**Phase 7: Integration & External Access**

1. **Named Credentials**

Named Credentials are a secure way to store authentication details for external systems in Salesforce. Instead of hardcoding usernames, passwords, or tokens, administrators can configure them in Salesforce and reference them in Apex, making integrations more secure and easier to maintain.

1. **External Services**

External Services allow Salesforce to connect with APIs without heavy coding. By importing API specifications (such as OpenAPI/Swagger), Salesforce can automatically generate Apex actions, enabling declarative integration with external systems using Flow or Process Builder.

1. **Web Services (REST/SOAP)**

Salesforce supports REST and SOAP web services to expose or consume APIs:

* **REST API**: Lightweight, JSON-based, and commonly used for modern integrations.
* **SOAP API**: XML-based, suitable for enterprise-level or legacy system integrations.

These APIs allow external applications to read, update, or delete Salesforce data.

1. **Callouts**

Callouts are outbound requests made from Salesforce to external systems (via REST or SOAP). Apex callouts allow Salesforce to send data, request information, or trigger operations in third-party systems. They require prior configuration of Remote Site Settings or Named Credentials for security.

1. **Platform Events**

Platform Events enable event-driven communication within Salesforce or between Salesforce and external systems. They work like a publish/subscribe model: one system publishes an event, and subscribers receive real-time notifications. This is useful for loosely coupled integrations.

1. **Change Data Capture (CDC)**

Change Data Capture allows external systems to receive real-time notifications whenever Salesforce records are created, updated, deleted, or undeleted. CDC ensures synchronization between Salesforce and other applications without the need for frequent polling.

1. **Salesforce Connect**

Salesforce Connect enables Salesforce to access data stored in external systems without actually importing it. It uses **External Objects** to display external data in real time, as if it were stored in Salesforce, making integrations seamless and reducing storage costs.

1. **API Limits**

Salesforce enforces limits on API calls to maintain performance and prevent system abuse. These limits vary based on edition and license type. Developers and admins must design integrations with efficiency in mind, using techniques like bulk APIs, caching, or event-driven models.

1. **OAuth & Authentication**

OAuth is the industry-standard protocol for secure API authentication. Salesforce uses OAuth for Single Sign-On (SSO) and secure integrations. It ensures that users or external systems can access Salesforce data without sharing passwords, by issuing secure tokens for authentication.

1. **Remote Site Settings**

Remote Site Settings define which external endpoints Salesforce is allowed to call. Before making an HTTP callout from Apex, the target endpoint must be added to Remote Site Settings (unless Named Credentials are used). This prevents unauthorized connections and enhances security.