Oracle SOA Suite 11g
What’s new?

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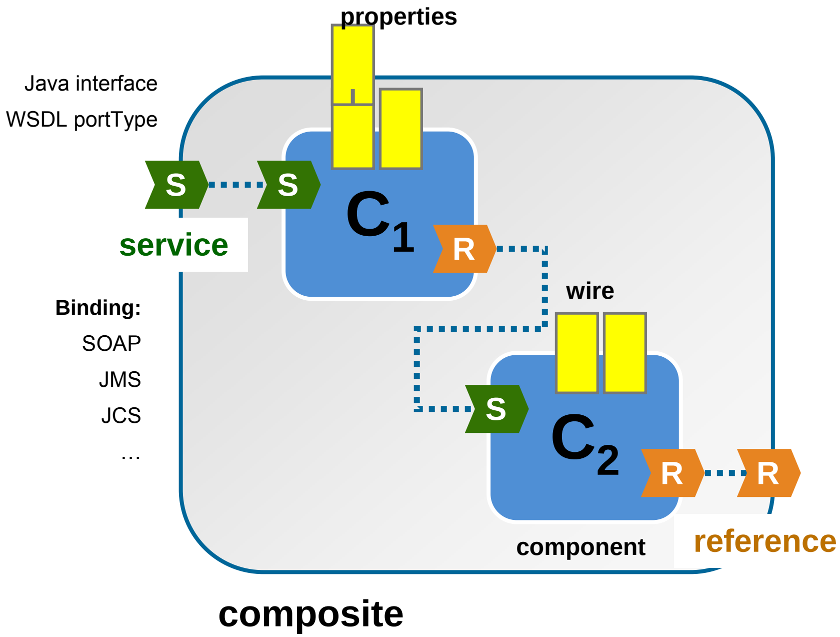
Agenda

- Service Component Architecture (SCA)
- SOA Composite Editor
- Unified Service Platform
- End-to-end Instance Tracking
- Seamless Upgrade Path
- Q&A

Service Component Architecture (SCA): key standards for SOA

What is SCA?



No vendor-, language-, technology-neutral unifying model for SOA.

How does one:

- *Implement services?*
- *Assemble composite applications?*
- *Lifecycle management?*
- *Metadata management?*
- *Versioning and testing?*

SCA terminology:

- **Composite**: deployment unit
- **Service**: entry-point into composite
- **Component**: provides logic
- **Reference**: refers to external services
- **Wire**: connects services, components and references – no special semantic.

Service Component Architecture:

- language-neutral
- component model
- **assembly model**

- Specifications backed by a growing number of leading industry vendors
- http://www.OSOA.org
- Being standardized at OASIS, the international open standards consortium

