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November 11–15, 2007

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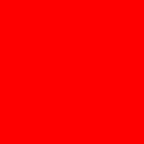


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S291362: What's New in Oracle SOA Suite

Demed L'Her, Sr. Principal Product Manager
Khanderao Kand, Architect

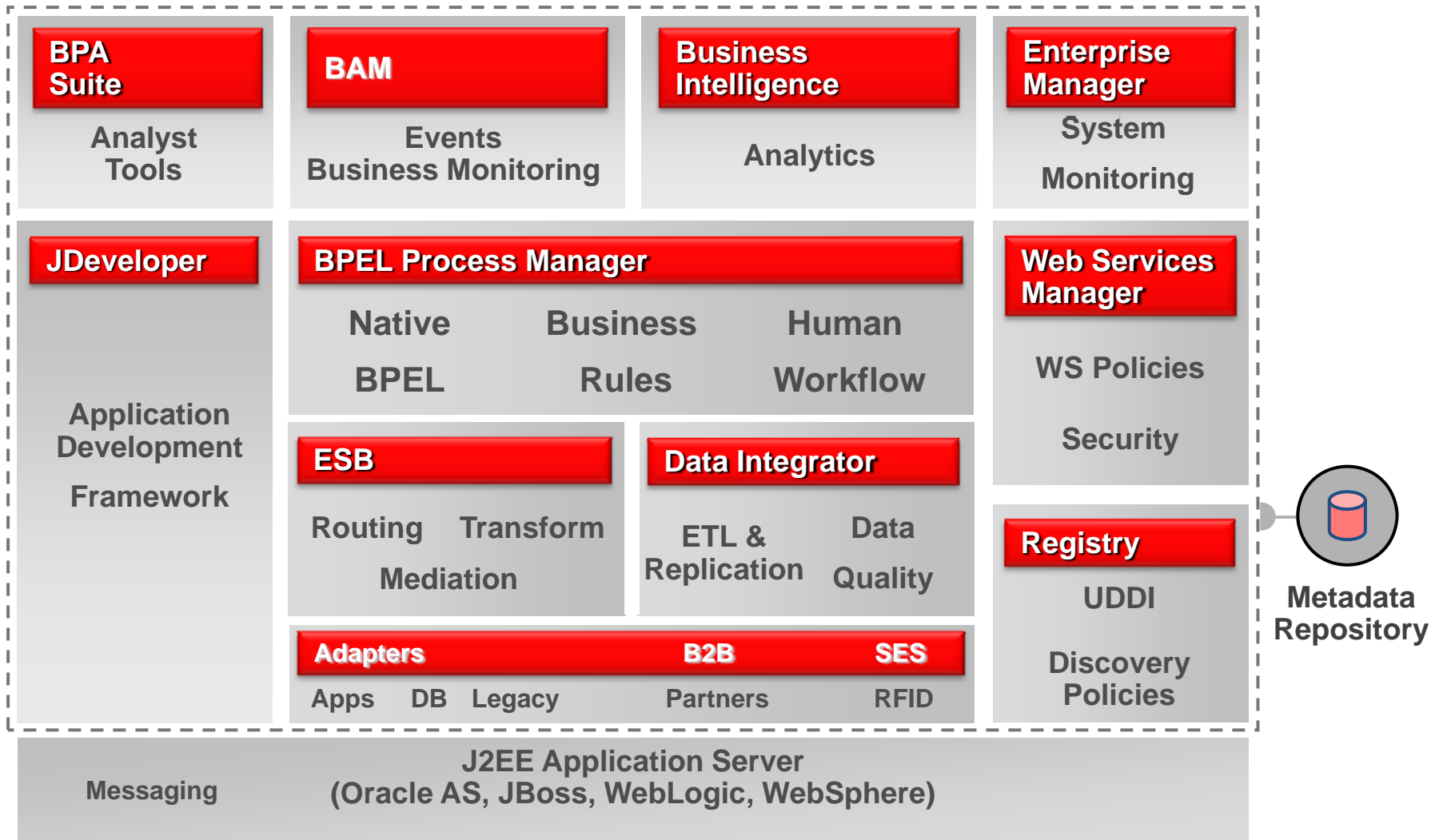


The following is intended to outline our general product direction. It is intended for information purposes only, and may not be incorporated into any contract. It is not a commitment to deliver any material, code, or functionality, and should not be relied upon in making purchasing decisions. The development, release, and timing of any features or functionality described for Oracle's products remains at the sole discretion of Oracle.

