



Siebel CRM Integration Overview - Benefits & Best Practices

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Safe harbor statement

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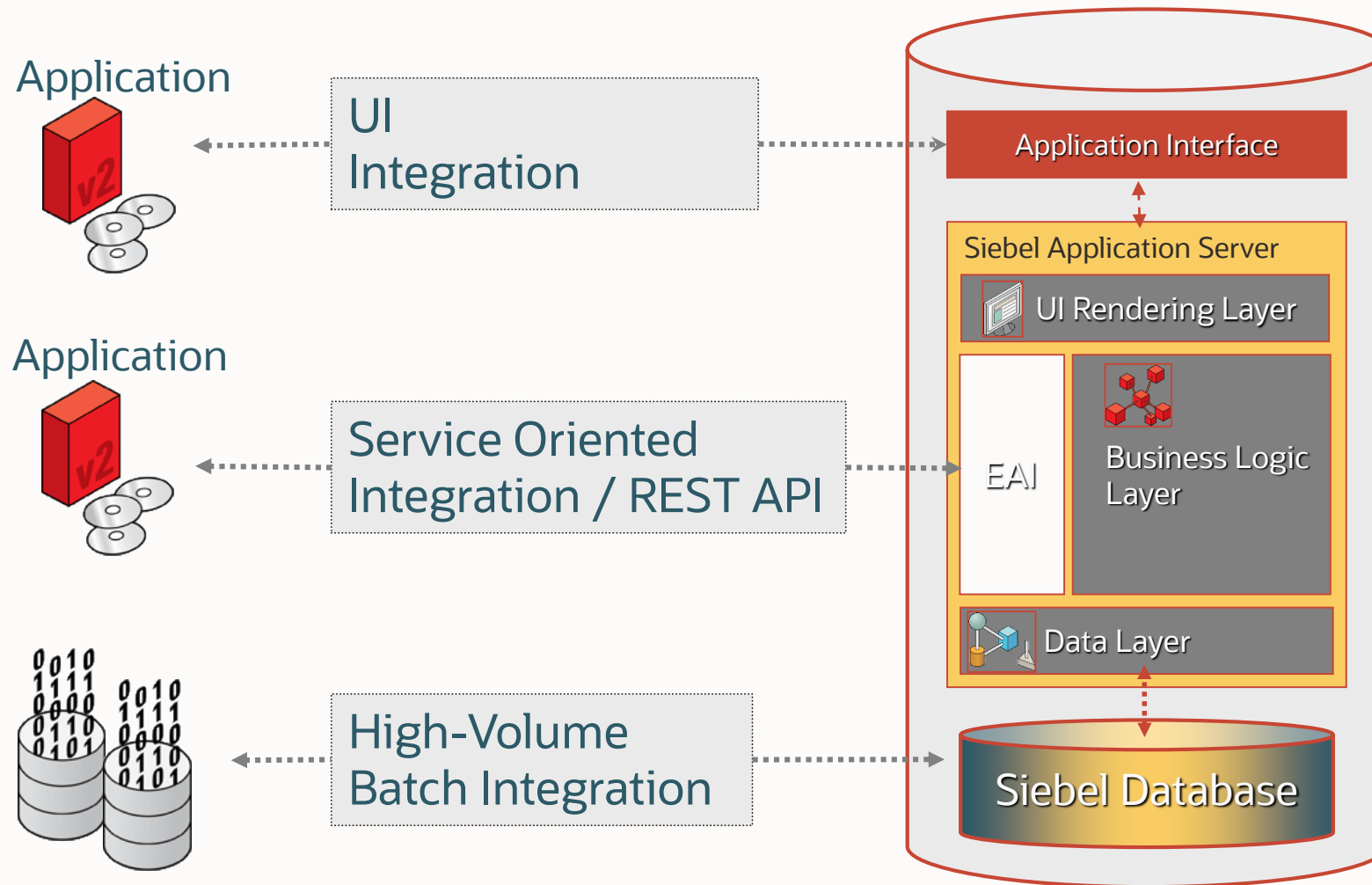


Agenda

- 1 Key Benefits of the 3 Layers of Siebel CRM Integration
- 2 Technical Deep Dive & Best Practices
- 3 Customer Success

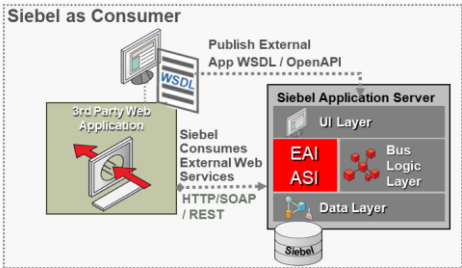
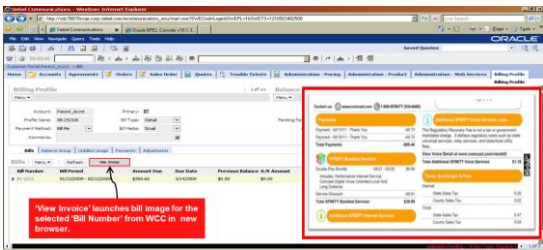


Siebel CRM Supports **3 Modes** of Integration



Which Layer of Integration?

	UI Layer	Business Layer	Database Layer
Usage	Real time, Loosely coupled, Embedded UI	Real time, Provider & consumer of business services	File Based, Large volume of data import, export, merge & delete in batch
Mechanisms	Symbolic URLs, DISA, Portlet	SOAP, REST, MQ, JMS	EIM, Data Import/Export
Benefits	Simple Reuse User Interface	Interoperability, broad support of protocols & data formats	Optimized for millions of transactions / hour



Choosing Most Suitable Integration

Real World Scenarios

Scan Asset QR Code

Embed Siebel Applet in Intranet Portal

Display Report inside View

Dock Live Experience Cloud inside View

Display Loyalty Member Point Balance in External Website

High Volume Contact Activities

Initial Load of Million of Transactions

DISA

Portlet

Symbolic Link

Open UI

App Data REST API

JMS Message Receiver

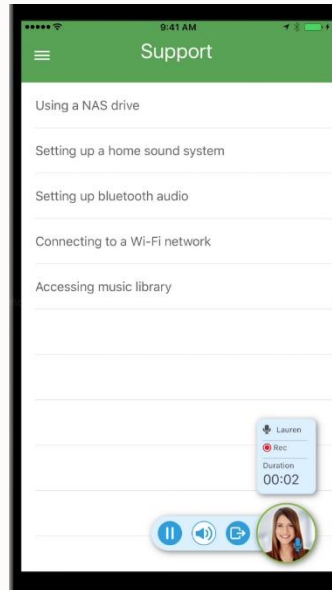
EIM

100% self-service cloud service that helps companies increase loyalty,
improve customer satisfaction and convert service into sales opportunities

