Modernizing Legacy Integrations with Oracle Integration Cloud Services (OICS)

Orientation and Lessons Learned

ASCEND 2024

Agenda

- Introduction to OICS
- OICS with the Oracle E-Business Suite
- Use cases
- EDI Killer Features
- Security Concerns
- Licensing, subscription and Costs
- Summary and Q&A

Mike Miller

Senior Solution Architect, Syntax

- Over 25 years of working with enterprise software and information security technologies
- Experience with enterprise software implementation and support, cloud operations, and executing compliance and risk management programs.
- A CISSP, Certified Information Systems Security Professional
- Oracle ACE Associate

Syntax

- Syntax was founded in 1972 in Montreal, Canada, and is celebrating 50 years in the ERP space
- Syntax provides full-stack, full-lifecycle Cloud Managed Services and Application Managed Services focused on leading ERP solutions such as JD Edwards, Oracle E-Business Suite, and SAP
- Syntax is cloud agnostic and supports both public and private solutions, including AWS, Azure, OCI, and Syntax Enterprise Cloud®
- Our ERP solutions include an array of value-add services, including our monitoring and automation platform, CxHub customer experience portal, security management, and enhanced security
- Syntax is a global company with offices and data centers in the Americas, Europe, and Asia

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ORACLE | Sell Partner
Expertise in
JD Edwards EnterpriseOne
in North America

ORACLE | Sell Partner
Expertise in
Oracle E-Business Suite
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JD Edwards Applications to Oracle Cloud
in North America

ORACLE | Service Partner
Expertise in
Oracle E-Business Suite Applications to Oracle Cloud
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ORACLE | Service Partner
Expertise in
CSPE: Oracle Cloud Platform - Oracle E-Business Suite Applications to Oracle Cloud
in North America

Gartner Magic Quadrant

Product News, Technical Solutions

Seven times in a row: Oracle named a Leader in 2024 Gartner Magic Quadrant for Integration Platform as a Service

February 22, 2024 | 4 minute read

Jürgen Kress
Director Product Management

Deepak Arora
Vice President, Product Management, Oracle

7 times a Gartner® Magic Quadrant™ Leader in iPaaS

We're happy and thankful to our customers, partners, and teams for being named a Leader seven times in a row by Gartner in the 2024 Magic Quadrant for integration platform as a service (iPaaS). Gartner recognizes Oracle as a Leader based on our Completeness of Vision and Ability to Execute in this report and a Leader in the 2023 Gartner Magic Quadrant for Data Integration Tools.

https://blogs.oracle.com/integration/post/seven-times-in-a-row-oracle-named-a-leader-in-2024-gartner-magic-quadrant-for-integration-platform-as-a-service

Gartner Report

Strengths

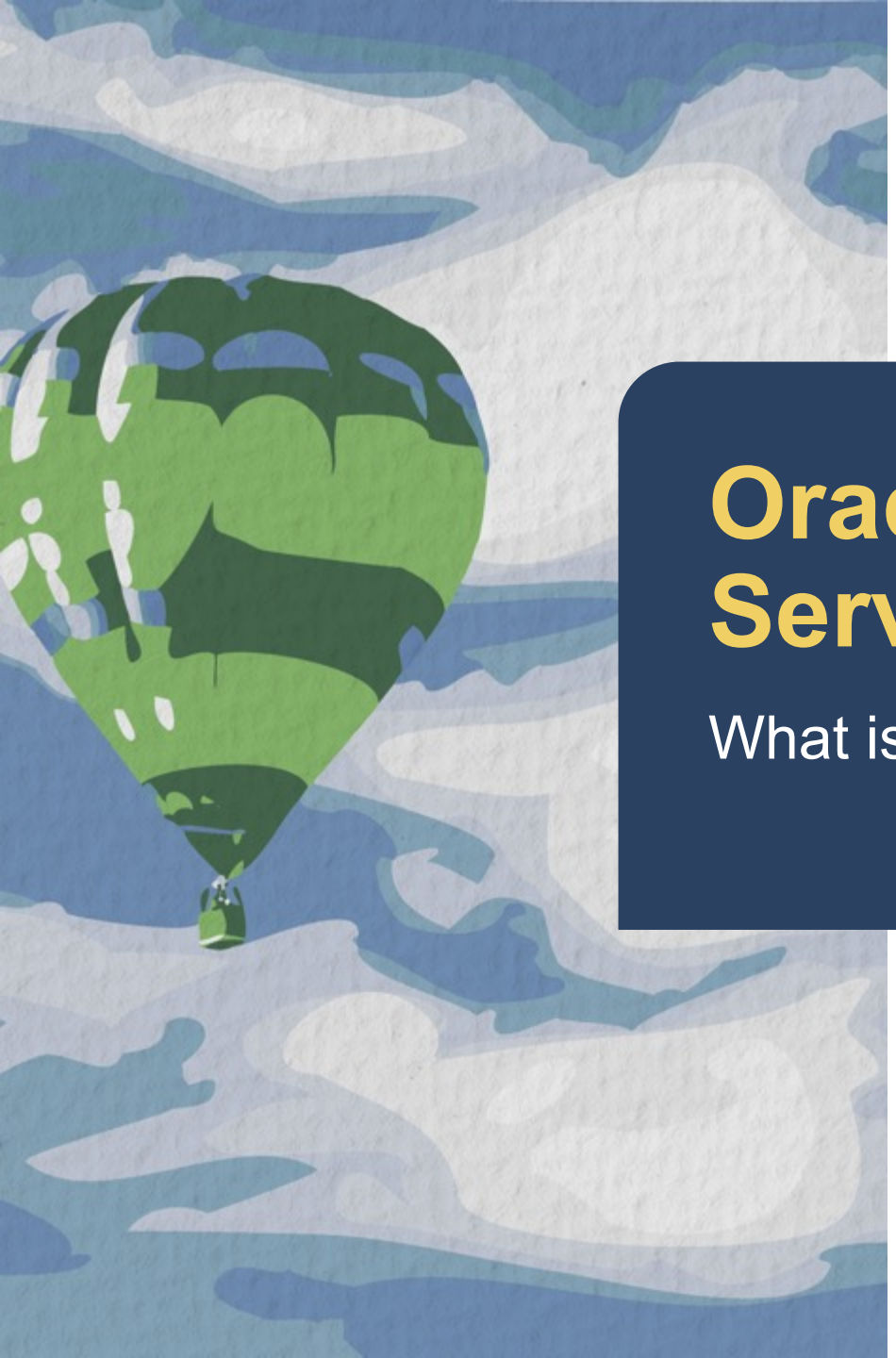
- **Business model innovation**: Oracle is out-innovating the market with respect to emerging enterprise needs such as sovereign clouds. This is particularly valuable to customers in countries with stringent regulatory and data privacy requirements as mandated by law. Allowing third parties to private label OCI and operate completely isolated regions is highly differentiated in the market for CIPS. This also helps promote the sovereign cloud needs in regions such as Europe and the Middle East.

- **Multicloud architectures**: Oracle is building compelling multicloud offerings leveraging its heritage in mission-critical database and data warehousing technology. Multicloud architectures, where one workload spans multiple cloud providers, are central to OCI's vision and its future offerings that live within and alongside providers such as AWS and Azure. These approaches to deploying and operating workloads in the cloud are unique critical capabilities for providers in this market.

- **Market responsiveness**: Oracle continues an impressive year-over-year pace of feature velocity that brings it closer to the market leaders in terms of hyperscale cloud capabilities. If the pace continues, Oracle will meet or exceed some of the providers in the Leaders quadrant in terms of capabilities within the foreseeable future.

https://www.gartner.com/doc/reprints?id=1-2BFV0YLG&ct=221019&st=sb

Source: Gartner (January 2023)



Oracle Integration Cloud Services

What is OICS? What is it not?

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Oracle Integration Solutions

Golden Gate

- Oracle Golden Gate is a real-time data integration and replication tool for high-availability requirements.
- It enables the replication of data across heterogeneous databases and systems with minimal latency

ODI

- Commonly deployed for bulk-loading data warehouses to connect multiple types of database environments
- Offers rich ELT capabilities to transform large loads of data periodically and incrementally

SOA Suite

- Comprehensive tool for designing, deploying, and managing service-oriented architecture (SOA) applications and complex integrations
- Requires experienced developers to build and maintain

OICS

- A cloud-native (only) SaaS integration solution ideal for citizen and power business users to deploy prebuilt integrations, adapters, and low-code/no-code tools for rapid integration development.
- Can convert SOA licensees to use for OCIS

Oracle Integration Cloud Services (OICS)

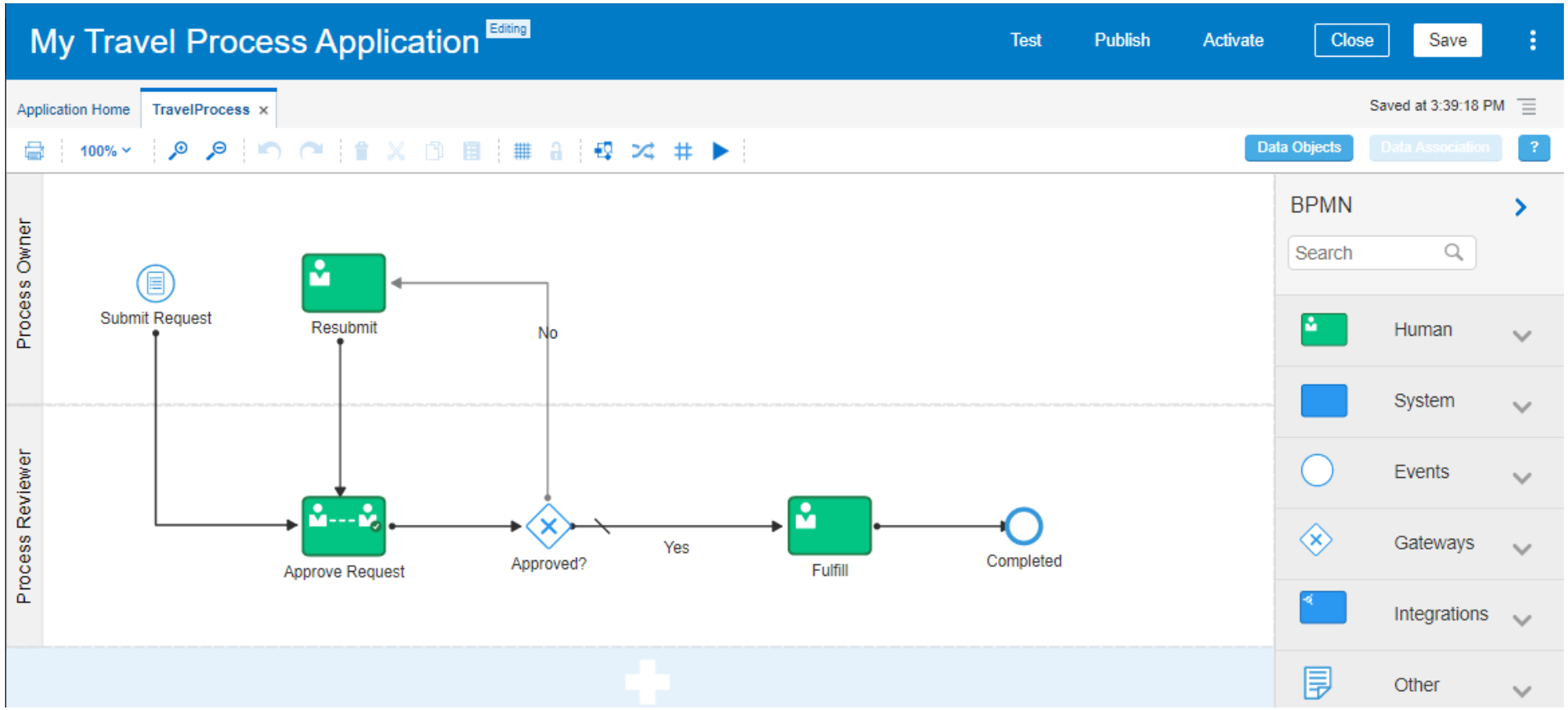
Cloud-based integration platform from Oracle that enables you to connect your applications, data, and devices, both on-premises and in the cloud. With OIC, you can create integrations quickly and easily without the need to install and maintain any software

Key Features

- OIC is a SaaS solution hosted and maintained by OCI
- Simple user interface for an All-in-One design to build, operate and monitor business processes (integrations)
- Protected by cutting-edge security - OCI provides top-tier security, including physical protection, OS security, and virtualization layer security, as well as tenant isolation
- Supports a wide range of applications with prebuilt application adapters
- Includes monitoring, machine learning, and powerful analytics tools
- Overall benefit is fast deployment and lower costs, and easier maintenance

OCIS is a logical extension of EBS' Integrated SOA Gateway

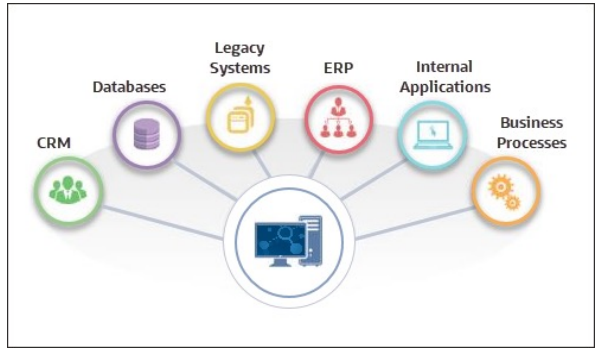
#1 Takeaway for Today: OICS Is A Process Builder



Process definition is the first step any integration

Oracle Integration Cloud Services Is Many Things

Capability		Prebuilt
Application Integration		Adapters
Process Automation		Accelerators and Recipes
Business Insight		Machine Language Recommendations
Visual App Builder		



Not a single function integration solution

Prebuilt Connectors For “Low Code” Integrations

ERP Connectivity

ERP Cloud · NETSUITE · EPM Cloud · Commerce Cloud · Utilities Cloud · Logistics Cloud

ORACLE E-Business Suite · ORACLE JD Edwards · SAP S/4 HANA · SAP Commerce Cloud · SAP Ariba · CONCUR · Shopify

HCM Connectivity

HCM Cloud · Taleo Talent Acquisition Cloud · Taleo Talent Cloud for Midsize

successfactors An SAP Company · workday.

