go to Setup → Change Data Capture

Select the objects you want to track (for your project):

- Quote
- Order
- Shipment__c (your custom object)
- Inventory__c (your custom object)

Click Save

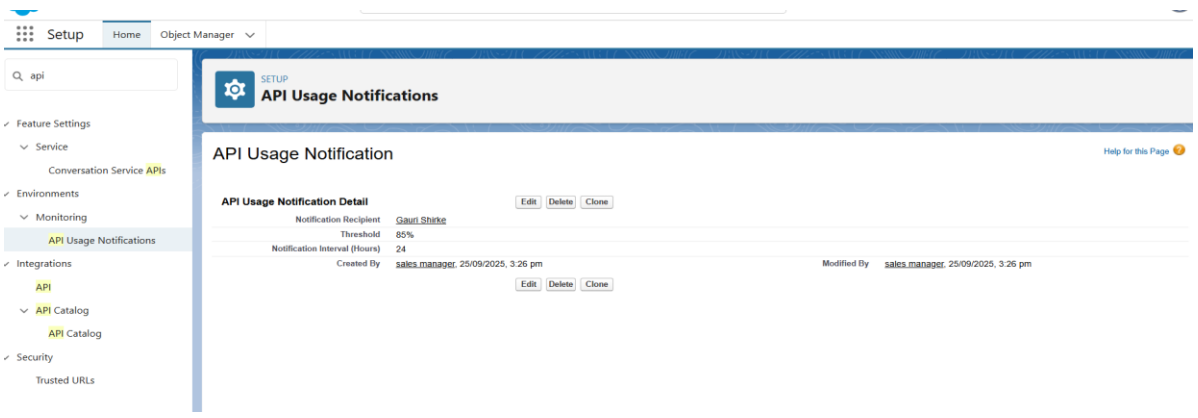


API Limits

Important for integrations (since ERP + Shipping APIs can be heavy).

Monitor: Setup → System Overview → API Usage.

- In Setup, type API Usage Notifications in the Quick Find box.
- Click API Usage Notifications.
- Click New to create a notification.
- Fill in:
- Threshold: 85% of daily limit
- Recipients: Custom Service Agent
- Save

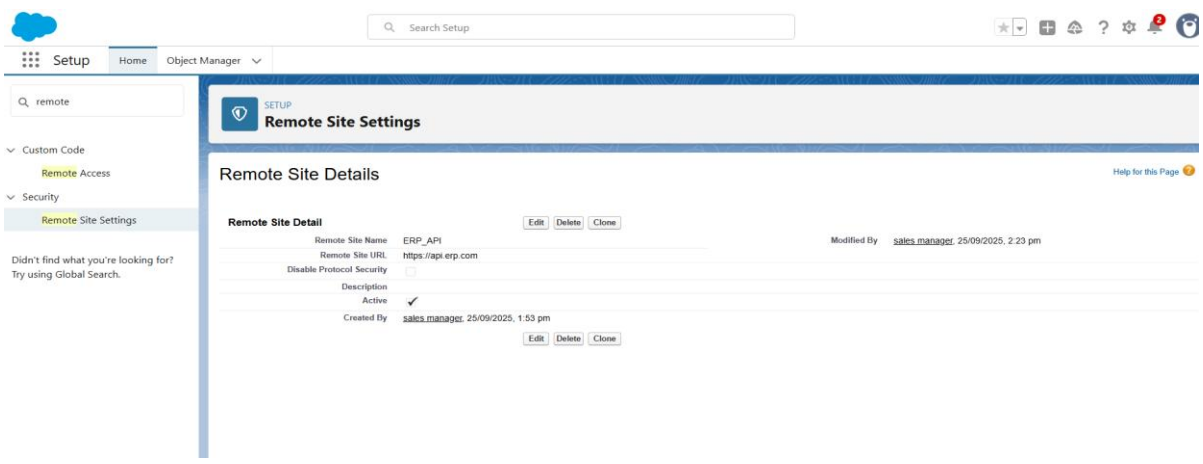


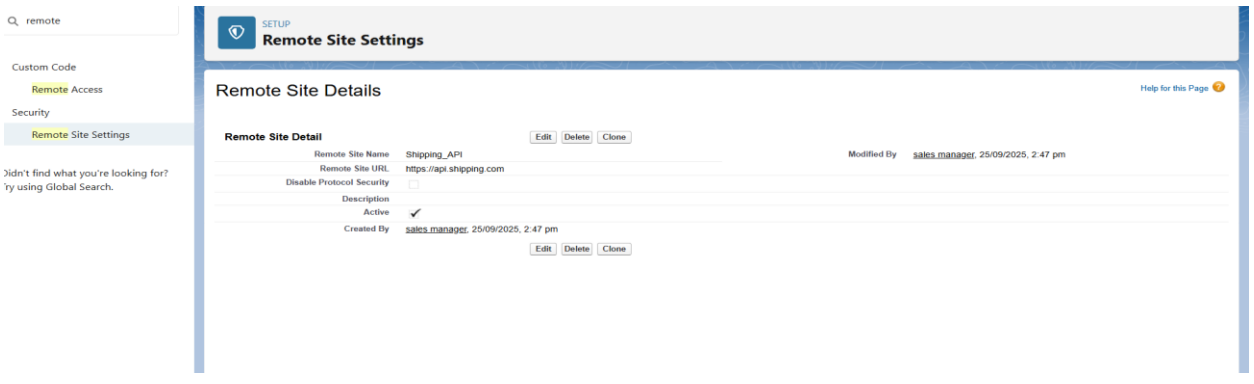
◆ Remote Site Settings

Go to Setup → Quick Find → Remote Site Settings.

Click New Remote Site.

- Remote Site Name: ERP_API
- Remote Site URL: https://api.erp.com (placeholder; use any valid API endpoint)
- Save



Remote Site Setting for shipping API:

- Setup → Remote Site Settings → New
- Remote Site Name: Shipping_API
- Remote Site URL: https://api.shipping.com