Evolution & Adoption of the Oracle SOA Suite



The Oracle SOA Technologies



Best-in-Class Awards



- Winner, SD Times 100
- Business Process Management
 - SOA & Integration



- SOA World Magazine
Readers' Choice Awards 2007
Winner in 15 of 20 categories, including:
- Best SOA/Web Services Platform
 - Best BPM Engine
 - Best Integrated Services Environment
 - Best Security Solution

Oracle SOA Suite 10g
Release 3
Oracle, oracle.com

Excellent 8.7		
criteria	score	weight
Interoperability	9.0	30.0%
Features	9.0	20.0%
Management	8.0	15.0%
Scalability	8.0	15.0%
Security	9.0	10.0%
Value	9.0	10.0%

InfoWorld

Oracle SOA Suite "Excellent"

- Highest Rating in SOA Category
- "Hands down, the most comprehensive and easy to use product on the market today"



- "★★★★" | Oracle BPEL Process Manager
"★★★★" | Oracle Business Activity Monitoring

intelligent enterprise

Winner, Best Business Process Management System



- Oracle BPEL Process Manager
- Winner, Web Services Journal Readers' Choice Award
 - "World class product"

var Business

Oracle SOA Suite, Winner, Tech Innovator 2007
Business Software: Enterprise Applications and Infrastructure



Winner, ebizQ Buyer's Choice Award
Enterprise Information Integration

Leader in Middleware

SOA and Business Process Management



"Oracle is a Leader across the board in our evaluation of application server platforms"

LEADER

- Application Server Platforms

LEADER

- Integration-Centric BPM Suites

LEADER

- Enterprise Service Bus

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intelligent
enterprise

Winner, Best Business Process Management System



Gartner

Oracle a Leader in All Application Infrastructure Magic Quadrants

LEADER

- Application Infrastructure

LEADER

- App. Infrastructure for Integration Projects

LEADER

- App. Infrastructure for Composite-Application Projects

LEADER

- App. Infrastructure for Service-Oriented Business Applications

LEADER

- Customer Data Integration Hubs



SOA World Magazine

Readers' Choice Awards 2007

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- Best Security Solution



Winner, SD Times 100

- Business Process Management
- SOA & Integration

var Business

Oracle SOA Suite

Winner, Tech Innovator 2007 for Business Software: Enterprise Applications and Infrastructure



1000's
Oracle SOA
Customers

BAE SYSTEMS

METRO Group

AmeriPath

Sodexho

vodafone

XEROX

EDS

QUALCOMM

redhat

THE HARTFORD

CITY OF LAS VEGAS NEVADA

IMPAC citigroup



BRITISH AIRWAYS

monster

Kabel Deutschland



ThyssenKrupp

USi

Novell



Life's Good

LG

Rabobank

Philadelphia Housing Authority
Building Beyond Expectations



SIMCO



NetApp

REUTERS

ATLAS
INSURANCE AGENCY



PETROBRAS
DISTRIBUIDORA S.A.

ING
LEASE

TURKCELL

Silicon Image

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Oracle SOA
Customers

pillar
DATA SYSTEMS

NEXTEL
TOGETHER WITH SPIRIT

Gateway



OPENWAVE

SCHENKER
Logistics

OOCL
We take it personally

Allstate
You're in good hands.

Wyeth

Avue
TECHNOLOGICAL CORPORATION

belgacom

cesa

iPass



ACN

GIANT EAGLE



Finnlines

DENERSTONE SOFTWARE

中国移动通信
CHINA MOBILE

HELIO



adx
Advanced Data Exchange

BAE SYSTEMS

Lufthansa

METRO Group

AmeriPath



TIMEX

ClickCommerce

STANFORD UNIVERSITY

edmunds.com

Webster

gevity
people 1st

Verstock.com
Your Online Outlet™

Cattles



FORMFACTOR

Washington Group International

IKON
Office Solutions™

ViewSonic

ACTIVANT

QFleet.com
VOYAGE MANAGEMENT SYSTEM

Sodexho

Service Delivery Platform Architecture

Needed to revitalize the ways in which value-added services were developed, deployed and controlled.

