



Multinational SIG



ADI SIG
APPLICATIONS DESKTOP INTEGRATOR SIG

2020 FALL EDUCATION SERIES SESSION 1

INTERFACES AND INTEGRATIONS IN THE CLOUD

Operational Data to the Cloud

Discussion on integrating the Cloud Service with on Premise Oracle products, like EBS; with on-premise non-Oracle products, with other Oracle Cloud Services, and with non-Oracle Cloud products.





AGENDA

- Introductions
 - Seamus and Celantra Systems
 - Brian and Creol Consulting
- Part 1 – Business/Functional Overview (Seamus)
 - Oracle's internal view
 - Some Concepts
- Part 2 – Detailed FBDI Process (Brian)
 - FBDI documentation
 - Filling out FBDI's
 - Uploading FBDI's
 - Programmatically calling FBDI's

INTRODUCTIONS

Seamus Moran
Celantra Systems
Brian Makarewicz
Creoal Consulting



PRESENTED BY



Seamus Moran



Brian Makarewicz





SEAMUS MORAN

Experienced leader with a demonstrated history of working in information technology and financial reporting and accounting. Strong professional skills in Oracle Applications, IT Strategy, Professional Services, Data Warehousing, and Software as a Service (SaaS), following a career in foreign controllership, corporate consolidation, systems implementation and US GAAP external reporting



SEAMUS MORAN CELANTRA SYSTEMS

- Effective Enterprise Structures
- Supply Chain Financials
- Tax Efficient System Implementation
- COA Design & Multi-GAAP Compliance
- Enhanced & Multi-Country Localization Solutions
- Cost Effective Global Roll-Out and Support



Recent Celantra Systems Customers

facebook

Single Operating Unit for a European Union Shared Service Center



Global Chart of Accounts & European Implementation



Global Roll Out Strategy & Shared Service Center



Global Intercompany Supply Chain



Global Chart of Accounts & Italy Implementation



Global Multi-Tier Intercompany Implementation

BRIAN MAKAREWICZ

SENIOR CONSULTANT



CREOAL CONSULTING

15

Year
History



- Commercial
- Federal
- International
- Public sector

ORACLE Partner

400

Successful
Implementations



150+

Resources



15

Specializations

ORACLE
CLOUD APPLICATIONS

2

Oracle ACE Experts

2 Star Presenters

100%

Oracle Service Provider



- Advisory
- Implementation
- Management
- Support

ORACLE
PARTNER NETWORK

OATUG
ORACLE APP. CUSTOMERS & TRUSTED ORACLE USERS

CLOUD
CUSTOMER
CONNECT
COMMUNITY

DC OATUG

BUSINESS & FUNCTIONAL OVERVIEW

Seamus Moran



THE INTEGRATED ERP CLOUD

Native Integration Flows

- Single common architecture for Employees, Users, Security, Geography, Customers, etc.
- Requisition to Receipts → Supplier Invoice to Payment ; Expense Reports to Reimbursement
- Period Close to Financial Reports; Budget to Approval
- Credit Review to Approval → Configure Quote to Order → Customer Invoice to Receipt

Pre-built Integrations

- Integrated Quote-to-Cash with CPQ Cloud Service and Financials Cloud Service
- Planning and Budgeting Cloud Service with Financials Cloud Service

Integration Services

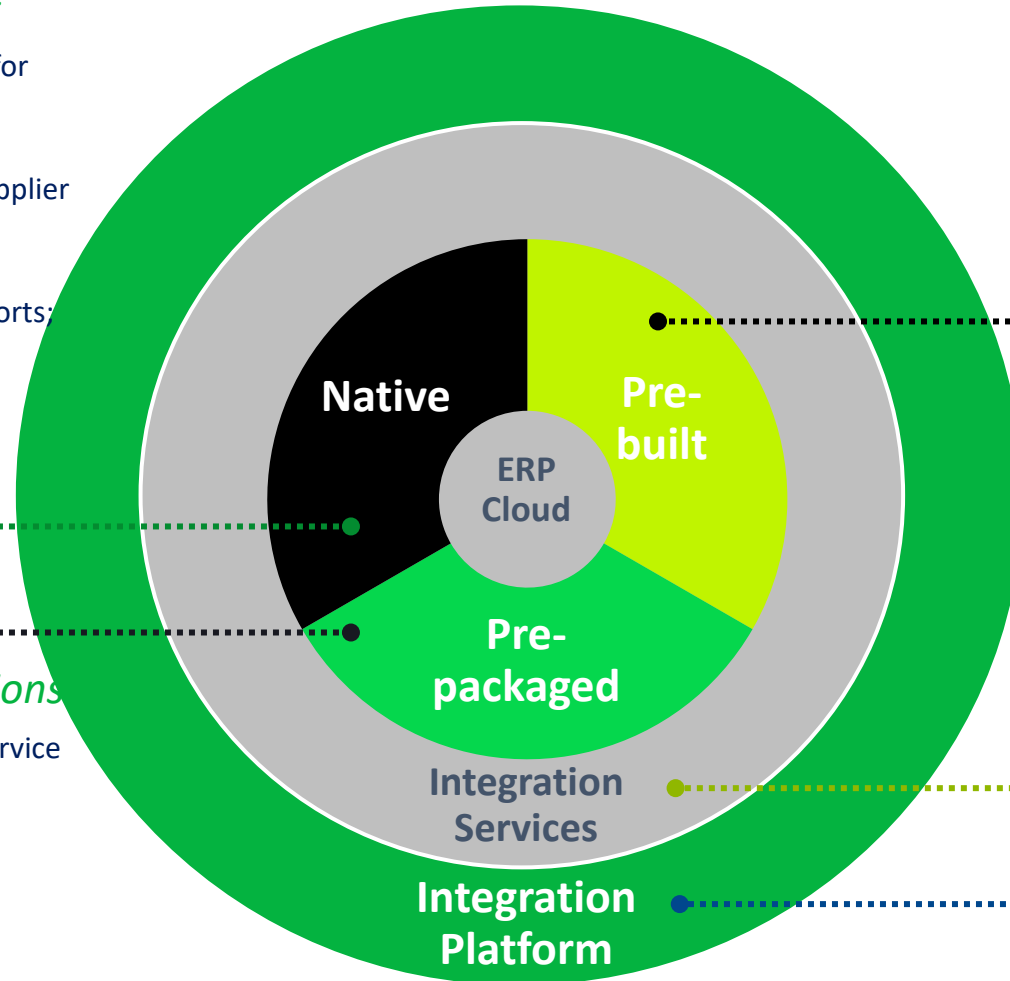
- Setup Services
- Bulk Inbound/Outbound Services
- Transactional Services

