



Inspections API
(HUB and Spoke)
Powered by ExAM

Supporting organizations through transformation.

Building successful programs. Driving results.

April 5, 2017



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ISV
PARTNER

ExAM/Salesforce Use Cases

PLATFORM

salesforce



ExAM ... Extensible & Capable

APPLICATION

ExAM



ExAM4... Surveys



Clients:

Veterans Affairs
SCGA
MB&A

Case Study:

Veterans Affairs

ExAM4... Inspections



Clients:

HUD
DGS
LAUSD
LCPS

Case Study:

HUD

ExAM4... Assess Anything



Clients:

DGS
LCPS
SCGA

Case Study:

LCPS

MOBILITY

iOS & Android



Cloud Success Packages



Clients:

Veterans Affairs
HHS
HUD
DeCA

Case Study:

Veterans Affairs

Cloud Customization



Clients:

Veterans Affairs
SCGA
HUD
LLNL

Case Study:

Veterans Affairs

ExAM/Salesforce Use Cases



Veterans Affairs



Veterans Affairs
Center for Innovation (VACI)



Loudoun County
Public Schools (LCPS)



Los Angeles Unified
School District (LAUSD)



District of Columbia
General Services (DGS)



Housing and Urban
Development (HUD)



Defense Commissary
Agency (DeCA)



Southern California
Golf Association (SCGAA)



Health and
Human Services (HHS)



Lawrence Livermore
National Laboratory (LLNL)

+ What is Salesforce?

Gartner®



- 4x most innovative company in the World by Forbes
- World's #1 enterprise app building platform
- 2016 Gartner Magic Quadrant Enterprise Application Platform as a Service
- 2016 Gartner Magic Quadrant for Mobile Application Development Platforms
- API first approach to AppCloud

Forbes

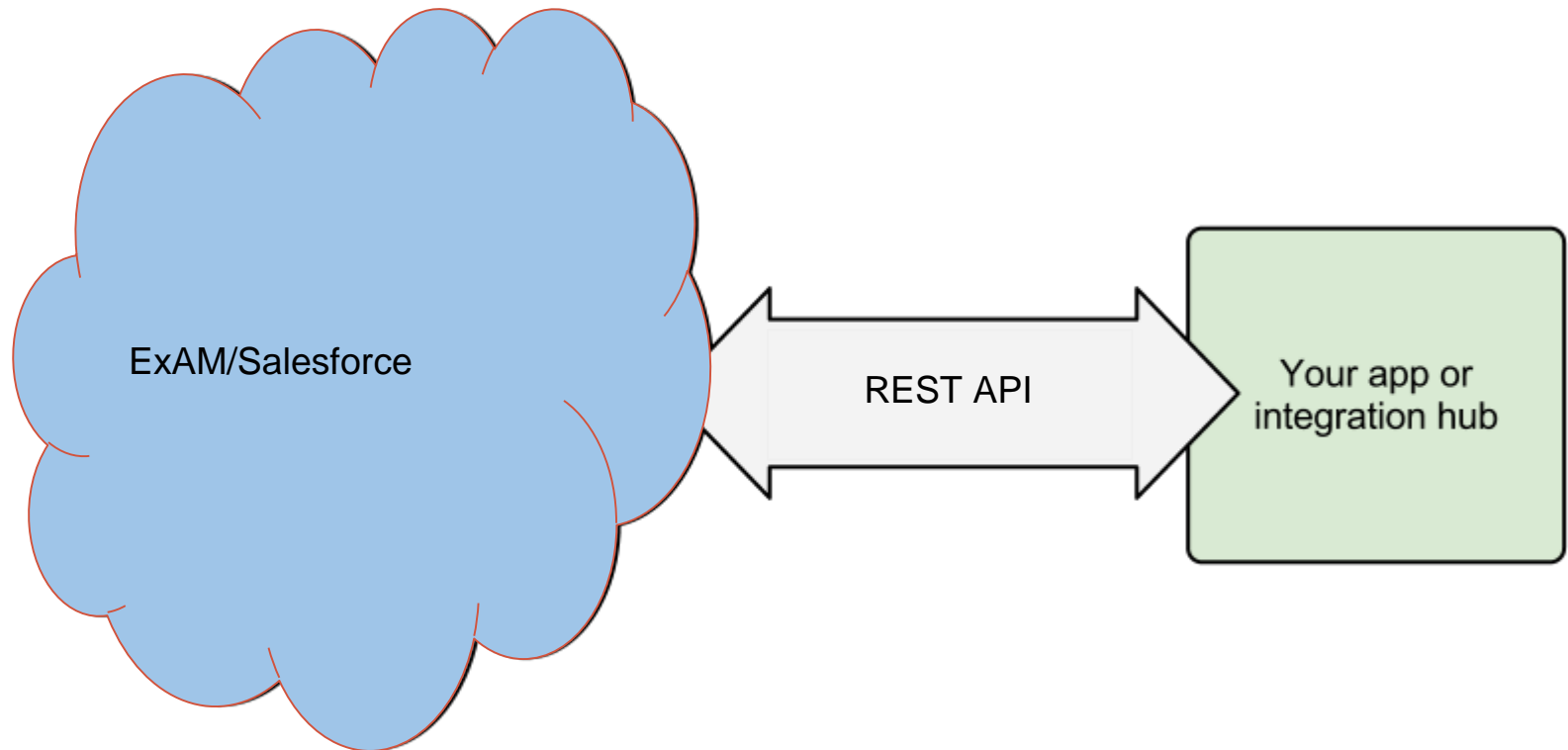
+ What is ExAM?

