



Valley Water

Clean Water • Healthy Environment • Flood Protection

Integrating Maximo with ERP using REST

Presented by: **Bart Sikorski**, Information Systems Analyst



Agenda

- Purpose of this presentation
- Project background
- Set-up
 - Maximo Configuration
 - Automation Scripts
- Business process
- Alternatives
- Results

About me



10 years working with Maximo.



M.S. in Computer Science.



8 NorCalMugs,
2 IBM Think,
1 PacMug,
1 MaximoWorld.



Purpose of this presentation



- Share ideas for ERP and REST integration.
- Inspiration for a new project or for improvement of an existing one.
- Provoke a discussion.



- Not step-by-step guide.
- Not claiming the title of the most proper implementation.

Project background

- PeopleSoft replaced with Infor CloudSuite.



- Reimplement the timecard integration.
- Improve upon the current integration.

- Replace SQL script-based integration with REST API's.
- Replace unidirectional with bidirectional.
- Enable mobile hours entry.

Maximo configuration

(2) Escalation – download & upload

← List View Escalation Communication Log

Escalation:
 INFORPOSTESC Call Infor REST API - Post/Update labor and work orders

Site: [Search]

Organization: [Search]

Applies To:
 INFORPOSTIFA [Search]

Condition:
 rownum=1

Create Successful Execution Entry?

Invocation Channel

← List View Invocation Channel

Invocation Channel:
 INFORPOSTINV Infor - Post/Update labor and work orders

Adapter: MAXIMO [Search] User Defined?

Operation:
 Invoke

Endpoint: INFORPOSTEN [Search] Process Response?

Action Group & Action

← List View Action

Action:
 INFORPOSTINV Call the Invocation Channel - Post/Update labor and work orders

Value:
 psdi.face.action.InvokeCustomClass

Object:
 INFORPOSTIFA [Search]

Parameter/Attribute:
 INFORPOST

Type:
 Custom Class

Memo:

Accessible From:
 ESCALATION

End Point

← List View End Point

End Point:
 INFORPOSTEN Infor - Post/Update labor and work orders

Handler: SCRIPT [Search]

Consumed By: INTEGRATION

Properties for End Point SC_INFORTIMESHEETPOS

Property	Value	Encrypted Value	Allow Override?
SCRIPT	INFORPOST		<input type="checkbox"/>

Maximo configuration

8

Communication Template

Employee: 1234 - Wed Mar 06 15:20:50 PST 2024 - Timesheet Integration Error Report

MaxMail
To: Mike Wilson

Wed 3/6/2024 3:20 PM

Timesheet Integration Error Report

#	Action	Work Order	Regular Hours	Premium Pay Hours	Start Date	Entered By	Transaction Date	Changed By	Change Date	Infor Error Message
1	Added	RWM1234567	6:00		3/6/24	WILSON	3/6/24 3:15 PM	MXINTADM	3/6/24 3:20 PM	Project 98765432 is restricted for this employee.

Infor Timesheet app

Infor Timesheet

Bart Sikorski

Find inforfacepost

Find Navigation Item

Go To Applications

Available Queries

All Records

All Bookmarks

EmployeeTimeRecord

EmployeeTimeRecord Create/Upda...

all records

Advanced Search Save Query Bookmarks

Infor Post Messages Filter

1 - 25 of 40504

ID	Refwo	Glaccount	Transdate	Api	Wostatus
789.101	ABC0123456	XXXX	1/11/24 10:30 AM	EmTIC	COMP 1
151.617	DEF121314	2021-18-192-XXXXX-02122232-4252	11/21/23 8:20 AM	EmTIC	APPR 1

Pay Codes in Crafts app

Premium Pay Codes Filter

Premium Pay Code	Description
> 120	Overtime Earnings @ 1.5
> 122	Overtime Earnings @ 2.0
> 125	Overtime Earnings @ 2.5

Custom interface table

List View Object Attributes Indexes Relationships

Object: INFORIFACEPO Custom interface table for timesheet integration with Infor

Status:

Attributes Filter

1 - 10 of 37

Status	Attribute	Description	Type	Length	Per
>	API	Api	ALN	24	☑
>	CHANGEBY	Changeby	UPPER	30	☑

System Properties

WebSphere Trusted Certificate

Dedicated Log Files

valleywater.org



Automation Scripts

Upload

[WOOOT](#): Creating WO records in interface table.

[WOGLEVAL](#): GL validation.

[LABTRANS.NEW](#): GL validation.

[LABTRANSOUT](#): Validation and creating interface table records.

[INFORPOST](#): Uploads labor and work orders.