Enterprise Messaging

Apache Kafka · AQ

JMS · IBM MQ Series

CX Connectivity

Engagement Cloud · CPQ Cloud · Service Cloud · Eloqua · Responsys · Marketo · salesforce

Field Service Cloud · Monetization Cloud · Policy Automation · ORACLE Siebel · servicenow

Database Connectivity

Database Cloud · ATP Cloud · ADW Cloud · Database

MySQL · SQL Server · IBM DB2

Technology Connectivity

REST · FTP · SOAP · SOA Suite · FILE

Productivity and Social Connectivity

Adobe Sign · box · DocuSign · Eventbrite · EVERNOTE · facebook · LinkedIn · Trello · twilio

Google Calendar · Gmail · Google Tasks · MailChimp · MS Calendar · MS Contacts · MS Email · Slack · SurveyMonkey · twitter

RPA Connectivity

UiPath · AUTOMATION ANYWHERE

OICS Accelerators vs. Recipes

Learn About Differences Between Accelerators and Recipes

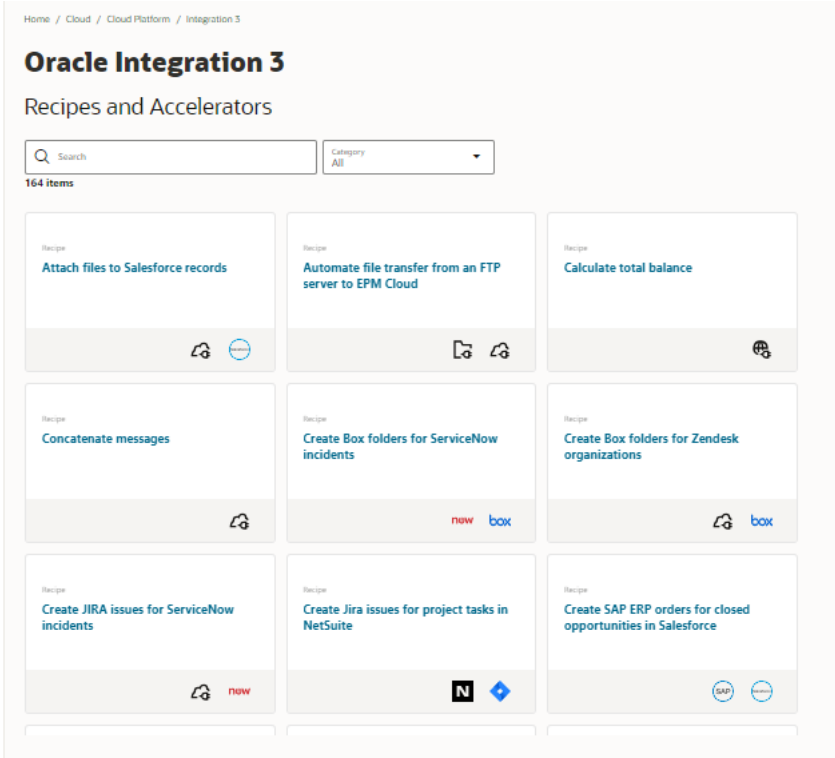
Accelerators are run-ready business integrations or technical patterns that you can configure and activate. **Recipes** are templates or samples that give you a head start.

Here's a comparison of accelerators and recipes.

Accelerators	Recipes
A business accelerator provides an end-to-end business process or use case (for example, marketing to lead, hire to retire, or concept to launch). A technical accelerator provides a common technical solution (for example, sending alerts on failures). They are meant to be called by another integration.	A recipe is a sample or template that gives you a head start.
Managed and supported by the producer	Not supported
Configurable and extendable	Fully editable in the Oracle Integration designer
Upgrades provided by producer	Can't auto-upgrade to new versions
Configurator in Oracle Integration and as native SaaS	Configurator in Oracle Integration
Paid offering (as decided by producer)	Always free

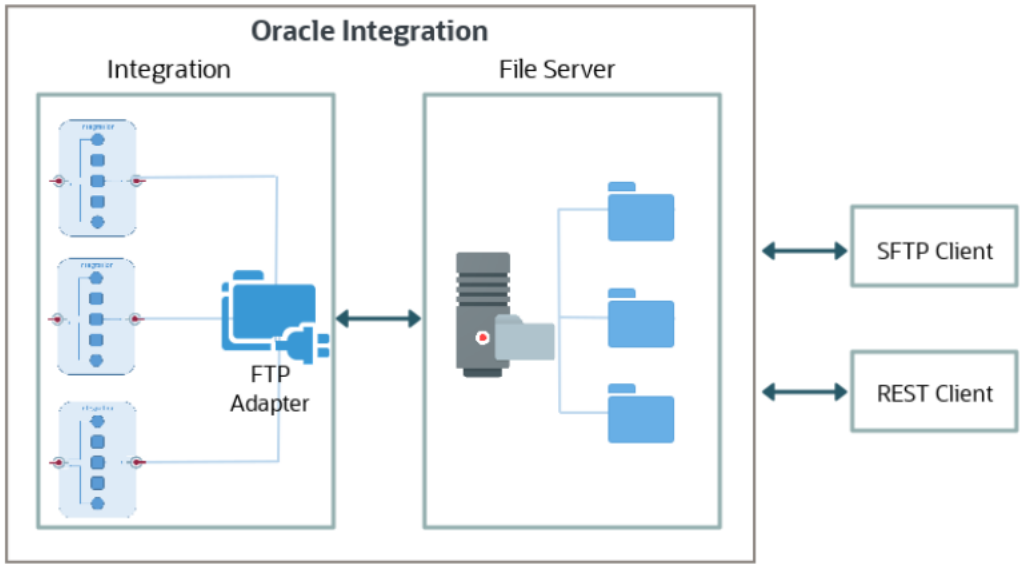
https://docs.oracle.com/en/cloud/paas/application-integration/find-recipes.html

The number of prebuilt solutions has grown significantly in the last year to over 160+



OICS Includes An Embedded File Server

Use **File Server** to store files or transfer real-time data among applications securely. File Server provides an embedded Secure File Transfer Protocol (SFTP) server within Oracle Integration, so you can focus on building integrations without needing to host and maintain a separate SFTP server.



OCIS Enables B2B With EDI

Use B2B to securely and reliably exchange business documents between your back-end applications and trading partners.

Oracle Integration Generation 2

B2B: Enable Business-to-Business E-commerce

Use B2B for Oracle Integration to securely and reliably exchange business documents between your back-end applications and trading partners.

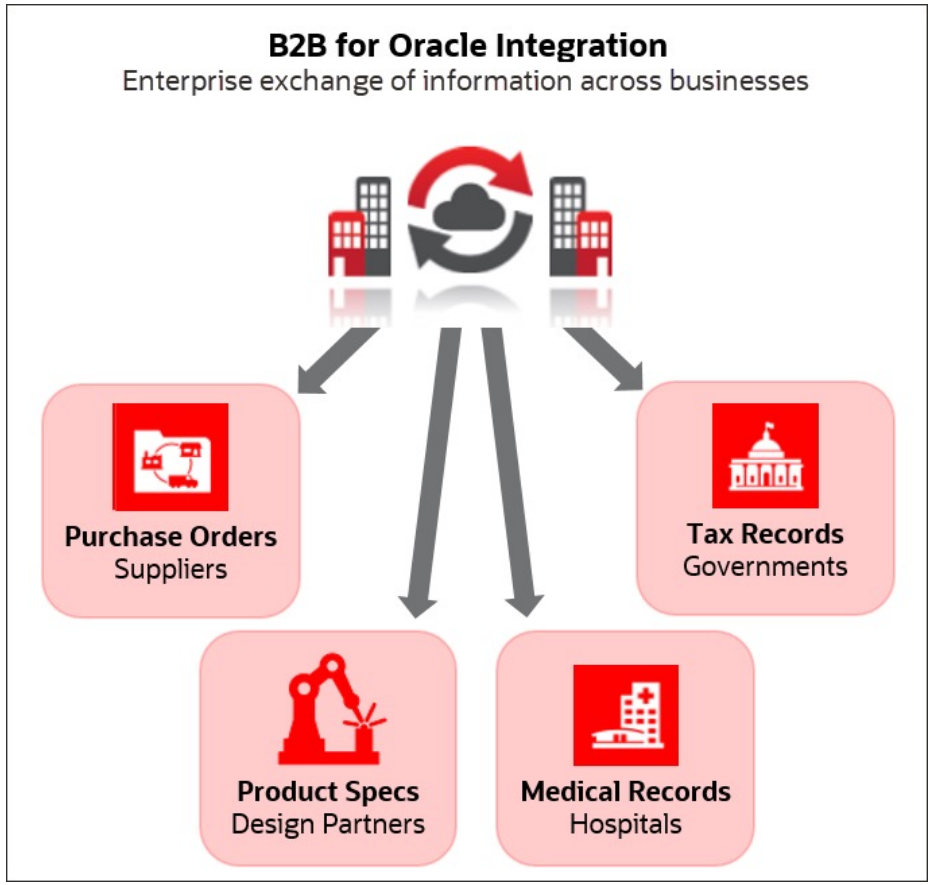
Discover B2B for Oracle Integration

- What is Electronic Data Interchange (EDI)?
- What is B2B for Oracle Integration?
- What business protocols are supported?
- What transport protocols are supported?
- What usage patterns does B2B for Oracle Integration support?

Develop B2B Flows in Oracle Integration

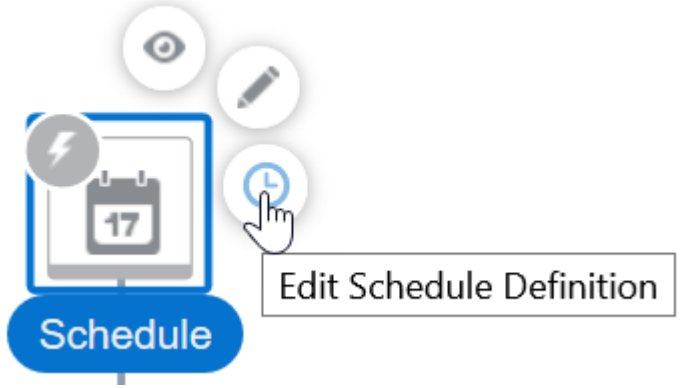
- Parse an inbound EDI document
- Transform an inbound EDI message
- Process an inbound EDI batch file using the stage file action
- Generate outbound EDI from an application message

EDI Included!



OICS Scheduler

Delivered with a scheduler by default



Define recurrence

Simple iCal

Frequency Hours and Minutes

Every 1 hour(s) 5 Minute(s)

This schedule is effective:

From 22-01-2021 12:00:00 AM

Until Never (repeat indefinitely)

Time zone (UTC+05:30) Kolkata - India Standard Time

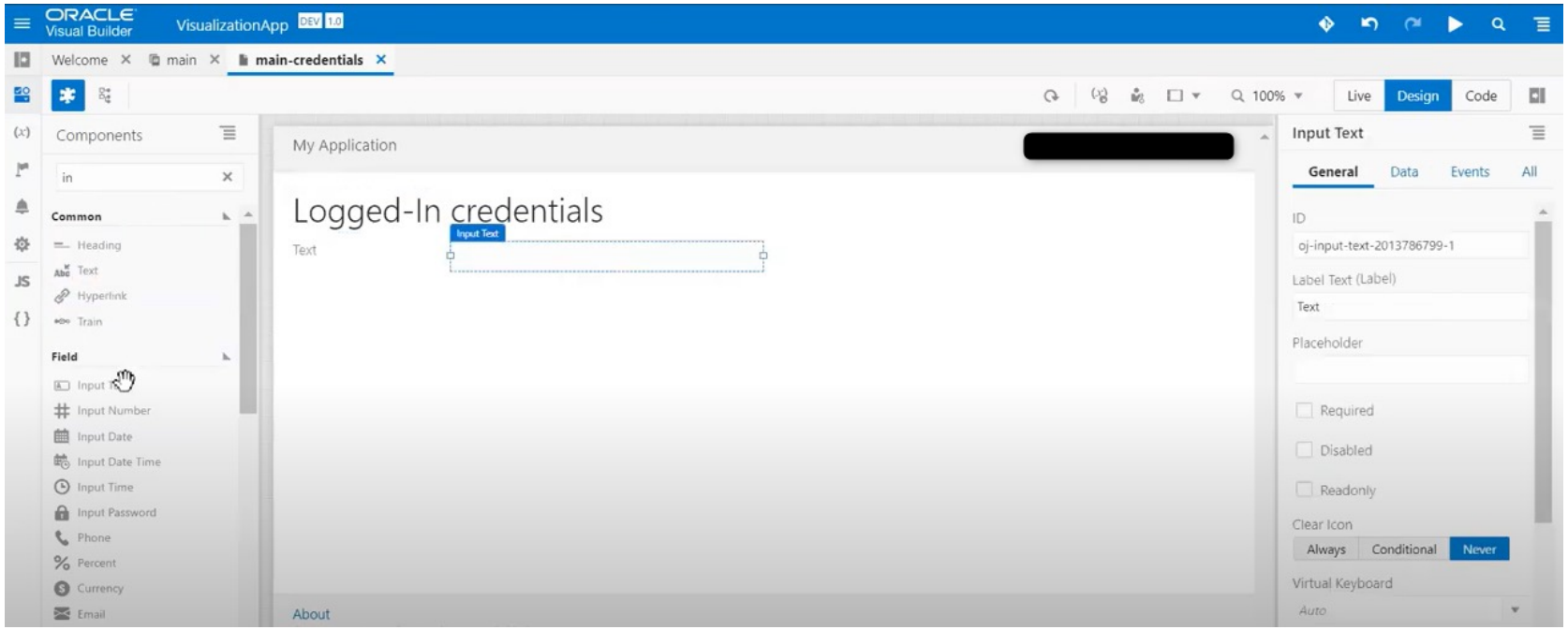
You must start up the schedule for these settings to take effect

Frequencies:

1. Only Once
2. Hours and Minutes
3. Days
4. Weeks
5. Months
6. Day of every Week & Week of every Month
7. Day of every Month
8. Months of every Year
9. iCal Expressions

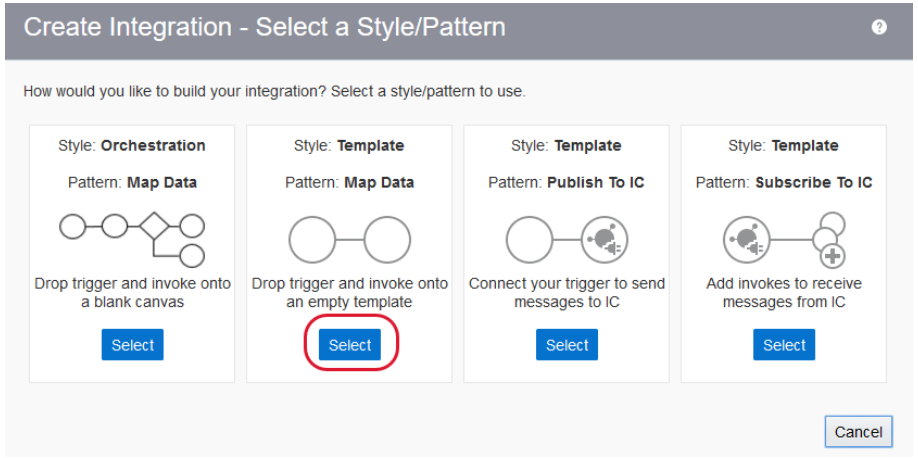
Visual Builder

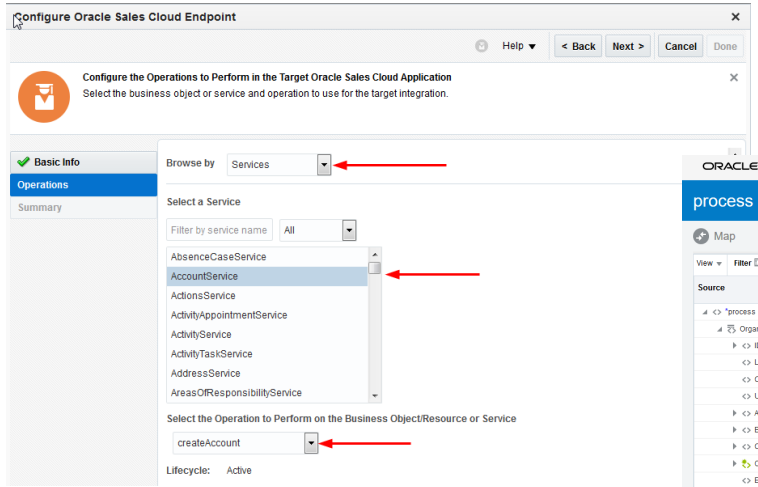
Low code developer GUI to build OICS integrations and Mobile Applications. Not the same as Visual Builder Studio which is more complete dev env with Git and issue tracking

