

# API Integration with Heroku Java



**salesforce**<sup>®</sup>  
**Platform**

# Safe Harbor

Safe harbor statement under the Private Securities Litigation Reform Act of 1995:

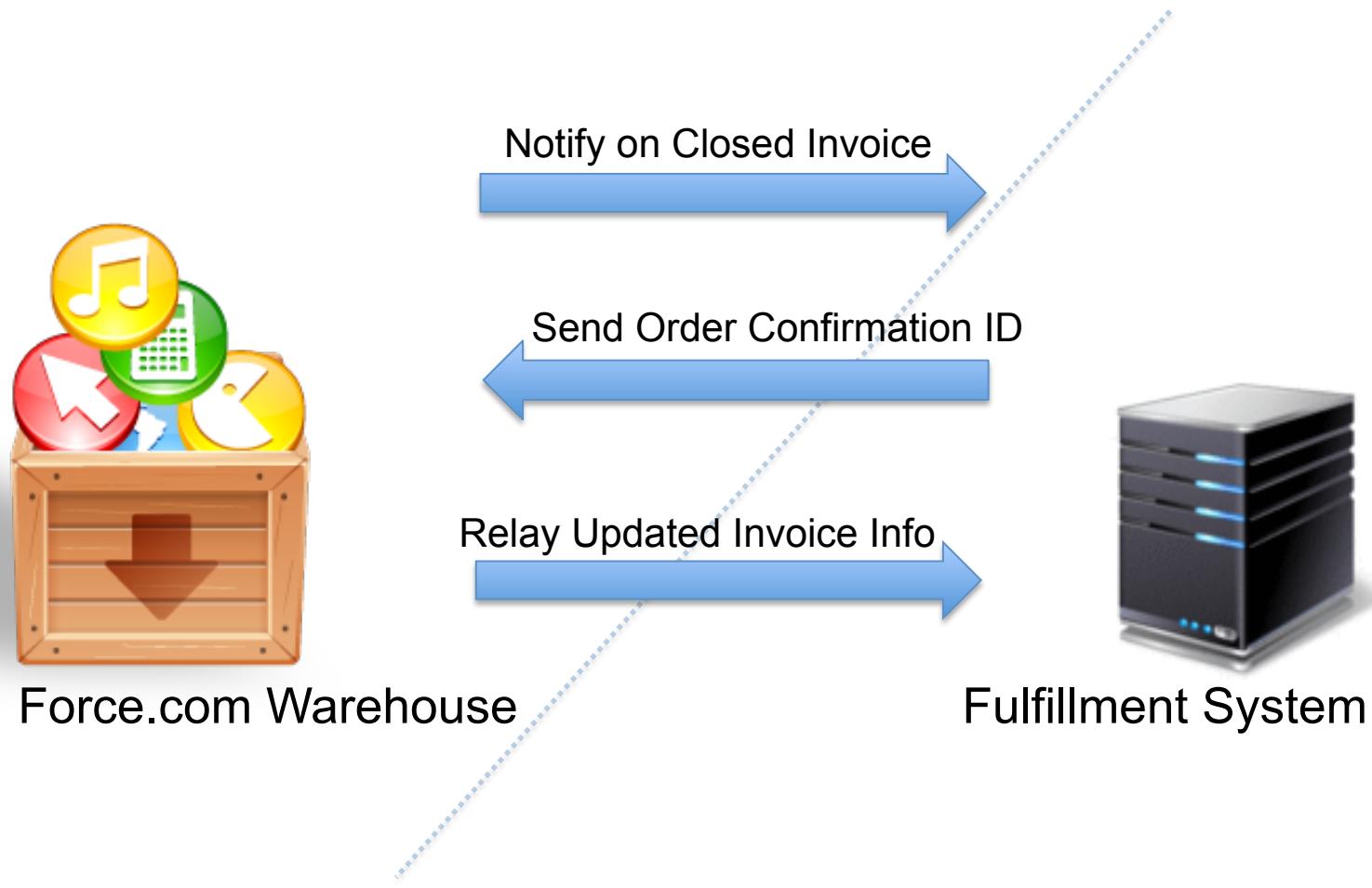
This presentation may contain forward-looking statements that involve risks, uncertainties, and assumptions. If any such uncertainties materialize or if any of the assumptions proves incorrect, the results of salesforce.com, inc. could differ materially from the results expressed or implied by the forward-looking statements we make. All statements other than statements of historical fact could be deemed forward-looking, including any projections of product or service availability, subscriber growth, earnings, revenues, or other financial items and any statements regarding strategies or plans of management for future operations, statements of belief, any statements concerning new, planned, or upgraded services or technology developments and customer contracts or use of our services.