Integration Platform

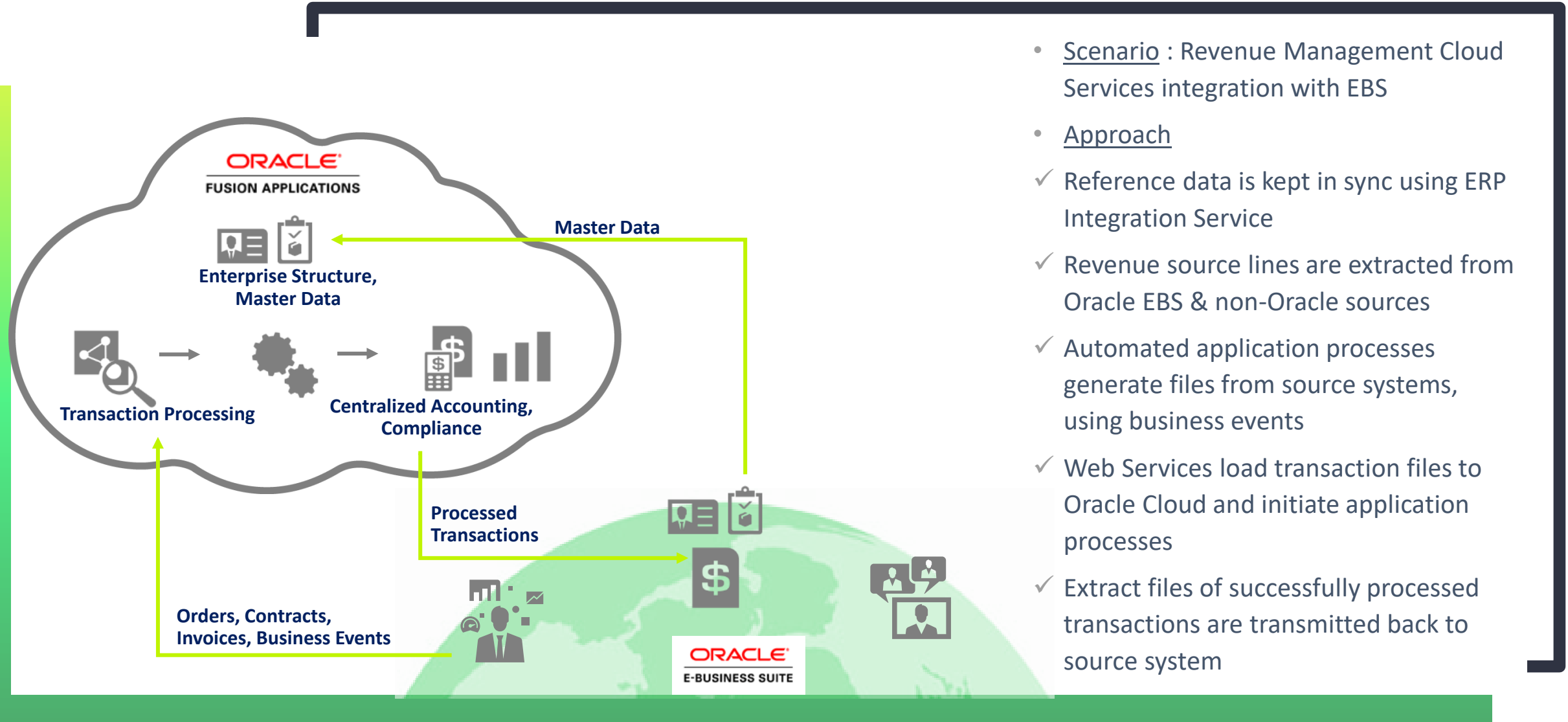
- Orchestrate Inbound/Outbound Bulk Data Flows across On-Premise, PaaS, and ERP Cloud
- Orchestrate Setup/Transactional Services across On-Premise, PaaS, and ERP Cloud

Pre-packaged Integrations

- Accounting Hub Reporting Service with EBS
- Revenue Management Cloud Service with EBS



