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A Review on Salesforce Integration

Lavanya Yallanki[1], Yogeshchandra Puranik[2]

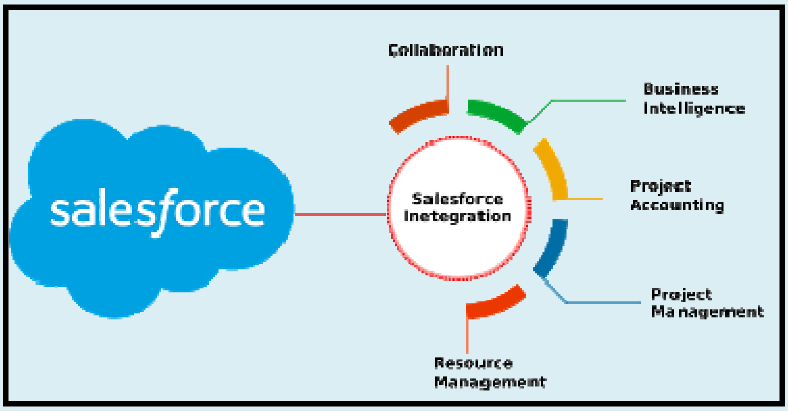
[1]PG Student, [2]Assistant Professor,
[1,2]Affiliated to Department of (MCA), P.E.S.'s Modern college of Engineering, Pune, Maharashtra, India

ABSTRACT

Nowadays Salesforce is one of the world's leading customer relationship management (CRM) programs. It helps to manage customers, sales and service in one platform and salesforce provides many automation and reporting tools.

Salesforce Integration is the process of connecting Salesforce.com to other 3rd party external systems and applications like Facebook, LinkedIn, Gmail, Outlook, Hub Soft, Heroku, SAP, Oracle, Microsoft, WordPress CMS and external websites. The Salesforce API is as vast as deep blue sea because it uses an API-first approach for building features on the Salesforce platform. API first means to build a robust API before designing its UI. This approach provides the flexibility to mold the data in whatever format required.

Appropriate Salesforce Integration allows enough access and also allows the analysis of information. A Salesforce Integration solution is a software that puts together and oversees correspondence between Salesforce CRM and distinct frameworks, utilizing APIs to decode messages that systems exchange. The decision of a Salesforce integration pattern depends upon the number of frameworks to incorporate and their particulars, as well as the number of integration levels to enfold.



A flawless Salesforce integration will help organization in the following ways –
- Connects Marketing, Sales & Service with ERP, MRP, SRP and other back office and legacy systems.
- Gives a true 360-degree view of the customer across all systems.
- Implement a multisystem end-to-end workflow over the systems.
- Gives real time data access to come up with better sales and service experience.
- Strengthen the efficiency of process execution.

KEYWORDS: *Salesforce Integration, API*

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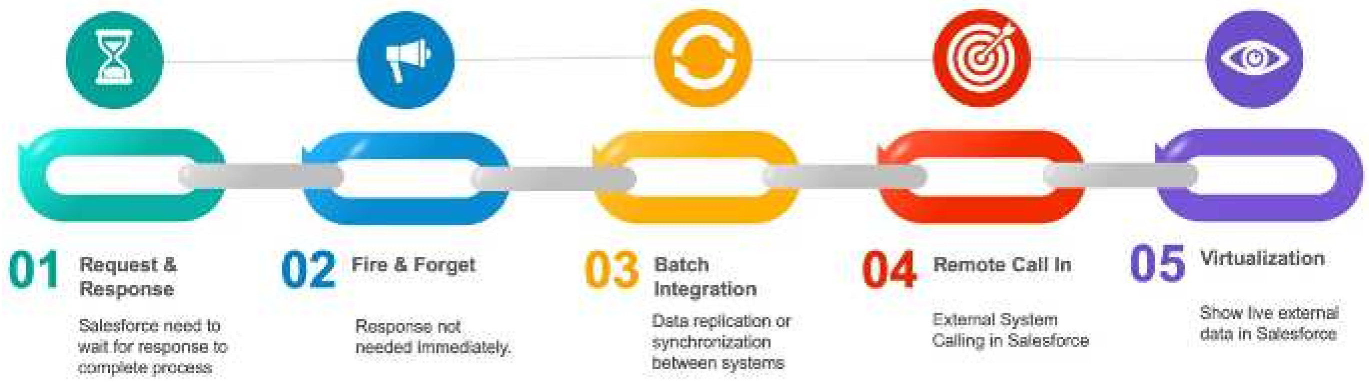
INTEGRATION PATTERNS IN SALESFORCE

Integration patterns are a useful resource for developers evaluating solutions for an integration strategy. Integration patterns identify how systems interact as part of an integration solution design.