The risks and uncertainties referred to above include – but are not limited to – risks associated with developing and delivering new functionality for our service, new products and services, our new business model, our past operating losses, possible fluctuations in our operating results and rate of growth, interruptions or delays in our Web hosting, breach of our security measures, the outcome of any litigation, risks associated with completed and any possible mergers and acquisitions, the immature market in which we operate, our relatively limited operating history, our ability to expand, retain, and motivate our employees and manage our growth, new releases of our service and successful customer deployment, our limited history reselling non-salesforce.com products, and utilization and selling to larger enterprise customers. Further information on potential factors that could affect the financial results of salesforce.com, inc. is included in our annual report on Form 10-K for the most recent fiscal year ended January 31, 2011 and in our quarterly report on Form 10-Q for the most recent fiscal quarter ended July 31, 2011. These documents and others containing important disclosures are available on the SEC Filings section of the Investor Information section of our Web site.

Any unreleased services or features referenced in this or other presentations, press releases or public statements are not currently available and may not be delivered on time or at all. Customers who purchase our services should make the purchase decisions based upon features that are currently available. Salesforce.com, inc. assumes no obligation and does not intend to update these forward-looking statements.



Create an external Java-based endpoint with authenticated, bi-directional communication to process invoice fulfillments



Create an external Java-based endpoint with bi-directional communication to process invoice fulfillments

**Create an external Java-based endpoint with authenticated, bi-directional communication to process invoice fulfillments**





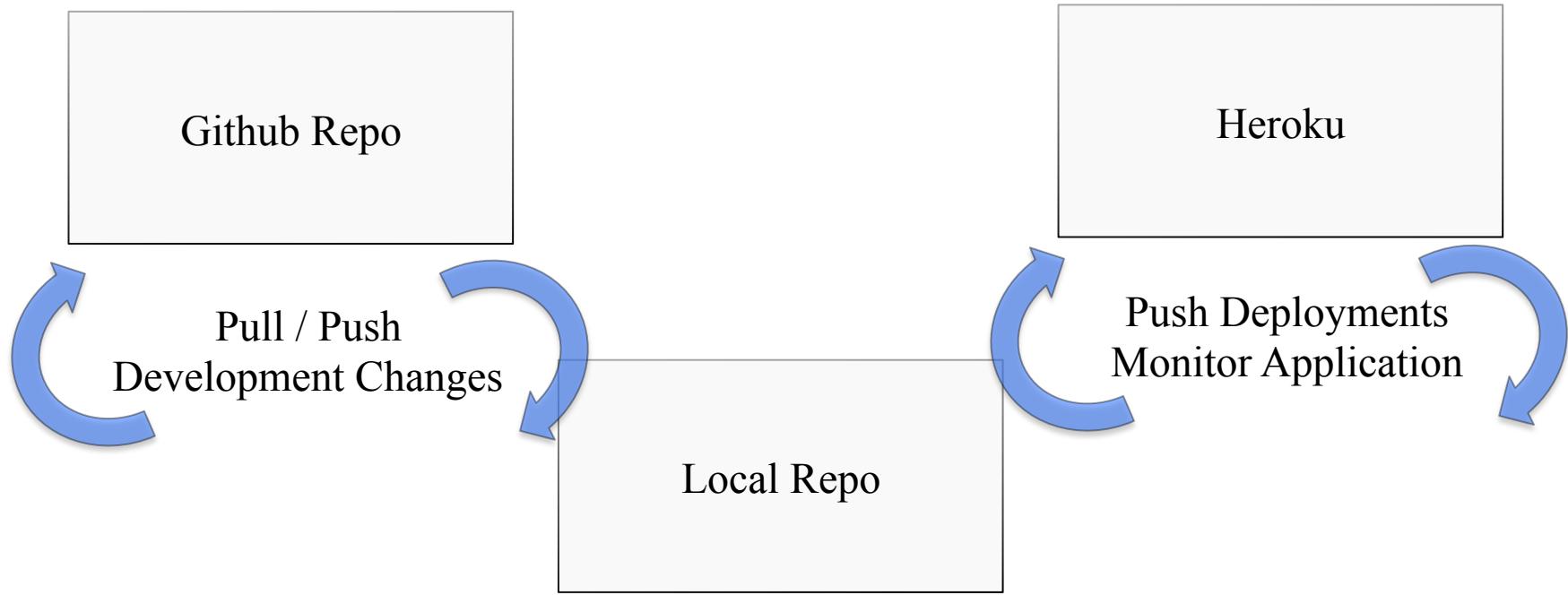
# heroku



## **Polyglot framework**

**PaaS architecture which allows for multiple language to be deployed**





```
$ git push heroku master
Counting objects: 67, done.
Delta compression using up to 4 threads.
Compressing objects: 100% (53/53), done.
writing objects: 100% (67/67), 26.33 KiB, done.
Total 67 (delta 5), reused 0 (delta 0)
```