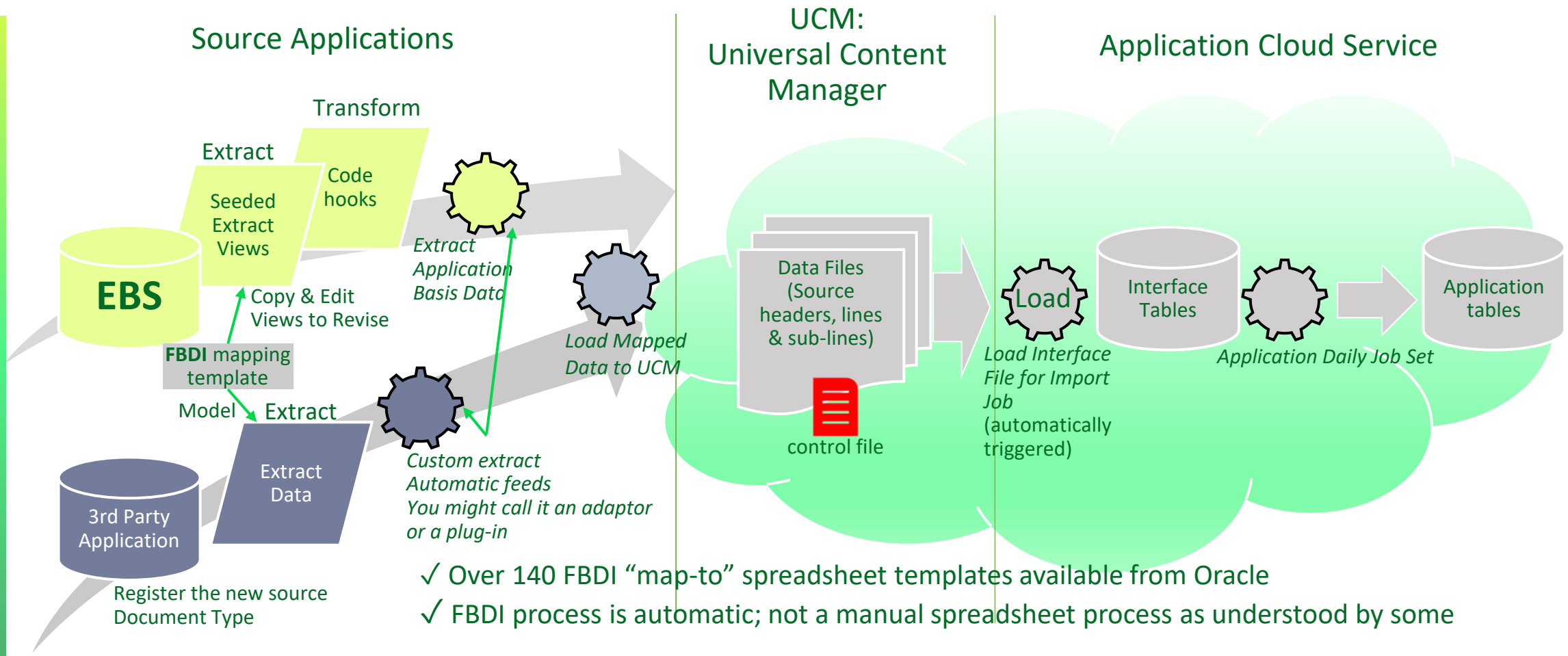
ERP INTEGRATION SERVICES - PREPACKAGED



- Scenario : Revenue Management Cloud Services integration with EBS
- Approach
 - ✓ Reference data is kept in sync using ERP Integration Service
 - ✓ Revenue source lines are extracted from Oracle EBS & non-Oracle sources
 - ✓ Automated application processes generate files from source systems, using business events
 - ✓ Web Services load transaction files to Oracle Cloud and initiate application processes
 - ✓ Extract files of successfully processed transactions are transmitted back to source system

IMPORT SALES RELATED DATA – FBDI

File Based Data Integration; Extract, Transform, Load



WEB SERVICES

REST

Representational State Transfer

- Meant to address issues in SOAP
- More Architectural than SOAP
- Simple URL instead of XML; HTTP
- So: CSV, Java JSON, RSS

Plusses

- ✓ No expensive tools
- ✓ Easier to learn
- ✓ Efficient and Fast
- ✓ Web technology



SOAP

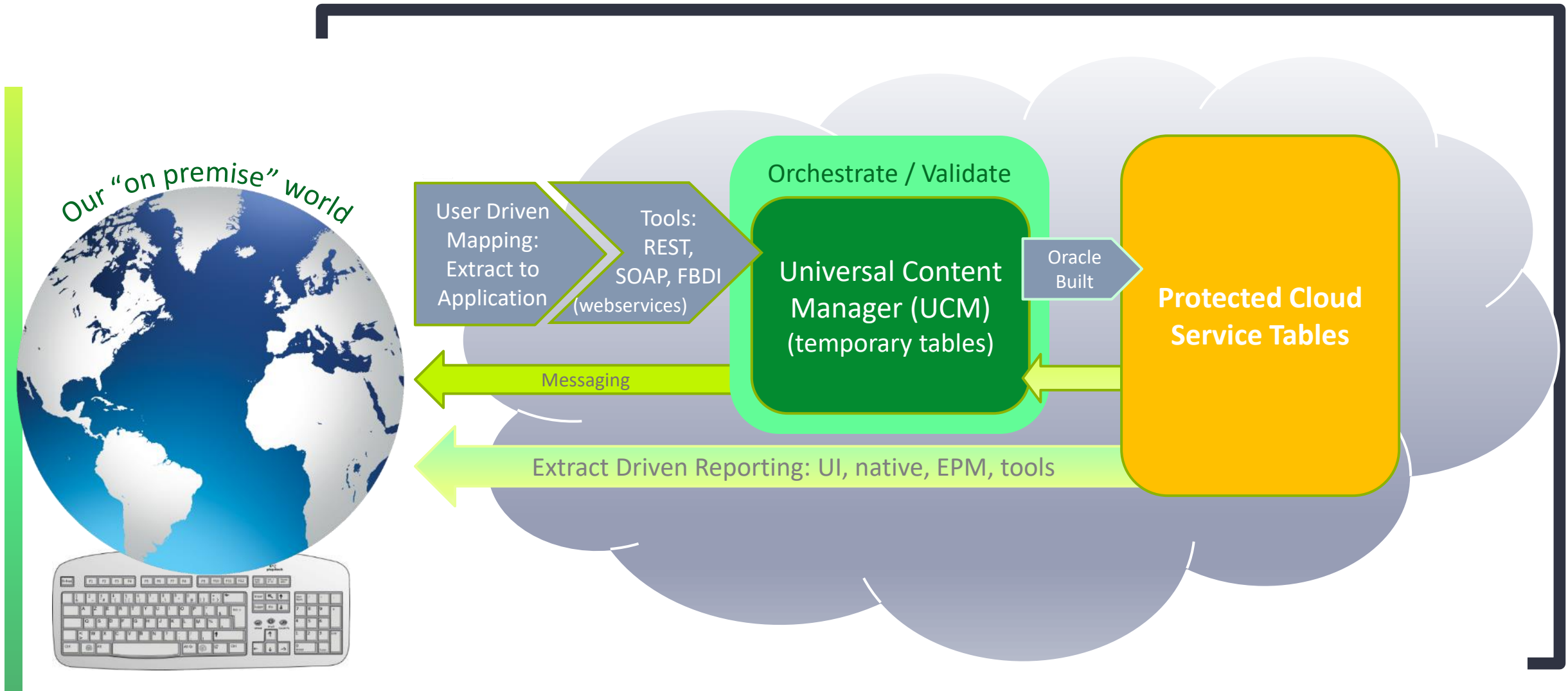
Simple Object Access Protocol

- Microsoft Standard, older
- Simple, but so not so simple
- XML Messaging, gets complex
- List of supporting Web Services standards – WS-this & WS-that
- Only use what you need
- WSDL and .NET language