- ExAM stands for Extensible Assessment Manager - in other words we help you get data in, assess it and operate your organization on the basis of it.
- ExAM and Inspections - Inspections are the flagship use case for ExAM because of the requirement for a flexible mechanism for gathering the information and an enterprise capability for managing that information.
- ExAM is an AppExchange product which means it was built on the Salesforce platform using Salesforce technologies.
- ExAM has Android and iOS specific apps (ExAM4Inspections.com) that connects to your Salesforce platform. The ExAM application provides a simple, elegant and native experience on your mobile device when on or offline.

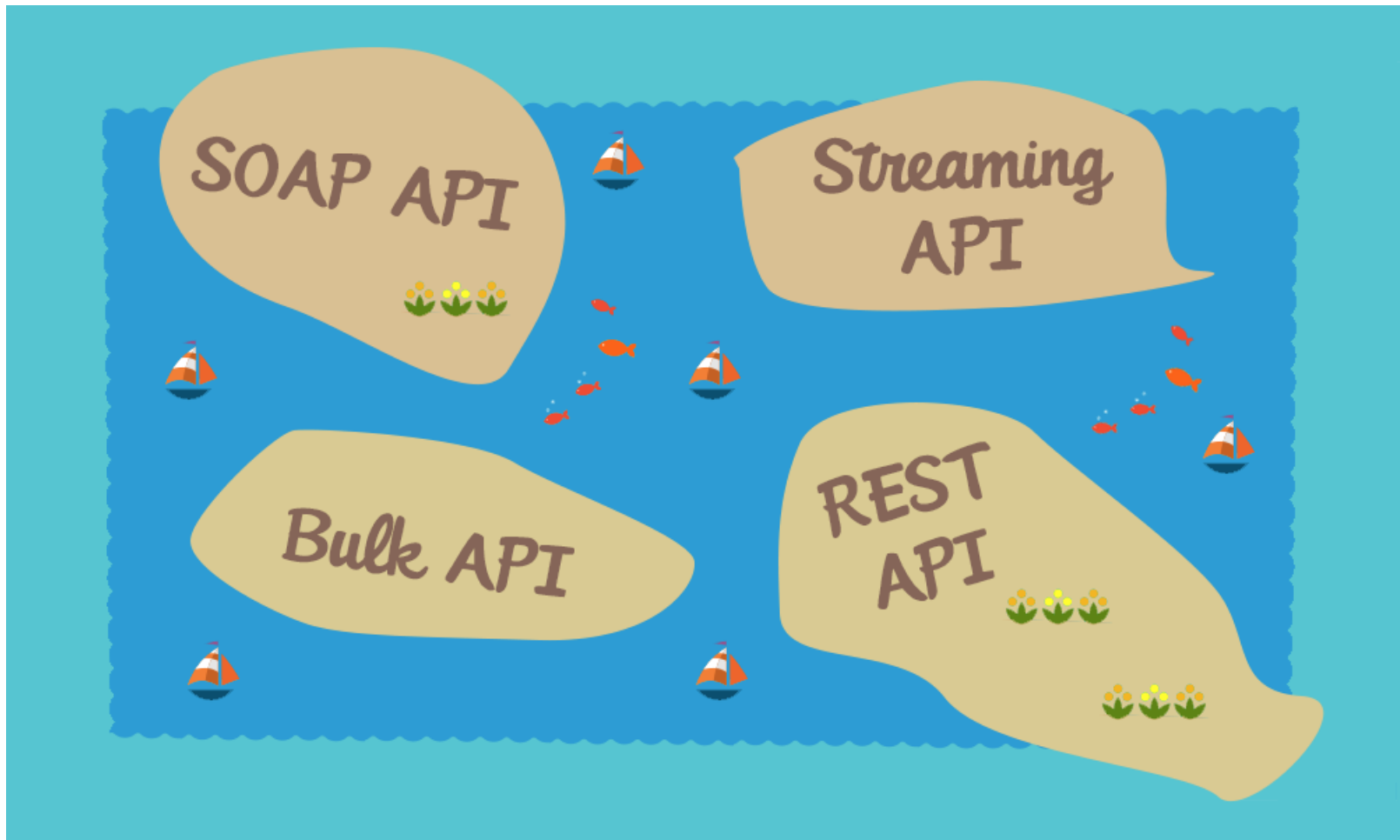


+ What is an API?

- **Application Program Interface** - A set of clearly defined methods of communication between various software components. - Wikipedia



+ Salesforce APIs



REST API

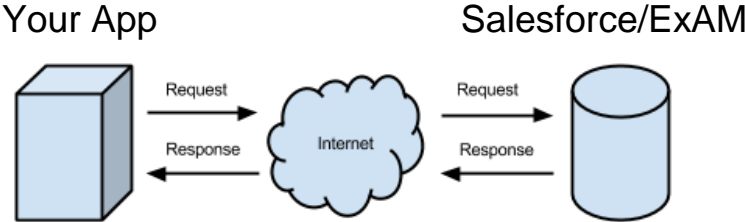
- REST API is a simple and powerful web service based on RESTful principles. It exposes all sorts of Salesforce functionality via REST resources and HTTP methods. For example, you can Create, Read, Update, and Delete (CRUD) records, search or query your data, retrieve object metadata, and access information about limits in your org.