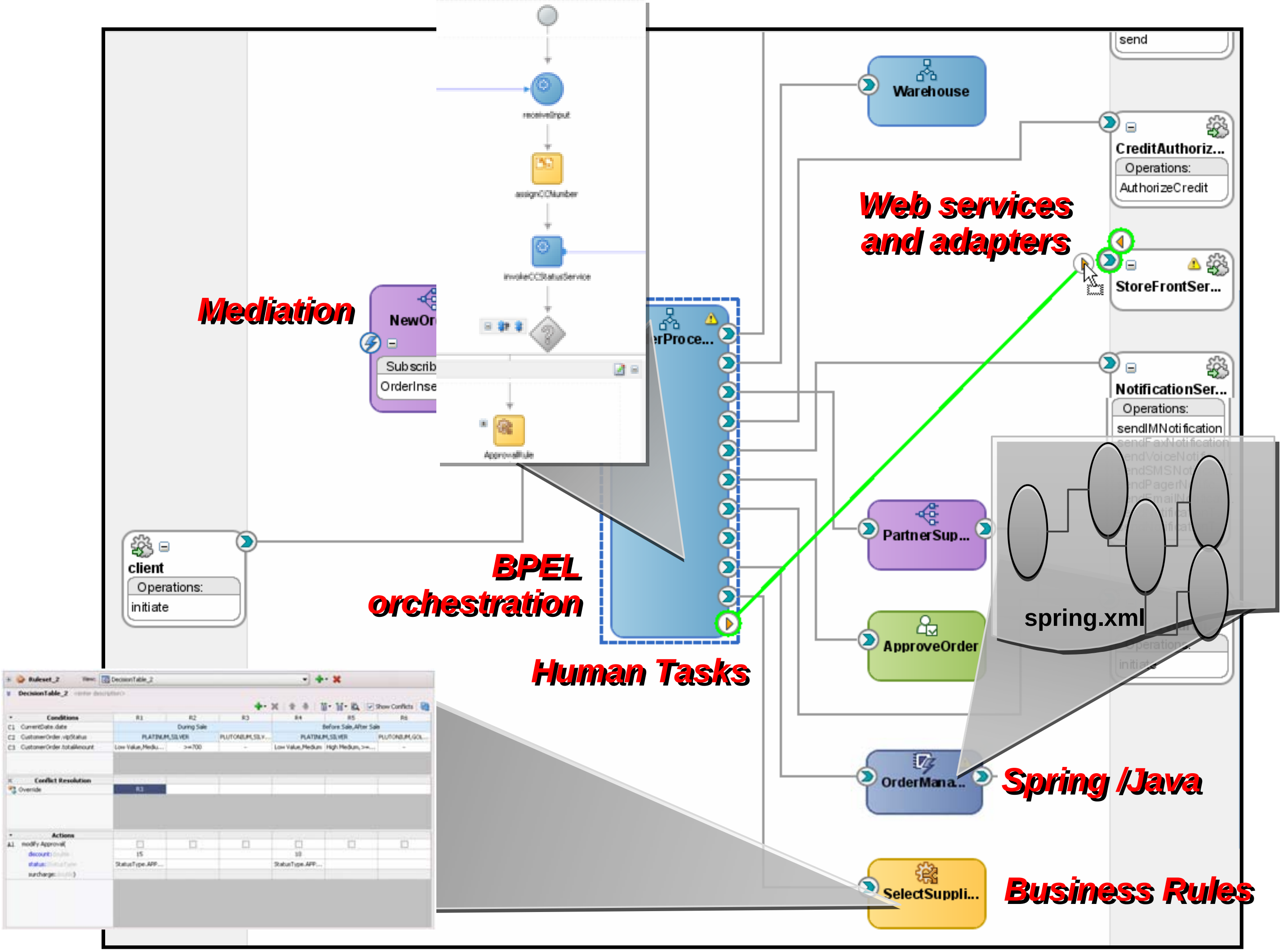
Challenge

***SOA lifecycle* can be difficult:**

- ***Many design tools to learn***
- ***Metadata fragmentation***
- ***How do we version a virtual composite application?***
- ***Etc.***

SOA Composite Editor

SCA Composite Editor



Conditions	R1	R2	R3	R4	R5	R6
C1 CurrentDate.date	During Sale			Before Sale,After Sale		
C2 CustomerOrder.vipStatus	PLATINUM,SILVER		PLUTONIUM,SILV...	PLATINUM,SILVER		PLUTONIUM,GOL...
C3 CustomerOrder.totalAmount	Low Value,Medu...	>=700	-	Low Value,Medium	High Medium, >=...	-
Conflict Resolution						
Override	R3					
Actions						
A1 modify Approval(	□	□	□	□	□	□
discount: double	15			10		
status: StatusType	StatusType.APP...			StatusType.APP...		
surcharge: double)						

Mediation

Web services and adapters

BPEL orchestration

Human Tasks

Spring /Java

Business Rules

Palette of Service Components & Adapters

Challenge

How do we optimize the performance of distributed applications?

- *avoid unnecessary over the wire (SOAP/HTTP) transmissions*
- *avoid marshalling/unmarshalling of messages between engines*
- *reduce installation and management complexity*

Unified Service Platform

Emergence of Service Platforms

SERVICE PLATFORM

- **Integrated** for ease-of-use & optimized performances
- **Yet, fully standards-compliant**
- **No sacrifice on hot-pluggability**