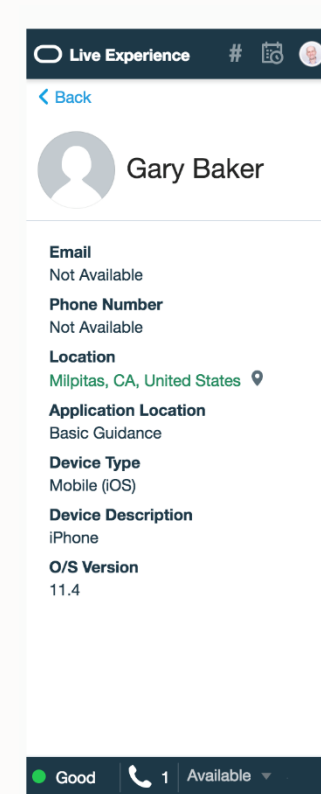
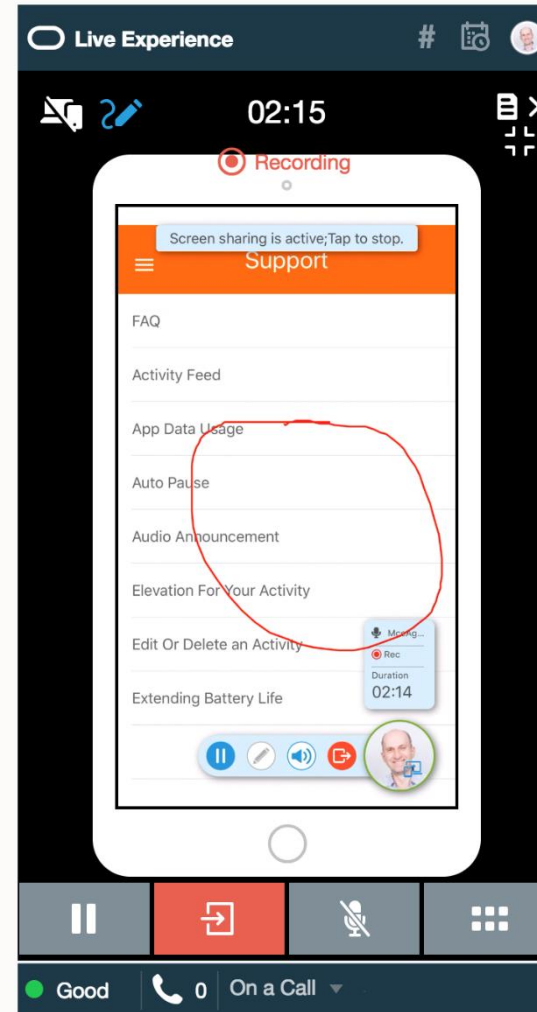


CUSTOMER

digital
engagement
capabilities



where they are (in-app,
within their context) at key
moments of their journey



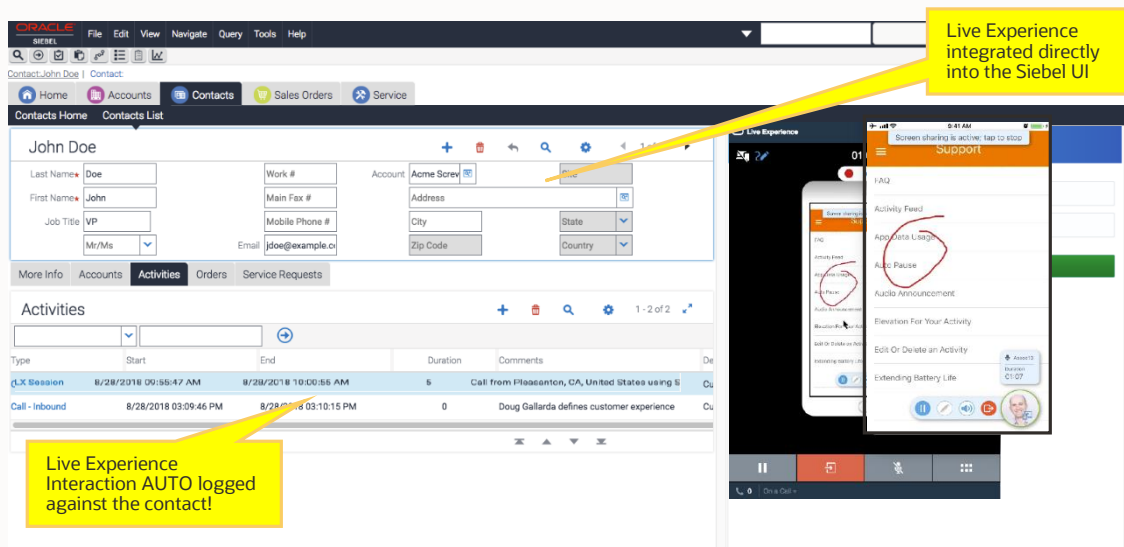
empowering associates with
context and insights

to provide proactive and meaningful engagements

Easy Extension and Integration

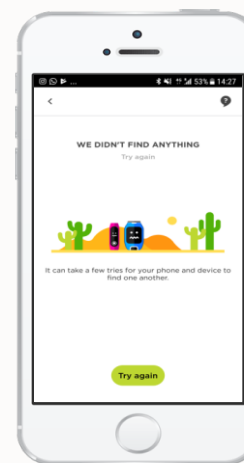
Extending Siebel

- Embedded External application
- Activity creation thru a business service call



Integration in end user application

- 5 lines of code

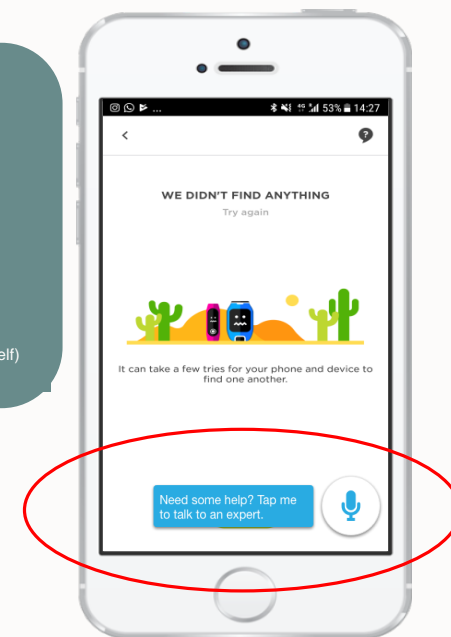


```
import CloudSDK

Controller.shared.configuration = Configuration()
Controller.shared.authToken = auth_token
Controller.shared.userID = auth_user_id

override func viewDidLoad() {
    super.viewDidLoad()
    Controller.shared.addComponent(viewController: self,
    hidden: false)
}

override func viewWillAppear(_ animated: Bool) {
    super.viewWillAppear(animated)
    Controller.shared.updateComponent(viewController: self)
}
```



Poll:

Which integration technologies do you plan to use in the future?