01 Request & Response
Salesforce need to wait for response to complete process
02 Fire & Forget
Response not needed immediately.
03 Batch Integration
Data replication or synchronization between systems
04 Remote Call In
External System Calling in Salesforce
05 Virtualization
Show live external data in Salesforce

- **Remote Process Invocation - Request & Response**

Request and Response pattern is beneficial for allowing data to be sent out to an external system to perform some functioning and redirected back to Salesforce for it to be updated. This is to make sure that the data has successfully been retrieved and processed on the other end but to get any response on which further processing can occur in Salesforce. The Salesforce API will do the first callout while holding back on the external system to complete it before making progress.

External Services offers a Restful no code solution to send over primitive data types to and from the External REST APIs using a lightning flow. When using a lightning component creating REST/SOAP calls or a custom Visualforce page with SOAP using APEX Rest or SOAP. This allows the External Interface to bring in the APEX class and methods to perform REST/SOAP actions on them. APEX Rest/SOAP permits writing out the classes to give access to the external system to consume data from salesforce and use APEX HTTP callout to build a SOAP/REST call to the external API.

- **Remote Process Invocation - Fire and Forget**

Fire and Forget is used when the sent request does not require waiting for a response. There are three Driven Platform Events that can be used since it allows the salesforce org to be either a subscriber or publisher of an event. This approach simplifies the process by contributing both a no code and low code approach. There are two no code approaches. One is a Process – Driven Platform Event utilizing a process builder to represent a Platform event. This can be done by utilizing the create record action and selecting the Platform event as the record type. Workflow – Driven Platform Event uses a flow to publish the event and has similar steps to bring out the event with a process builder. It uses the create record element and selects the platform event as the record type. Customized –Driven Platform Event is the less code approach which is acquired using an Apex Class to bring out the event using the Event Bus class. Then once the event has been published the external application can support the event using CometD. Apart from using CometD the event can be subscribed from a Process Trigger, the pause Event in a workflow, or an Apex Trigger. The next technique is Outbound Messaging and call backs which uses triggered workflows to forward an outbound message to the external system when an insert or update happens. This allows the user to select the object that has to be sent; define the endpoint and the fields from the object to be sent.

- **Batch Integration**

The most common method of data integration which is appropriate for less frequently changing data. It is an effortless way for implementing and provides an excellent solution for processing flat files.

- **Remote Call – In**

A remote system can create, retrieve, update, or delete data which is stored in Lightning Platform. When there is a remote system which makes updates on Salesforce org a Remote Call-In pattern would be used. This allows the remote API to connect to Salesforce which can make changes to the data that has changed and notify Salesforce of external events. Remote system calls on Salesforce to either update or to query the data. It waits for successful completion & updates the response back in Salesforce.

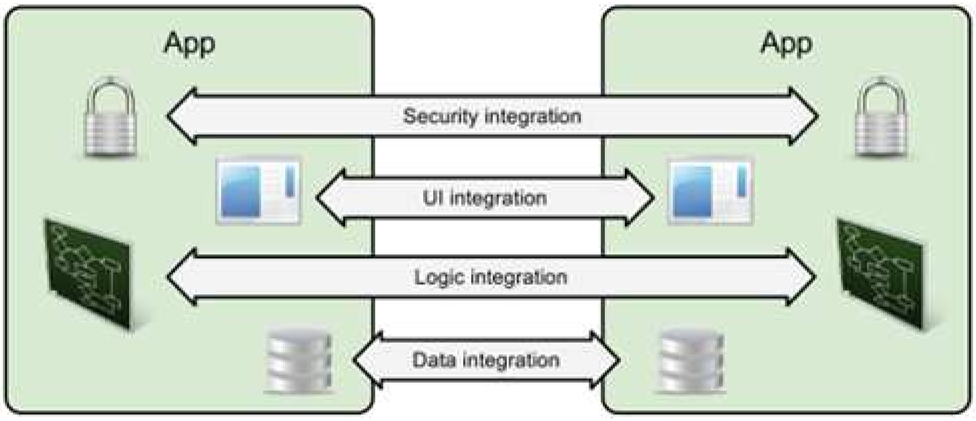
Remote systems is connected to Salesforce using the below methods:

- Soap API
- REST API
- Apex Web Services
- Apex REST Services
- Bulk API

- **Data Virtualization**

Data virtualization pattern is used when an external system performs operations that are not handled by or carries data that is not present in Salesforce. This integration pattern allows users to use the Salesforce platform to acquire that data without learning the external system. It allows for real-time access to the latest version of information from an external system without having to store the data in Salesforce.

POSSIBLE WAYS TO INTEGRATE WITH SALESFORCE



- **Data Integration**

Data Integration uses SOAP APIs and REST APIs. It mostly handles data synchronization requirements, where one application in an enterprise acts as the primary source for a particular business object, like Account. It requires no coding in Salesforce, which is an advantage, but then it cannot implement any custom logic.

Data Integration is necessary when needed to sync data from two or more systems. As a result, every add-on that has been integrated will share real-time data.

➢ **User Interface Integration**

Salesforce allows designers and developers to create fascinating front-end User Interfaces (UI) for a much logical experience. The front-end development is usually done through Visualforce and the Lightning Component Framework in Salesforce.

User Interface Integration combines the UIs of at least two frameworks. It gives users a single point of entry into many applications. The most suitable example is Facebook Apps, which appears to be in the Facebook occurrence but in reality, the content is served from different application traders.

➢ **Business Logic Integration**

Business Logic Integration uses Apex Web Services for Inbound and Apex Callouts for Outbound. It typically handles cases where business logic is built out across several applications to implement the complete end-to-end business process.

TYPES OF SALESFORCE INTEGRATION

Salesforce is the most flexible tool which offers ample ways to integrate data.

➢ **Real-Time Integration**

Real-time integration is a high affinity to line up sales and marketing successfully. It is more suitable and less challenging to handle errors and control queues.

➢ **App Exchange**

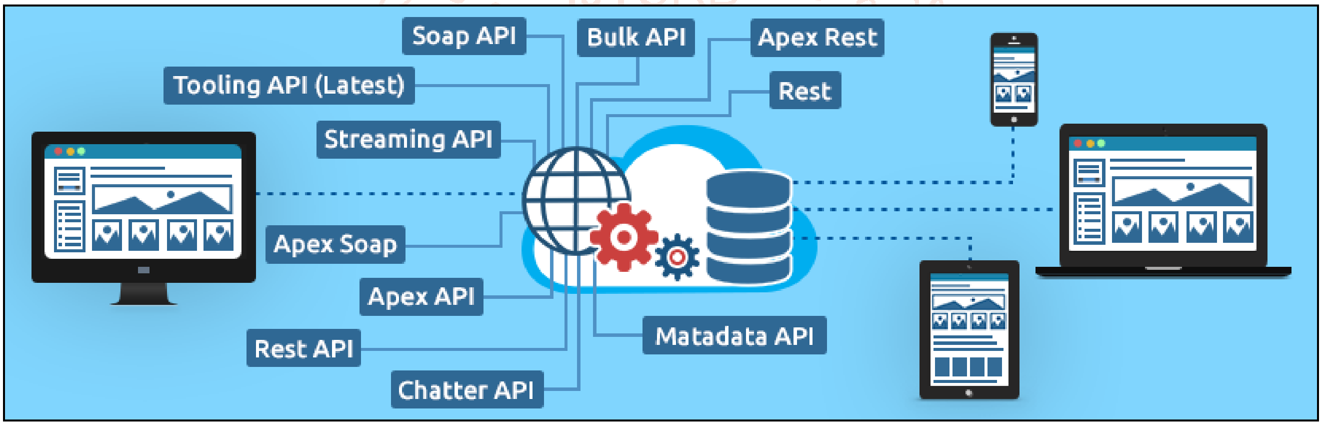
There are several apps available in Salesforce which can be right away installed in the Salesforce environment. They are necessary in reducing time and money in proper integration and hold up future enhancements.

➢ **Real-Time Mashups**

It requires building-up of the user interface in Visualforce to create personalized UIs. They are commonly used for evaluating the data from external systems quickly.