11g

SCA

ESB

BPEL

10.1.3

Web Services

WSDL

10.1.2

XSLT

J2EE

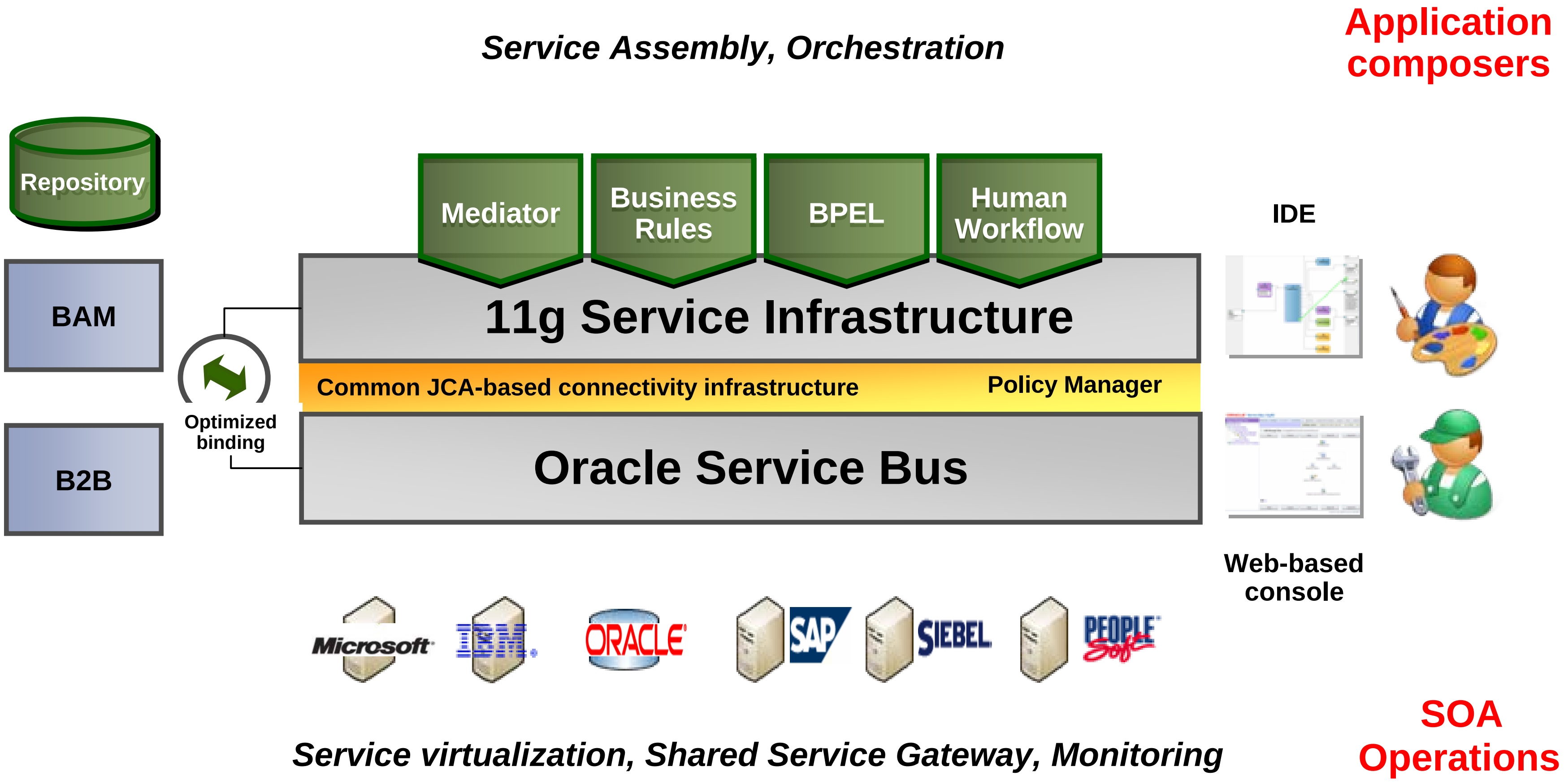
XML

EAI

Messaging

CORBA

Unified Service Platform



Challenge

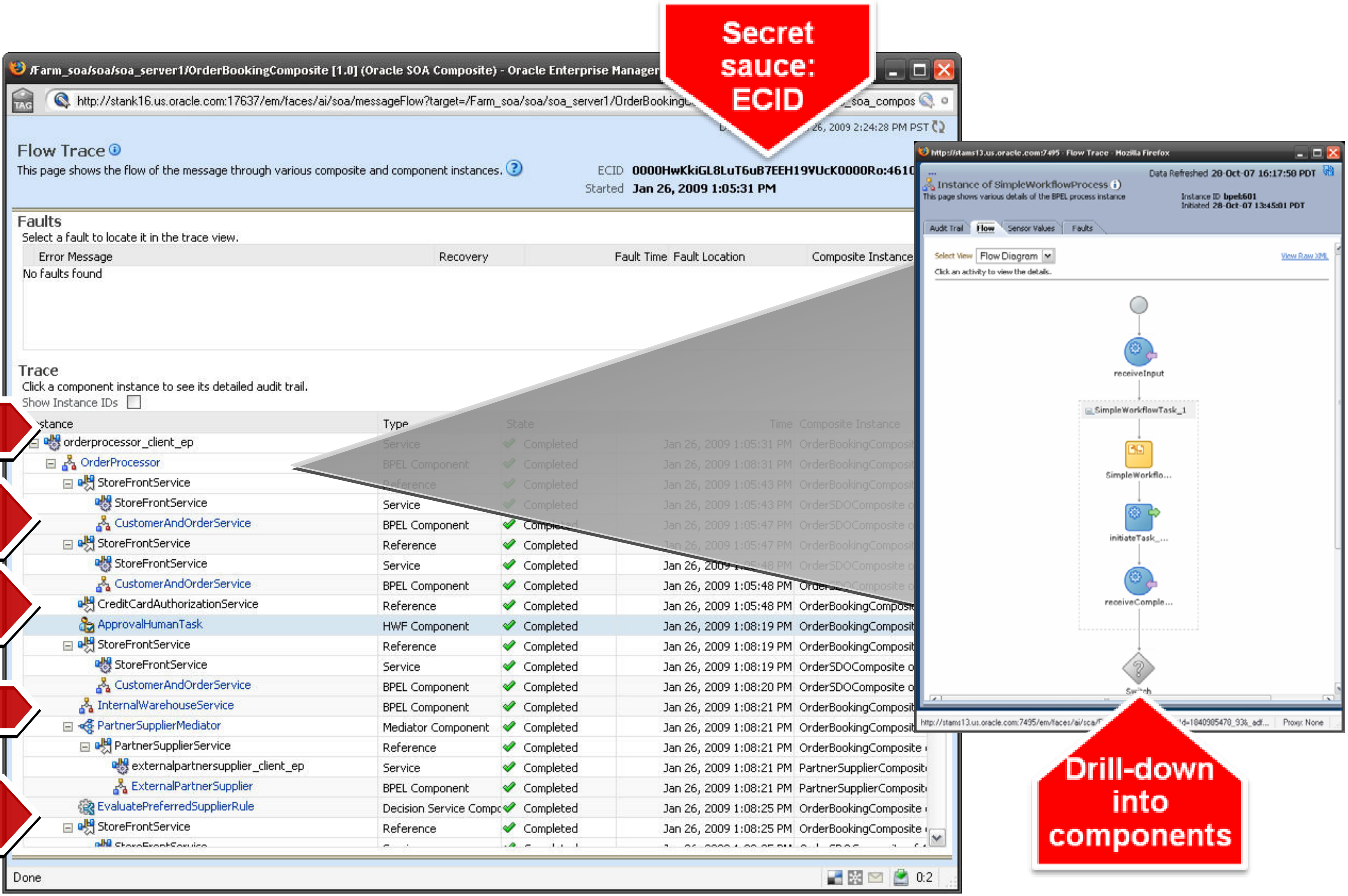
How can I get
complete end-to-end visibility and
increase my auditing capabilities in such
a distributed environment?

End-to-End Instance Tracking

End-to-End Instance Tracking

- Instance tracking (“where is my order?”) across all SOA components:
  - Routing, BPEL PM, Human Workflow, Business Rules, B2B, Spring, etc.
- Within a composite, across composites and even outside of Oracle technologies
- Coupled to unified exception handling framework (“Error hospital”):
    - Search
    - manage
    - resubmit failed instances (including batch)
- Integral part of Enterprise Manager FMW Control

End-to-End Instance Tracking



Secret sauce: ECID

/Farm_soa/soa/soa_server1/OrderBookingComposite [1.0] (Oracle SOA Composite) - Oracle Enterprise Manager

http://stank16.us.oracle.com:17637/em/faces/ai/soa/messageFlow?target=/Farm_soa/soa/soa_server1/OrderBookingC... soa_compos

...26, 2009 2:24:28 PM PST

Flow Trace

This page shows the flow of the message through various composite and component instances.

ECID 0000HwKkiGL8LuT6uB7EEH19VUcK0000Ro:4610

Started Jan 26, 2009 1:05:31 PM

Faults

Select a fault to locate it in the trace view.

Error Message	Recovery	Fault Time	Fault Location	Composite Instance
No faults found				

Trace

Click a component instance to see its detailed audit trail.