- REST API provides a powerful, convenient, and simple REST-based web services interface for interacting with Salesforce.
- Learn more about the Salesforce Rest API:
 - https://developer.salesforce.com/docs/atlas.en-us.api_rest.meta/api_rest/intro_what_is_rest_api.htm
 - https://trailhead.salesforce.com/modules/api_basics/units/api_basics_rest

+ Exchanging Data

YourApp to ExAM/Salesforce

- ExAM exposes three REST web services in order to submit and retrieve data
- Salesforce REST API's support two formats for representations of resources: **JSON** and XML
- In our model, resources will be in **JSON** format
- Apex REST supports OAuth 2.0 and session authentication mechanisms. In simple terms, this means that we use industry standards to keep your application and data safe.

YourApp to ExAM/Salesforce



+ Inspection and Data Exchange



Inspection

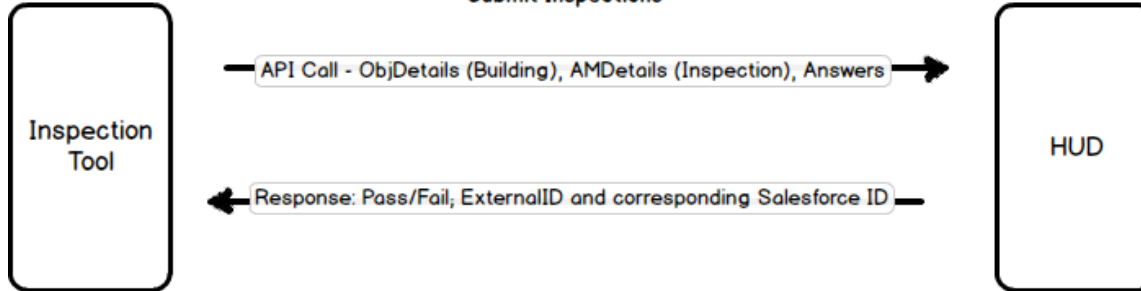
- Five inspections in one:
 - Unit
 - Exterior
 - Systems
 - Common Areas
 - Site
- Inspections are all related to the unit
- Inspections can be of the Building or of the Unit
- Inspections are submitted upon completion
- Deficiencies must be addressed through re-inspections