Messaging (JMS, MQ)

REST

SOAP

Desktop Integration Siebel Agent (DISA)

Portlet

Publish/Subscribe Events

Other



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Technical Deep Dive

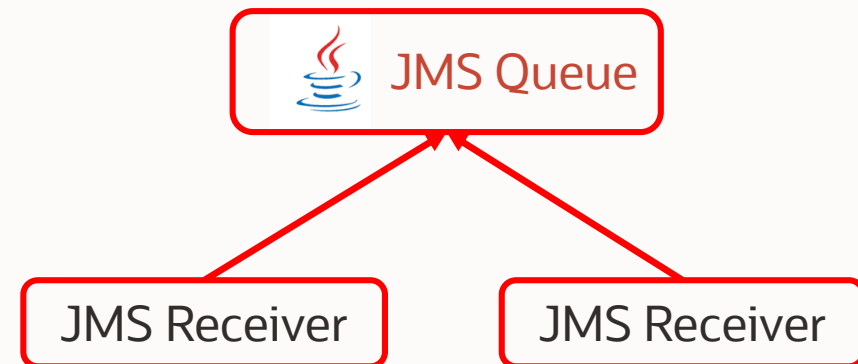
& Best Practices



Scalability of JMS Receiver

- Multithreaded JMS Receiver (alias EAIJMSRcvr) operates in batch mode
- Can be scaled up to run multiple threads in one task.
 - Set MaxWorkQThreads, MinWorkQThreads, MaxWorkQLength
- High Availability can be achieved by running on multiple servers
- Auto start feature was completed in Siebel CRM 17.1
- Note: *Messages must be atomic*

JMS High Availability



Why REST?

Kick-start Digital Transformation and leverage Siebel CRM by exposing and consuming business data & services:

- Lightweight
- Agile Development

Infrastructure APIs also available for Siebel components:

- Cloud Gateway
- Siebel Management Console (SMC)
- Siebel Approval Manager
- Migration Application
- CI/CD Pipeline



SOAP vs. REST

Session Management

SOAP

- Siebel Authorization Stateless & Stateful require significant session management in middleware
- WS-Security uses the anonymous pool which prevents audit trail from properly capturing end user actions

REST API

- Session management is handled by a pool inside each AI node
- Each request is stateless

REST for UI Integration

- Native support in JavaScript
- Pre-built & customizable Siebel objects

Pure JavaScript example:

```
1 var req = new XMLHttpRequest()
2
3 req.open('GET', 'https://host/siebel/v1.0/data/Account/Account/');
4 req.setRequestHeader('Authorization', 'Basic U0FETU1001NJRUFJFTA==');
5 req.onload = function () {
6     var data = JSON.parse(this.response)
7
8     if (req.status >= 200 && req.status < 400) {
9         data.items.forEach((Account) => {
10             console.log(Account.Name)
11         })
12     } else {
13         console.log('error')
14     }
15 }
```

jQuery example:

```
1 $(document).ready(function() {
2     $.ajax({
3         url: "https://host/siebel/v1.0/data/Account/Account/",
4         headers: {
5             "Authorization": "Basic U0FETU1001NJRUFJFTA=="
6         }
7     }).then(function(data) {
8         data.items.forEach((Account) => {
9             console.log(Account.Name)
10         })
11     });
12 });
```

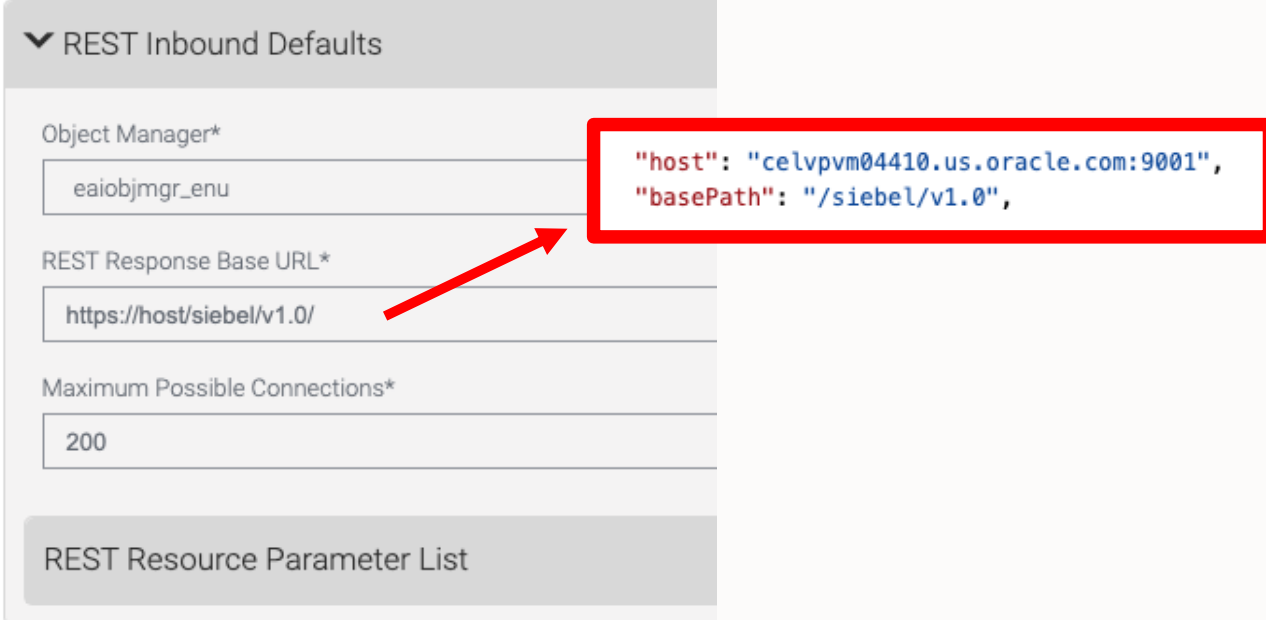


REST Inbound Setup

Setup an Application Interface Profile

Setup REST Inbound Defaults

- Specify the handling object manager (OM)
 - Best Practice: Clone EAI for REST traffic
- Specify the REST Base URL for OpenAPI
 - Host is automatically generated by “describe”
 - Only Base Path is needed
- Specify the Maximum Possible Connections for User Connection Pool per AI Node
 - Must be less than or equal to OM MaxTasks
- AI profile has only 1 REST End Point