Show Instance IDs □

Instance	Type	State	Time	Composite Instance
orderprocessor_client_ep	Service	✓ Completed	Jan 26, 2009 1:05:31 PM	OrderBookingComposit
OrderProcessor	BPEL Component	✓ Completed	Jan 26, 2009 1:08:31 PM	OrderBookingComposit
StoreFrontService	Reference	✓ Completed	Jan 26, 2009 1:05:43 PM	OrderBookingComposit
StoreFrontService	Service	✓ Completed	Jan 26, 2009 1:05:43 PM	OrderSDOComposite o
CustomerAndOrderService	BPEL Component	✓ Completed	Jan 26, 2009 1:05:47 PM	OrderSDOComposite o
StoreFrontService	Reference	✓ Completed	Jan 26, 2009 1:05:47 PM	OrderBookingComposit
StoreFrontService	Service	✓ Completed	Jan 26, 2009 1:05:48 PM	OrderSDOComposite o
CustomerAndOrderService	BPEL Component	✓ Completed	Jan 26, 2009 1:05:48 PM	OrderSDOComposite o
CreditCardAuthorizationService	Reference	✓ Completed	Jan 26, 2009 1:05:48 PM	OrderBookingComposit
ApprovalHumanTask	HWF Component	✓ Completed	Jan 26, 2009 1:08:19 PM	OrderBookingComposit
StoreFrontService	Reference	✓ Completed	Jan 26, 2009 1:08:19 PM	OrderBookingComposit
StoreFrontService	Service	✓ Completed	Jan 26, 2009 1:08:19 PM	OrderSDOComposite o
CustomerAndOrderService	BPEL Component	✓ Completed	Jan 26, 2009 1:08:20 PM	OrderSDOComposite o
InternalWarehouseService	BPEL Component	✓ Completed	Jan 26, 2009 1:08:21 PM	OrderBookingComposit
PartnerSupplierMediator	Mediator Component	✓ Completed	Jan 26, 2009 1:08:21 PM	OrderBookingComposit
PartnerSupplierService	Reference	✓ Completed	Jan 26, 2009 1:08:21 PM	OrderBookingComposite
externalpartnersupplier_client_ep	Service	✓ Completed	Jan 26, 2009 1:08:21 PM	PartnerSupplierComposit
ExternalPartnerSupplier	BPEL Component	✓ Completed	Jan 26, 2009 1:08:21 PM	PartnerSupplierComposit
EvaluatePreferredSupplierRule	Decision Service Compo	✓ Completed	Jan 26, 2009 1:08:25 PM	OrderBookingComposite
StoreFrontService	Reference	✓ Completed	Jan 26, 2009 1:08:25 PM	OrderBookingComposite

Done

http://stams13.us.oracle.com:7495 - Flow Trace - Mozilla Firefox

Data Refreshed 28-Oct-07 16:17:50 PDT

Instance of SimpleWorkflowProcess

This page shows various details of the BPEL process instance

Instance ID bpel:601

Initiated 28-Oct-07 13:45:01 PDT

Select View Flow Diagram

View Raw XML

Click an activity to view the details.

http://stams13.us.oracle.com:7495/em/faces/ai/sca/F... ld=1840985470_93&_adf... Proxy: None

Drill-down into components

BPEL

External Service

Human Workflow

Routing

Business Rules

Challenge

“Asynchronous Messaging”?!

***All I care about is business events –
how can you make this easier for me?***

Event Delivery Network

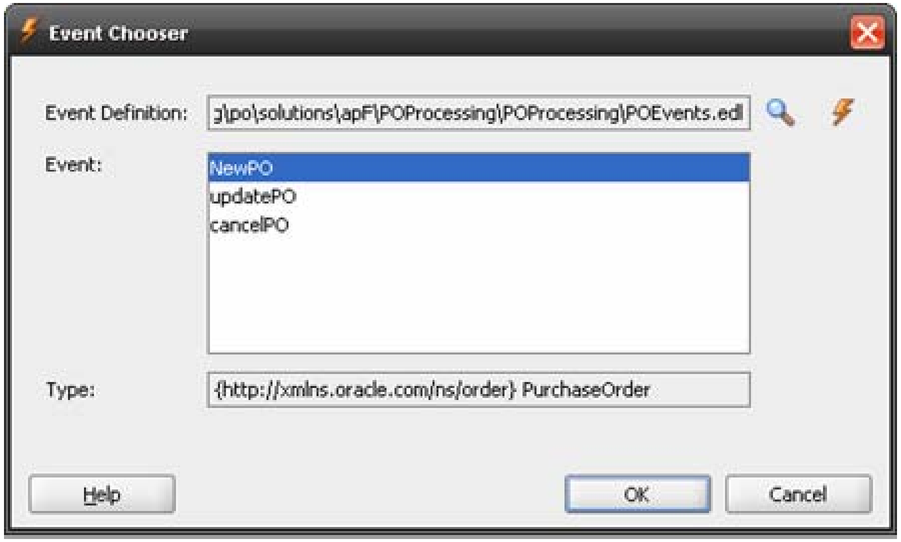
Event Delivery Network (EDN)

- Work with events – not messaging infrastructure!