Data Exchange

- All five inspections can be submitted at the same time
- Submissions can be updated to address deficiencies that have been resolved
- ExAM/Salesforce will passback IDs to facilitate the update of inspections throughout the process

API Calls

Submit Inspections

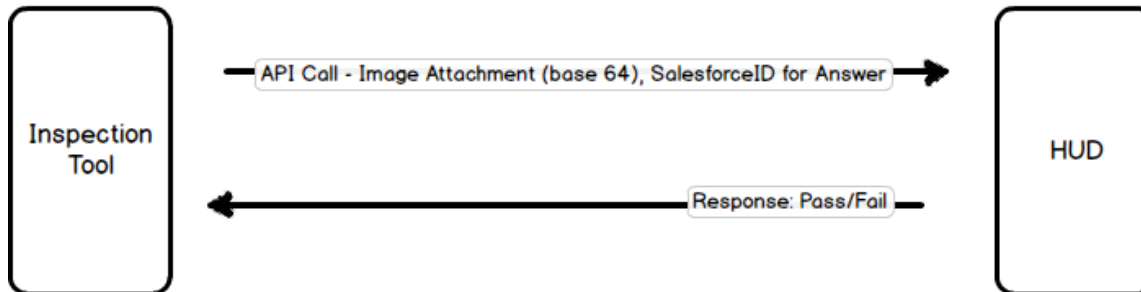


All objects are submitted as arrays; The first array for the fields and the second for the data (see JSON format)

The External ID field is for tying your object to the HUD Salesforce object. These external ID's can either be autogenerated in order to only tie the objects together for the call or they can be actual ID's from your system.

If you use your own unique ID's, for your convenience set the option 'SaveExternalID' to '1' to save the external ID's into Salesforce. This allows you to easily assign future Inspections and Answers utilizing your own systems ID's. This also enables you to retrieve Salesforce ID's in the future by providing your external ID (see API call 3 - Retrieve Salesforce ID's)

Submit Images

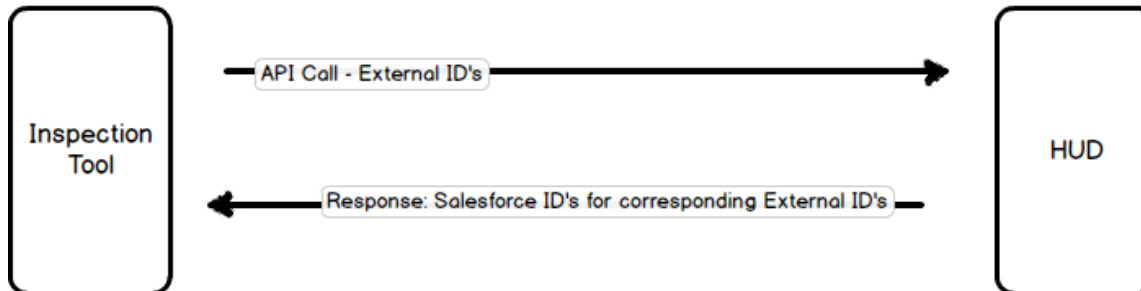


Because of the potential size of images - once you have submitted answers a separate call is necessary for images to be sent over.

Utilize the submit images API to send a Base 64 encoded image over to Salesforce

The Salesforce ID to attach the image to can be acquired one of two ways. Either by saving the response of the Submit Inspections call to retrieve the Answer ID, or if you are utilizing the SaveExternalID's function you can query Salesforce with your external ID for Answers to retrieve the Salesforce ID before sending.