API INTEGRATION SOLUTIONS

The API Integration solutions gives access to developers to connect to the external API no matter the Protocol or Data Format used. Below is the list of API Integration solutions that Salesforce offers:



➢ **REST API**

REST stands for Representational state transfer. It is a simple and strong web service built on restful principles. It discloses all varieties of Salesforce functionality via REST resources and HTTP methods. For example, one can create, read, update, and delete (CRUD) records, search or query to search data, retrieve object metadata, and access information about limits in the org. REST API supports XML and JSON both.

➢ **SOAP API**

SOAP API stands for Simple Object Access Protocol API which only supports XML.

It is a robust and strong web service built on the industry-standard protocol of the same name. It can be utilized to create, update, delete, retrieve records in any language that supports web services. It is mainly used to maintain passwords, perform searches, and retrieve metadata. SOAP API supports XML only as it uses Web Services Description Language (WSDL) files as a formal Contract between API and consumer.

➢ **Bulk API**

Bulk API is optimized to work with large volumes of data.It is used for querying, inserting, updating or deleting large volumes of data. Allows to query or load large sets of data programmatically. It is based on REST and executes asynchronously.Bulk API supports attachment uploading. It sends data in batches over HTTP.

Salesforce provides an interface to check the status of the Bulk API job.

➢ **Metadata API**

Salesforce metadata API is used by developers to retrieve, create, deploy, update, or delete the customized data. The purpose of Salesforce Metadata is to be used for management to mold customizations and build tools to assist management at the mode of metadata. The easiest way to acquire the functionality in Metadata API is to use the IDE of *Force.com* or Ant migration tool.

➢ **Streaming API**

Streaming API is the radar which allows to define events and push notifications to the client app when the event occurs.

No need to keep an active lookout for data changes or to continuously poll Salesforce and create unnecessary API requests.

Streaming API also keeps the external source in coincide with the Salesforce data with PushTopic events and Change Data Capture events. It also allows the processing of business logic in an external system in response to data changes in Salesforce.

- **APEX SOAP**

Apex SOAP web services gives access to an external application to call Apex methods via SOAP Web services. Apex callouts enable Apex to call external web or HTTP services.

- **APEX REST**

One can expose Apex classes and methods so that external applications will be able to access code and applications via the REST architecture. This is achieved by defining Apex class with @RestResource notation to expose it as a REST resource. Adding notation to methods can also expose them through REST. For example, @HttpGet annotation can be used for a method to expose it as a REST resource that can be called by an HTTP GET request.

- **Tooling API**

Tooling API is used to fetch the metadata like Apex classes, Apex triggers, custom objects, custom fields, etc. If anyone wants to get the list of Custom Objects or Custom fields, there is no need to manually gather the details from the whole SF organization. Instead, it can be gathered with the help of Tooling API SOQL. Tooling API came in the Spring' 13 release.

- **Chatter API**

Chatter API is a REST API for Chatter to display Salesforce information, especially in mobile applications. Responses are localized, structured for presenting, and can be filtered to contain exactly what the application needs.

BENEFITS OF SALESFORCE INTEGRATION

- **Offers all-in-one access**

Users don't need to switch systems to get what they need. They can stay logged into one system to get all done.

- **Increases productivity**

Teams have to do a lot of cut-paste of data to make sure it appears in all systems. However, manual tasks may lead to mistakes and turn into a time consumer. Integrated systems have automated checks and balances to make sure they have the same information.

- **Provides effortless access to data**

System integration allows information to be acquired from all the integrated systems. Having more information which can convert into meaningful information, the more information you have for making better decisions.

- **Enhances communication**

One division may be more convenient with Salesforce while another prefers to work with a different system. Integrating these two systems will allow each team to work in the system they prefer, which gracefully communicates and leads to more data sharing.

- **Automates workflows without any code**

Since integrated systems play well together, their workflows can be automated with point-and-click.

- **Provides more insightful reporting**

Users get more detailed and relevant reports that help them to make better decisions and take the best actions.

CONCLUSION

Salesforce is an easy to learn and growing technology in the market and all data is stored onto the cloud. The main purpose of this review paper is to establish the basic concepts of Salesforce Integration. Also for learning this technology no one needs to have coding knowledge. Every learning material is available on the internet and Salesforce.com also has a free demo.

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