- Declarative way to work with publish-subscribe:
  1. Create
  2. Discover
  3. Consume

- Offers rich subscription capabilities:
  1. **Events Names**
  2. **Content**-based XPath filters

- **Integrated Service & Event foundation**



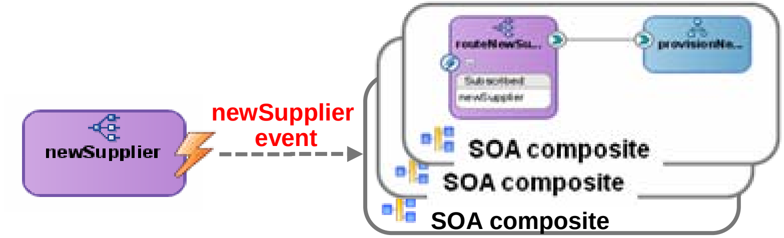
Event Definition: g\po\solutions\apF\POProcessing\POProcessing\POEvents.edl

Event: NewPO
updatePO
cancelPO

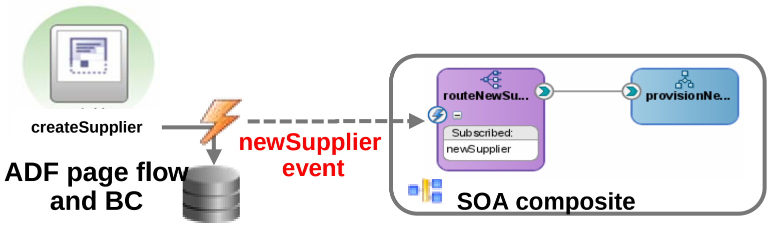
Type: {http://xmlns.oracle.com/ns/order} PurchaseOrder

EDN support across the stack

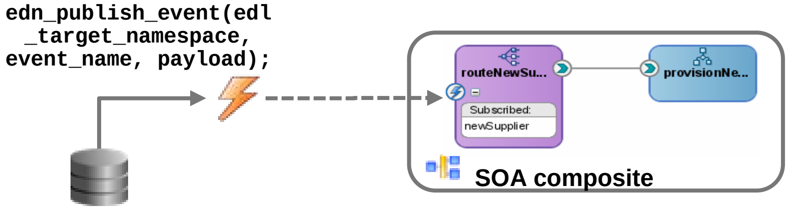
- SOA composites can raise events, enabling fan-out patterns



- Update operations (commit, delete, …) on ADF-BC objects can trigger events to initiate SOA composites



- PL/SQL programs can raise events



```
edn_publish_event(edl
 _target_namespace,
event_name, payload);
```

Challenge

How can we make sense of the ever-growing number of events, and extract useful information from the noise?

Complex Event Processing

Complex Event Processing (CEP)

Monitor streams of events, correlates seemingly unrelated events into patterns

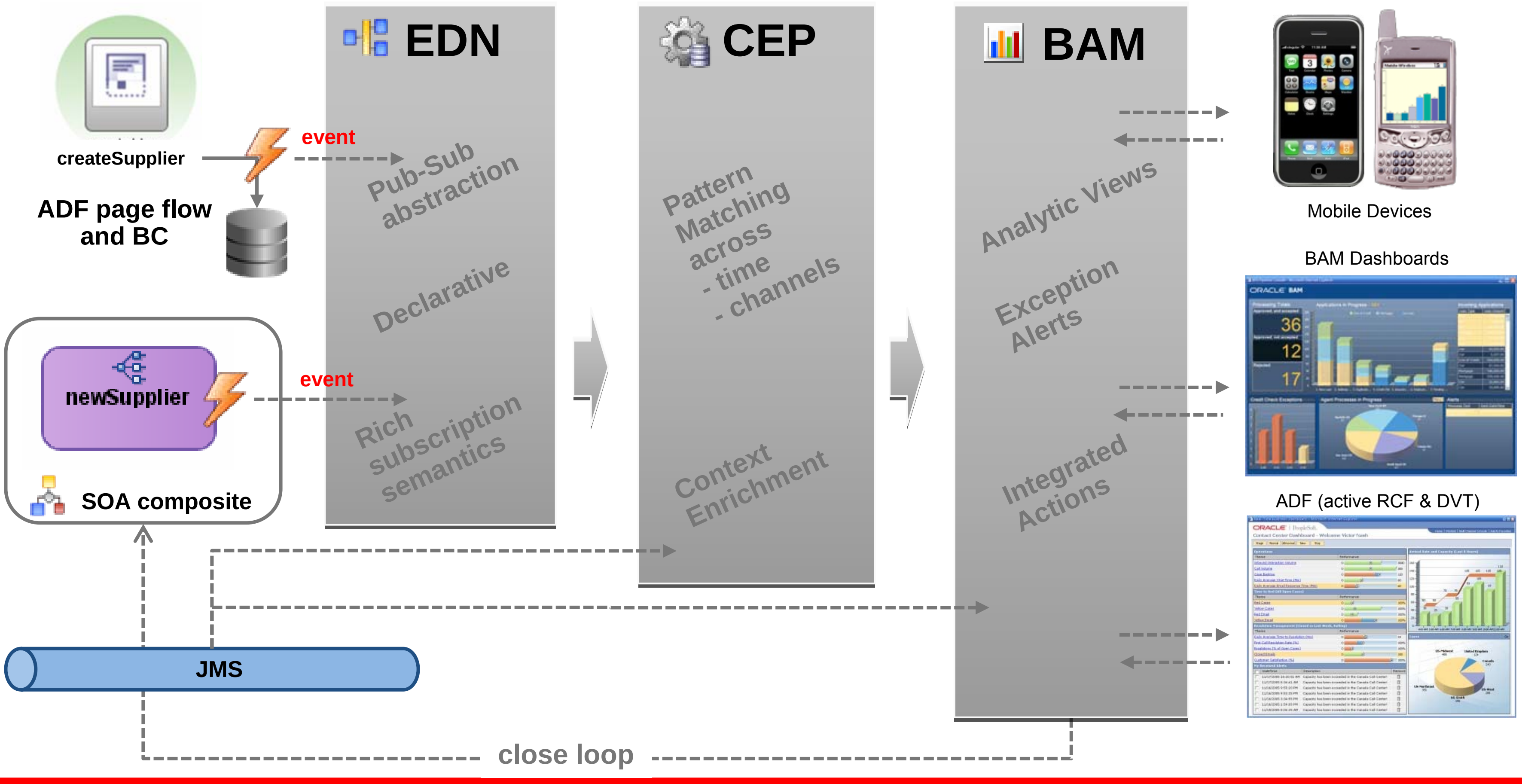
Applications in almost every industry vertical:

- risk management,
- fraud detection,
- intrusion detection,
- compliance,
- etc.

- Optimized to handle very large volumes of events
- CQL: Continuous Query Language

Real-Time Process Agility

EDA delivers real-time event processing for monitoring, analyzing, and acting on business process optimization.



createSupplier

event

ADF page flow and BC

newSupplier

event

SOA composite

JMS

EDN

Pub-Sub abstraction

Declarative

Rich subscription semantics

CEP

Pattern Matching across
- time
- channels

Context Enrichment

BAM

Analytic Views

Exception Alerts

Integrated Actions

Mobile Devices

BAM Dashboards

ADF (active RCF & DVT)

close loop

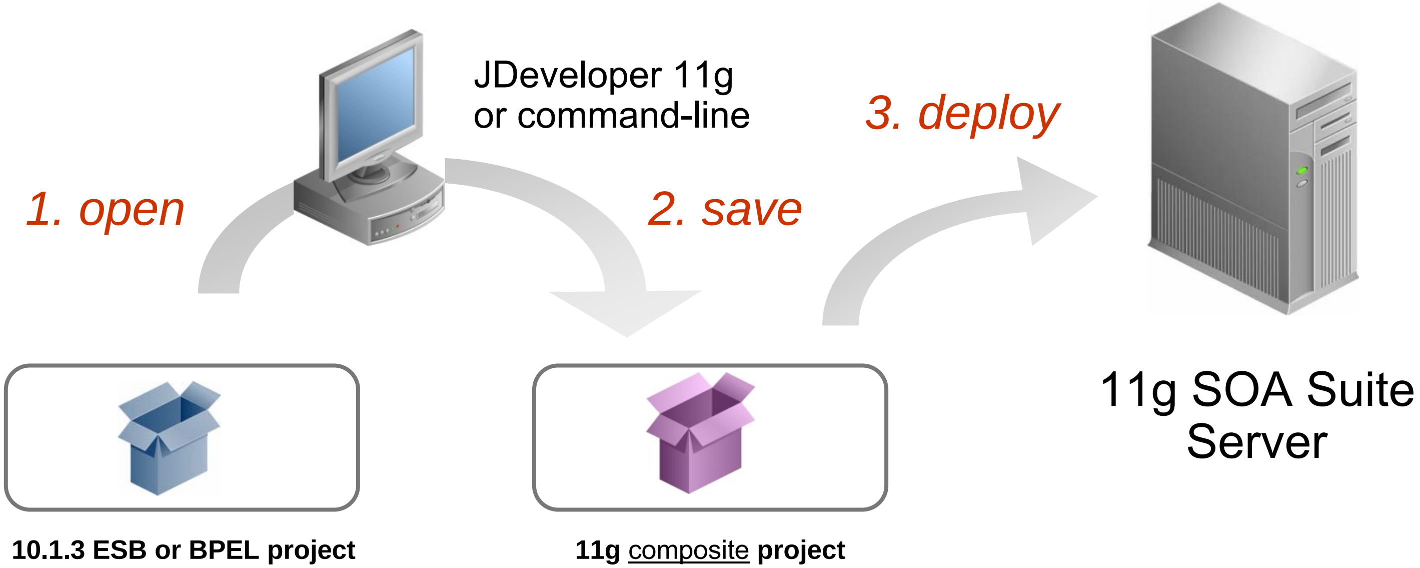
Challenge

I want to uptake all these new features – but not at the cost of a rewrite!