Download

[INFORGET](#): Downloads labor transactions from timecard.

Library

[LIBHTTPCLIENT](#):
HTTP client library script.

Automation Scripts

LIBHTTPCLIENT:

```
var J_JSON=Java.type("com.ibm.json.java.JSON");
var HttpHeaders=Java.type("org.apache.http.HttpHeaders");
var HttpVersion=Java.type("org.apache.http.HttpVersion");
var HttpGet=Java.type("org.apache.http.client.methods.HttpGet");
var HttpClientBuilder=Java.type("org.apache.http.impl.client.HttpClientBuilder");
var BasicHttpParams=Java.type("org.apache.http.params.BasicHttpParams");
var HttpProtocolParamBean=Java.type("org.apache.http.params.HttpProtocolParamBean");

//...

// get http parameters
var params = new BasicHttpParams();
var paramsBean = new HttpProtocolParamBean(params);
paramsBean.setVersion(HttpVersion.HTTP_1_1);
paramsBean.setContentCharset("UTF-8");
paramsBean.setUseExpectContinue(true);

//...

// get client, request
var clientBuilder = HttpClientBuilder.create();
var client = clientBuilder.build();
var request=null;
var authHeader=null;

//...

authHeader="Bearer " +ctxToken;

request = new HttpGet(ctxUrl);
request.setParams(params);
request.addHeader(HttpHeaders.CONTENT_TYPE, "application/json");
request.addHeader(HttpHeaders.ACCEPT, "application/json");

request.addHeader(HttpHeaders.AUTHORIZATION, authHeader);

//...

// get client response
var response = client.execute(request);

// return JSON response
var myStatus = response.getStatusLine().getStatusCode();
var obj = J_JSON.parse(response.getEntity().getContent());
```

Automation Scripts

WOGLVAL:

```

var MXServer=Java.type("psdi.server.MXServer");
var HashMap=Java.type("java.util.HashMap");

//...

var ctxPost=new HashMap();
var mxserver=MXServer.getMXServer();
ctxPost.put("ctxUrl", mxserver.getProperty("ab.cde.infor.host"));
ctxPost.put("ctxHttpmethod", "POST");
ctxPost.put("ctxUser", mxserver.getProperty("ab.cde.infor.user"));
ctxPost.put("ctxPass", mxserver.getProperty("ab.cde.infor.pass"));

service.invokeScript("LIBHTTPCLIENT",ctxPost);
var token=ctxPost.get("obj").get("access_token");

//...

//Project and Taks relation validation
var ctxGetTask=new HashMap();

ctxGetTask.put("ctxUrl", "https://fghijk.infor.lmn/OPQ/rst/uvwX/BusinessClassId/type/type2?attrib=fltr=%28%28Prj%3D%22"+(glSegments[4])+"%22%20and%20DimFif%3D%22"+(glSegments[5]));
ctxGetTask.put("ctxHttpmethod", "GET");
ctxGetTask.put("ctxToken",token);

service.invokeScript("LIBHTTPCLIENT",ctxGetTask);

var obj5=JSON.parse(ctxGetTask.get("obj3"));
var countResultProjectTask=obj5[0]["_count"];
log.debug("LABTRANS.NEW.countResultProjectTask: "+countResultProjectTask);

log.debug("LABTRANS.NEW.Project/Task relation valid?: "+(countResultProjectTask>0 ? "GL is valid" : "GL is not valid"));
//End of Project and Task relation validation

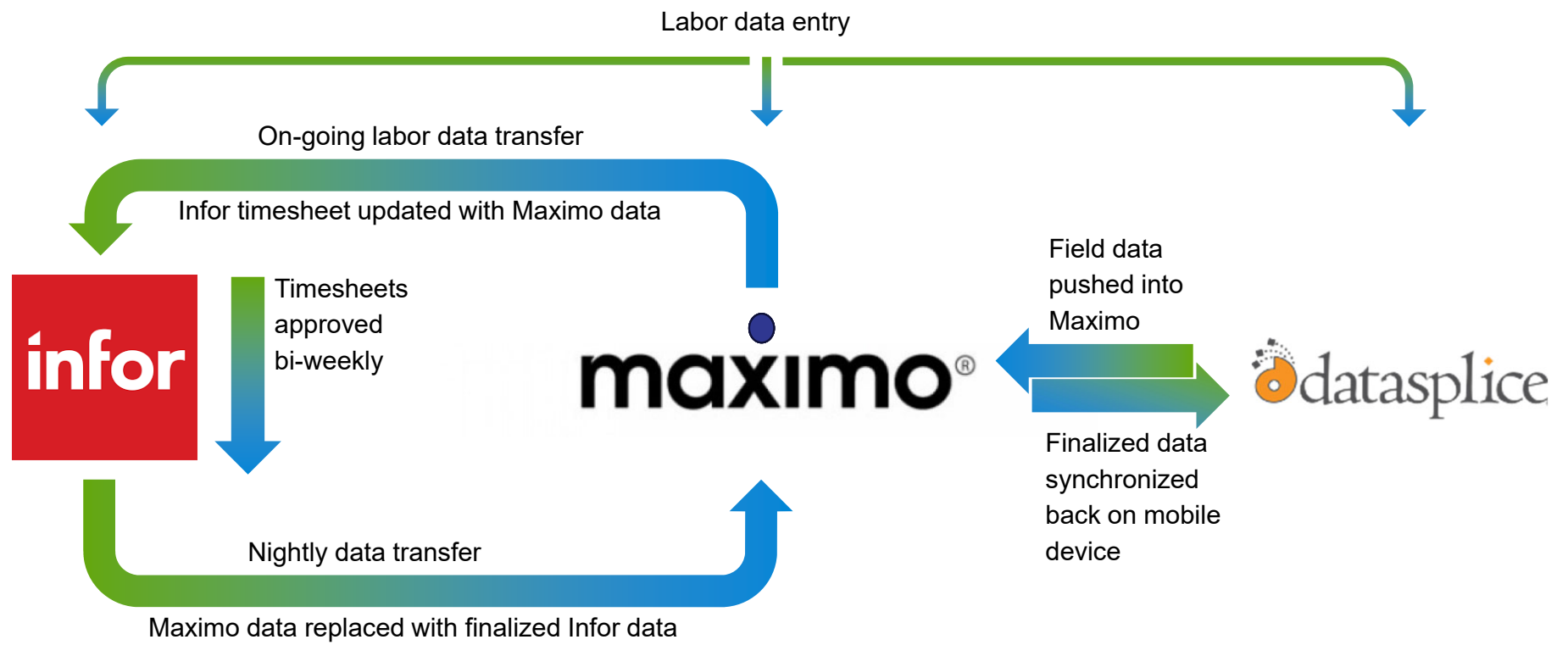
//...

if(countResultProjectTask<1){
  mbo["delete"]();
  log.debug("LABTRANS.NEW: script will throw an error and finish.");
  service.error("", "\nProject and Task combination not valid.\nEnter valid GL Account value.");
}