Create an external Java-based endpoint with **authenticated**, bi-directional communication to process invoice fulfillments



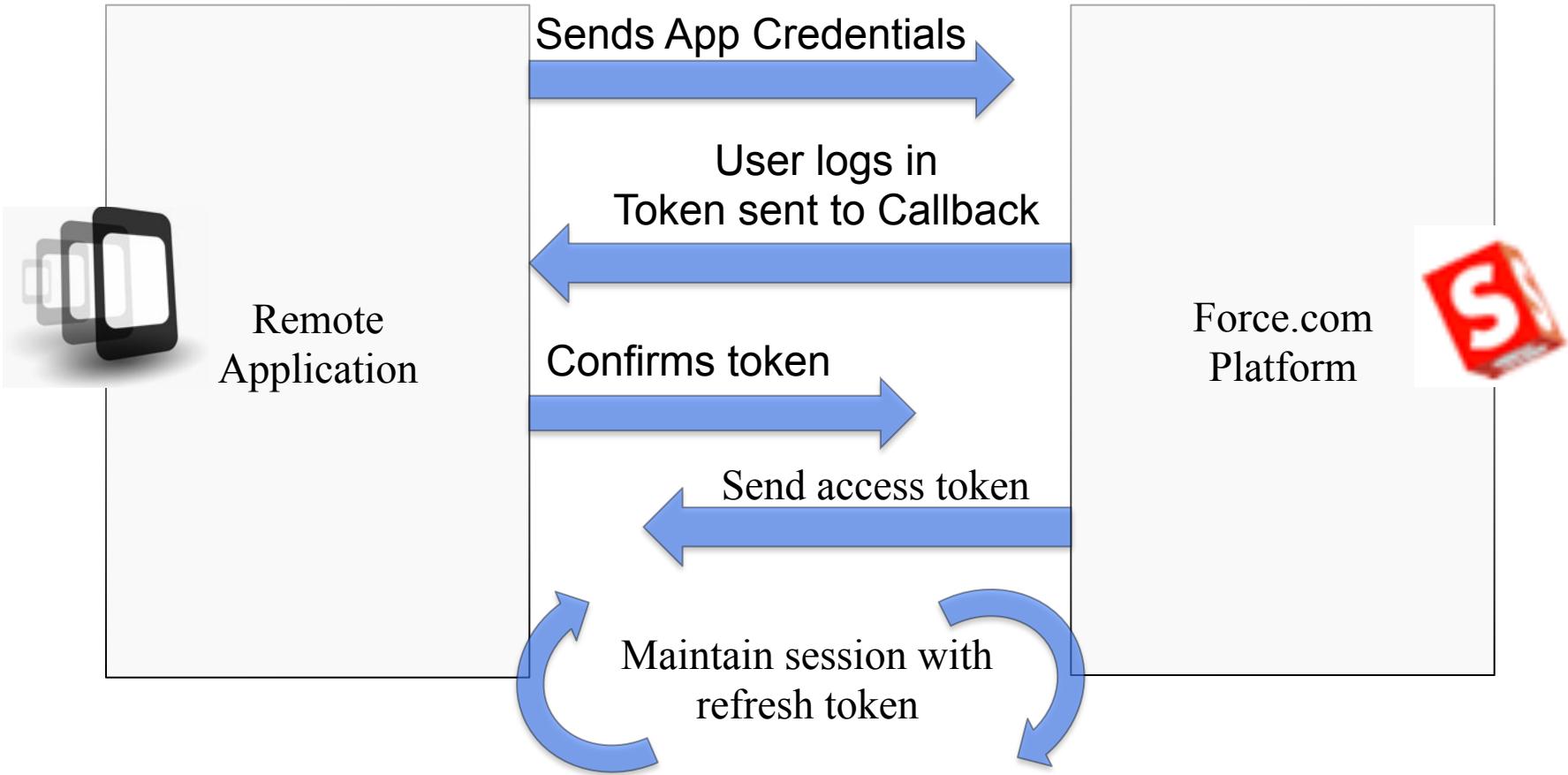
OAuth



## **OAuth**

**An industry standard method of validating user credentials while avoiding password anti-patterns.**

# OAuth2 Flow



Create an external Java-based endpoint with authenticated,  
**bi-directional communication to process invoice fulfillments**



```
curl https://na1.salesforce.com/services/data/v20.0/query/?q=SELECT+name+from+Account -H  
"Authorization: OAuth token" -H "X-PrettyPrint:1"
```