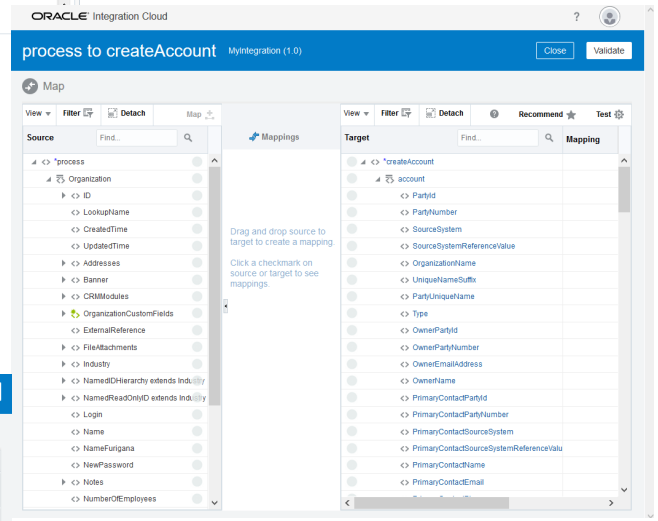


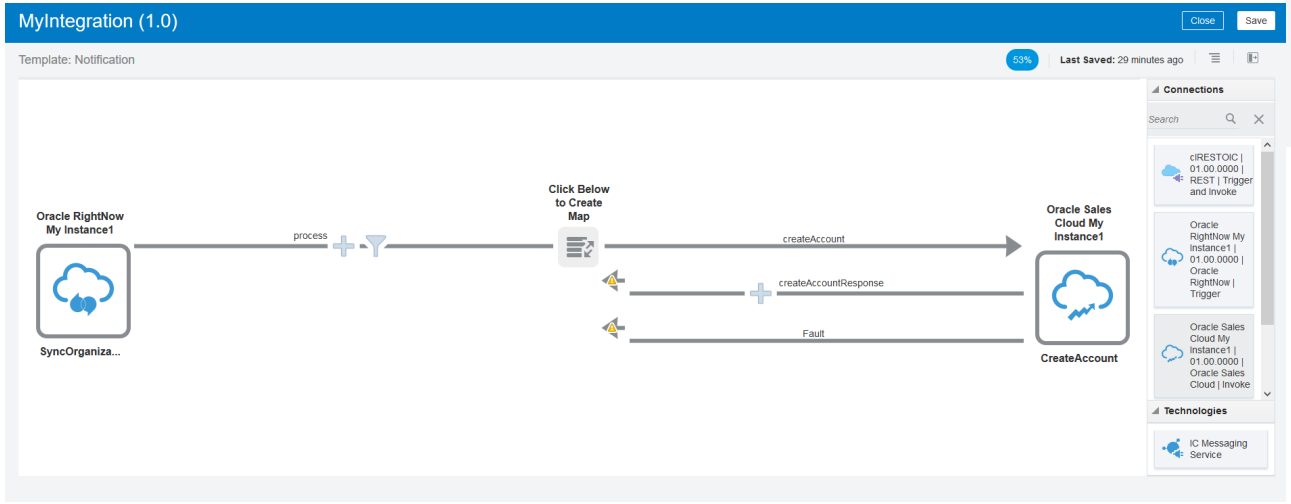
https://www.ateam-oracle.com/post/difference-between-vbvbcs-vs-vbs#:~:text=VB%20Studio%20combines%20Visual%20Builder's,developer%20and%20lifecycle%20management%20tools.

Low Code Integration



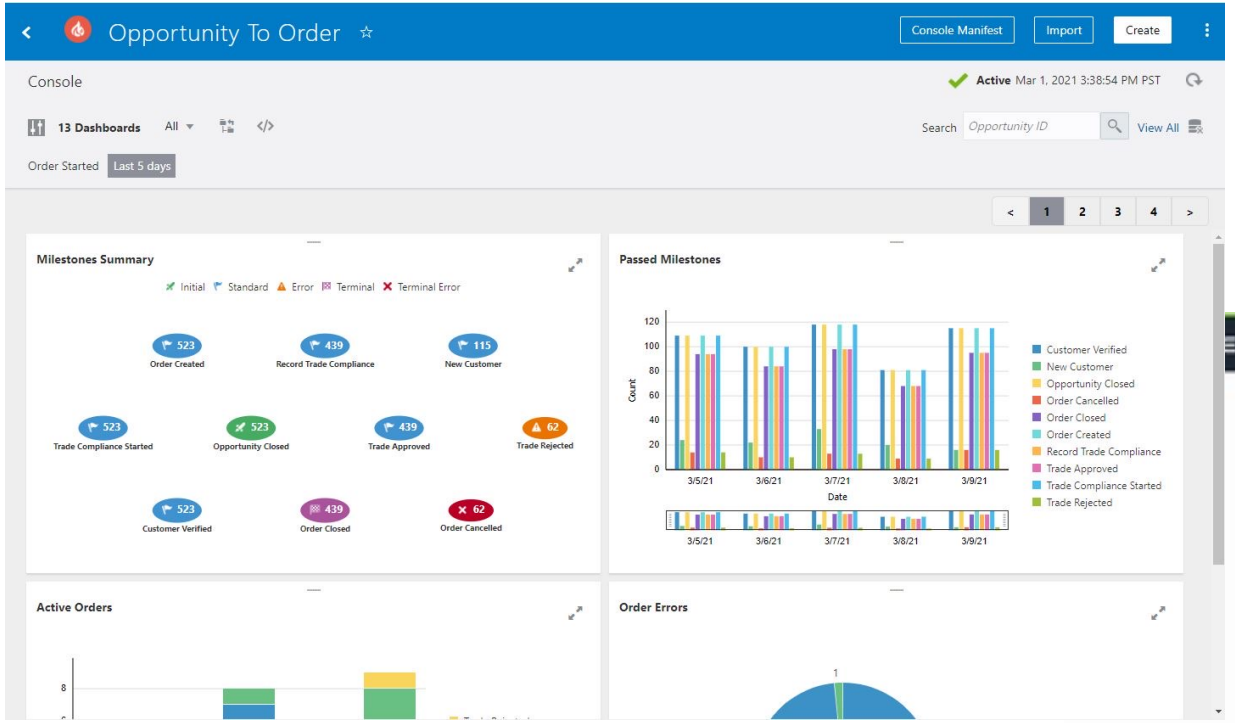




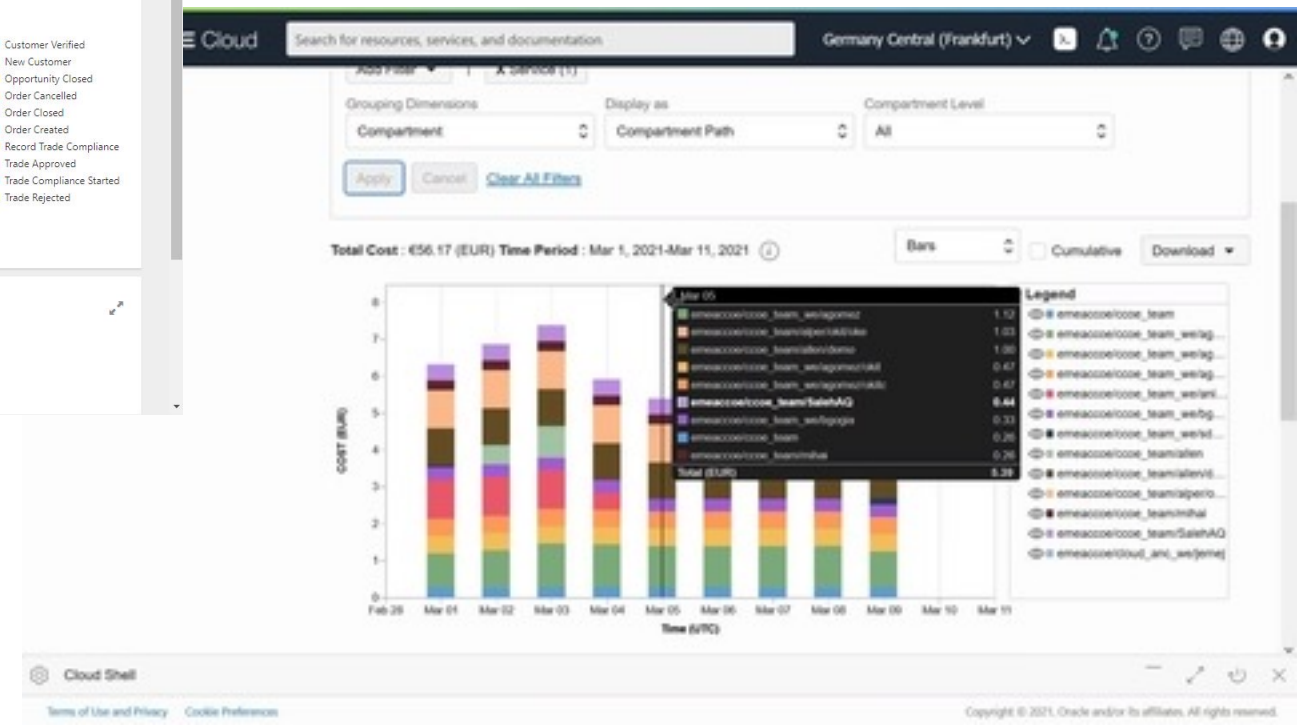


https://www.oracle.com/webfolder/technetwork/tutorials/obe/cloud/ic/ic_create_end_end_integration/obe-ic-creatingnewintegration/index-iccreatenewintegration.html

OICS Integration ”Process” Insights



Visualizes metrics in real-time and recommends actionable insights into processes and integration flows as well as forecasts consumption



OICS with EBS

How does it work?

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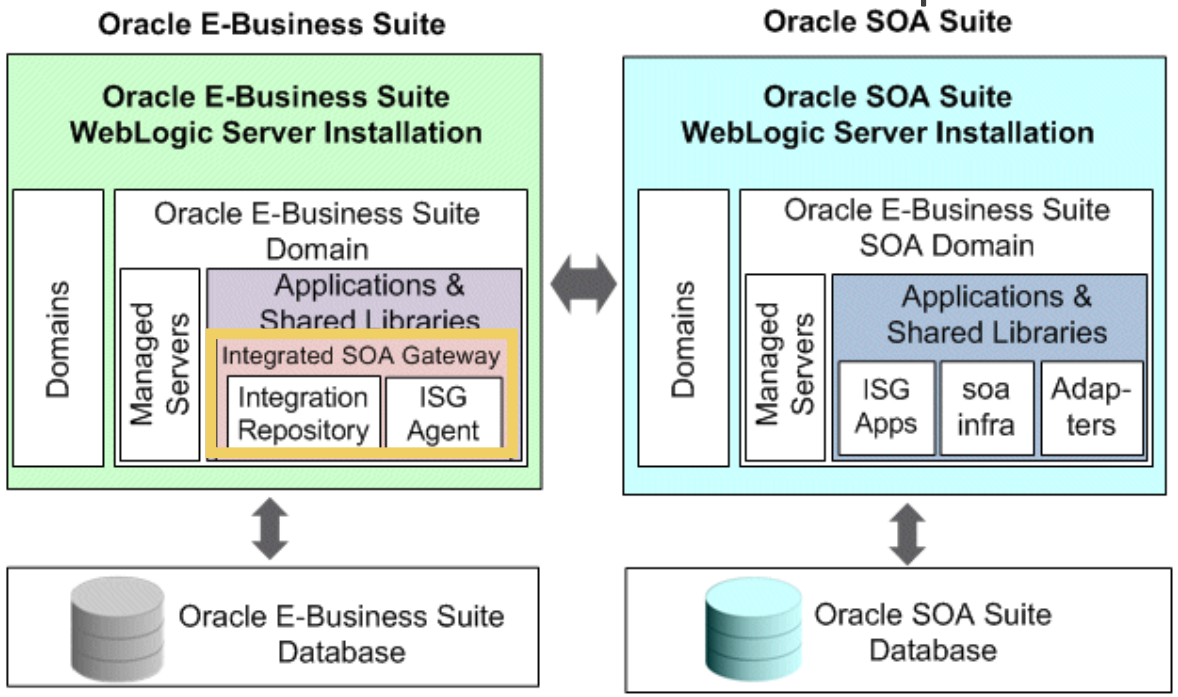
Oracle Integration Cloud Services vs ISG and/or SOA Suite

Integrated SOA Gateway

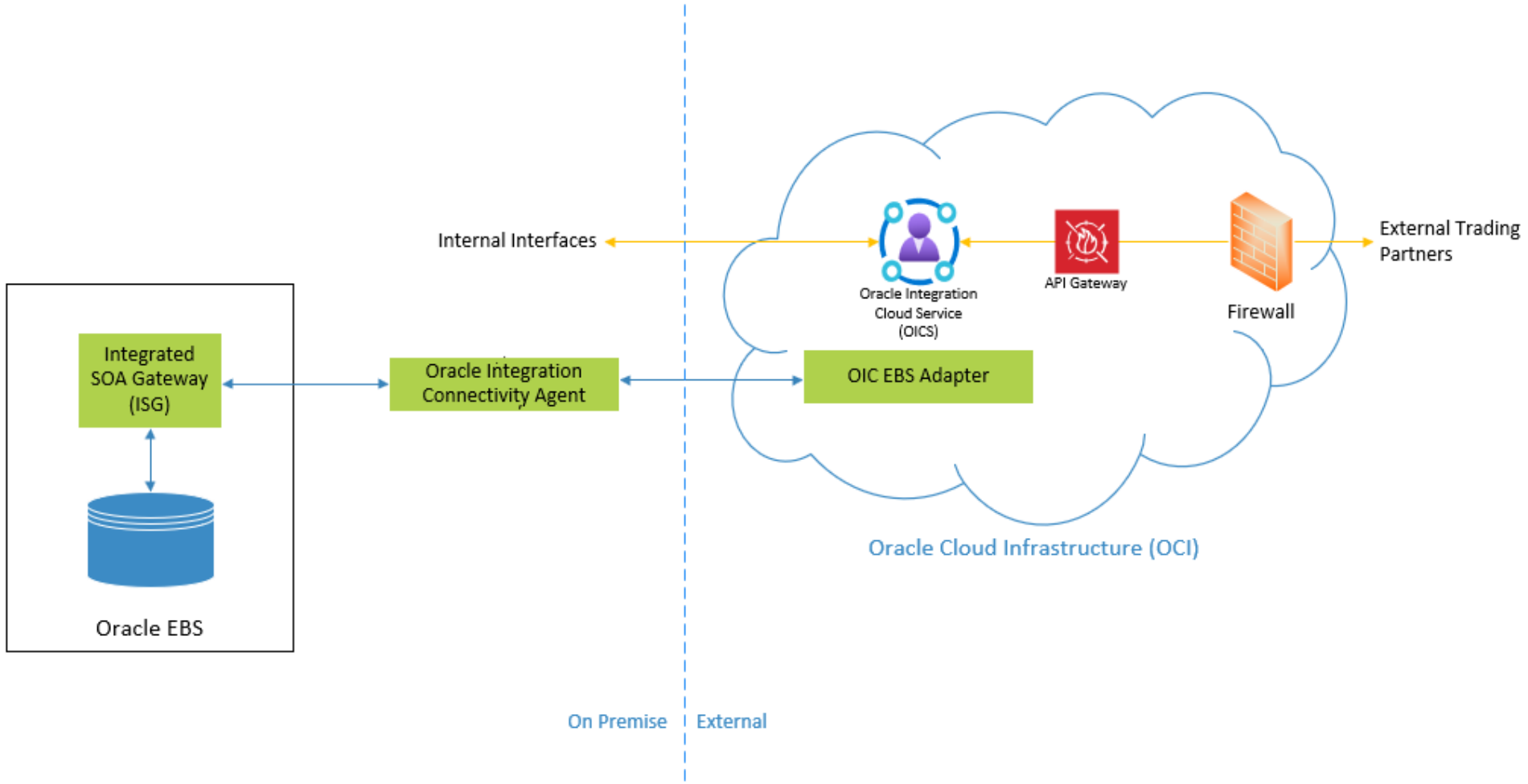
- Free with EBS
- Preinstalled but not configured