Plusses

- ✓ Transport independent
- ✓ Distributed Enterprise
- ✓ Built in error handling

One way to understand integration



DETAILED FB DI PROCESS

Brian Makarewicz



DATA ENTRY METHODS

- Application Forms
- Web Services
 - (REST/SOAP)
- Open interface programs
 - FBDI

The screenshot displays a software interface for data entry. At the top, there is a form for supplier information with fields for Supplier Name, Supplier Number, Supplier Site, Legal Entity, Invoice Group, Type, Description, Terms Date, Requester, Attachments, and Note. Below this is a section for 'Lines' with a 'Match Invoice Lines' button. A toolbar contains various action icons like '+', '-', 'X', 'Print', 'Freeze', and 'Detach'. A menu bar lists options: Distribution, Reference, Tax, Purchase Order, Receipt, Consumption Advice, Inventory, Overlay, Income Tax, Prepayment, Asset, Corrected Invoice, and Project. The main area features a table with columns: Num, Type, Amount, Distribution Set, Distribution Combination, Distribution Combination Description, Accounting Date, Prorate Across All, Description, and Reference 1. The table contains five rows of 'Item' data with an amount of 100.00 and description 'Audit Fees'. Below the table, there are sections for 'axes', 'Transaction Taxes', and 'Withholding Taxes', each with its own toolbar and table headers.

Num	Type	* Amount	Distribution Set	Distribution Combination	Distribution Combination Description	Accounting Date	Prorate Across All	Description	Reference 1
Item		100.00	Audit Fees			11/20/15	<input type="checkbox"/>	test	
Item		100.00	Audit Fees			11/20/15	—	test	
Item		100.00	Audit Fees			11/20/15	—	test	
Item		100.00	Audit Fees			11/20/15	—	test	
Item		100.00	Audit Fees			11/20/15	—	test	

WEB SERVICES

- Oracle provides both REST and SOAP
- <https://docs.oracle.com/en/cloud/saas/financials/20c/oeswf/business-object-services.html#business-object-services>
- <https://docs.oracle.com/en/cloud/saas/financials/20b/farfa/index.html>

The screenshot displays the Oracle documentation for the 'Journal Interface Header' web service. On the left is a navigation pane with a tree view of services, including 'ERP Object Attachment Service', 'ERP Object Descriptive Flexfield Update Service', 'ERP Object Inquiry Service', 'Expense Item and Expense Report', 'External Bank Account', 'External Cash Transaction', 'External Payer', 'Financial Reporting Service for Coexistence with E-Business Suite', 'Financial Utilities Service (Deprecated)', 'Fixed Asset', 'Fulfillment Service', 'Journal', 'Journal Interface Header', 'Journal Interface', 'Legal Entity (Deprecated)', 'Legal Reporting Unit (Deprecated)', 'Payables Invoice', 'Payables Invoice Management', 'Receivables Adjustment', 'Receivables Adjustment API (Deprecated)', 'Receivables Chargeback (Deprecated)', 'Receivables Chargeback', 'Receivables Credit Checking', 'Receivables Credit Memo', 'Receivables Credit Memo Approval (Deprecated)', and 'Receivables Debit Memo'. The main content area is titled 'Journal Interface Header' and includes a description: 'The journal header consolidates common information for the journal interface, such as batch name, batch description, ledger identifier, accounting period, accounting date, journal source, currency, and so on.' It also provides the QName: '{http://xmlns.oracle.com/apps/financials/generalLedger/journals/desktopEntry/journalImportService/}GIInterfaceTransHeader'. Below this is a 'Relationships' section with a table describing how the service data object is related to other service data objects or business object services. The table has two columns: 'Relationship Type' and 'Object or Service'. The relationships listed are 'Contains' (pointing to 'Journal Interface') and 'Handled by' (pointing to 'Journal'). There is also an 'Attributes' section with a table describing attributes in the service data object. This table has three columns: 'Name', 'Type', and 'Description'. The attributes listed are: 'AccountingDate' (type: '{http://xmlns.oracle.com/adf/svc/types/}Date-Date', description: 'The accounting date on which the journals are recorded.'), 'AccountingPeriodName' (type: 'string', description: 'The accounting period in which the journal batch entries are recorded.'), 'BatchDescription' (type: 'string', description: 'The description of the journal batch.'), 'BatchName' (type: 'string', description: 'The name of the journal batch.'), 'ErrorToSuspenseFlag' (type: 'boolean', description: 'The indicator for whether journal amount errors should be posted to the suspense account.'), 'GIInterface' (type: 'Journal Interface', description: 'Oracle internal use only.'), 'ImportDescriptiveFlexField' (type: 'string', description: 'The indicator for whether journal descriptive flexfields should be imported.'), 'LedgerId' (type: 'long', description: 'The unique identifier for the ledger. • Primary Key'), 'SummaryFlag' (type: 'boolean', description: 'The indicator for whether summary journals should be created.'), 'UserCategoryName' (type: 'string', description: 'The user-defined name for the journal entry category.'), and 'UserSourceName' (type: 'string', description: 'The user-defined name for the journal entry source.').

WEB SERVICES

- Allow for real time integrations
- Allows for immediate synchronous or asynchronous responses
- Map data from the source system to the ERP application web service.

```
<soapenv:Envelope xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/" xmlns:typ="http://schemas.xmlsoap.org/soap/envelope/">
  <soapenv:Header/>
  <soapenv:Body>
    <typ:createSupplier>
      <typ:supplierRow>
        <!--Optional:-->
        <sup:SupplierId?></sup:SupplierId>
        <!--Optional:-->
        <sup:Supplier?></sup:Supplier>
        <!--Optional:-->
        <sup:SupplierNew?></sup:SupplierNew>
        <!--Optional:-->
        <sup:SupplierNumber?></sup:SupplierNumber>
        <!--Optional:-->
        <sup:AlternateName?></sup:AlternateName>
        <!--Optional:-->
        <sup:TaxOrganizationType?></sup:TaxOrganizationType>
        <!--Optional:-->
        <sup:SupplierType?></sup:SupplierType>
        <!--Optional:-->
        <sup:InactiveDate?></sup:InactiveDate>
```

```
<!--Zero or more repetitions:-->
<sup:SupplierAddresses>
  <sup:AddressName?></sup:AddressName>
  <!--Optional:-->
  <sup:Country?></sup:Country>
  <!--Optional:-->
  <sup:AddressLine1?></sup:AddressLine1>
```

FILE BASED DATA IMPORTS

1. Excel Template
2. SQLLDR Control Files
3. Interface Table Definitions
4. A how to guide

Payables Standard Invoice Import

Import Payables Invoices process is used to create invoices from invoice records in the Oracle Fusion Payables open interface tables.