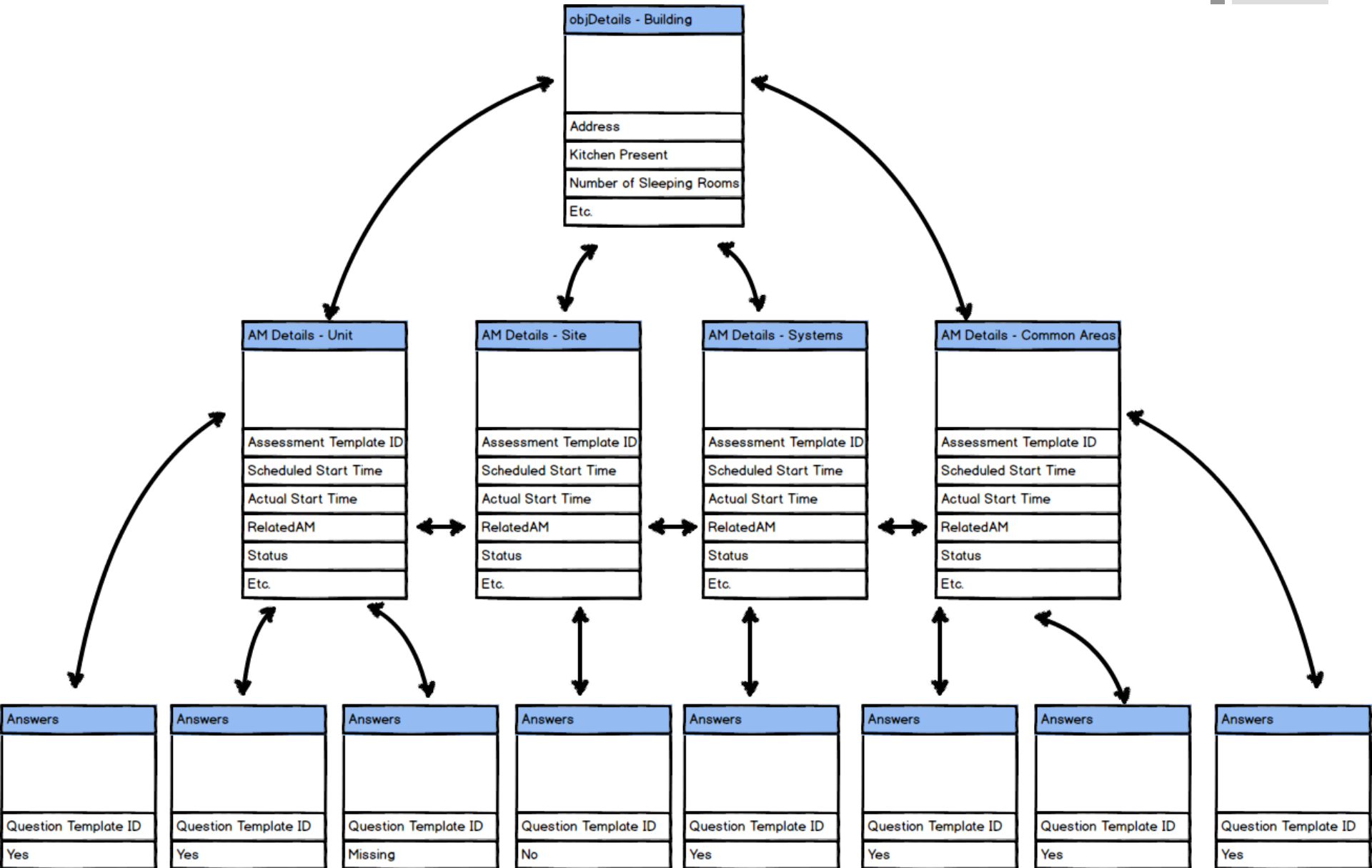
Retrieve Salesforce ID's



For users utilizing the Save External ID function in the API calls you can simply call the Retrieve Salesforce ID API by providing an array of your systems ID for the objects (noted in the API as "External ID").

This call not only helps when sending data via API to HUD, it is also a great way to troubleshoot and debug.