SOA Suite @Customer or OCI PaaS

- Additional license along with supporting technology
- Separate technology stack installation

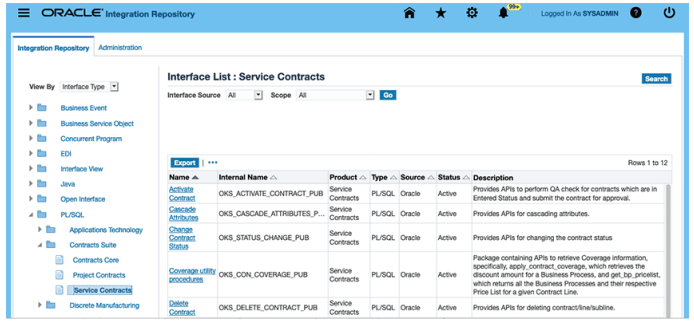


Using Oracle Integration Cloud (OIC) With EBS



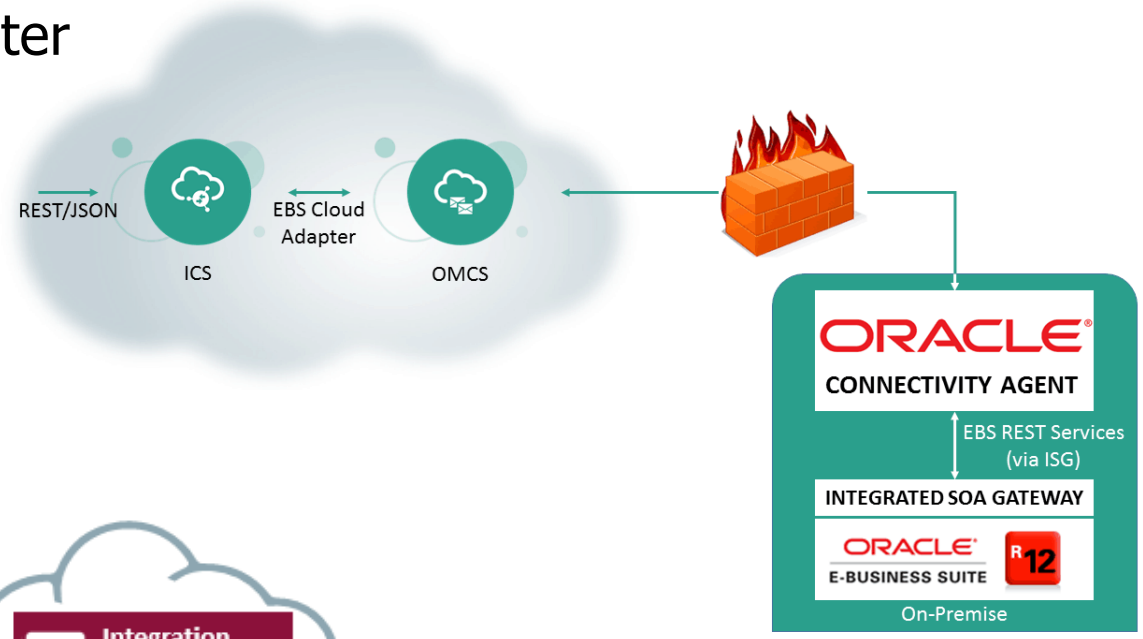
EBS Integrated SOA Gateway (ISG)

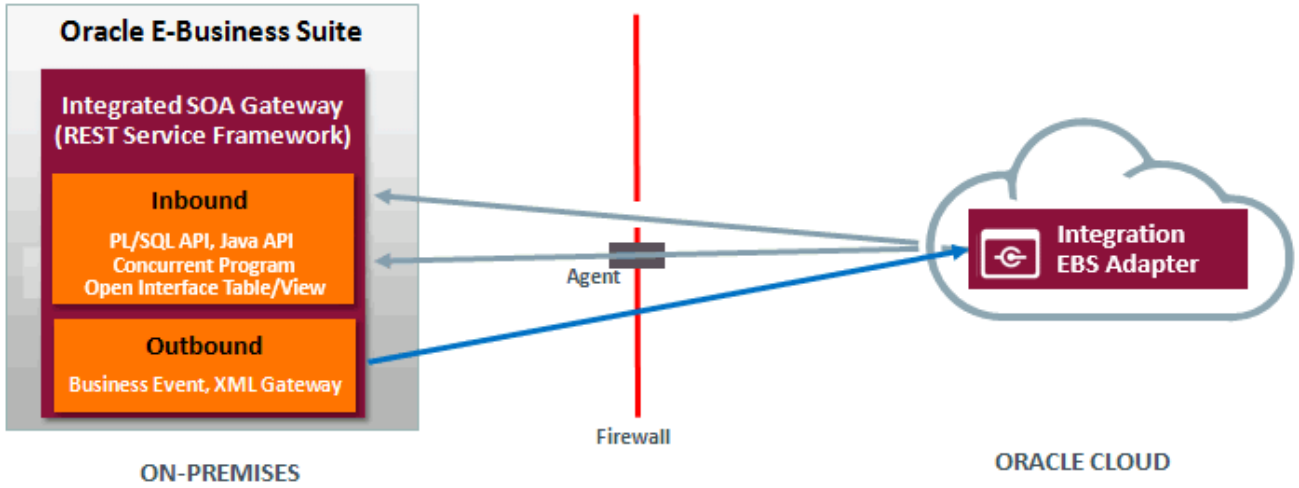
- Centralized catalog integration interfaces and APIs
  - Delivery by Oracle or custom
  - Free with the standard license of EBS (no extra license required)
- Must be configured
  - Configure Oracle E-Business Suite Integrated SOA Gateway REST Services
  - Configure network access to Oracle E-Business Suite services
  - Deploy the required REST Services in Oracle E-Business Suite
  - Grant the required user privileges
- More information
  - ISG FAQ https://support.oracle.com/epmos/faces/DocumentDisplay?id=2110687.1
  - Installing Oracle E-Business Suite Integrated SOA Gateway, Release 12.2 (Doc ID 1311068.1)



OICS Connectivity Agent and EBS Adapter

1. Install the OICS Connectivity Agent
2. Configure within OICS the EBS Adapter to talk to the agent





Oracle E-Business Suite Adapter in Oracle Integration Frequently Asked Questions (FAQ) (Doc ID 2110687.1)

Examples And Case Studies

EBS with OICS

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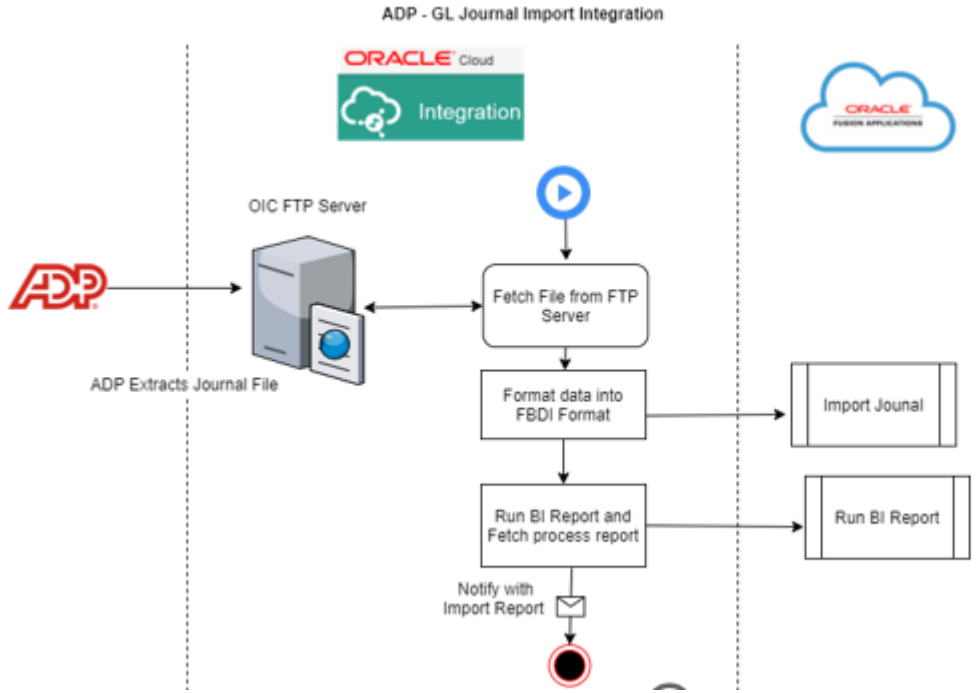
ADP Integration With Oracle E-Business

- Prebuilt integration provided for ADP
- ADP is polled for data and loads the content to the OIC sftp server
- Executes Cloud ERP Scheduled Jobs and creates Oracle Business Intelligence reports
- Delivers the reports by email upon completion status of the task



Airline Parts Supplier RMA Integration With EBS

- Real-time data integration between Zebra (3rd party application) and the EBS to send/receive information related to hardware device maintenance requests
- As real-time data is received via OIC integration for device maintenance service requests, the turnaround time has been reduced. Being in the airline industry, this is critical because here they need things to be resolved quickly within defined timelines
- Integration retrieves the valid RMA order and submits a request to Zebra, and RMA status is then received from Zebra and updates the status Oracle EBS.
- In case of

ERP (RMA)

Middleware Oracle Integration tool (OIC: Oracle Integration Cloud)

Third party Application (Zebra) which is receiving RMA order and sending responses back to Oracle

Airline Parts Supplier EBS Order Entry Integration

- Automates the process of sending the shipment details to the operational portal from EBS using OIC Integration
- Integration extracts all the valid shipment numbers and methods for tracking
- In case of any issue, email notifications are sent

Oracle ERP (Order Management)

Middleware Oracle Integration tool (OIC: Oracle Integration Cloud)

ORO (Internal Portal)

EDI Killer Features

OCIS

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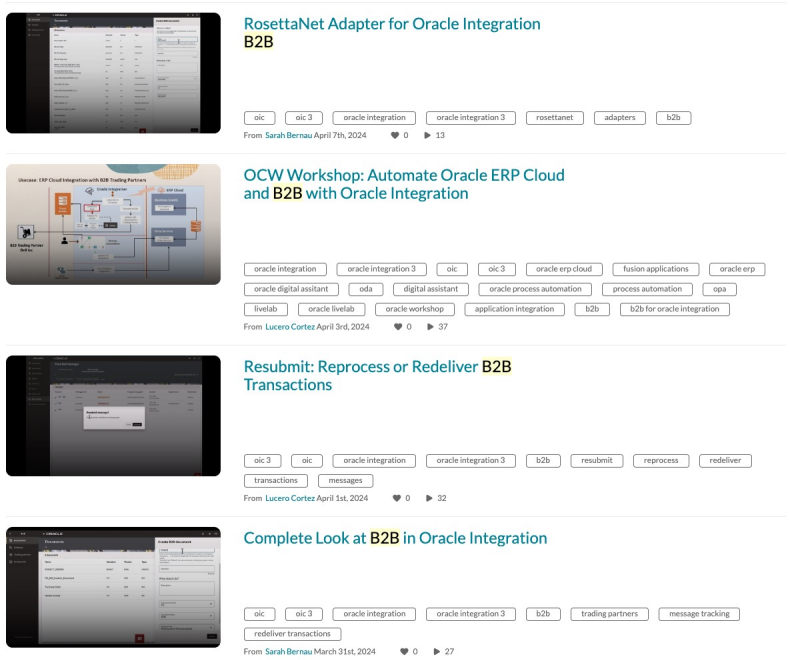
EDI Features To Note

1) A comprehensive set of out-of-the-box: ANSI X12, EDIFACT, custom, REST, RosettaNet, fixed, delivered, XML
2) Easy, Fast Trading partner onboarding
   - OCI B2B is based on the 80/20 Principle: Instead of configuring countless “envelopes,” to add a new trading partner, you only need to configure a minimal set of required elements.
   - Flexible translation/lookup/Mapping tables (e.g. where every vendor uses a different code for “red”)
     - Can import from CSV file
     - Can add rows/columns on the fly
   - Can Deploy/undeploy transactions for testing and debugging transactions – with one trading partner at a time
3) Comprehensive observability (aka Monitoring) and tracking of transactions
   - Overall health and stability of OCIS fleet
   - Complete lifecycle of 850 PO through to 810 invoice
   - Custom correlation tags mapped to specific elements
   - Can resubmit instead of resending
4) High Availability (HA) by default
   - Built on standard OCI Availability Domains within an OCI Region
   - If required: Customer-managed DR in alternate OCI region
   - OCI may soon offer OCI - managed DR solutions for alternate regions