Details

- Object owner: FIN:Payables:Payables Standard Invoice
- UCM account: fin/payables/import

File Links

File	Link
XLSM template	PayablesStandardInvoiceImportTemplate.xlsm
Control files	<ul style="list-style-type: none">• Invoice Header Import Control File• Invoice Lines Import Control File
ODI model file	Payables Standard Invoice Import ODI Model
ODI folder files	<ul style="list-style-type: none">• fusionapps/fin/odi/nodedeploy/model/MFOL_AP.xml• fusionapps/fin/odi/nodedeploy/model/MFOL_FIN_Integration.xml

Job and Table Links

Name	Link
Scheduled process	Import Payables Invoices
Tables	<ul style="list-style-type: none">• AP_INVOICES_INTERFACE• AP_INVOICE_LINES_INTERFACE

Related Topics

- [Open Interface Import: How Invoices are Imported?](#)

FILE BASED DATA IMPORTS

Business Owners
 populate an
 Oracle Provided
 Excel File

	A	B	C	D	E	F	G
2	Invoice Headers						
3	* Required	** At least one is required					
4	*Invoice ID	*Business Unit	*Source	*Invoice Date		**Supplier Name	
5	100	Vision Operations	External	AP		2012/02/12	Advanced Network Devices
6	200	Vision Operations	External	AP		2012/04/01	Advanced Network Devices
7	300	Vision Operations	External	AP		2012/02/12	Advantage Corp
8	400	Vision Operations	External	AP		2012/02/12	Advanced Network Devices
9	500	Vision Operations	External	AP		2012/02/12	Advantage Corp
10	600	Vision Operations	External	AP		2012/02/12	Advanced Network Devices
11	700	Vision Operations	External	AP_Demo_CM_Forex_10I	-6591.51	2012/04/01	Advnatage Corp
12	800	Vision Operations	External	AP_Demo_Std_PoMatched_1	33226.75	2012/04/01	Advanced Network Devices
13	900	Vision Operations	External	AP_Demo_Std_RctMatched_1	15300.00	2012/04/01	Advanced Network Devices
14	1000	Vision Operations	External	AP_Demo_Std_POForex_10I	90415.97	2012/02/12	Advanced Network Devices
15	1100	Vision Operations	External	AP_Demo_Std_Bad_Data_10I	14403.90	2012/02/12	Advanced Network Devices
16	1200	Vision Operations	External	AP_Demo_CM_Reject_10I_12	-13064.56	2012/04/01	Advanced Network Devices

SOURCE
 VARCHAR2(80 CHAR)

Indicates the feeder system from which an invoice is imported.

Navigation steps to find valid values:
 1. Navigate to Setup and Maintenance.
 2. Search and go to task Manage Payables Lookups.
 3. In the Search region, enter Lookup Type <Source>.
 4. Click Search to view the various lookup codes.

FILE BASED DATA IMPORTS

INVOICE_ID	INVOICE_NUMBER	DESCRIPTION	VENDOR_NAME
100	584735-12APRIL	April Fuel	Exxon
101	STAPLES201202	Office Supplies Feb 2012	Staples Inc.

INVOICE_ID	LINE_NUM	ITEM	QTY	AMOUNT
100	1	FUEL	1	743.22
101	2	48888823	14	23.10
101	2	DELL LAPTOP 23"	1	1510.32
101	3	RKM-23B	500	80.92

FILE BASED DATA IMPORTS

A Macro generates a zip file that can be uploaded

ORACLE Fusion Applications 11g Release 9 (11.1.9)
Receiving Open Interface - Create Receipt/ASN

Overview
You can create Receipts or Advance Shipment Notices (ASN) using this template for processing receiving transactions through Receiving Open Interface. For creating receipt based transactions, use the template Receiving Open Interface - Create Receipt Based Transactions. The receiving open interface requires the following tables to have parent-child relationship in order to create a receipt or ASN.

- The table RCV_HEADERS_INTERFACE contains the receipt header/shipment header information - such as receipt source, supplier, shipment number, ship to organization etc.
- The table RCV_TRANSACTIONS_INTERFACE contains the receipt line information - such as Organization, Item Number, receipt quantity, UOM etc.
- The table INV_TRANSACTION_LOTS_INTERFACE contains lot information and is to be populated if the transaction is for a lot controlled item and requires lot number information
- The table INV_SERIAL_NUMBERS_INTERFACE contains serial information and is to be populated if the transaction is for a serial controlled item and requires serial number information
- The table INV_IPN_INTERFACE contains packing unit information and is to be populated if you need to pack the ASN line content into a packing unit

Preparing the Table Data

1. Prepare the data for each interface table using the corresponding worksheet in this template. See the section **Excel Template Format** for details about this template.
2. Refer to the bubble text on each column header either for detailed instructions on preparing the data in that column, or for a description of the data and data type that the column requires
3. Common tasks for preparing table data include setting up for data merge, and searching for internal identifiers.

Loading the Data

1. After you finish preparing the data in the parent and child sheets, click the Generate CSV File button to generate a ZIP file containing one or more CSV files.
2. For information on loading the data in the CSV files into the interface tables, see the Documentation tab for the Load Interface File for Import scheduled process in Oracle Enterprise Repository for Oracle Fusion Applications.