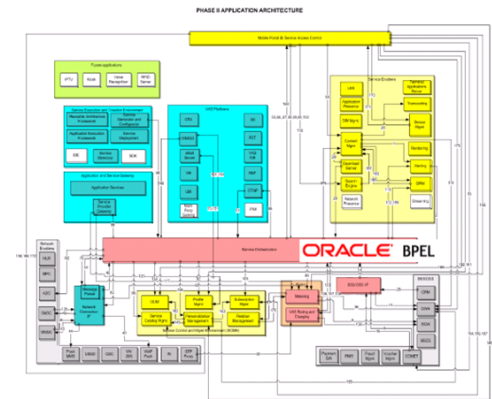
Turkcell SDP Service Level Requirements

- 27.6M subscribers,
- 900+ SMS msgs/sec.
- 1200+ TPS guaranteed

With this new SDP based on Oracle SOA, Turkcell was able to:

- ✓ Offer a consistent interface to 3rd party content and application providers
- ✓ Reduce launch time for new services and marketing campaigns (from 4 to 1 month)
- ✓ Drastically reduce maintenance costs (50%) by rationalizing the 600+ ad-hoc interfaces
- ✓ Cost of services reduced by up to 75%

After this success Turkcell rolled out several other projects, including a Unified Customer Management Architecture (over 275,000 transactions a day through BPEL)



- 16x BPEL servers, 3x 8-CPU RAC nodes
- 200 designers, 300 developers, 2,300 test cases
- 180 BPEL processes, 189 interfaces
- 240 sync and 140 async transactions per second

SOA Adoption within Oracle

APPLICATIONS

Peoplesoft

CRM 9 release uses BPEL PM and BAM internally (see next slide)

8.48 Peopletools certified with BPEL PM 10gR2 to orchestrate services. 8.51 now being certified with 10gR3.

iFlex

BPA Suite to model fin. services processes and BPEL PM to execute them

Application Integration Architecture (AIA)

Predefined integration processes between apps implemented with Oracle ESB and BPEL PM

Retek

BPEL for synchronizing Retek sales data with Oracle Financials

Oracle JMS and ESB to replace SeeBeyond

Siebel

Distributed Order Orchestration

JD Edwards

Oracle BPEL and ESB to replace Web Methods

Fusion Applications

SOA Suite 11g as the foundation for the next generation of Applications

MIDDLEWARE

Oracle Content Services

BPEL PM for document workflows

BPEL PM for invoice processing solutions

WebCenter

Worklist portlet

Exchange synchronization

Identity Management

BPEL PM for identity provisioning workflows

Business Intelligence

ODI as the new ETL tool in BI EE, Hyperion and BAM

OPERATIONS

Internal Global IT

BPEL PM for Oracle Alerts workflows

OnDemand

Oracle SOA Suite for Integration as a Service

Oracle SOA Suite Roadmap

10gR2
Jan 06

Individual Best-Of-Breed Engines

- BPEL PM
- OWSM
- B2B
- UDDI Registry
- BAM

Development

- Portal Integration framework (JSR-168)
- Sensors integrated with Oracle BAM

With each new release:

- **Further extend**
- **Integrate existing**

10gR3
Oct 2006

New Components

- Oracle ESB
- Oracle Business Rules
- Oracle BPA Suite

SOA Platform Release

- Single installer for BPEL, ESB, OWSM
- Shared OracleLite, app-server, JDev instances
- Unified Web service test interface
- Integrated consoles, design-time

Key Features

- Rich, Meta-data driven Human Workflow
- BPEL Test
- Mediation
- Decision Service
- Large Process Support
- Transaction Tracing
- Connected Consoles
- Error Hospital (10.1.3.3)
- Rich Modeling for Biz Analytics, BPMN
- Bi-directional support between model, executable processes and BAM

11gR1
2007+

New Components

- Oracle Data Integrator
- Stellent
- Tangosol
- Complex Event Processing

Development

- SCA platform
- Tangosol for dehydration
- BPEL versioning extended to composites
- ESB error hospital extended to composites (+ batch resubmission, etc.)
- BPEL unit testing extended to Composites
- J2EE BAM
- Extensible BPEL Designer Palette
- Richer Worklist Applications
- MDS (metadata services) Integration
- Bi-directional support between simulation and BAM
- XSL document merge/many to 1