More Information

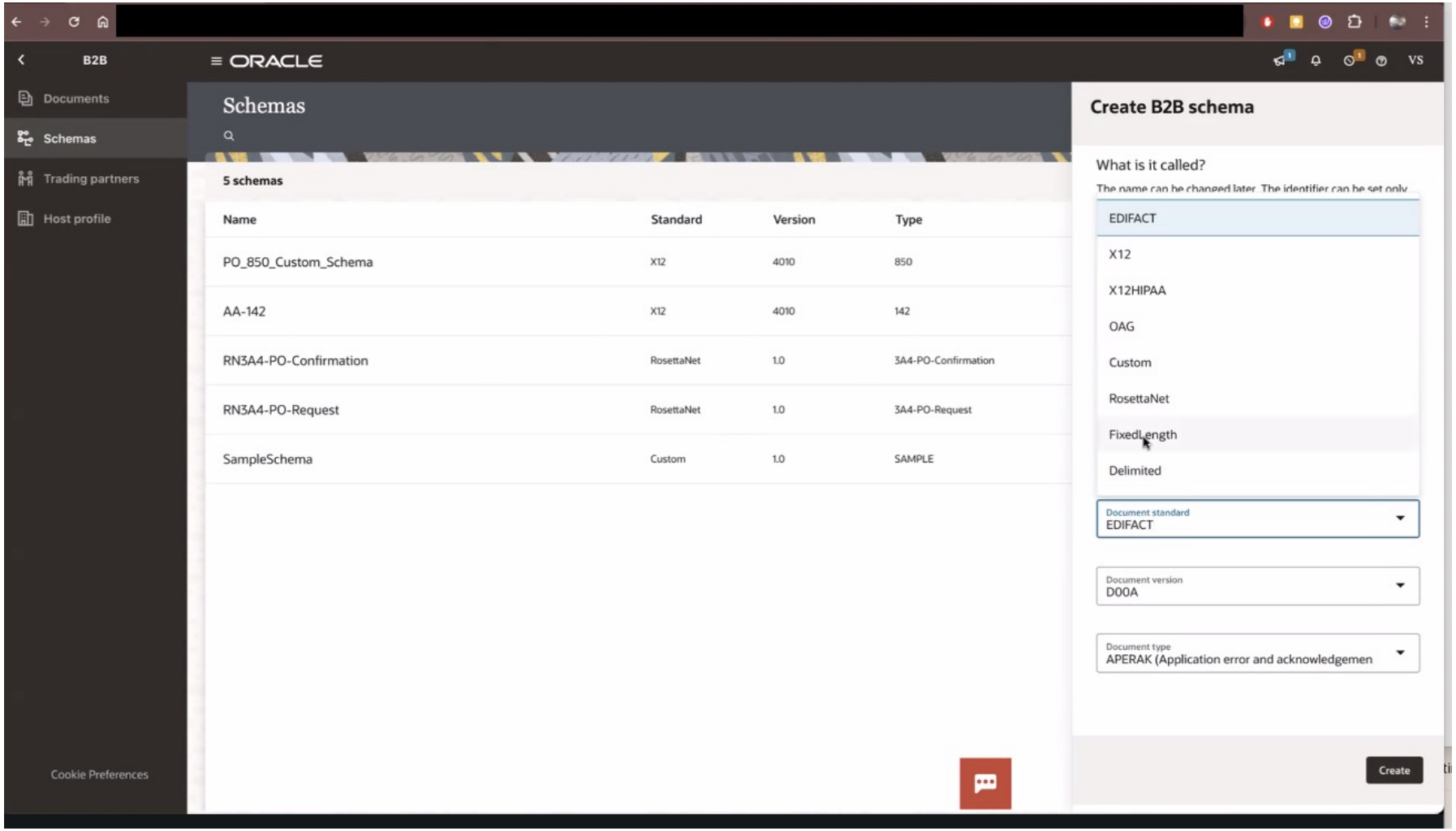
More here
https://blogs.oracle.com/integration/

https://videohub.oracle.com/tag?tagid=b2b

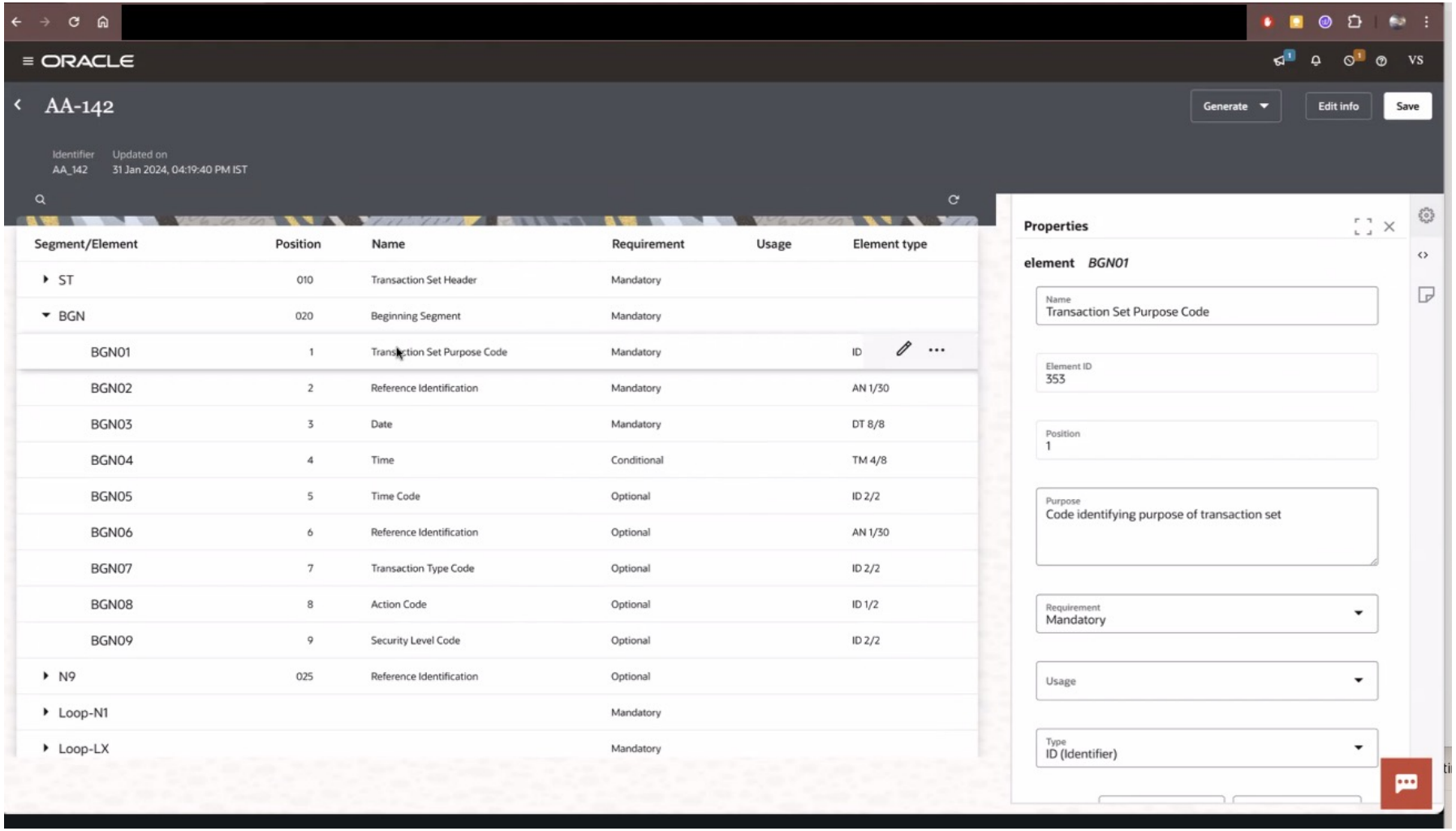


- Complete Look at B2B in Oracle Integration
- Complete Look at Oracle Integration Observability
- B2B Tracking in Oracle Integration
- Use Fixed Length Document Types for B2B
- B2B REST Protocol in Oracle Integration
- Configure a B2B Trading Partner Transport
- ***Create an XML Schema for B2B***
- Create B2B Trading Partner Agreements
- Create a Trading Partner in Oracle Integration
- ***Create an AS2 Connection to a Trading Partner***
- RosettaNet Adapter for Oracle Integration B2B
- OCW Workshop: Automate Oracle ERP Cloud and B2B with Oracle Integration
- Resubmit: Reprocess or Redeliver B2B Transactions

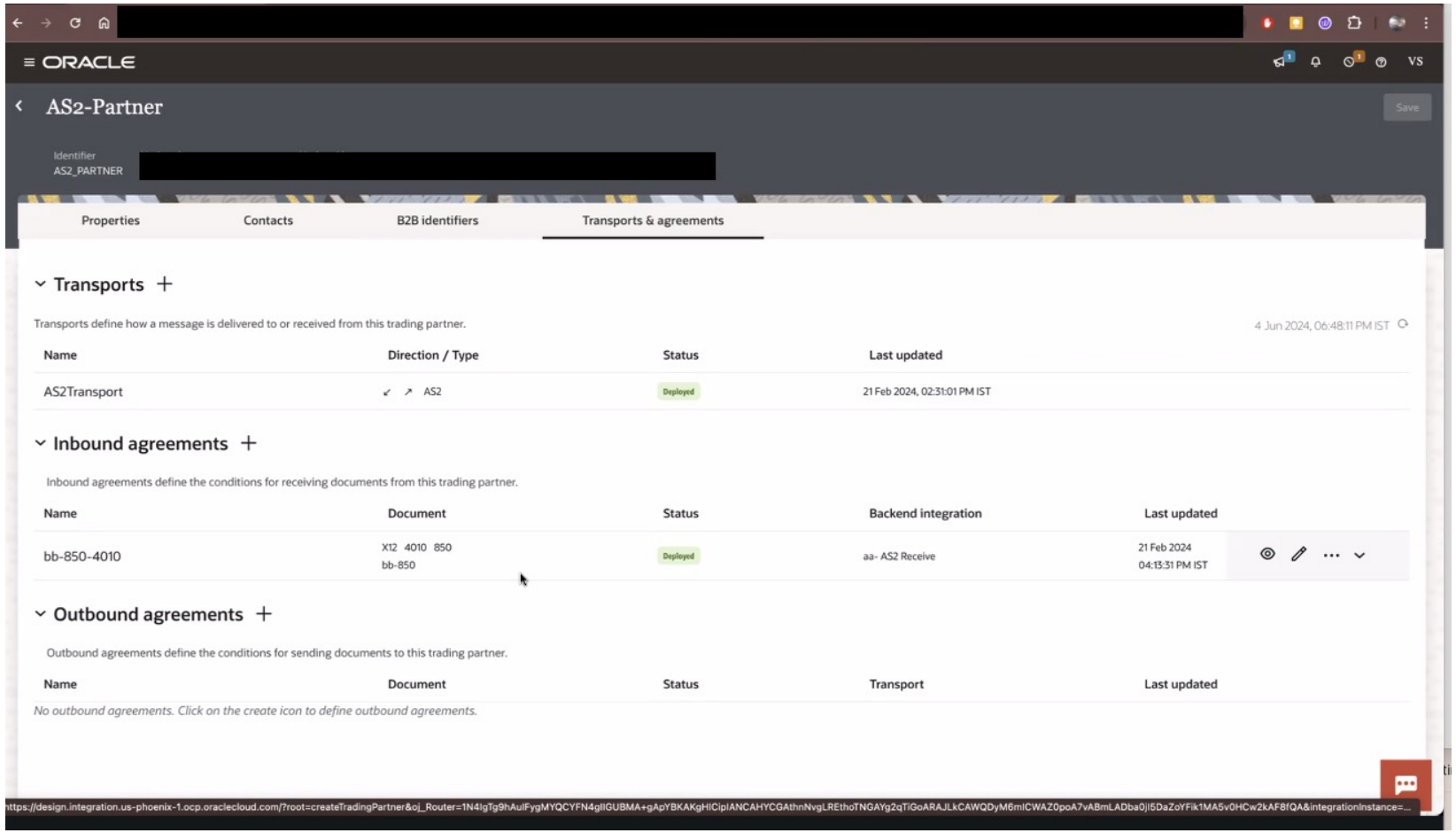
Out of the Box B2B Solutions “Schema”