## REST API

```
{  
    "done" : true,  
    "totalSize" : 14,  
    "records" :  
    [  
        {  
            "attributes" :  
            {  
                "type" : "Account",  
                "url" : "/services/data/v20.0/sobjects/  
Account/001D000000IRFmaIAH"  
            },  
            "Name" : "Test 1"  
        },  
        {  
            "attributes" :  
            {  
                "type" : "Account",  
                "url" : "/services/data/v20.0/sobjects/  
Account/001D000000IRFmaIAH"  
            },  
            "Name" : "Test 2"  
        }  
    ]  
}
```



# **Representational State Transfer**

A stateless data transport based on standard HTTP  
methods for delivering as JSON or XML

# Apex REST

UpdatedApexREST.java #

```
1  @RestResource(urlMapping='/FieldCase/*')
2  global class ApexRESTUpdate {
3
4      //Note we no longer need to include RestRequest and RestResponse as incoming parameters
5      //The static RestContext has request and response properties instead
6      @HttpGet
7      global static List<Case> getOpenCases() {
8          String companyName = RestContext.request.params.get('companyName');
9          Account company = [ Select ID, Name, BillingState from Account where Name = :companyName ];
10         List<Case> cases = [SELECT Id, Subject, Status,OwnerId, Owner.Name from Case WHERE
11             return cases;
12
13     }
14
15     //Here we are using CaseSummary as an incoming parameter, which is an Apex class not an
16     //Previously, you could not use user defined params
17     @HttpPost
18     global static String createCase(CaseSummary cs) {
19         Case c = new Case();
20         c.Subject = cs.CaseExternalID + cs.CaseDescription;
21         insert c;
22
23         return c.Subject;
24     }
25 }
```

```
S2 }
S4 }
S5     return c.Subject!
```

salesforce



## **Apex REST**

**Annotations allow developers to develop custom endpoints for the REST API**

# Apex JSON

```
1  public with sharing class ApexJSONExample {
2
3      public ApexJSONExample() {
4
5      }
6
7      public void testSerialize() {
8          Flog__c f = new Flog__c();
9          Dog__c dog = [SELECT ID, Name, Breed__c from Dog__c LIMIT 1];
10         f.JSON__c = JSON.serialize(dog);
11         insert f;
12         //SELECT ID, Name, JSON__c from Flog__c
13     }
14
15     public void testDeserialize(string newName) {
16         Flog__c f = [SELECT ID, Name, JSON__c from Flog__c LIMIT 1];
17         Dog__c dog = (Dog__c)JSON.deserialize(f.JSON__c,Dog__c.class);
18         dog.Name = newName;
19         update dog;
20         //SELECT Id, Name from Dog__c WHERE Name = 'NewDogName'
21     }
22
23 }
24
25 /**
26 * \SERECL ID` NAME` FLOG__C WHERE NAME = 'NEWDOGNAME',
27 * UPDATE DOG;
28 * DOG.NAME = NEWNAME;
29 * DOG = (DOG__C)JSON.DESERIALIZED.MOST(DOG__C.POLY__C.C);
30 * POLY__C.C = [SELECT ID, NAME FROM DOG__C WHERE NAME = 'NEWDOGNAME'];
31 * 
32 */
33 }
```

# **Apex JSON**

**Native parsing, serialization and deserialization of  
JSON data**



# Overview of Force.com API Services

	Apex REST	Apex SOAP	REST API	SOAP API	Bulk API	Streaming API
Protocol	REST	SOAP/ WSDL	REST	SOAP/ WSDL	REST	CometD
Data Format	JSON/ XML	XML	JSON/ XML	XML	CSV/XML	JSON
Client libraries/ tools	HTTP client (lightweight)	SOAP/ WSDL library	HTTP client (lightweight)	SOAP/ WSDL library	HTTP client (lightweight)	CometD JQuery
Data Volume	Medium	Medium	Medium	Large	Very Large	Small-Large
Sync/Async	Sync	Sync	Sync	Sync	Async	Stream

## **Bulk API**

**Asynchronous API for handling large amounts of  
XML based data**

## **Extract Transform Load (ETL)**

A type of toolset which allows for the easy migration and manipulation of data between different systems

# **Streaming API**

A Bayeux implementation to provide real-time data updates to clients

# Use Case Quiz

Implement a third party .Net server by creating classes via a WSDL file

**SOAP**

Create a lightweight API for a mobile native client

**REST**

Insert or update 50,000 records daily from a .csv file

**BULK**

Create a web page which will automatically notify the user when new cases arrive, without reloading

**STREAMING**



# Integration with Heroku Java Tutorial



salesforce®



# THANK YOU