Internal

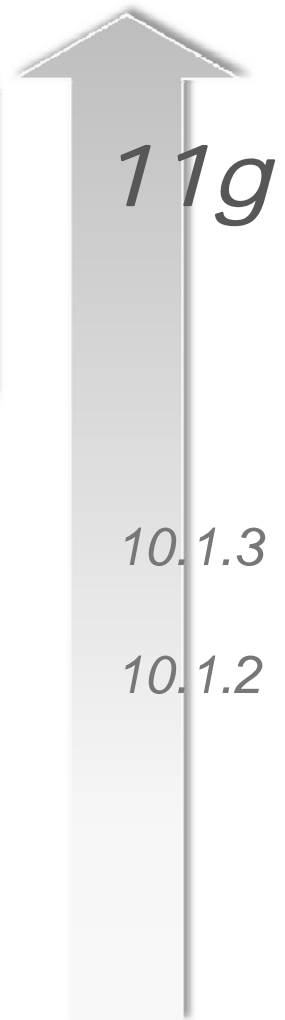
- Architecturally unified
- Integration with Business Events
- Service Bean Integration
- Unified EM console

Emergence of Service Platforms

SERVICE PLATFORM

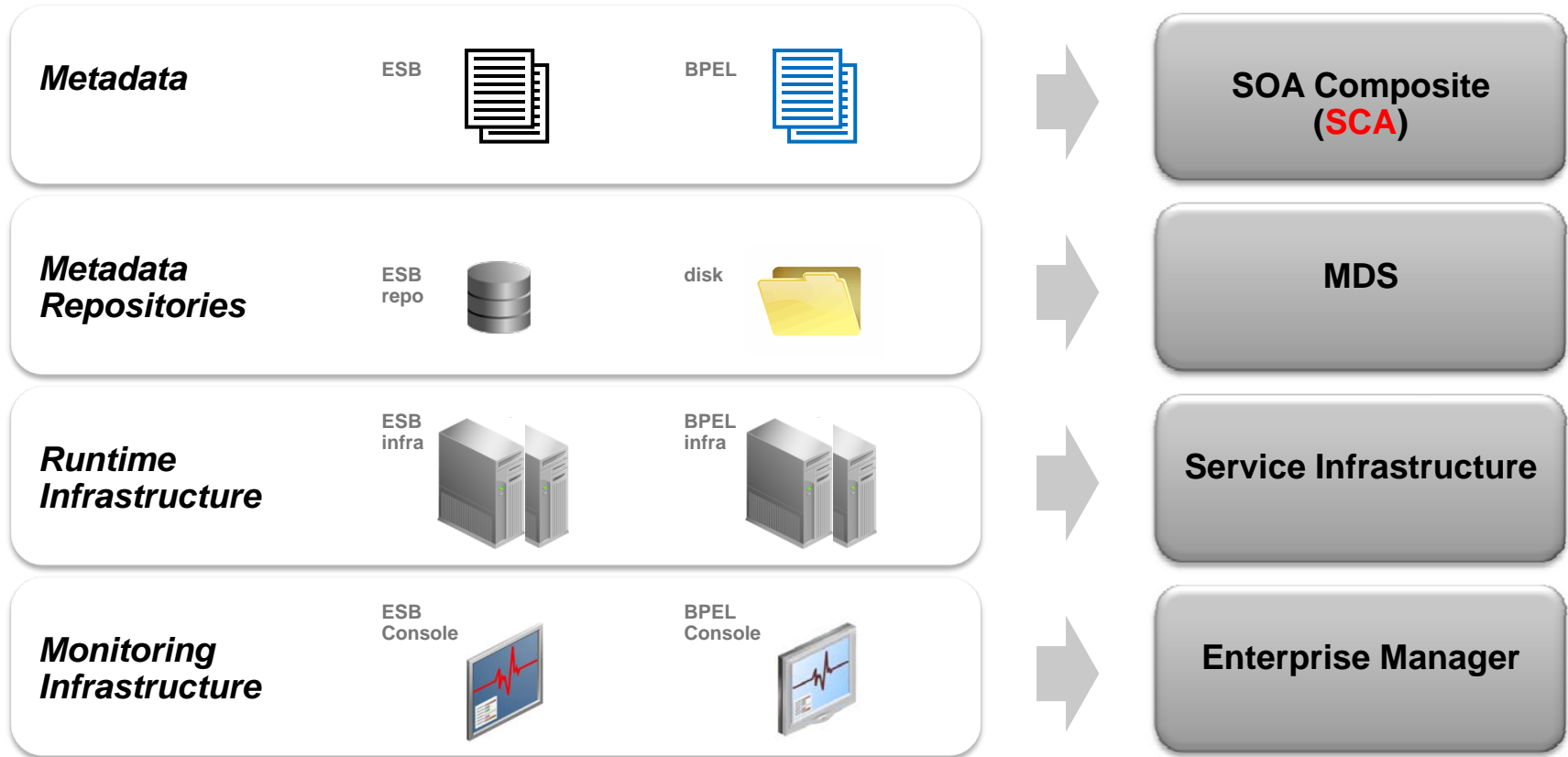
- **Integrated** for ease-of-use & optimized performances
- **Yet, fully standards-compliant**
- **No sacrifice on hot-pluggability**