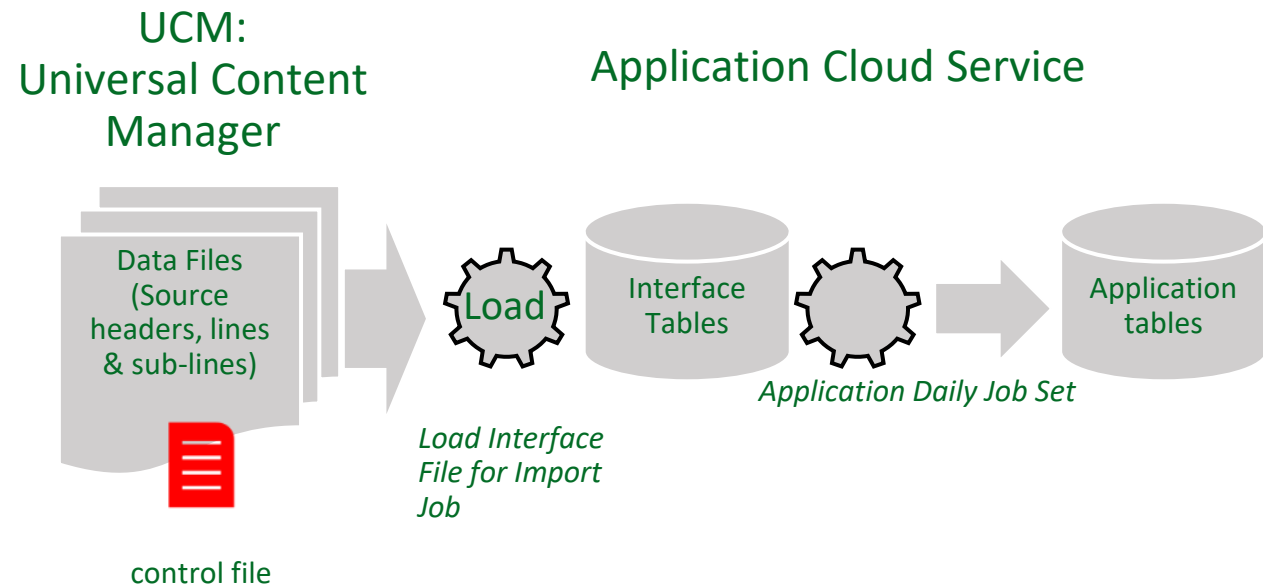
Generate CSV File

Excel Template Format

- Each interface table is represented as a separate Excel sheet.
- The first row in each sheet contains column headers that represent the interface table columns. The columns are in the order that the control file expects them to be in the data

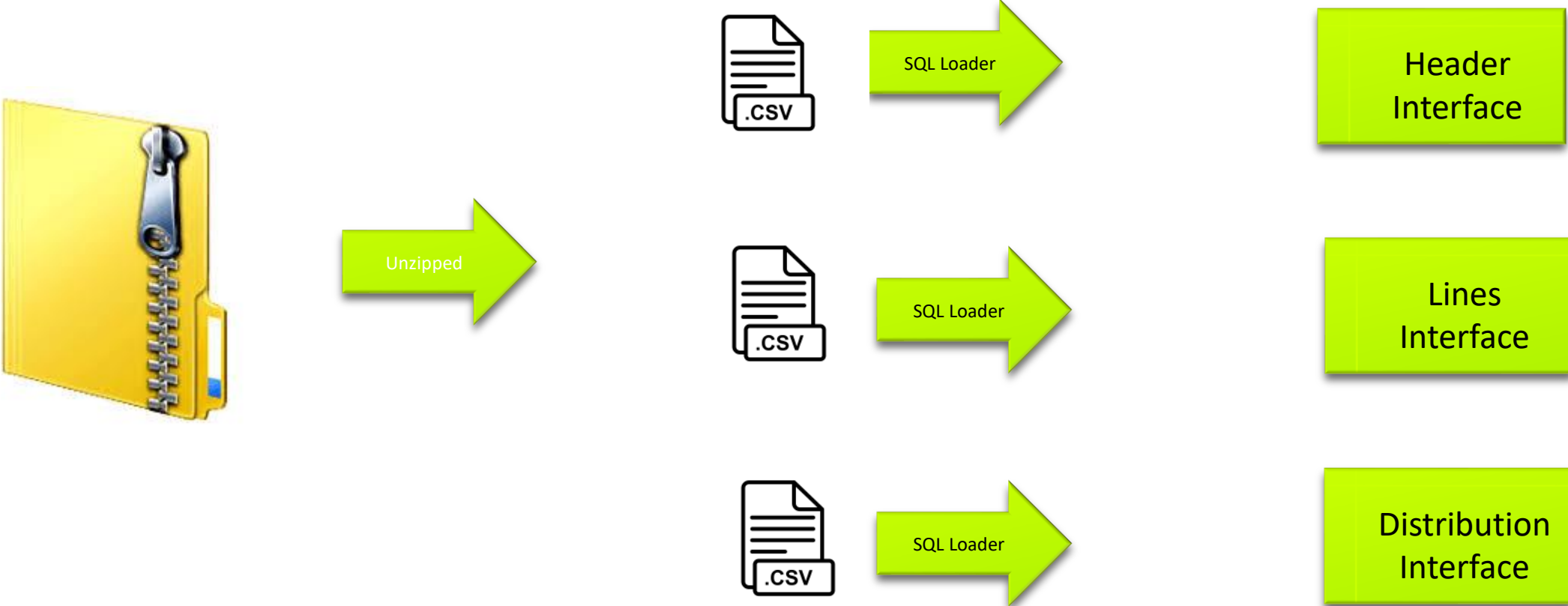
FILE BASED DATA IMPORTS

- Upload zip file to UCM
- Import data into the application
 - Load the file to interface tables
 - Import the data into the application