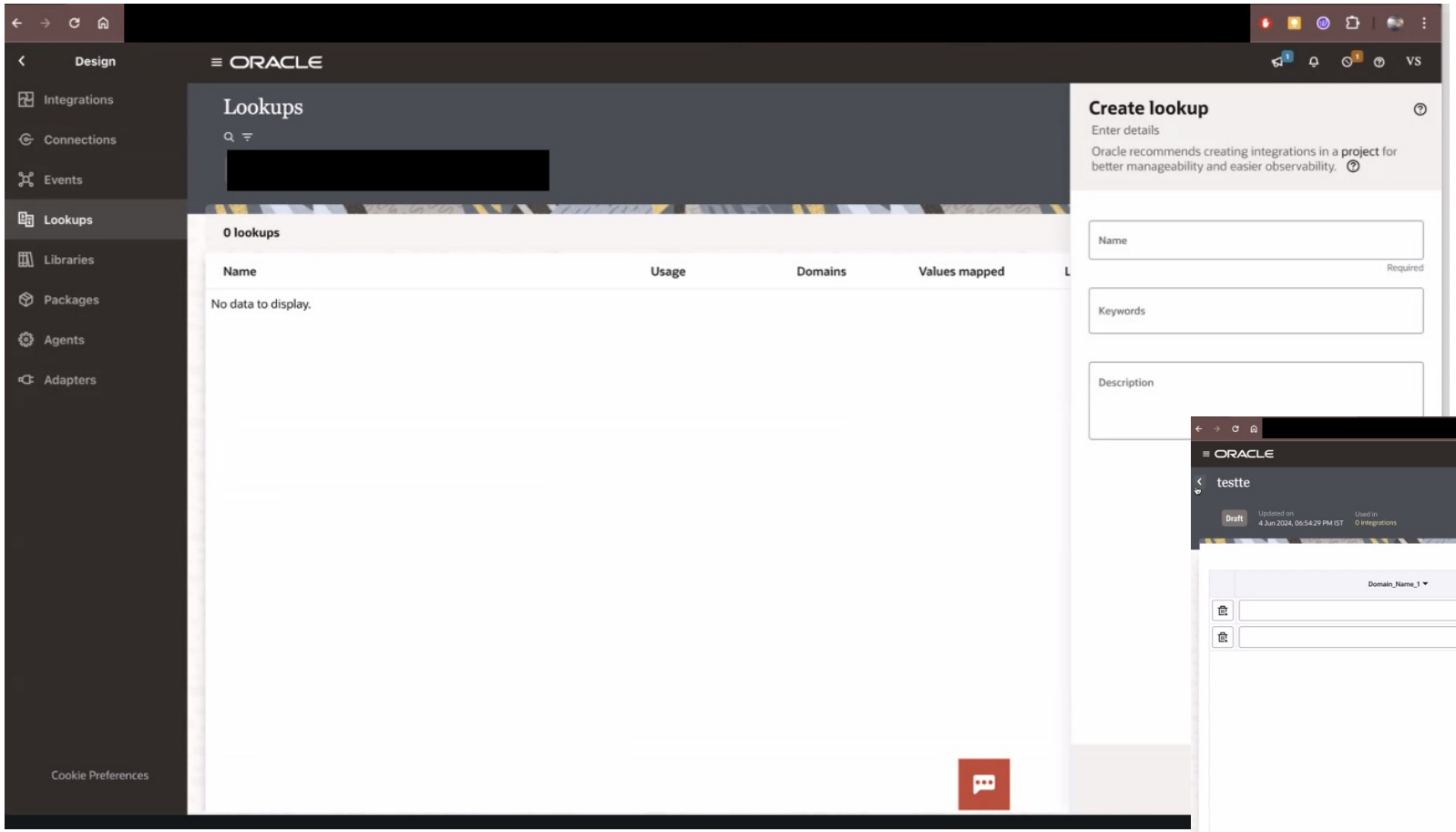
Elements Can Be Easily Modified

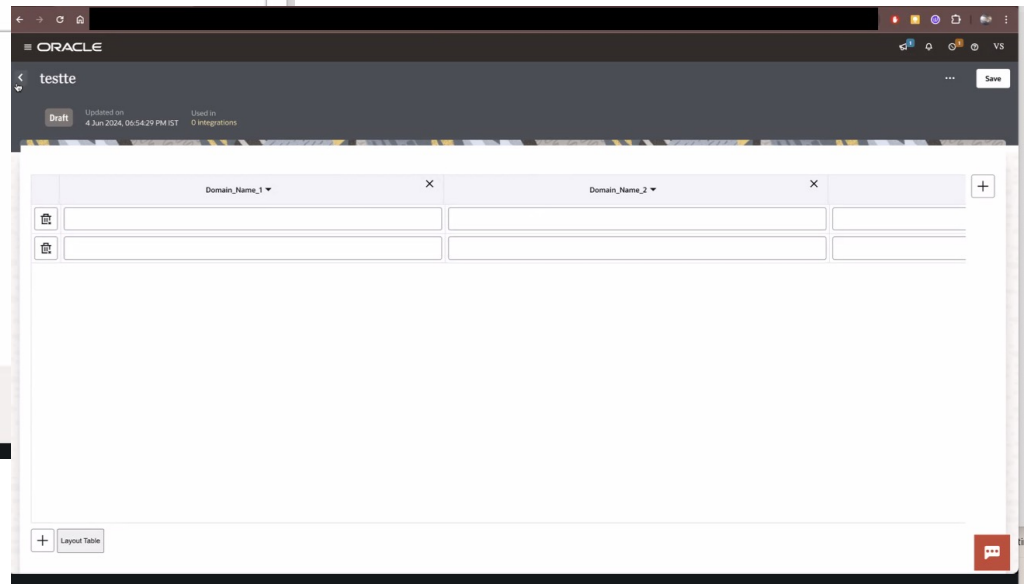


Deploy/UnDeploy/Resend

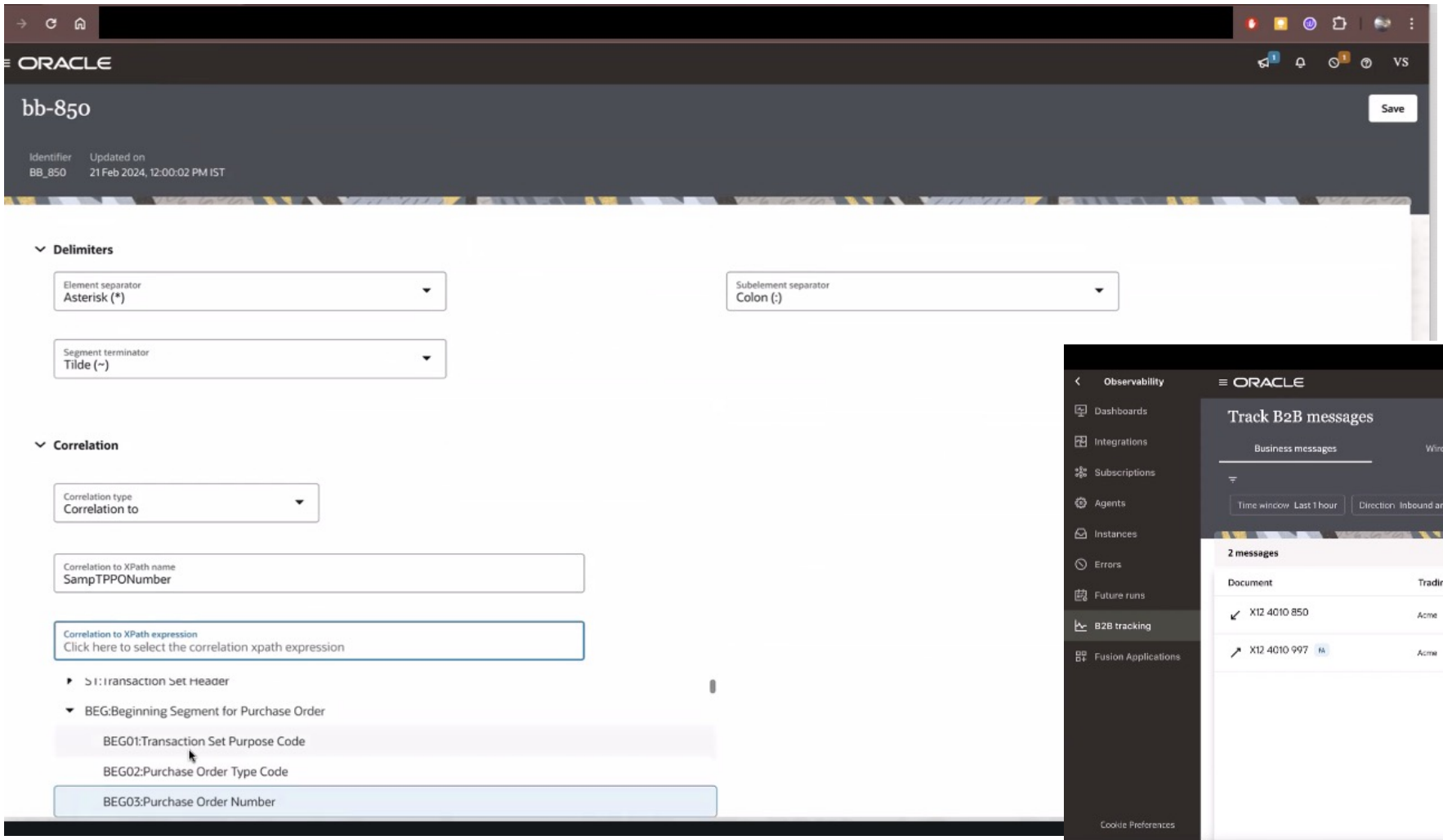


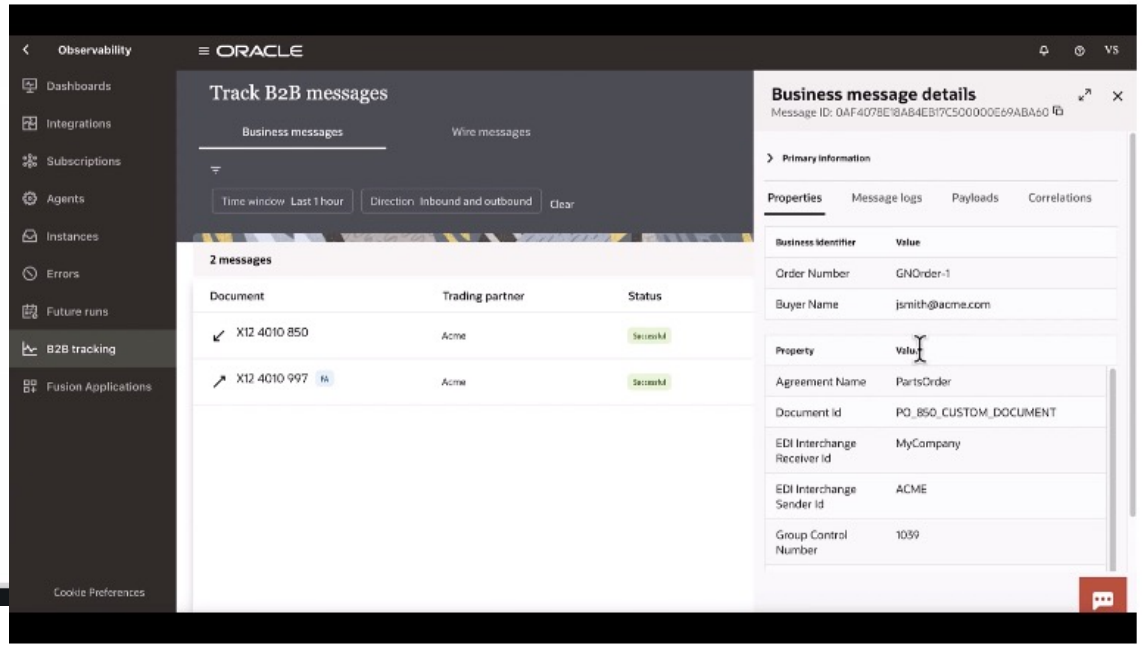
Create Lookup Table and Add Columns



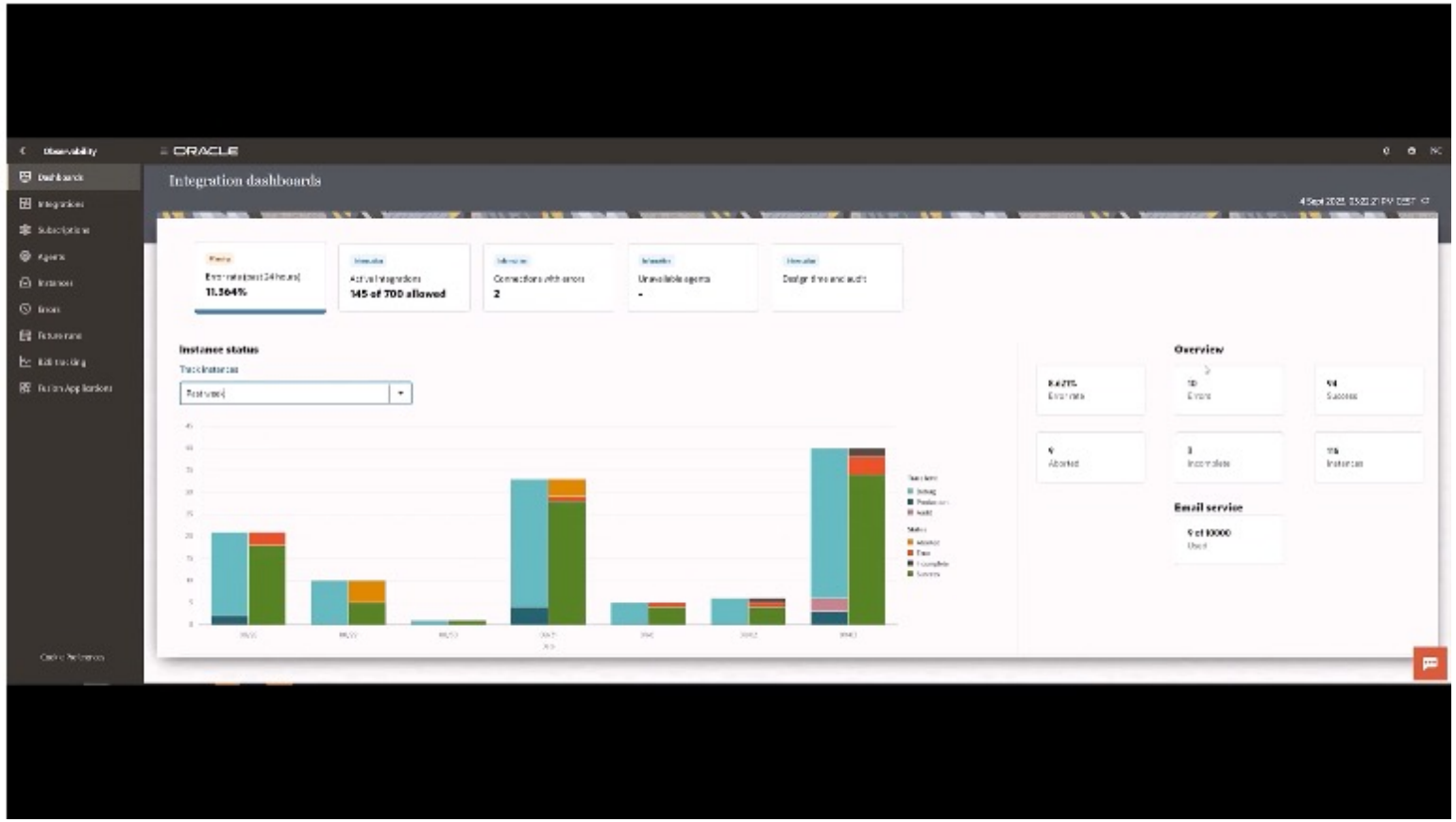


Lifecycle Reporting With Tracking/Observability

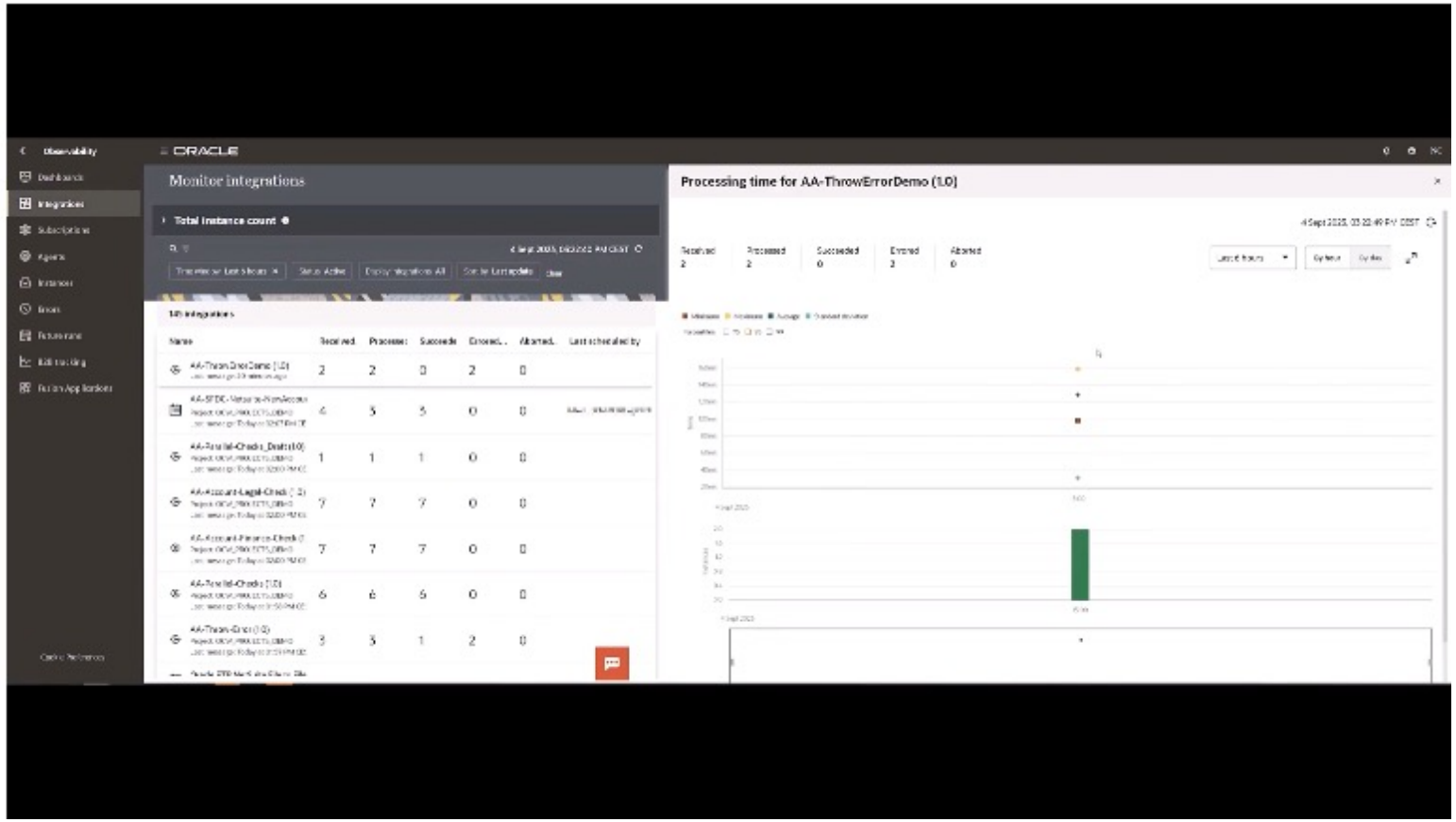




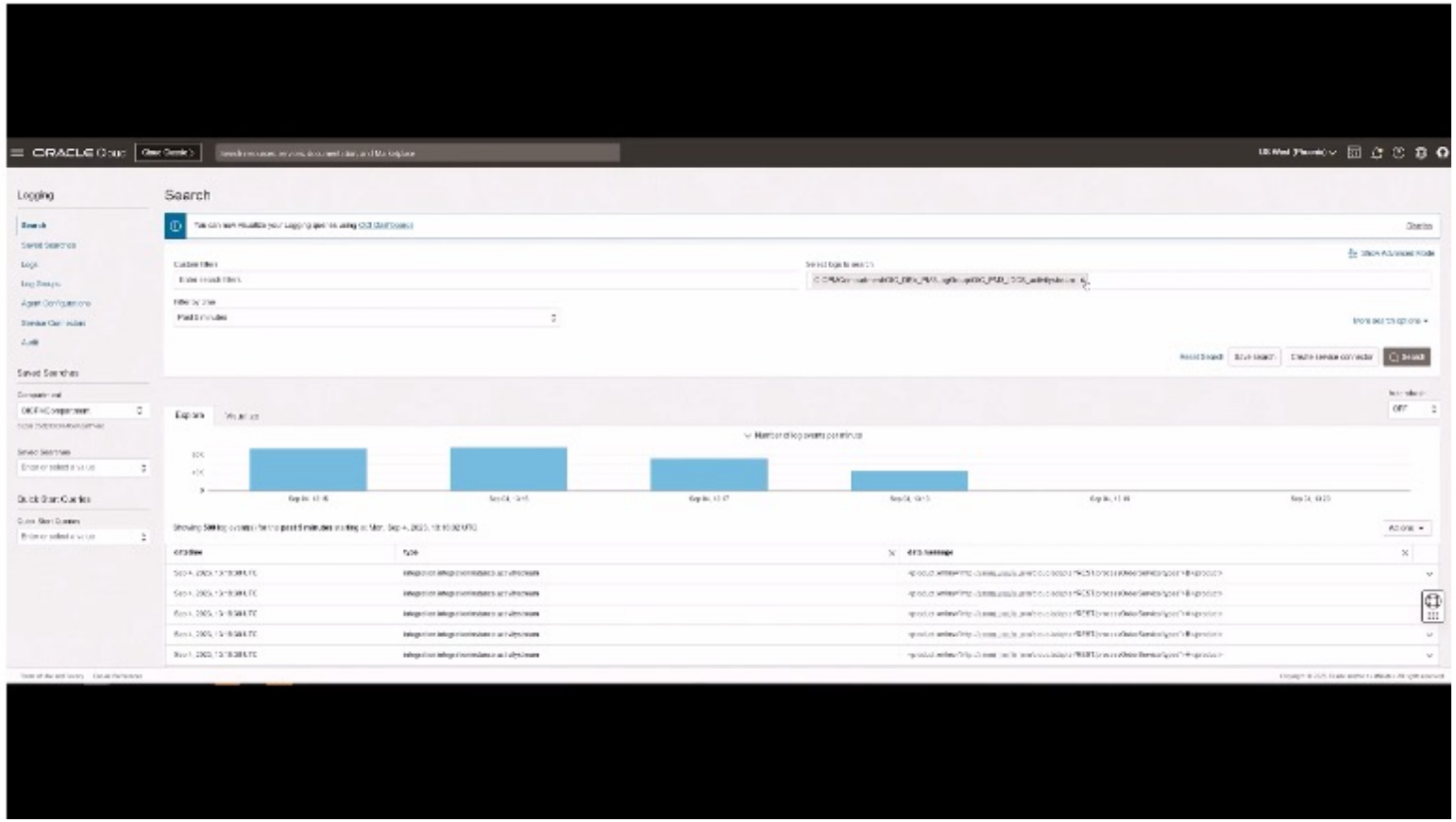
Monitoring/ Observability



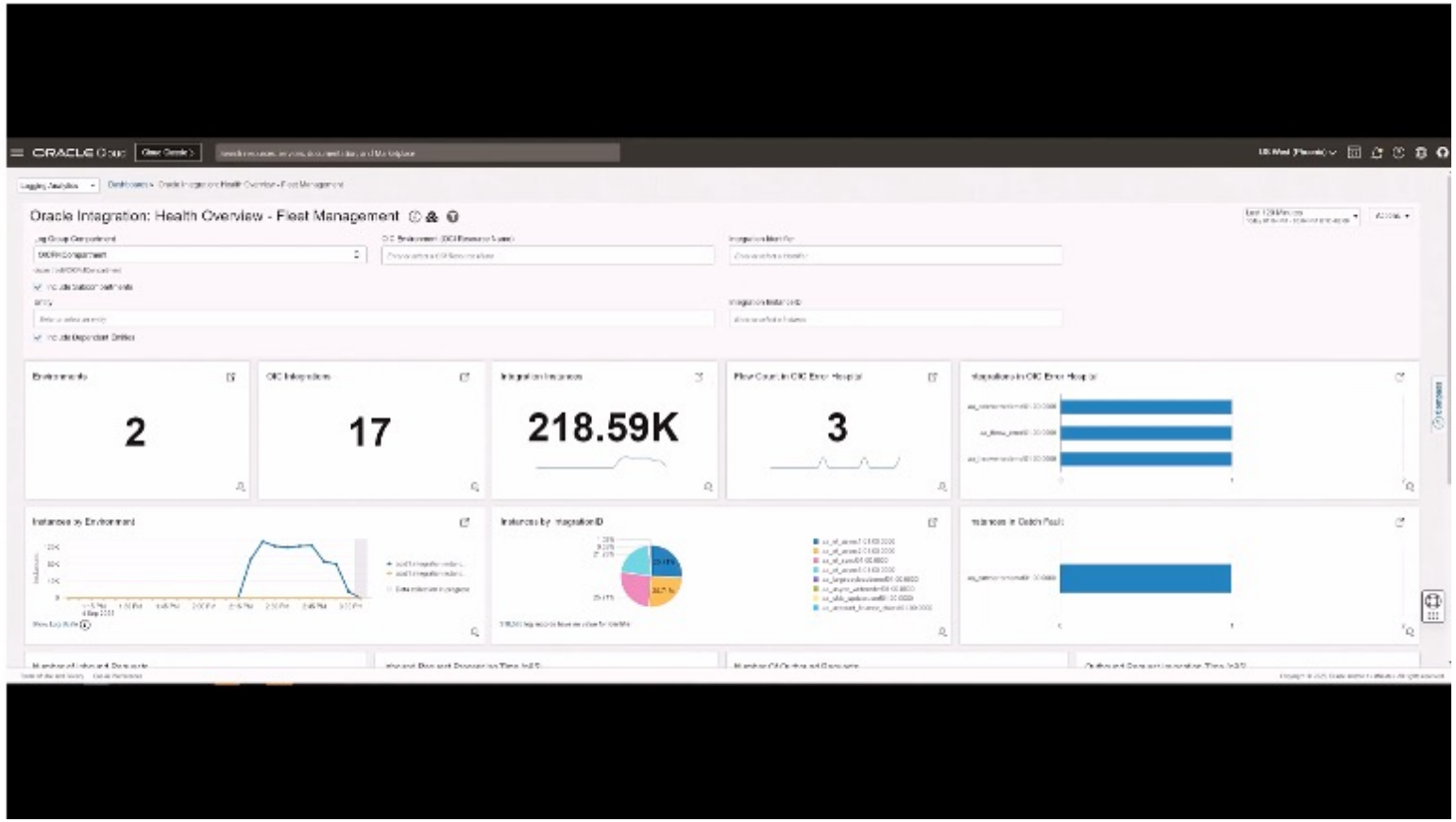
Monitoring/ Observability



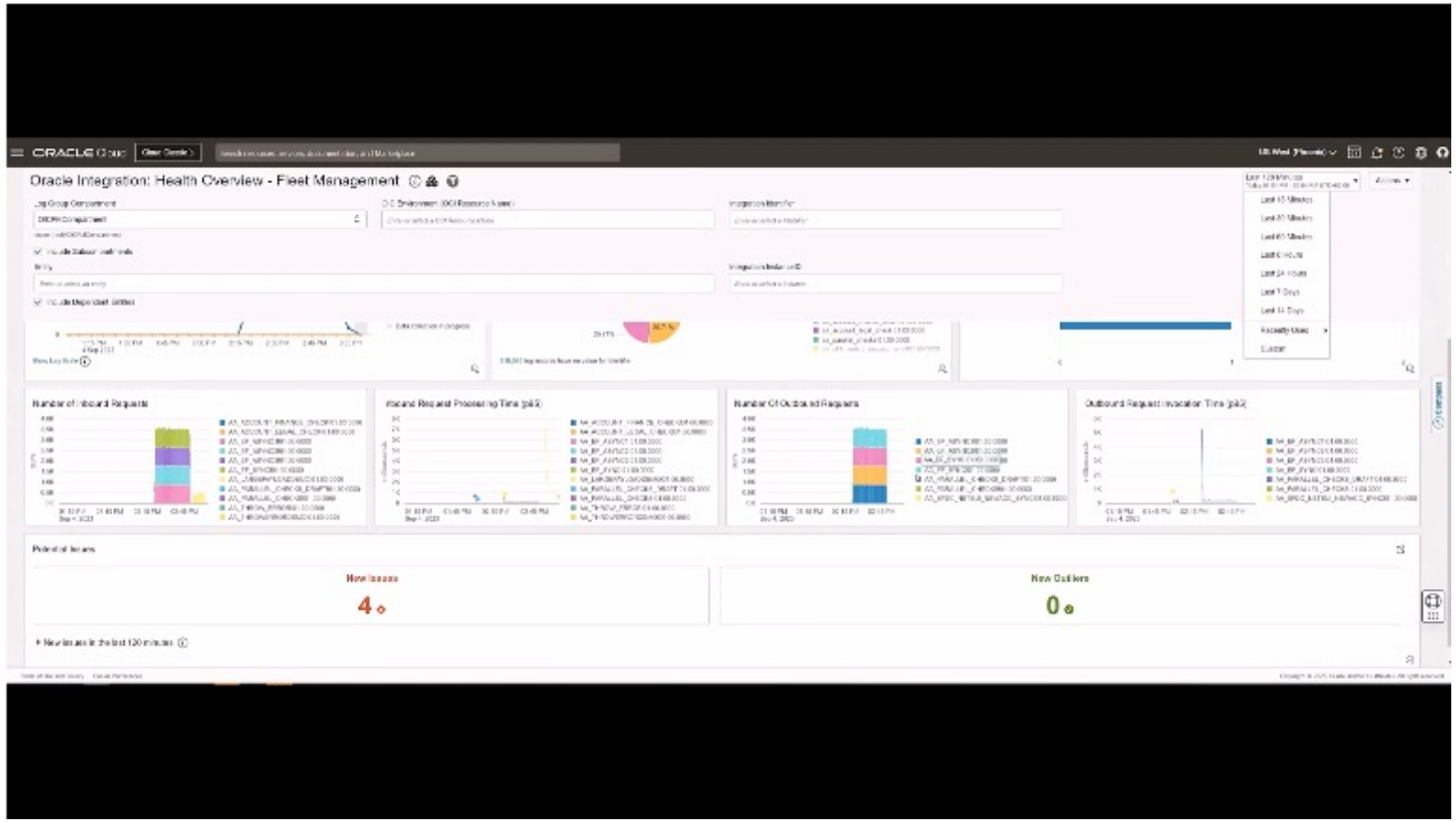
Send OIC Logs To OICS Logging Analytics



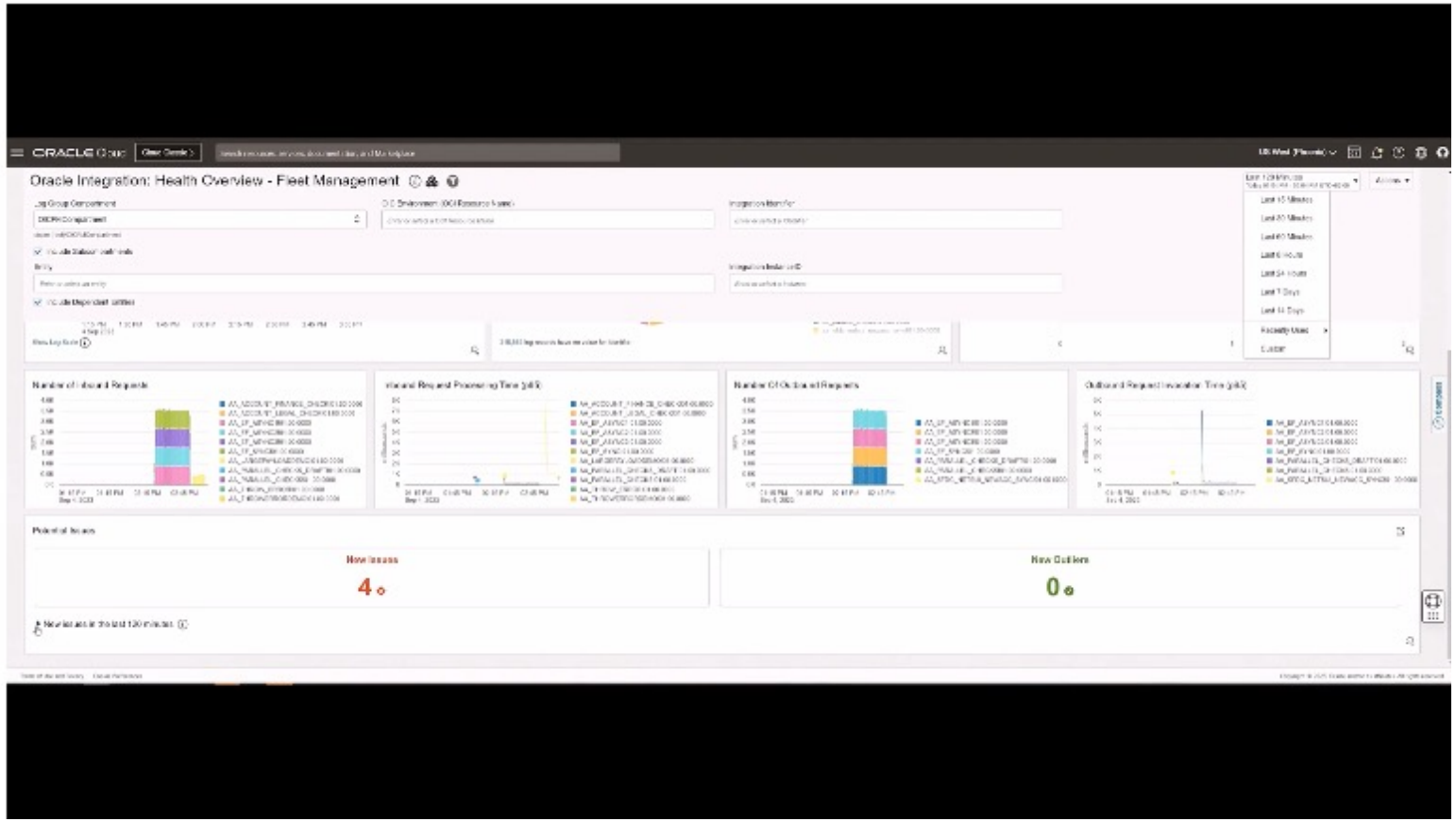
OCI Health Overview Dashboard



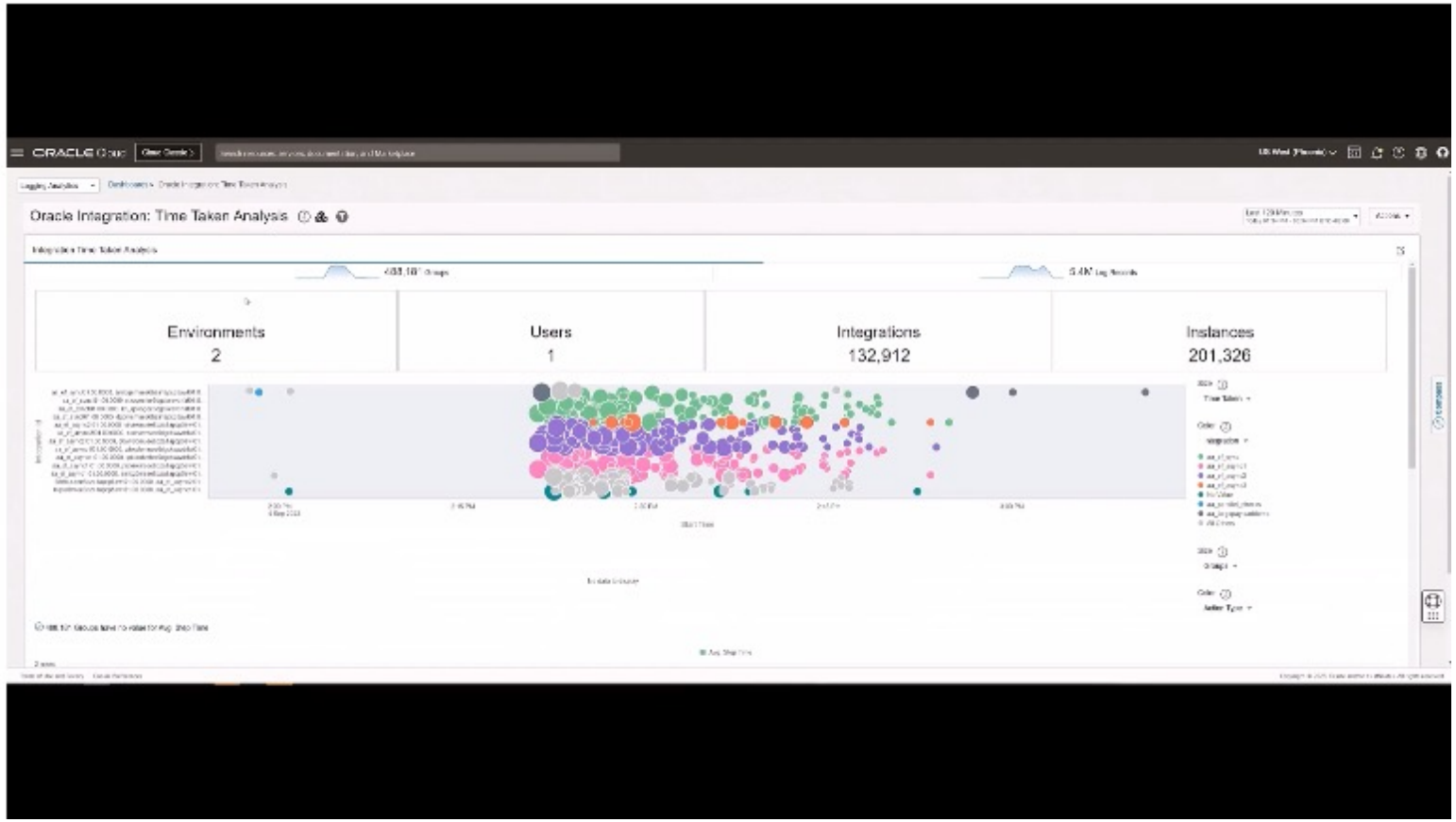
Inbound/ Outbound Timings



Potential Issues (Outliers)



Time Taken Over Time



Security Considerations

First Things First

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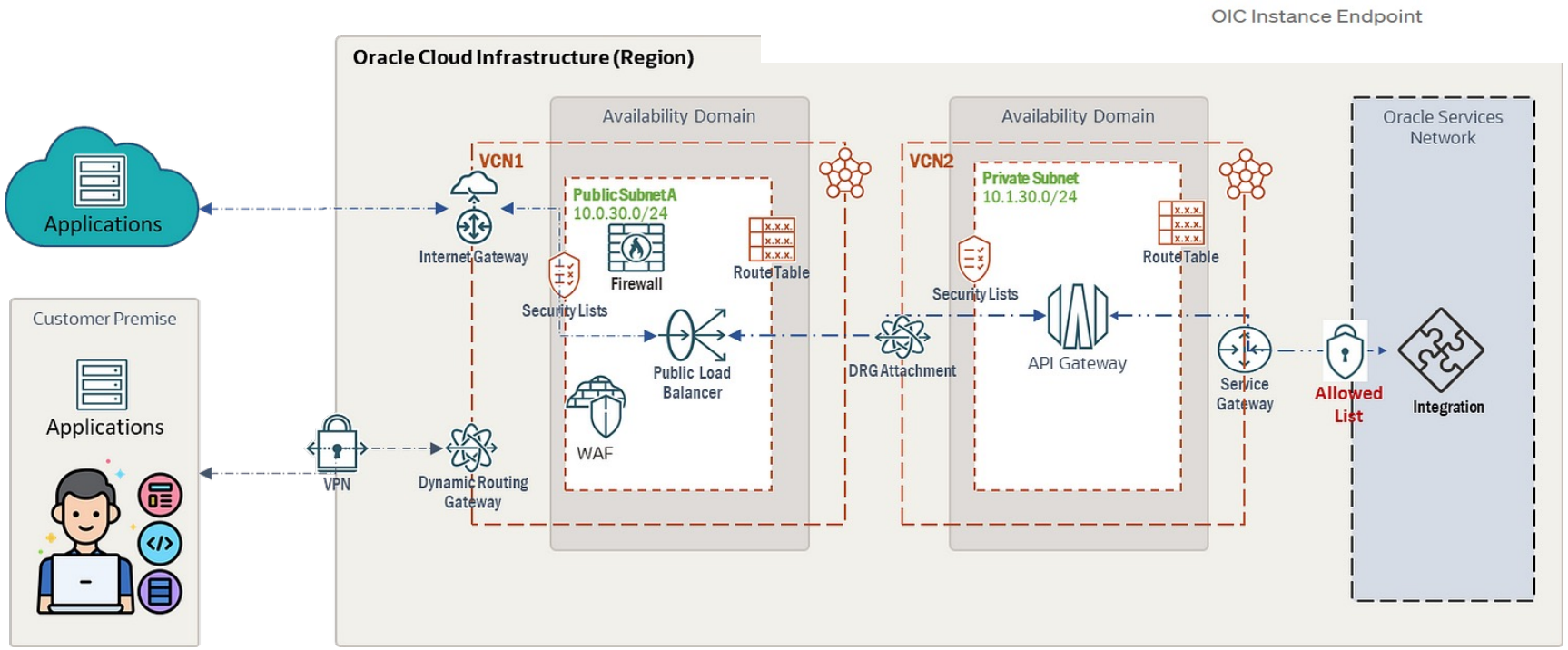
OIC Deployment

https://<OICInstanceName>-<OCITenancyNamespace>-<OCIRegion>.integration.ocp.oraclecloud.com:443



By default OIC instances are provisioned on the Public cloud, i.e., for anyone who invokes an Integration in OIC, the traffic comes via Public Internet

- Incoming traffic should be analyzed by WAF & Firewall
- Analyzed traffic should be passed to a Load Balancer whose backend should be a Private API Gateway
- Private API Gateway should have OIC as the backend. APIGW allows traffic only from Load Balancer
- Allowed List/Network Access on OIC as shown above will have APIGW IP only

Encryption

- ***Incoming Data:*** Encryption of data interfacing to OIC is the client's responsibility, and if any transformations are required on data and decryption is required, then a private key is to be shared by the client
- ***Staging Data:*** Once the data is interfaced in OIC, it can be encrypted using PGP encryption, where OCI stores the keys in OCI Vault to use them for encryption. In OIC, we can encrypt data at the data field level and file level
- ***Outgoing Data:*** Data outbound to OIC can be encrypted using PGP encryption which the end user will be decrypted using the private key
- **Message-Level Encryption (MLE)** Is a security technique used to protect the confidentiality and integrity of a message during transmission. This reference architecture demonstrates how to use OCI Vault to achieve MLE in OIC: https://docs.oracle.com/en/solutions/oic-message-level-encryption/index.html#GUID-383E7800-9BC3-4F31-AD8D-C3D8CE5A1FEB

OIC Roles

Oracle Integration	Description
ServiceAdministrator	A user with the ServiceAdministrator role is a super user who can manage and administer the features provisioned in an Oracle Integration instance.
ServiceDeveloper	A user with the ServiceDeveloper role can develop the artifacts specific to the features provisioned in an Oracle Integration instance. For example, in Integrations the user can create integrations, and in Processes the user can create process applications and decision models.
ServiceMonitor	A user with the ServiceMonitor role can monitor the features provisioned in an Oracle Integration instance. For example, the user can view instances and metrics, find out response times, and track whether instance creation completed successfully or failed. This role provides privileges for users with limited knowledge of Oracle Integration, but with high-level knowledge of monitoring it. This user role does not grant permissions to change anything.
ServiceDeployer	A user with the ServiceDeployer role can publish the artifacts developed in a feature. This role is not applicable for the Integrations feature.