Seamless Upgrade Path

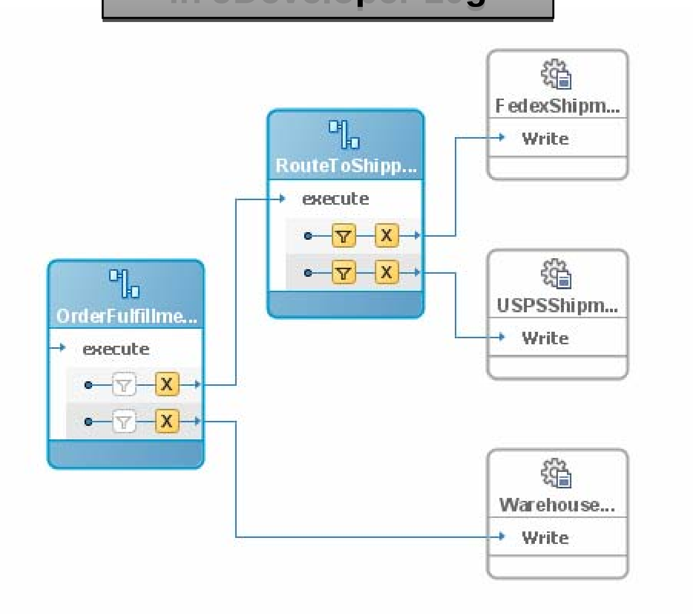
10.1.3 → 11g Upgrade Path

Automated project upgrade: open your 10g project in JDeveloper 11g and re-deploy!



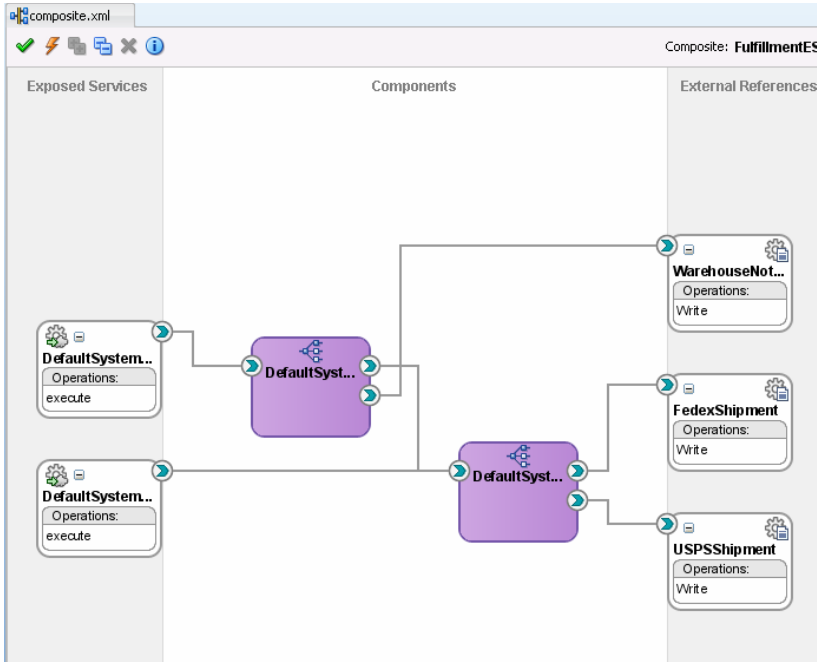
Upgrade project in JDeveloper

Fulfillment ESB project in JDeveloper 10g



re-open upgrade

SCA composite with Mediator in JDeveloper 11g



upgrades full project:

•Routing rules & filters

•Transformations

•Adapter configurations

What else is new?

Hundreds of new features based on customers’ feedback

“it’s not just about the platform”

Oracle SOA Suite 11g: SOA Service Platform

- Leverages **SCA** to deliver the industry first full Service Platform:
  - Single design-time environment: **SOA Composite Editor**
  - Single runtime: **Unified Service Platform**
  - Single monitoring console: **End-to-end Instance Tracking**
  - **Integrated Service & Event Foundation**
- Natural evolution from 10g, **seamless upgrade path**
- Wealth of **new features based on customers' feedback**

Questions