Phase 7: Integration & External Access

This phase covers how Salesforce integrates with external systems, secures API access, and streams data changes in real time. Below are concise descriptions and setup guidance for each integration capability you'll commonly use when connecting Salesforce to other platforms.

Named Credentials

Named Credentials centralize the URL and authentication details for external endpoints so that callouts can use them securely without hard-coding credentials. Create a Named Credential in Setup > Named Credentials, set the endpoint URL, choose an authentication provider or username/password, and reference it from Apex HTTP callouts or external data sources. This simplifies credential rotation and enforces secure storage of secrets. Use Named Credentials wherever possible instead of embedding auth tokens in code.

External Services

External Services lets admins import an OpenAPI (Swagger) definition or schema for an external REST API and register its actions inside Salesforce. After registering, Flow Builder and Apex can call those external actions declaratively. To configure: upload an OpenAPI spec under Setup > External Services, provide authentication (Named Credential), and then use the generated actions in Flows or Apex. This reduces custom coding for predictable API operations and makes maintenance easier.

Web Services (REST / SOAP)

Salesforce supports both REST and SOAP web services. You can build Apex REST endpoints (via @RestResource) to expose data to external systems, or consume external SOAP/REST services via Apex callouts. For SOAP, generate Apex classes from WSDL (Setup > Apex Classes > Generate from WSDL). For REST, use HttpRequest/Http classes or register external services. Always secure endpoints using OAuth, named credentials, or IP restrictions.

Callouts

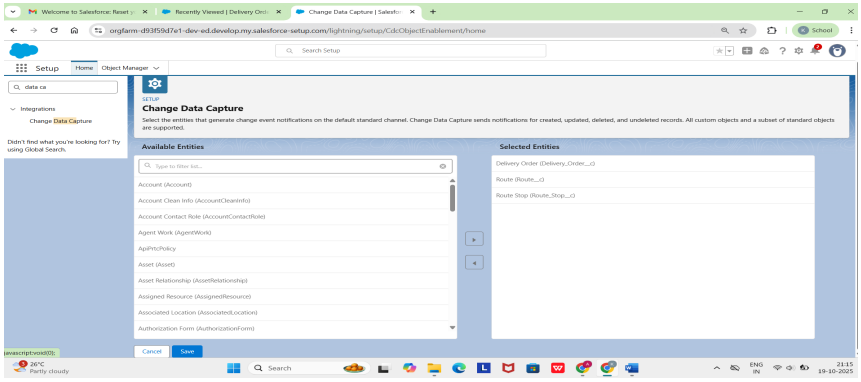
Callouts are outbound HTTP/HTTPS requests Salesforce makes to external services. Implement callouts in Apex using Http, HttpRequest, and HttpResponse classes. Callouts can be synchronous (from Apex) or asynchronous (Queueable, Future). Ensure the target URL is allowed in Remote Site Settings or use Named Credentials to avoid permission errors. Remember governor limits and always handle timeouts and retries sensibly.

Platform Events

Platform Events provide a publish/subscribe model within Salesforce and to external systems. Define an event object, publish events from Apex, Flows, or external systems, and subscribe via CometD, Apex triggers, or external subscribers. Use Platform Events for decoupled integrations requiring near-real-time communication (e.g., notify an external dispatcher when a route changes). They are resilient and scalable for event-driven integration patterns.

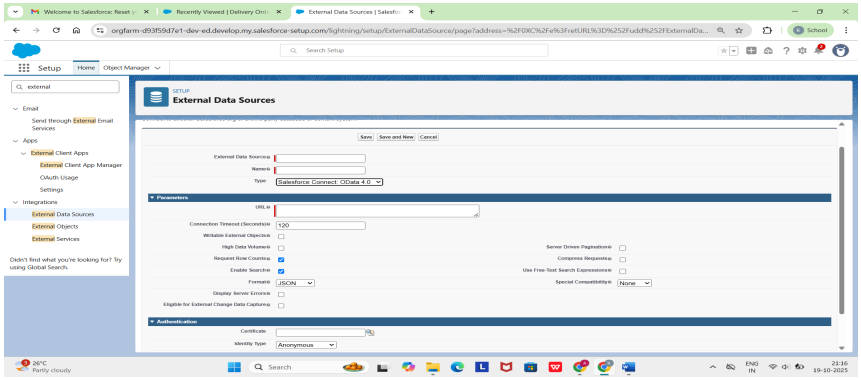
Change Data Capture (CDC)

Change Data Capture streams data change events (create/update/delete/undelete) for selected objects on the standard channel. Consumers (external systems, middleware) can subscribe and react to changes in near real-time. Enable CDC in Setup > Change Data Capture and pick the objects (e.g., Delivery Order, Route, Route Stop). Use CDC for synchronizing systems without polling; it's efficient and reduces integration complexity.



Salesforce Connect

Salesforce Connect surfaces external data in Salesforce using external objects (no data storage in Salesforce). It supports OData and other adapters. To configure, go to Setup > External Data Sources and create a new External Data Source (Salesforce Connect: OData 4.0). Set the URL and authentication (Named Credential). After validation, create External Objects and use them in record pages and reports like native objects.



API Limits

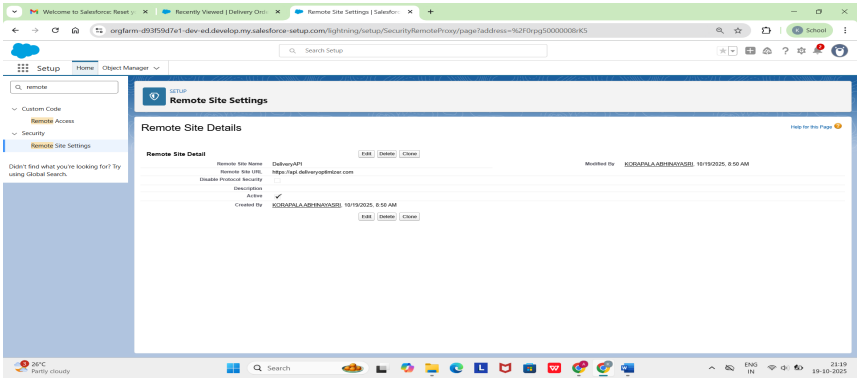
Salesforce enforces API usage limits (daily API calls, concurrent long-running requests) depending on edition and licenses. Monitor limits in Setup > System Overview or via REST endpoints. Design integrations to minimize API consumption: use Bulk API for large imports, Change Data Capture for change-based sync, and caching or batching where appropriate. Handle HTTP 429 / 503 responses gracefully with backoff.

OAuth & Authentication

OAuth is the recommended approach to authenticate external clients and services with Salesforce. Use connected apps (Setup > App Manager) to obtain client id/secret and configure OAuth flows (Web Server, JWT, Username-Password, etc.). For server-to-server integrations, JWT Bearer Token flow or OAuth with refresh tokens is common. Always scope permissions to least privilege and rotate credentials regularly.

Remote Site Settings

Remote Site Settings is a legacy approach to allow Apex callouts by registering external endpoints (Setup > Remote Site Settings). Enter the remote URL and activate it so Apex HttpRequest calls succeed. If using Named Credentials, Remote Site Settings is not required; Named Credentials encapsulate the endpoint and optional auth for safer callouts.



Conclusion

These integration features form a robust toolkit for connecting Salesforce with external applications. Combine change streaming (CDC, Platform Events), secure authentication (Named Credentials, OAuth), and efficient data access (Salesforce Connect) to build scalable, secure, and maintainable integrations. Always account for API limits, secure credentials, and prefer declarative options when available.