▼ REST Inbound Defaults

Object Manager*

eaiojmgr_enu

REST Response Base URL*

https://host/siebel/v1.0/

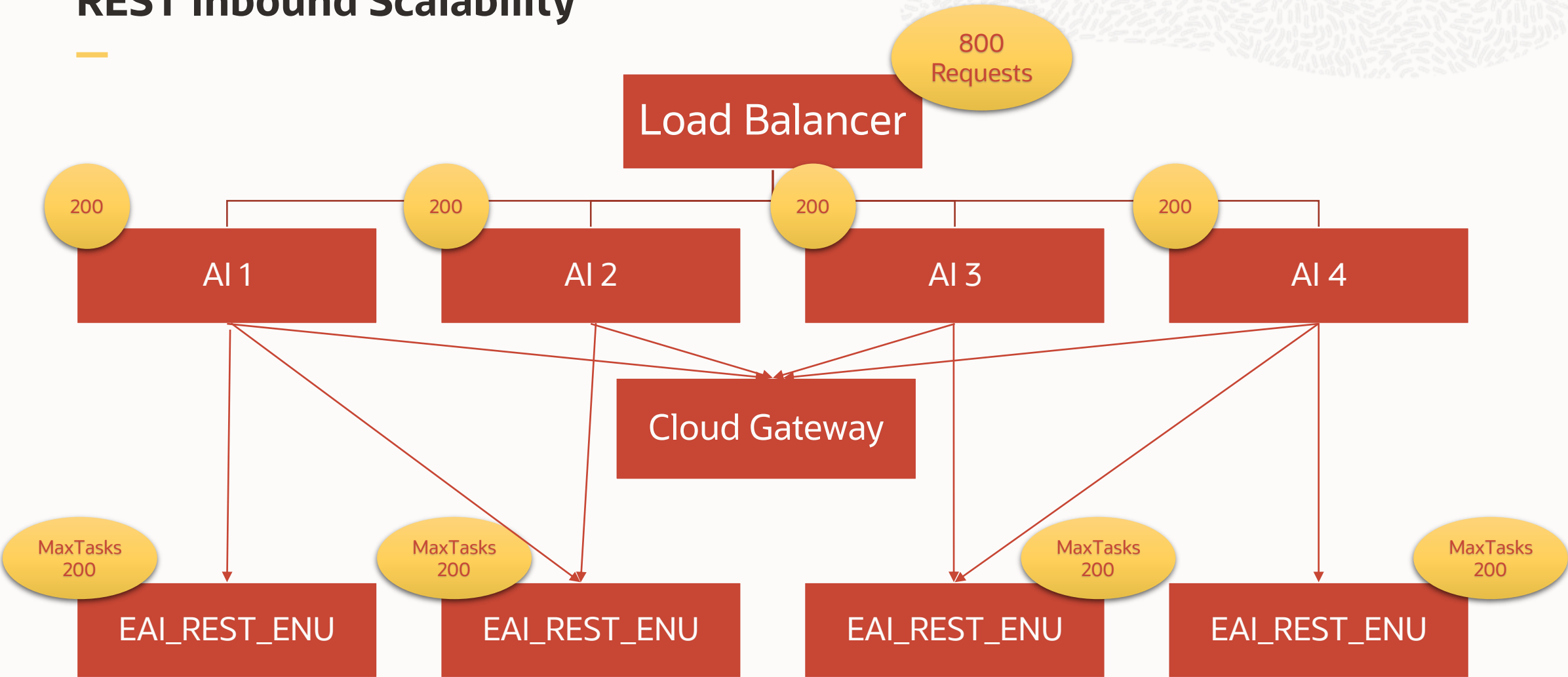
Maximum Possible Connections*

200

REST Resource Parameter List

`"host": "celvpvm04410.us.oracle.com:9001",`
`"basePath": "/siebel/v1.0",`

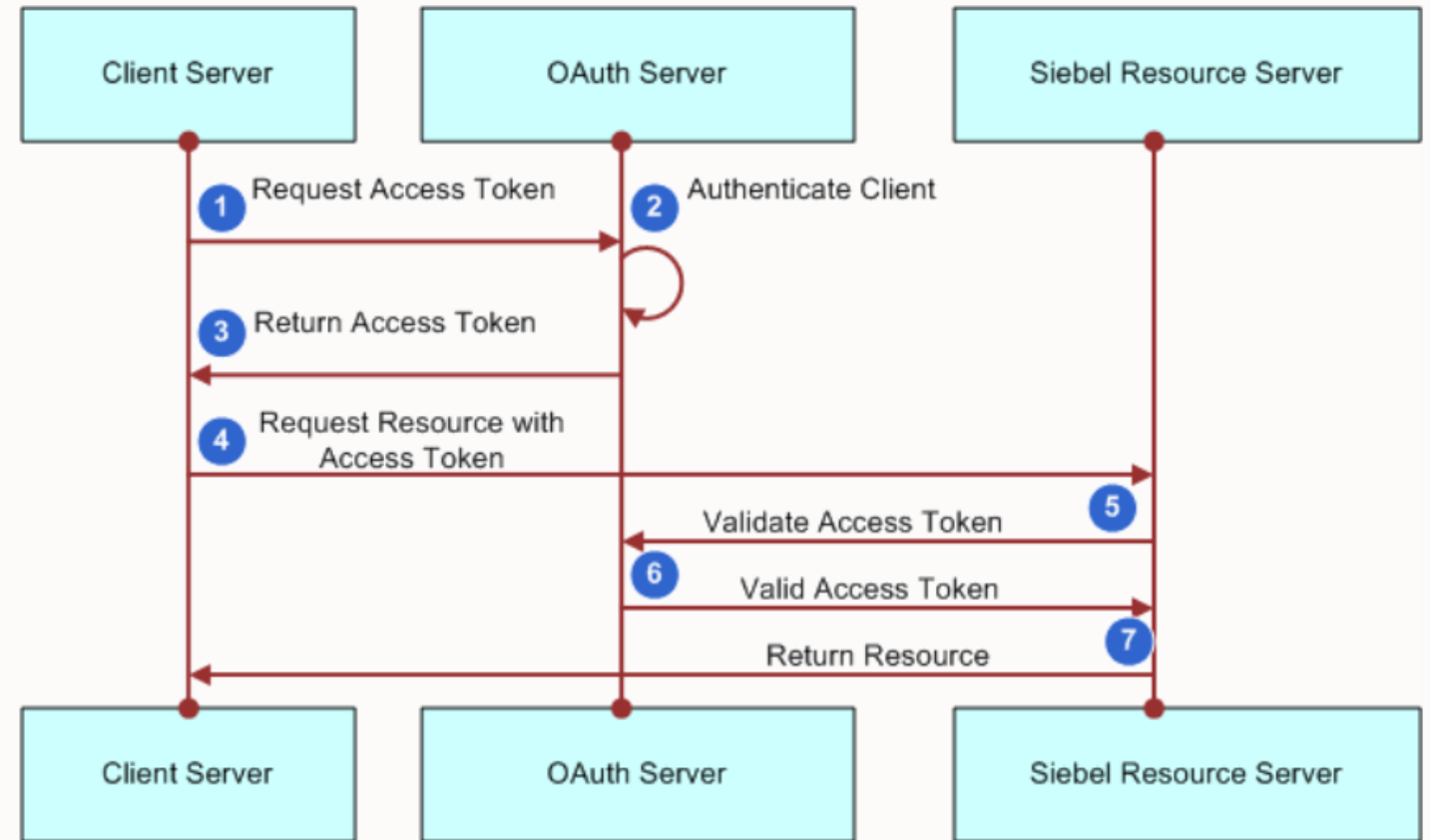
REST Inbound Scalability



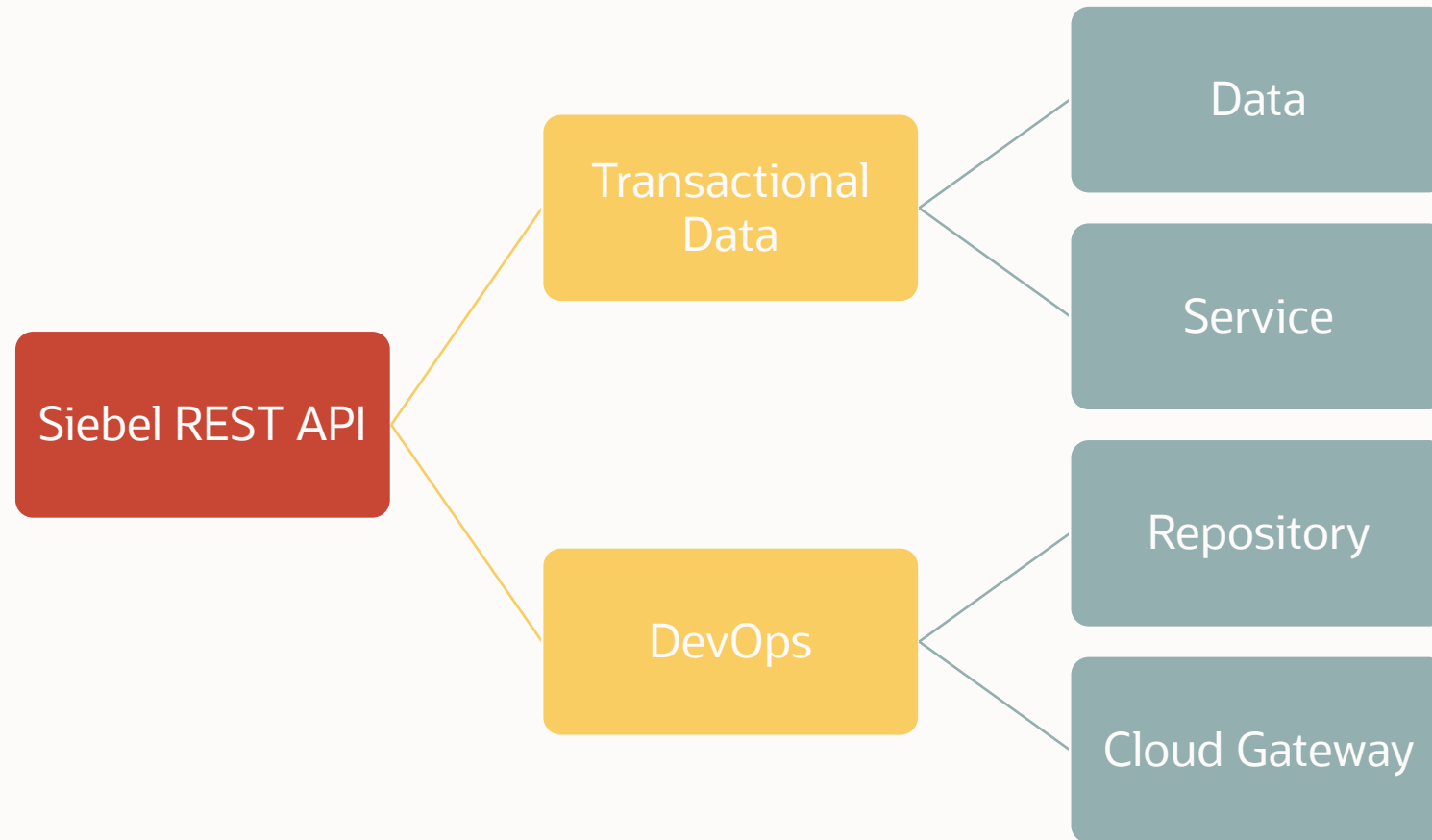
REST Inbound Authentication

- Basic Authentication over SSL (Username/Password Base64 encoded in Authorization header)
- OAuth 2.0
- Single Sign-On

Client Credential Authorization flow



REST Inbound API Types



REST Inbound API URI



Application Data:

- [https://<host>/siebel/v1.0/**data**/Business Object/Business Component/<optional id>?<URI Parameters>](https://<host>/siebel/v1.0/data/Business Object/Business Component/<optional id>?<URI Parameters>)

Business Services:

- [https://<host>/siebel/v1.0/**service**/Business Service/Method](https://<host>/siebel/v1.0/service/Business Service/Method)

Repository:

- [https://<host>/siebel/v1.0/**workspace**/workspace name/Object/<Name>/<Child Object>/<Child Name>](https://<host>/siebel/v1.0/workspace/workspace name/Object/<Name>/<Child Object>/<Child Name>)

Cloud Gateway:

- [https://<host>/siebel/v1.0/**cloudgateway**/discovery/services/<obj_mgr_alias>/connectstring](https://<host>/siebel/v1.0/cloudgateway/discovery/services/<obj_mgr_alias>/connectstring)

REST Inbound Application Data vs Business Service

REST Application Data

- Supports access control using View Mode (Except All)
- Suited for simple atomic CRUD operations
- Supports custom business objects

REST Business Service

- Access is controlled with Responsibility
- Can execute complex business functions in eScripts or Workflows
- Can use OOTB or custom business services

Configuring REST Application Data

Use Web Tools or Siebel Tools

Create or modify:

- Integration Object Name
Base *
- Integration Component Key
REST ROWID User Key:1
- Integration Component Key Field
Id

Integration Objects (Use Siebel Tools)

W	Name
	Base Access Group
	Base Account
	Base Action
	Base Asset Management

Integration Component Keys

W	Name	Changed
	REST ROWID User Key:1	
	V77 Wizard-Generated User Key:1	

Integration Component Key Fields

W	Name	Changed	Field Name
	Id		Id

REST Application Data URI Parameters

PageSize

- how many records to return. Default is 10

StartRowNum

- returns records at a specific row (zero based) fields
- a comma-separated list of fields to return in the response

searchspec

- sets the search specifications for the data in the response

workspace&version

- set workspace name and version to inspect without having to deliver the changes (REST & Soap)