ServiceUser	A user with the ServiceUser role has privileges to utilize only the basic functionality of a feature such as access to the staged and published applications. For example, in Integrations the user can navigate to resource pages (such as integrations and connections) and view details, but can’t edit or modify anything. The user can also run integrations and start process applications.
ServiceInvoker	A user with the ServiceInvoker role can invoke any integration flow in an Oracle Integration instance that is exposed through SOAP/REST APIs or a scheduled integration. See Run an Integration Flow. A user with ServiceInvoker role cannot:Navigate to the Oracle Integration user interface or perform any administrative actions in the user interface. Invoke any of the documented Oracle Integration REST APIs. See About the REST APIs.
ServiceViewer	A user with the ServiceViewer role can navigate to all Integration resource pages (for example, integrations, connections, lookups, libraries, and so on) and view details. The user cannot edit any resources or navigate to the administrative setting pages.

Licensing, Pricing and Syntax Managed Services

OCIS Economics

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Pricing Depends on OICS Edition

- **Standard** includes Integration (SaaS Integration Adapters, Technology Adapters, and Scheduled File Transfer) and Visual Builder.
- **Enterprise** instance includes all the standard features plus On-Premise Application Adapters and Process Automation.

Regardless of which edition you choose, Oracle handles cloud and database management, backup, restore, and other administrative tasks for you

Standard vs Enterprise

Capability	Available in Standard edition	Available in Enterprise edition
Integration	Yes	Yes
Visual Builder	Yes	Yes
Standard adapters	Yes	Yes
Enterprise adapters*	No	Yes
Process	No	Yes
B2B**	No	Yes
Integration Insight	No	Yes +
File Server	Yes +	Yes +
Embedded recipes and business and technical accelerators	Yes +	Yes +

*Enterprise adapters include Oracle E-Business Suite Adapter, Oracle JD Edwards EnterpriseOne Adapter, Oracle Siebel Adapter, and SAP Adapter.

OICS Pricing

Integration			
Product	Comparison Price (/vCPU) *	Unit price	Unit
Oracle Integration Cloud Service - Standard	—	$0.6452	5K Messages per hour
Oracle Integration Cloud Service - Standard - BYOL	—	$0.3226	20K Messages per hour
Oracle Integration Cloud Service - Enterprise	—	$1.2903	5K Messages per hour
Oracle Integration Cloud Service - Enterprise - BYOL	—	$0.3226	20K Messages per hour

- When an OIC instance is created, by default, a message pack of 1 is selected
  - You will be charged 1 msg pack/hour for the new instance – *whether the message pack is being used or not*. (31 days x 24 hours = 744 hours in a month)

BYOL SOA Licenses to OICS

BYOL Cloud Services		
Oracle Integration Cloud Service – Standard – BYOL	B89643	20,000 Messages Per Hour
Oracle Integration Cloud Service – Enterprise - BYOL	B89644	20,000 Messages Per Hour

Conversion Ratios:

- For each supported Processor license You may activate up to 2 OCPUs, which is 40,000 messages per hour of the above referenced BYOL Cloud Services. For every 25 supported Named User Plus licenses. You may activate 1 OCPU of the above referenced BYOL Cloud Services, which is 20,000 messages per hour.

Any of the following supported program licenses may be aggregated to meet the conversion ratio above.

For Oracle Integration Cloud Service – Standard - BYOL

Oracle SOA Suite for Oracle Middleware AND Oracle Weblogic Suite AND applicable application adapter(s) (if being used)

For Oracle Integration Cloud Service – Enterprise - BYOL