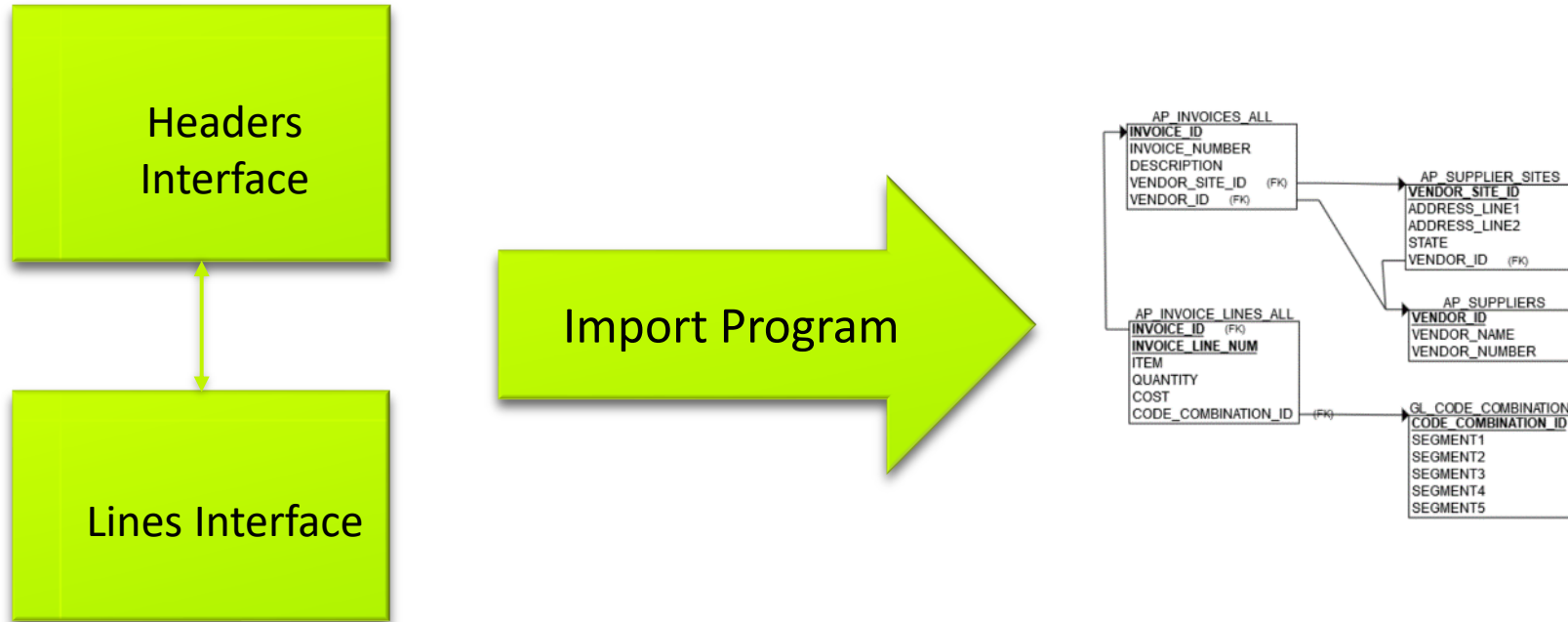


LOAD INTERFACE FILES

- Zip file consists of a csv for each tab in the templates



IMPORT PROGRAM



FBDI WEB SERVICE

```
soap:Envelope xmlns:soap="http://schemas.xmlsoap.org/soap/envelope/">
  <soap:Body>
    <ns1:loadAndImportData xmlns:ns1="http://xmlns.oracle.com/apps/financials/commonModules/shared/model/erpIntegrationService/types/">
      <ns1:document xmlns:ns2="http://xmlns.oracle.com/apps/financials/commonModules/shared/model/erpIntegrationService/">
        <ns2:Content>UESDBBQAAAAIAHSsJUWkOHOWFAEAAHgDAAAXAAAAQXBjbnZvaW5lc0ludGVyZmFjZS5jc3bV0U9LWzAYBvC74HcIO3h61+XN/xzrqLLRitYJHivmUOzKbFJEP73p1sEQymDgwef0HB5I8gtK
        REop5Nc35LL3deu8J6u2DrC8S/P7EnAcKGtpwoBRFatkC6ohOB9cG1y36WrvyGvVvpMLerREB1BMC0lgnNWaw6rM4A0gfEqLLH3MAKSao+TGSgVp8QL5eu3e6io4iNmfwHhSVA/9oE4EId6TMso0p3O EZGp3Q
        q6K7PxsK8HtEao4QC4Hsd1D6J5qU/UNCRHJdb5xX5HIcKRguBZsR1QdEnE1Z8oKI6aIRosTiFCgjd/A/ohI8CNEcSDVb6LZYPRcu4Y8JGRZ+U/XNEBuu2Q2SGkuo5SRUmylvv+91A9QSwMEFAAAAAgAM4YNRY
        XONvBWAAAAxQEAAbsAAABBCeludm9pY2VMaW5lc0ludGVyZmFjZS5jc3YzNDU0NDaw0DHU8Qxx9dUxs7Q00DPSAYJCHWRGqKNjZGBoom9sqG9grkNT4OrnwstlCHKWsSXMWYbGpiBHAKeiiIqjgXCWiTHMwZ
        mMGdVoag1prOzAFBLAQIUABQAAAAIAHSsJUWkOHOWFAEAAHgDAAAXAAAAAAAEIAAAAAAABBCeludm9pY2VzSW50ZXJmYW51LmNzd1BLAQIUABQAAAAIADOGDUWFzjBwVgAAAMUBAAAbAAAAAAAEAA
        TAAAAEBAABBCeludm9pY2VMaW5lc0ludGVyZmFjZS5jc3Z0SwUGAAAAIAAAACQAAAA2AEAAAA</ns2:Content>
        <ns2:FileName>TestUploadFileName.zip</ns2:FileName>
        <ns2:ContentType>zip</ns2:ContentType>
        <ns2:DocumentTitle>LoadandImportCallbacktest</ns2:DocumentTitle>
        <ns2:DocumentAuthor>finuser1</ns2:DocumentAuthor>
        <ns2:DocumentSecurityGroup>FAFusionImportExport</ns2:DocumentSecurityGroup>
        <ns2:DocumentAccount>fin$/journal$/import$/</ns2:DocumentAccount>
        <ns2:DocumentName></ns2:DocumentName>
        <ns2:DocumentId></ns2:DocumentId>
      </ns1:document>
      <ns1:jobList xmlns:ns2="http://xmlns.oracle.com/apps/financials/commonModules/shared/model/erpIntegrationService/">
        <ns2:JobName>/oracle/apps/ess/financials/generalLedger/programs/common,JournalImportLauncher</ns2:JobName>
        <ns2:ParameterList>1061,Expenses,1,ALL,N,N,N</ns2:ParameterList>
        <ns2:JobRequestId></ns2:JobRequestId>
      </ns1:jobList>
      <ns1:interfaceDetails>1</ns1:interfaceDetails>
      <ns1:notificationCode>10</ns1:notificationCode>
      <ns1:callbackURL>#NULL</ns1:callbackURL>
    </ns1:loadAndImportData>
  </soap:Body>
</soap:Envelope>
```