ViewMode

- Used as an access control. Values are: Personal, Sales Rep, Organization, Group, Catalog
- Default value is Sales Rep (My visibility)
- All is not available in Application Data

ChildLinks

- comma-separated list of child business components that require links returned
- Filters the child links (set to None to disable child links)

uniformresponse

- Force response to be a json array when only one record is return

REST Application Data URI Parameters Examples

Get a specific record, showing Status and Closed Date fields

- <https://host/siebel/v1.0/data/Service Request/Service Request/1-1NHP? fields=Status,Closed Date>

Get second page of all records, where the page size is 10 records

- <https://host/siebel/v1.0/data/Service Request/Service Request?PageSize=10&StartRowNum=10>

Get all records with a search spec

- [https://host/siebel/v1.0/data/Service Request/Service Request?searchspec=\(\[Status\]~LIKE"*open*"\)](https://host/siebel/v1.0/data/Service Request/Service Request?searchspec=([Status]~LIKE)

Get Contacts for an Account while restricting the fields and child business components

- <https://host/siebel/v1.0/data/Account/Account/?fields=Name,Location&ChildLinks=CUT Address>

REST Inbound Recent Features

Multiple Business Component Records

Key benefits:

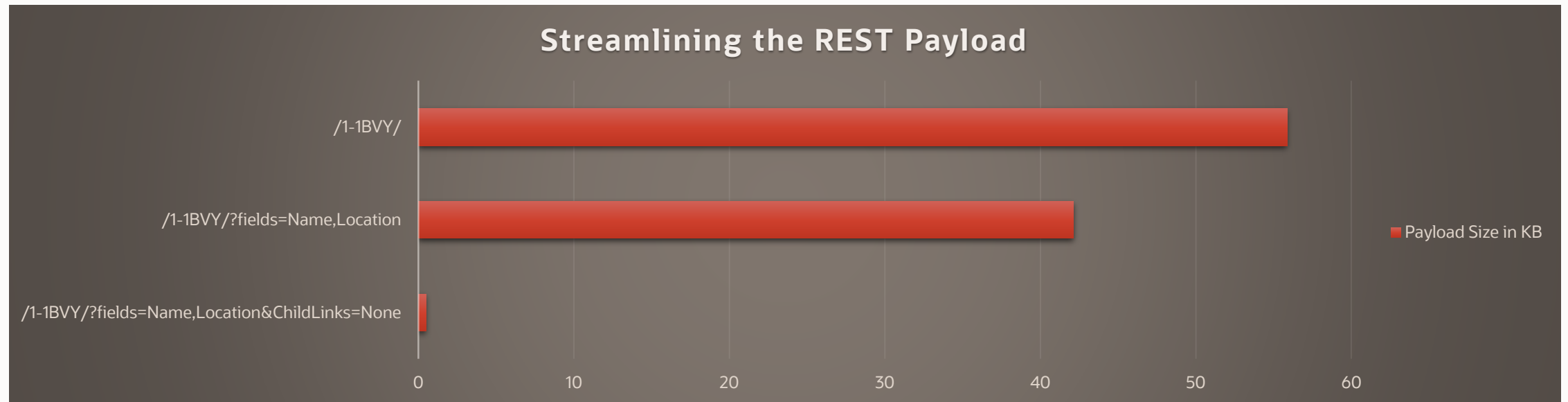
- Can insert, upsert, and delete multiple business component records
- Max number of records is 100
- Request Body will have an array of JSON objects
- If one record fails, entire request is rejected

Refer to the feature Transfer of Information on Oracle's learning web site:

[Siebel CRM 2020 TOI: Multiple Object Support in Siebel REST for DATA Functional Overview](#)

REST Application Data – Best Practice

- Query by Row Id when available
- Restrict the results to only include needed fields
- Set ChildLinks to None if not required



Configuring REST Business Service Access

Navigate to:
Administration – Application > Business Service Access

Business Service

Clear Cache

▼

➔

Name

WC_Account_BS

Access By Responsibility

Responsibilities

Clear Cache

▼

➔

Responsibility

Description

Organization

Web Access

Sales Manager

Sales Manager

Default Organization

Business Service Method

▼

➔

Name

Visibility

QueryPage

Sales Rep



REST Business Service Example

HTTP Method: **POST**

URI: /siebel/v1.0/service/WC_Account_BS/QueryPage

Query String: ViewMode=Sales Rep

- My Opportunity visibility

Integration Object: **WC_Account_IO**

Business Service Arguments:

- **LOVLanguageMode: LIC**
- **SiebelMessageIn:** *SiebelMessage*

HTTP Headers

- Authorization: Basic XXX
- Content-Type: application/json

REST Business Service Example

POST

https://{{url}}/siebel/v1.0/service/WC_Account_BS/QueryPage

Params

Authorization

Headers (12)

Body

Pre-request Script

Tests

Settings

none

form-data

x-www-form-urlencoded

raw

binary

GraphQL

JSON

```
1 {
2   "body":{
3     "LOVLanguageMode":"LIC",
4     "SiebelMessageIn":{
5       "MessageId": "",
6       "MessageType": "Integration Object",
7       "IntObjectName": "WC_Account_IO",
8       "IntObjectFormat": "Siebel Hierarchical",
9       "ListOfWC_Account_IO":{
10        "pagesize": "10",
11        "startrownum": "0",
12        "recordcountneeded": "true",
13        "Account":{
14          "Name": "LIKE '*'",
15          "Type": ""
16        }
17      }
18    }
19  }
20 }
21
```

Body Cookies Headers (7) Test Results

Pretty

Raw

Preview

Visualize

JSON

```
1 {
2   "SiebelMessageOut": {
3     "IntObjectFormat": "Siebel Hierarchical",
4     "MessageId": "",
5     "IntObjectName": "WC_Account_IO",
6     "MessageType": "Integration Object",
7     "Account": [
8       {
9         "Name": "ACME",
10        "Type": "Customer"
11      },
12      {
13        "Name": "Amazon",
14        "Type": "Customer"
15      },
16      {
17        "Name": "Auto Fixing",
18        "Type": "Body Shop"
19      },
20      {
21        "Name": "Burger Queen",
22        "Type": "Customer"
23      },
24      {
25        "Name": "CVS",
26        "Type": "Chain Drug"
27      }
28    ]
29  }
30 }
```



Postman Tips

- Use Environments feature to store URLs, usernames, passwords, etc...
- Save requests in Collections
- Setup authorizations in Collections to use Environment variables