Oracle SOA Suite for Oracle Middleware AND Oracle Weblogic Suite AND Oracle Unified BPM Suite AND applicable application adapter(s) (if being used)

https://www.oracle.com/contracts/docs/paas_iaas_universal_credits_3940775.pdf?download=false

Migrate SOA Suite B2B Artifacts To OICS

Which B2B Artifacts Can Be Migrated

Before beginning migration, it is important to understand which B2B artifacts in Oracle SOA Suite can be migrated to Oracle Integration.

Can Be Migrated	Cannot Be Migrated

• Host profile
• Trading partners (properties, contacts, identifiers)
• Transport protocols (AS2, REST, FTP, RosettaNet)
• Inbound and outbound agreements
• Agreement parameters
• Transport connections
• Transport template integrations
• Schemas and schema parameters (EDI, OAG, custom, and RosettaNet)
• Documents and document parameters (EDI, OAG, custom, and RosettaNet)
	The following artifacts are ignored if included in the exported ZIP file.
	• SOA connections / endpoints
	• SOA composite applications
	• SOA security configurations
	• HL7 document protocol
	• The following delivery/transport protocols:
	  ○ AS1
	  ○ AS4
	  ○ ebMS,
	  ○ MLLP
	  ○ Generic-AQ
	  ○ Generic-JMS
	  ○ Genaric-Email
	  ○ Generic TCP
	  ○ Generic MFT

Migrate by creating export files of B2B artifacts that consists of one or multiple ZIP files

https://docs.oracle.com/en/cloud/paas/application-integration/integration-b2b/migrate-b2b-artifacts-oracle-soa-suite-oracle-integration1.html

Message Packs and Messages

- One (1) message pack is a unit of 5,000 messages per hour
  - With BYOL 20,000 messages per hour
- OICS has a minimum of one (1) message pack
  - 31 days for std $480
  - 31 days for enterprise $960
- Message is a unit of measure for the size of the integration payload or number of concurrent integration developers
- Outbound messages are *NOT* counted
- Max 10MB XML message payload size
- Max file size 1GB for files and attachments

Component	Unit of Measure	Messages
Integration	Payload increments of 50,000 kb	1
Visual Builder GUI	1 concurrent development/admin user	100
Process GUI	1 concurrent development/admin user	400
Integration Insights GUI	1 transaction	1

REST/SOAP/Events Integration Message Examples

Example	Inbound Payload	Outbound Payload	Message Count
1	47kb		1
2	51kb		2
3	67kb		2
4	107kb	50kb	3

OICS Costs

One-Time Costs

- Provision OCI tenancy
  - Network, compartments, security policies, logging, API Gateway, and monitoring
- EBS tasks
  - Configure ISG
  - install OICS connectivity agent
- OCI tasks
  - Provision Integration Cloud Services
  - Configure OICS EBS adapter
  - Build integrations

On-Going Costs (Monthly)

- OCI consumption (e.g., OICS) and tenancy management
- Monitoring (and reSubmittign) and reporting

Summary

OICS Is Market Leader For A Reason

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Summary

- Take the Gartner Magic Quadrant announcement seriously
- Use to create from scratch or from Prebuilt integrations, integrations that can be combined in different ways and built into graphical workflows
  - External applications and B2B
  - On-premise applications
    Scheduled Jobs
  - File Transfers
- Seriously consider if you need to modernize your EDI/B2B solution
- Take security seriously
- If you have SOA Suite, seriously evaluate OIC. Bring licenses and significant cost savings.
- Consider a managed service for OIC
  - Development assistance and monitoring
  - Pay in arrears with a 36-month rate sheet lock
- More information
  - https://blogs.oracle.com/integration/

Q&A

Mike Miller

Michael.Miller@syntax.com

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Please complete the session survey in the conference app.

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