WHAT IS BASE 64

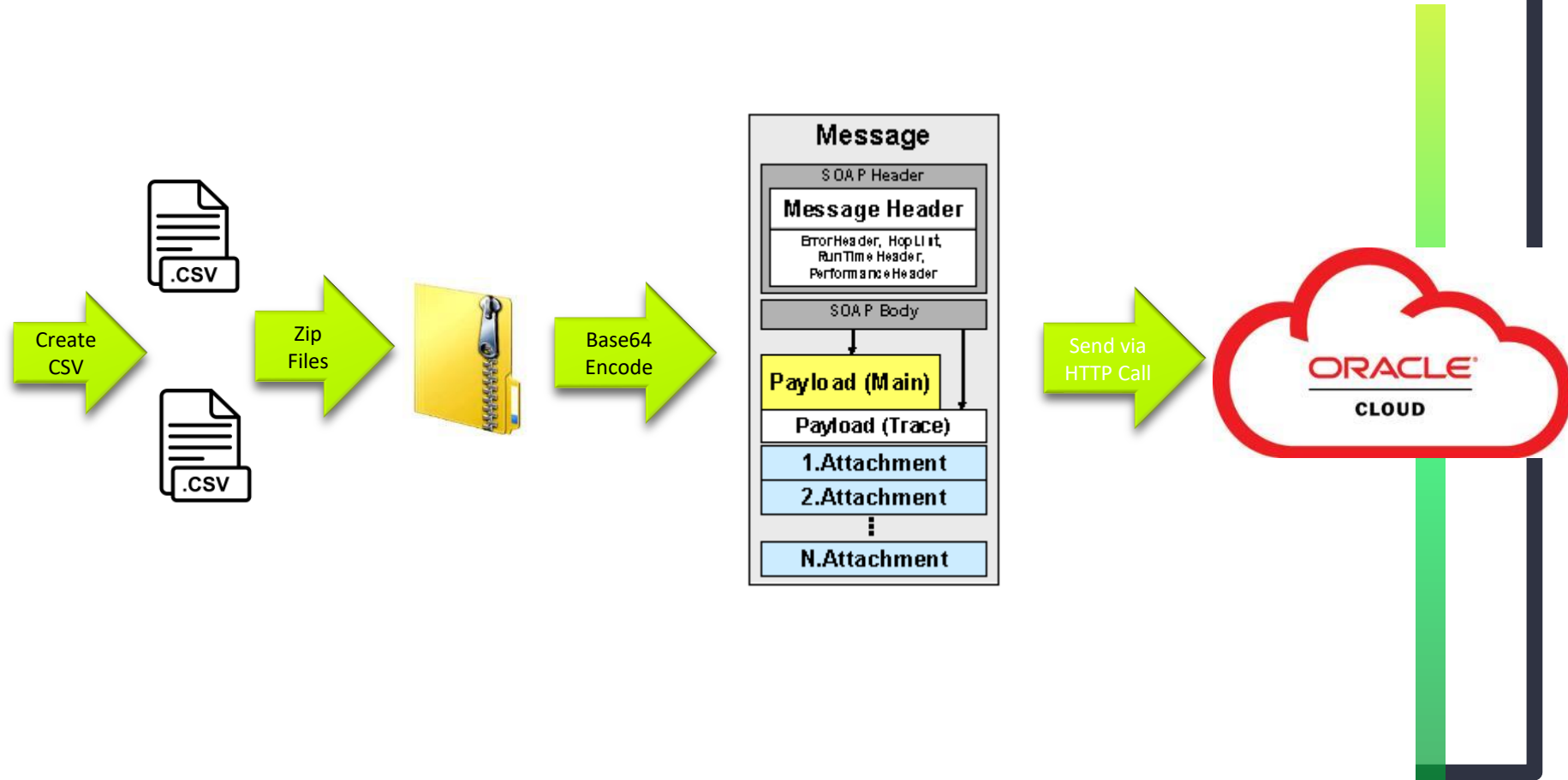
- Binary encoding into a TEXT format
- Widely used in HTTP.
 - Hyper TEXT transfer protocol

Value	Char	Value	Char	Value	Char	Value	Char
0	A	16	Q	32	g	48	w
1	B	17	R	33	h	49	x
2	C	18	S	34	i	50	y
3	D	19	T	35	j	51	z
4	E	20	U	36	k	52	0
5	F	21	V	37	l	53	1
6	G	22	W	38	m	54	2
7	H	23	X	39	n	55	3
8	I	24	Y	40	o	56	4
9	J	25	Z	41	p	57	5
10	K	26	a	42	q	58	6
11	L	27	b	43	r	59	7
12	M	28	c	44	s	60	8
13	N	29	d	45	t	61	9
14	O	30	e	46	u	62	+
15	P	31	f	47	v	63	/

AUTOMATED PROCESS

INVOICE_ID	INVOICE_NUM	DESCRIPTION	VENDOR_NAME
100	584735-12APRIL	April Fuel	Exxon
101	STAPLES201202	Office Supplies Feb 2012	Staples Inc.

INVOICE_ID	LINE_NUM	ITEM	QTY	AMOUNT
100	1	FUEL	1	743.22
101	1	48888823	14	23.10
101	2	DELL LAPTOP 23"	1	1510.32
101	3	RKM-23B	500	80.92



IMPORTANT POINTS FOR AUTOMATING FBDI

- Batch Processes
 - Near Real Time is possible, not easy
 - For real time, use SOAP/REST web services
- Asynchronous
 - Synchronous is possible, not easy
 - For synchronous, use callback or SOAP&REST
 - Web Services require ID's, as opposed to business values (ex: BU ID instead of BU Name)
- Not easily scalable
 - Possible, but not easy
 - Without PaaS, this would require building out the infrastructure instead of buying
- Requires some platform
 - Platform can be on prem or cloud



ASK THE EXPERTS

- If you'd like a session with one of our experts reach out to Jenn Rush to schedule your individual session
- jenn.rush@celantrasystems.com

NEXT SESSION

FINANCIAL REPORTING IN ERP CLOUD

10/29/20 - 8:30 AM PDT (11:30 EDT)

QUESTIONS?