SCA
ESB
BPEL
Web Services WSDL
XSLT
J2EE XML
EAI
Messaging
CORBA



SOA Management - Simplified

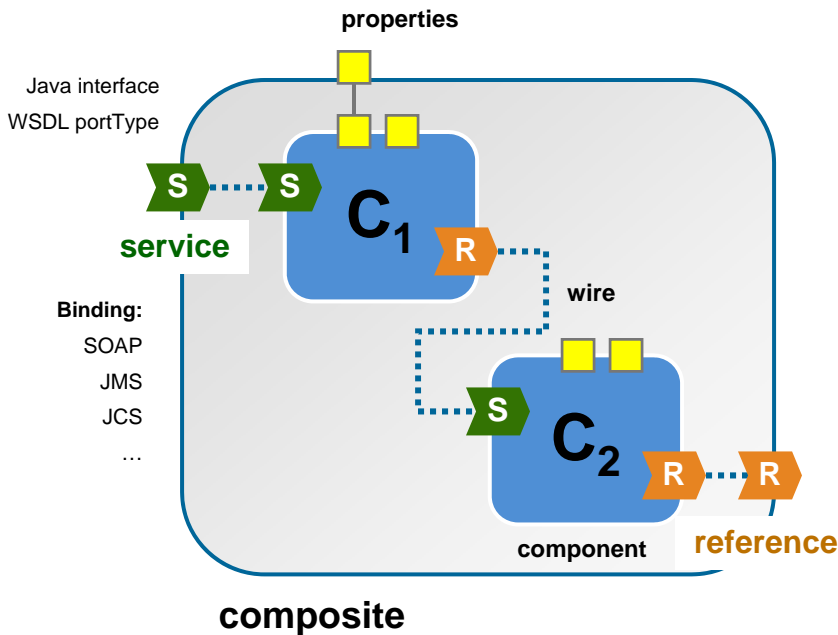
11g



Leveraging **SCA** to deliver the service platform



What is SCA?



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

SCA terminology:

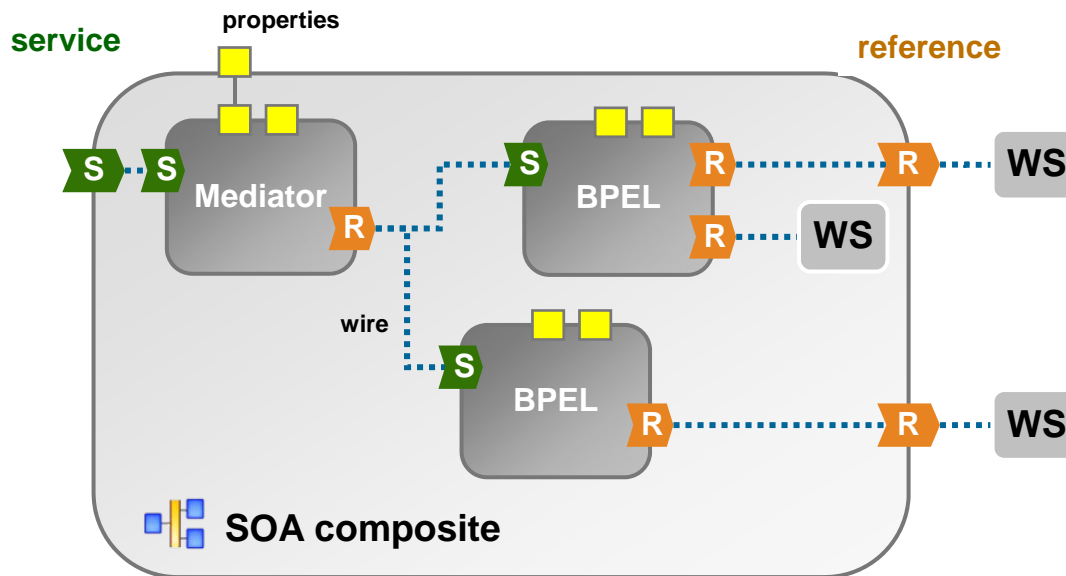
- **Composite:** deployment unit
- **Service:** entry-point into composite
- **Component:** provides logic
- **Reference:** refers to external services
- **Wire:** connects services, components and references – no special semantic.
- **Bindings:** Access interactions with outside a composite