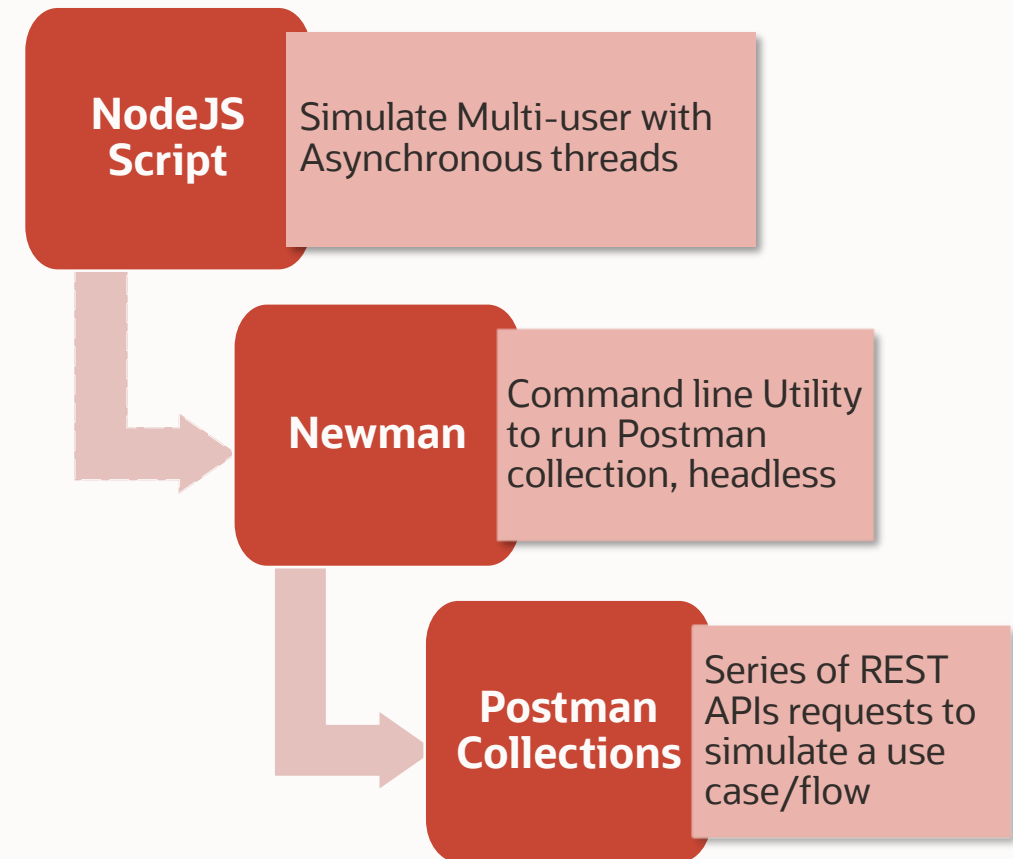
The screenshot displays the Postman interface with several key components:

- DEV Environment:** A dropdown menu at the top left showing the current environment is 'DEV'.
- EDIT COLLECTION Dialog:** A modal window for editing a collection named 'Siebel'. It features tabs for 'Description', 'Authorization' (currently active), 'Pre-request Scripts', 'Tests', and 'Variables'. The 'Authorization' tab shows 'Basic Auth' selected. A warning message states: "Heads up! These parameters hold sensitive data. To keep this data secure while working in a collaborative environment, we recommend using variables. [Learn more about variables](#)". The 'Username' field contains '{{username}}' and the 'Password' field contains '{{password}}'. A checkbox for 'Show Password' is checked.
- MANAGE ENVIRONMENTS Dialog:** A modal window titled 'MANAGE ENVIRONMENTS' explaining that an environment is a set of variables for switching request context. It includes a 'Share' button and a 'Persist All' button.
- Environment Variables Table:** A table showing the mapping of initial values to current values for the environment.

INITIAL VALUE ⓘ	CURRENT VALUE ⓘ	...	Persist All	Reset All
localhost	sbl02.subnet.vcn.oraclevcn.com			
SADMIN	SADMIN			
SADMIN2019	SADMIN2019			

Siebel REST API – Internal Validation Process

- Postman collection – List of Requests (based on the use case/flow, consisting of 'Request Body', 'Pre-requisites' for the API test and 'Test' scripts for validating the Response for the request.
- Newman – Command line utility to execute one or more collections, in headless mode
- Node.JS Script – to simulate/configure the multiple users & iterations for the collection(s) execution
- Finally, post execute the HTML report is generated to view the results of the execution.





OpenAPI Specification (Swagger)

Siebel Business Objects

- <https://host/siebel/v1.0/data/describe>
- <https://host/siebel/v1.0/data/Account/Account/describe>

Siebel Business Services

- <https://host/siebel/v1.0/service/describe>
- [https://host/siebel/v1.0/service/WC Account BS/QueryPage/describe](https://host/siebel/v1.0/service/WC_Account_BS/QueryPage/describe)

Siebel Repository Objects

- <https://host/siebel/v1.0/workspace/main/describe>

Cloud Gateway APIs

- Coming soon! Future Update

REST Outbound Services

- Supports JSON format
- Supports Open API 2.0 compatible JSON specifications
- Supports security of type basic authentication
- Must use Siebel Tools
- Siebel Tools CFG (tools.cfg)

[JAVA64]

```
FullName = RESTOutboundJvmSubsys
Description = RESTOutbound Java Business Service subsystem Parameters
SubsysType = JVMSubSys
CONTAINERURL = http://ses-tomcat-host:<Config Agent Port>/siebel/jbs
```

[EAIFileTransportConfigSubsys]

```
EAIFileTransportFolders = D:\<Siebel Tools>\temp
```

- Siebel Enterprise Profile Configuration
 - Profile Name / Alias: JAVA64
 - CONTAINERURL: <http://host:<ses http port>/siebel/jbs>
- Optional: Add JBS logging parameter (JBSLogLevel=5) to
 - ses\applicationcontainer\webapps\configagent.properties