+ Data Structure for API Callout



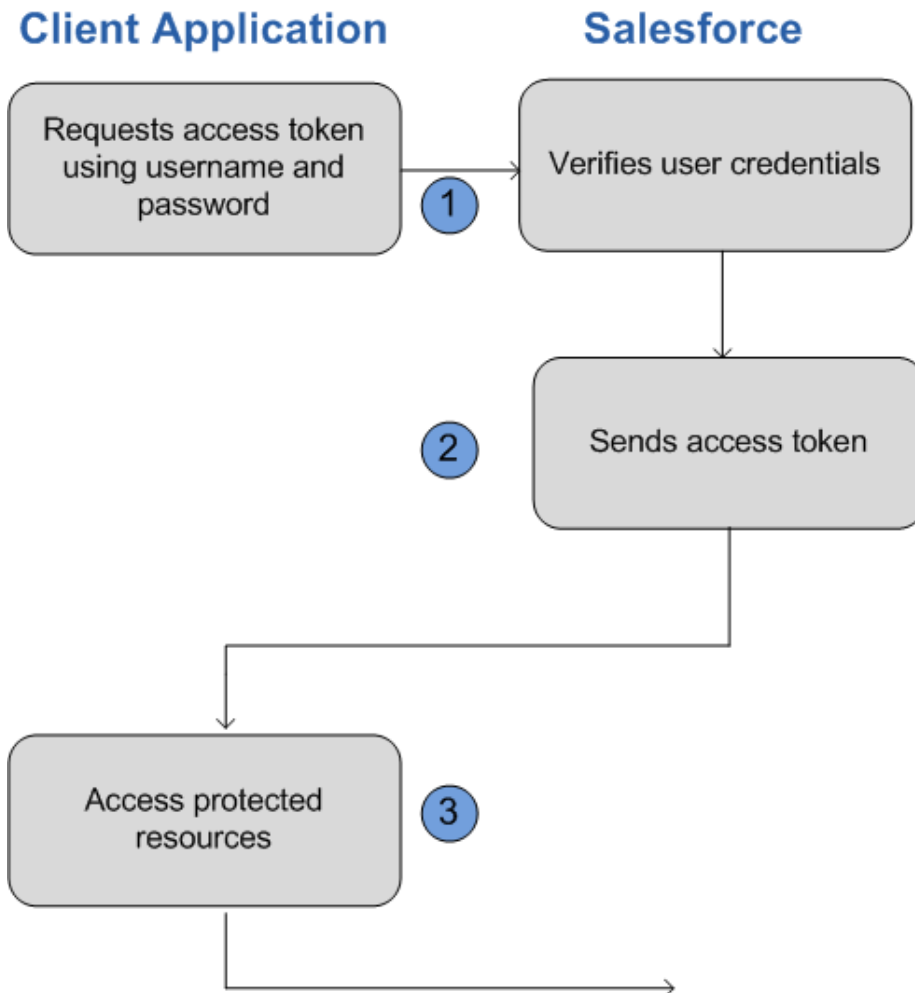
+ JSON Format

```

{
  "uniquePrefix" : "PHA1",
  "objDetails": {
    "saveExternalIds" : 1
    "fields": [
      "objName",
      "name",
      "externalId",
      "salesforceId"
    ],
    "data": [
      [
        "Account",
        "Test Account1",
        "12345",
        ""
      ],
      [
        "Account",
        "Test Account2",
        "12346",
        ""
      ]
    ],
  },
  "amDetails": {
    "saveExternalIds" : 1
    "fields": [
      "assessmentTemplateId",
      "parentObjSfId",
      "parentObjExtId",
      "overallStatus",
      "scheduledStartDate",
      "scheduledEndDate",
      "externalId",
      "salesforceId",
      "relatedAM1ExtId",
      "relatedAM1SfId",
      "relatedAM2ExtId",
      "relatedAM2SfId",
      "relatedAM3ExtId",
      "relatedAM3SfId",
      "relatedAM4ExtId",
      "relatedAM4SfId",
    ],
    "data": [
      [
        "a0I36000004WoGHEA0",
        "001i000001usoDIAAI",
        "",
        "Completed",
        "2016-06-18 06:47:20",
        "2016-06-19 06:47:20",
        "4321",
        "",
        "",
        "",
        "",
        "",
        "",
        "",
        "",
        "",
        "",
        "",
        ""
      ],
    ],
  },
  "answerDetails": {
    "saveExternalIds" : 1
    "fields": [
      {
        "response",
        "questionTemplateId",
        "amExtId": "4321",
        "amSfId": "4321",
        "externalId",
        "salesforceId",
        "comments",
        "priority",
      }
    ],
    "data": [
      [
        "Option1",
        "a0J36000003D6TEEA0",
        "4321",
        "",
        "6543",
        "",
        "Test Comment 2",
        "High"
      ],
      [
        "Very Good",
        "a0J36000003T7TJEAK",
        "4321",
        "",
        "6544",
        "",
        "A Comment",
        "High"
      ]
    ],
  },
}

```

Security Protocol: Knocking at the Door



- PHAs will use a HUD provided Username and Password so they can exchange data with HUD.

Helpful Resources

- https://developer.salesforce.com/docs/atlas.en-us.api_rest.meta/api_rest/intro_understanding_authentication.htm



DEMO