```

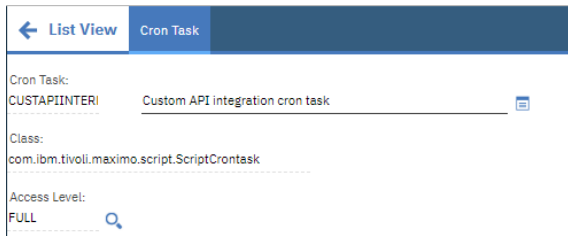


Business process



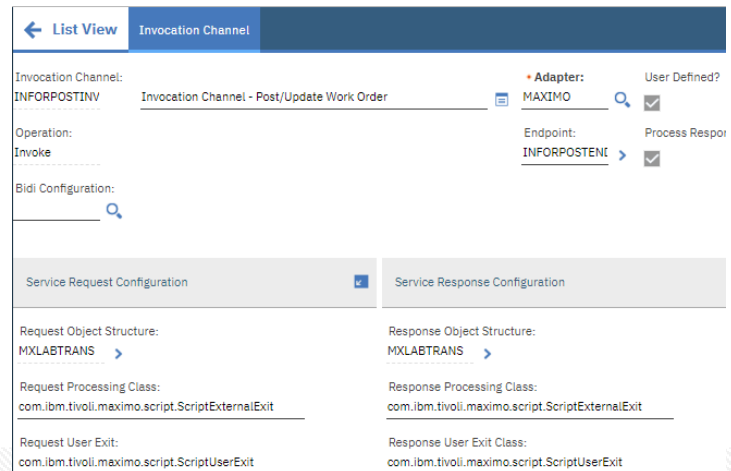
Alternatives

- Cron Task.



OR

- Invocation Channel Request and Response scripts.
- HTTP Handler Endpoint.
- Message Tracking app.



Results

14

1

Processing around 3,000 labor transactions in a bi-weekly period.

2

Time entry in either system (+ mobile).

3

Modern and portable technology.

4

ERP and Maximo in sync.

5

Ready for MAS.

QUESTIONS





Valley Water

Clean Water • Healthy Environment • Flood Protection