

Phase 7 Integration & External Access

»» Remote Site Settings & Named Credentials

➤ Remote Site for Google Maps API


➤ Setup → Remote Site Settings

- ✓ Name: Google_Maps_API
- ✓ URL: <https://maps.googleapis.com>
- ✓ Active: Checked

❖ Named Credential for External Email Service

➤ Setup → Named Credentials

- ✓ Label: Volunteer Email Service
- ✓ Name: Volunteer_Email_Service
- ✓ URL: <https://api.emailservice.com>
- ✓ Identity Type: Named Principal
- ✓ Authentication Protocol: OAuth 2.0
- ✓ Generate Authorization Header: Checked


 **SETUP**
Remote Site Settings

Remote Site Details

Remote Site Detail Edit Delete Clone

Remote Site Name	Google_Maps_API	Modified By	Aditya Vishwakarma, 26/09/2025, 12:22 am
Remote Site URL	https://maps.googleapis.com		
Disable Protocol Security	<input type="checkbox"/>		
Description	Google Maps API for event location mapping		
Active	<input checked="" type="checkbox"/>		
Created By	Aditya Vishwakarma, 26/09/2025, 12:22 am		

Edit Delete Clone

 **SETUP**
Named Credentials

Named Credentials External Credentials External Auth Identity Providers

1 Items - Sorted by Label New ▼

Label	Type	URL	External Credential	Actions
Volunteer Email Service	Secured Endpoint	https://api.emailservice.com	Volunteer Email Service Credential	▼

»» REST Callouts

❖ Apex Class: ExternalEmailService

```
public class ExternalEmailService {

    @future(callout=true)
    public static void sendWelcomeEmail(String participantEmail, String eventName) {
        try {
            HttpRequest req = new HttpRequest();
            req.setEndpoint('callout:Volunteer_Email_Service/send');
            req.setMethod('POST');
            req.setHeader('Content-Type', 'application/json');
            req.setTimeout(120000); // 2 minutes timeout

            Map<String, Object> emailData = new Map<String, Object>{
                'to' => participantEmail,
                'subject' => 'Welcome to ' + eventName,
                'body' => 'Thank you for registering for ' + eventName + '! We look forward to seeing you at the event.',
                'from' => 'noreply@volunteer.org'
            };

            req.setBody(JSON.serialize(emailData));

            Http h = new Http();
            HttpResponse res = h.send(req);

            if (res.getStatusCode() == 200 || res.getStatusCode() == 201) {
                System.debug('Email sent successfully to: ' + participantEmail);
                // Log successful email
                logEmailActivity(participantEmail, eventName, 'SUCCESS', 'Email sent successfully');
            } else {
                System.debug('Email send failed: ' + res.getBody());
                // Log failed email
                logEmailActivity(participantEmail, eventName, 'FAILED', res.getBody());
            }
        } catch (Exception e) {
            System.debug('Exception in sendWelcomeEmail: ' + e.getMessage());
            logEmailActivity(participantEmail, eventName, 'ERROR', e.getMessage());
        }
    }
}
```

»» Platform Events

❖ Custom Platform Event: Volunteer_Registration__e

- Setup → Platform Events
 - ✓ Label: Volunteer Registration
 - ✓ Plural Label: Volunteer Registrations
 - ✓ Object Name: Volunteer_Registration__e
- Fields:
 - ✓ Event_Id__c (Text, 18)
 - ✓ Participant_Email__c (Text, 255)
 - ✓ Registration_Type__c (Text, 50)

Platform Event
Volunteer Registration

Standard Fields (4) | Custom Fields & Relationships (4)

Platform Event Definition Detail

Edit Delete

Singular Label	Volunteer Registration	Description	
Plural Label	Volunteer Registrations	Deployment Status	Deployed
Object Name	Volunteer_Registration		
API Name	Volunteer_Registration__e		
Event Type	High Volume i		
Publish Behavior	Publish Immediately i		
Created By	Aditya Vishwakarma, 26/09/2025, 1:10 am	Modified By	Aditya Vishwakarma, 26/09/2025, 1:10 am

Standard Fields

Action	Field Label	Field Name	Data Type	Controlling Field	Indexed
Edit Del	Created By	CreatedBy	Lookup(User)		
Edit Del	Created Date	CreatedDate	Date/Time		
Edit Del	Event UUID	EventUuid	Text(36)		
Edit Del	Replay ID	ReplayId	External Lookup		