http ses
tomcat port

REST Outbound Services

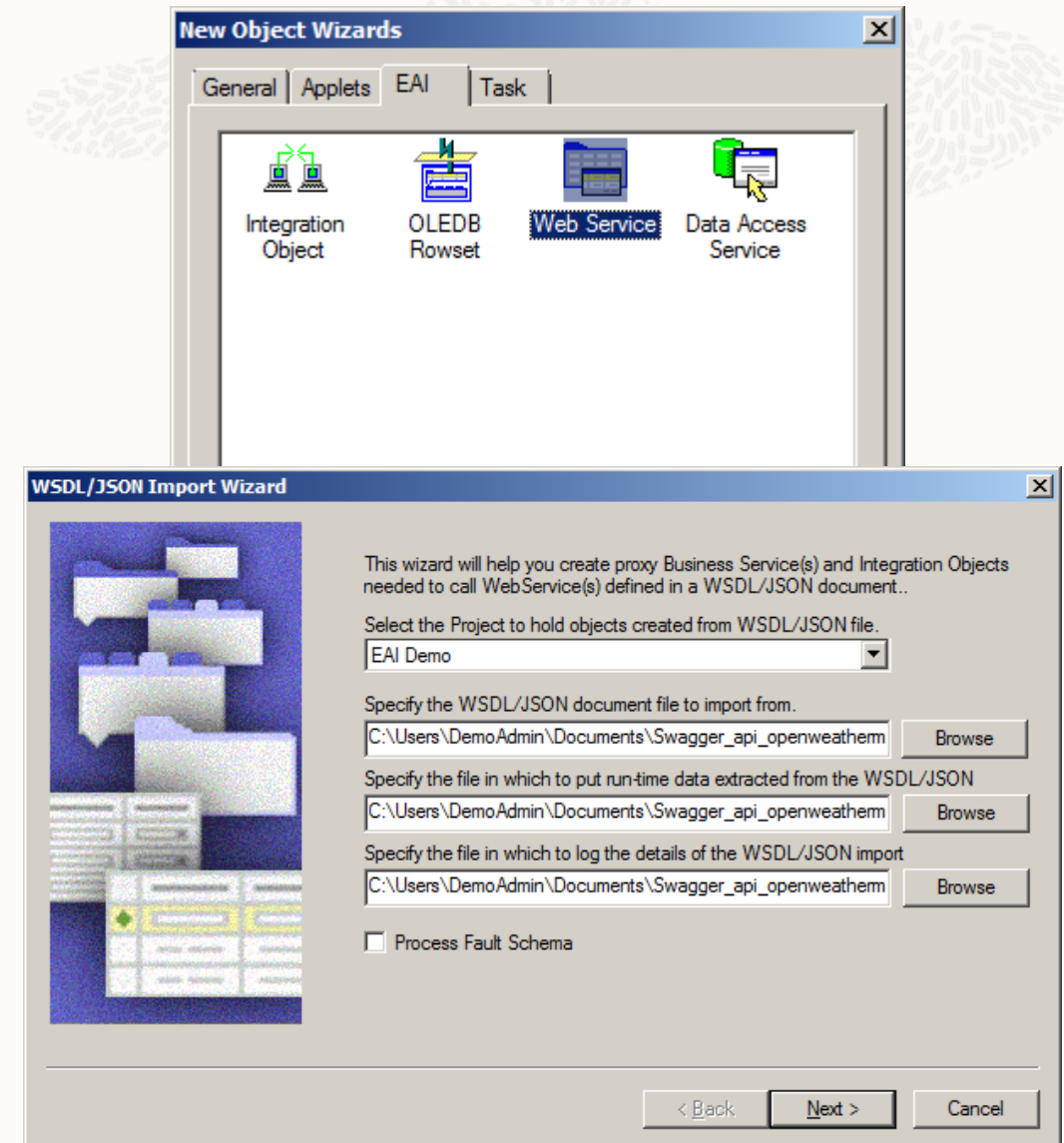
Import Wizard

- In a developer workspace, choose new Web Service from New Object Wizards
- Specify a project and JSON OpenAPI (Swagger) description
- Integration Object and Proxy Business Service are created

Refer to Transfer of Information

Siebel CRM 2020 TOI: Siebel REST API Outbound Framework Enhancements Functional Overview

Modified Objects			
	Object Name	Object Type	Operation
>	Get	Integration Object	Insert
	REST_weather	Business Service	Insert



REST Outbound Services

Common Logs

- Java Business Service (JBS)
 - \ses\applicationcontainer\logs\siebeljbs_xx.log
- Object Manager running the Proxy Business Service (Ex: Call Center)
- SES Tomcat Access Log (localhost_access_log.<date>.txt)

Customer Success





Bradley Creevey

Case & Incident Management Systems Section
Department of Home Affairs

Key Takeaways

- 1 Our innovations in integration have delivered fantastic value for our customers, with Siebel CRM playing an integral part in front to back office system architectures
- 2 Recent integration enhancements make it easier than ever to augment Siebel CRM with cloud innovation
- 3 Proven track record and customer success case studies – to find out more – talk to the Oracle team



Thanks!

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ORACLE

Poll Result:

Which integration technologies do you plan to use in the future?

Messaging (JMS, MQ)

REST

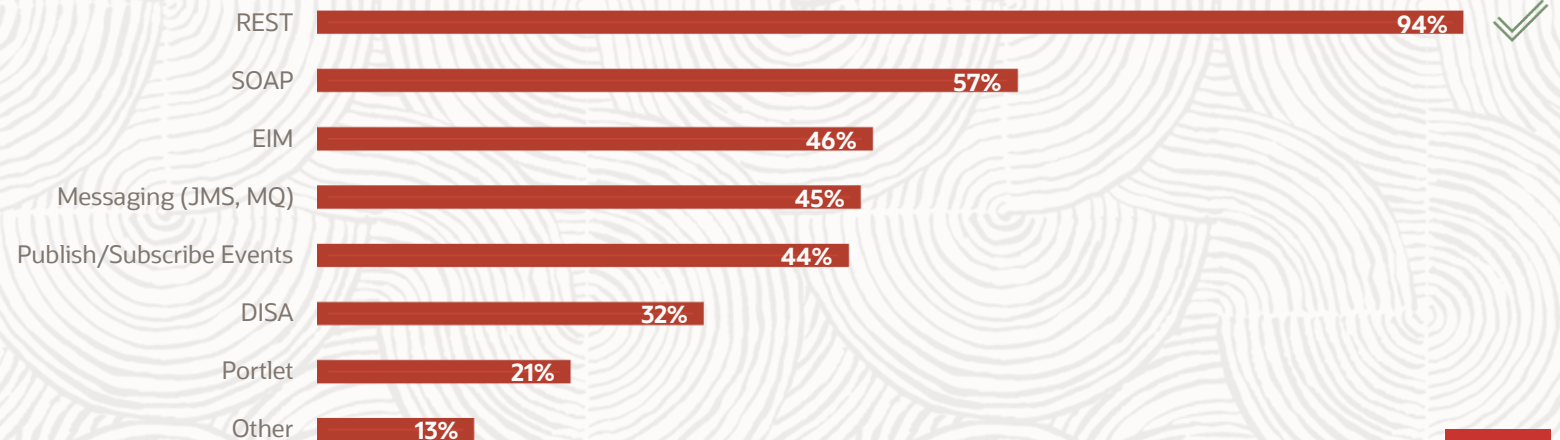
SOAP

Desktop Integration Siebel Agent (DISA)

Portlet

Publish/Subscribe Events

Other



Take the Siebel CRM Innovation Survey



Let us help you kickstart your
Siebel CRM transformation

<https://go.oracle.com/siebelcrm-innovation> 





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