Custom Fields & Relationships

New

Action	Field Label	API Name	Data Type	Indexed	Controlling Field	Modified By
Edit Del	Event Id	Event_Id__c	Text(18)			Aditya Vishwakarma, 26/09/2025, 1:11 am
Edit Del	Event Name	Event_Name__c	Text(255)			Aditya Vishwakarma, 26/09/2025, 1:12 am
Edit Del	Participant Email	Participant_Email__c	Text(255)			Aditya Vishwakarma, 26/09/2025, 1:11 am
Edit Del	Registration Type	Registration_Type__c	Text(50)			Aditya Vishwakarma, 26/09/2025, 1:11 am

❖ Publisher (in VolunteerRegistrationController):

```
// Get event details for platform event
Volunteer_Event__c event = [
    SELECT Id, Event_Name__c
    FROM Volunteer_Event__c
    WHERE Id = :eventId
    LIMIT 1
];


// Insert participation record
Volunteer_Participation__c vp = new Volunteer_Participation__c(
    Event__c = eventId,
    Name = participantName,
    Attendance_Status__c = 'Registered'
);
insert vp;

// Publish platform event
Volunteer_Registration__e regEvent = new Volunteer_Registration__e(
    Event_Id__c = eventId,
    Registration_Type__c = 'New',
    Event_Name__c = event.Event_Name__c
);
```

»» Change Data Capture

❖ Enable CDC for Volunteer Events

- Setup → Change Data Capture
- Select Volunteer_Event__c
- Click Enable



SETUP

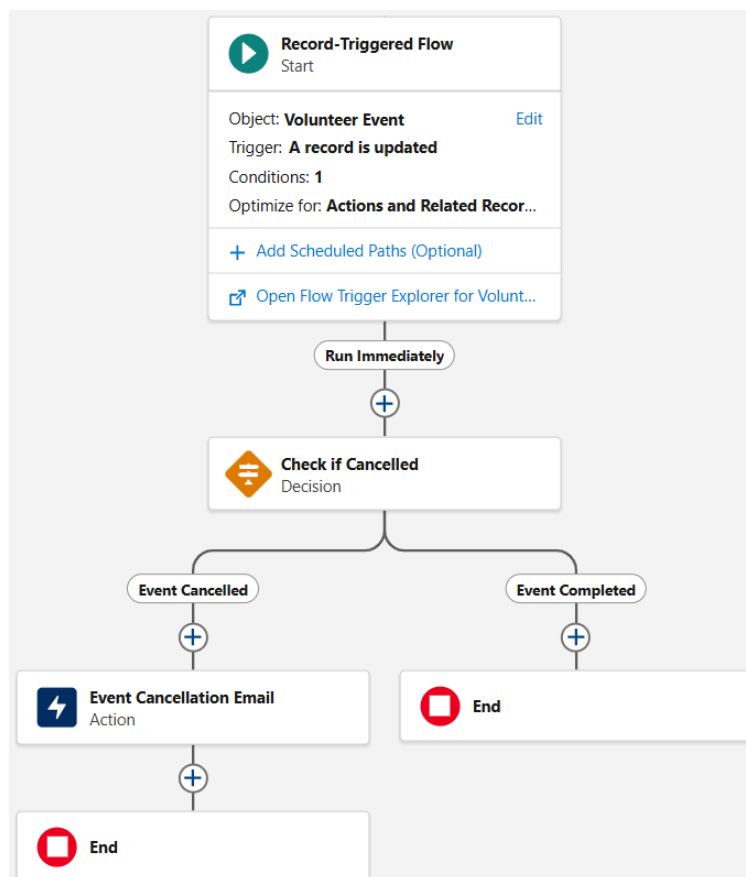
Change Data Capture

Select the entities that generate change event notifications on the default standard channel. Change Data Capture sends notifications for created, updated, delete are supported.

Available Entities	Selected Entities
<input type="text" value="Type to filter list..."/>	<div>Volunteer Event (Volunteer_Event__c)</div>
<div>API Usage Log (API_Usage_Log__c)</div>	
<div>Account (Account)</div>	
<div>Account Clean Info (AccountCleanInfo)</div>	

❖ CDC Subscriber Flow

- Setup → Flows → New Flow
 - ✓ Type: Record-Triggered Flow
 - ✓ Trigger: Volunteer_Event__c Change Event
- Actions: Send notification to coordinators when event status changes to 'Cancelled'



»» External Services

❖ Weather Service Integration

- Setup → External Services
 - ✓ Import OpenAPI spec for weather service
 - ✓ Generate Apex classes automatically
 - ✓ Use in event planning to check weather conditions

❖ Usage in Apex:

```
public class ExternalEmailService {  
  
    @future(callout=true)  
    public static void sendWelcomeEmail(String participantEmail, String eventName) {  
        try {  
            HttpRequest req = new HttpRequest();  
            req.setEndpoint('callout:Volunteer_Email_Service/send');  
            req.setMethod('POST');  
            req.setHeader('Content-Type', 'application/json');  
            req.setTimeout(120000); // 2 minutes timeout  
  
            Map<String, Object> emailData = new Map<String, Object>{  
                'to' => participantEmail,  
                'subject' => 'Welcome to ' + eventName,  
                'body' => 'Thank you for registering for ' + eventName + '! We look forward to seeing you at the event.',  
                'from' => 'noreply@volunteer.org'  
            };  
  
            req.setBody(JSON.serialize(emailData));  
  
            Http h = new Http();  
            HttpResponse res = h.send(req);  
  
            if (res.getStatusCode() == 200 || res.getStatusCode() == 201) {  
                System.debug('Email sent successfully to: ' + participantEmail);  
                // Log successful email  
                logEmailActivity(participantEmail, eventName, 'SUCCESS', 'Email sent successfully');  
            } else {  
                System.debug('Email send failed: ' + res.getBody());  
                // Log failed email  
                logEmailActivity(participantEmail, eventName, 'FAILED', res.getBody());  
            }  
        }  
    }  
}
```

»» OAuth & Authentication

❖ Connected App for Mobile Integration

- Setup → App Manager → New Connected App
 - ✓ Name: Volunteer Mobile App
 - ✓ API Name: Volunteer_Mobile_App
 - ✓ Contact Email: admin@volunteer.org
 - ✓ Enable OAuth Settings: Checked

- ✓ Callback URL: <https://volunteer.app/callback>
- ✓ Selected OAuth Scopes:
 - Access and manage your data (api)
 - Perform requests on your behalf at any time (refresh_token, offline_access)

The screenshot shows the 'App Settings' interface for a 'Volunteer App'. The left sidebar lists various settings categories, with 'Utility Items (Desktop Only)' currently selected. The main area displays the configuration for a utility item named 'Quick Register'. On the right, the 'Properties' panel shows the following details:

- Label:** Quick Register
- Icon:** A lightning bolt icon with a fallback option.
- Panel Width:** 480
- Panel Height:** 480
- Start automatically:** An unchecked checkbox.

»» API Limits Monitoring

❖ Apex Class for API Usage Tracking

```
public class APILimitMonitor {

    public static void logAPIUsage(String operationType) {
        try {
            Integer callouts = Limits.getCallouts();
            Integer calloutLimit = Limits.getLimitCallouts();
            Decimal usagePercentage = calloutLimit > 0 ? (callouts * 100.0 / calloutLimit) : 0;

            API_Usage_Log__c log = new API_Usage_Log__c(
                Operation_Type__c = operationType,
                API_Requests_Used__c = callouts,
                API_Requests_Limit__c = calloutLimit,
                Timestamp__c = Datetime.now(),
                Usage_Percentage__c = usagePercentage
            );
            insert log;

            // Alert if approaching limit (80% threshold)
            if (usagePercentage > 80) {
                sendLimitAlert(operationType, usagePercentage);
            }

        } catch (Exception e) {
            System.debug('Error logging API usage: ' + e.getMessage());
        }
    }
}
```

»» Salesforce Connect (External Objects)

❖ External Data Source for Volunteer Skills Database

- Setup → External Data Sources
 - ✓ Type: OData 2.0 Adapter
 - ✓ URL: <https://skills.database.com/odata>
 - ✓ Authentication: Named Credential

❖ External Object: External_Volunteer_Skills__x

- Fields:
 - ✓ Skill_Name__c
 - ✓ Skill_Level__c
 - ✓ Volunteer_Email__c
- Used for matching volunteers to appropriate events

External Data Source: OData 2.0 Adapter

Connect to another Salesforce org or a third-party database or content system.

« [Back to External Data Sources](#)

EditValidate and SyncDelete

External Data Source	OData 2.0 Adapter
Name	OData_2_0_Adapter
Type	Salesforce Connect: OData 2.0

▼ Parameters

URL	https://skills.database.com/odata
Connection Timeout (Seconds)	120
Writable External Objects	<input type="checkbox"/>
High Data Volume	<input type="checkbox"/>
Server Driven Pagination	<input type="checkbox"/>
Request Row Counts	<input checked="" type="checkbox"/>
Compress Requests	<input type="checkbox"/>
Enable Search	<input checked="" type="checkbox"/>
Custom Query Option for Salesforce	