Design-Time benefits of the service platform

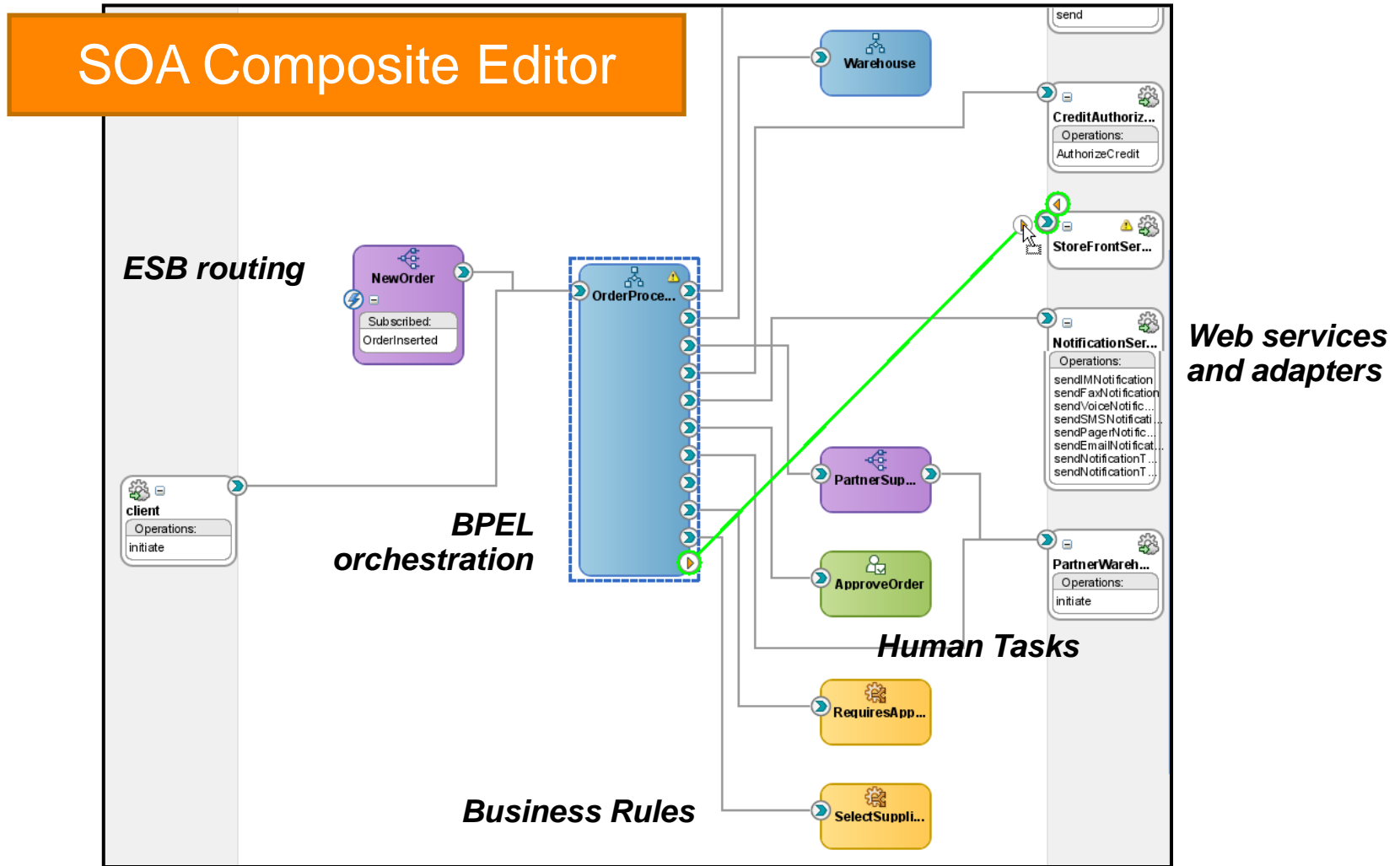


SOA Composite

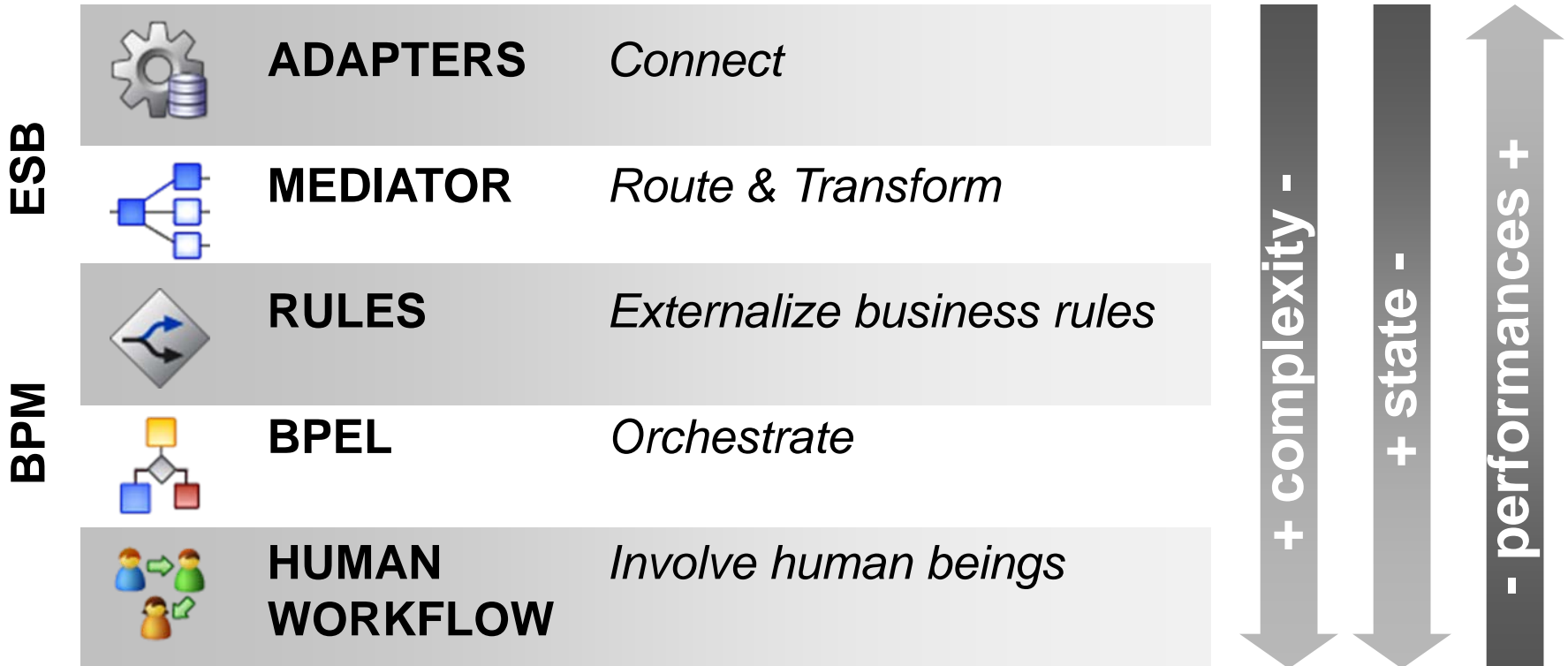
- SOA composite is a standards-based deployment unit
- Leverages the SCA assembly model
- Can mix variety of components: ESB routing (Mediator), BPEL, Human Workflow, etc.



Drag & Drop Graphical Assembly



Enabling Incremental SOA development



Unit Testing

10.1.3 BPELTest framework elevated to composite level

1. Define tests / asserts / emulations (JDeveloper)
2. Execute (SOAConsole or ANT)
3. Review results (SOAConsole or standard JUnit report)

The screenshot displays the JDeveloper IDE interface for configuring a BPEL test. It features three main windows:

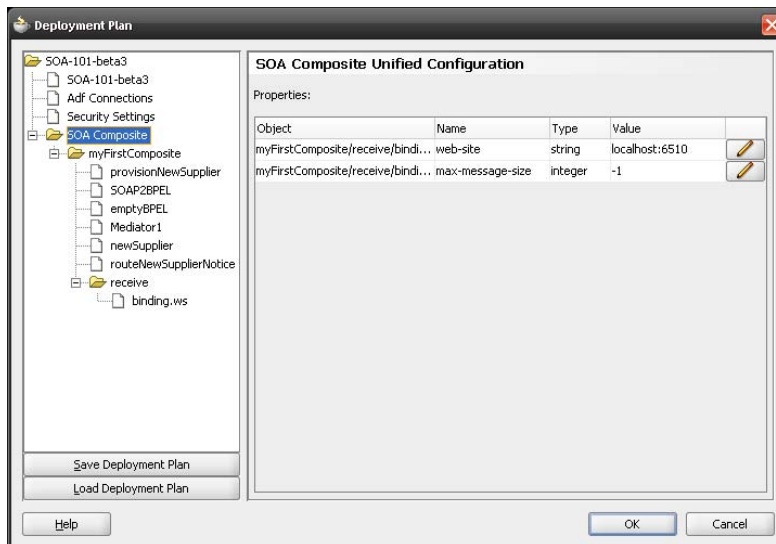
- Create Assert:** A dialog box for defining an assertion. The 'Assert Target' is set to 'LoanBrokerRequestMessage.payload/s1:loanApplication'. The 'Compare By' is set to 'pattern-match'. The 'Assert Value' field is empty.
- composite.xml - Structure:** A tree view showing the project structure. Under 'Test Suites', there is a 'mytestsuite' folder containing three test files: 'test-assert-element.xml', 'test-assert-message.xml', and 'test-assert-output.xml'.
- Edit Initiate:** A dialog box for configuring the 'initiate' operation. The 'Service' is 'receive' and the 'Operation' is 'execute'. The 'Message' is 'Message Parts' with 'Part' set to 'request'. The 'Value' is entered manually as:

```
<singleString xmlns="http://xmlns.oracle.com/singleString" >
  <input>hello</input>
</singleString>
```

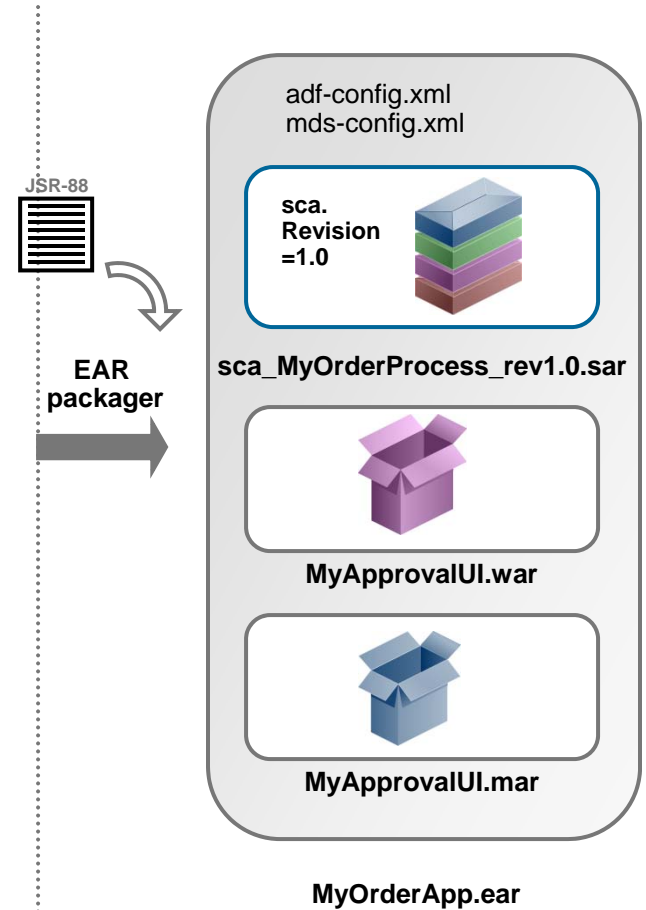
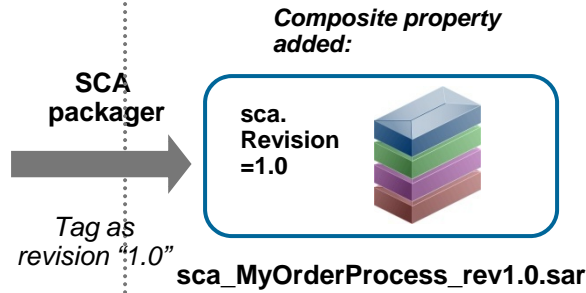
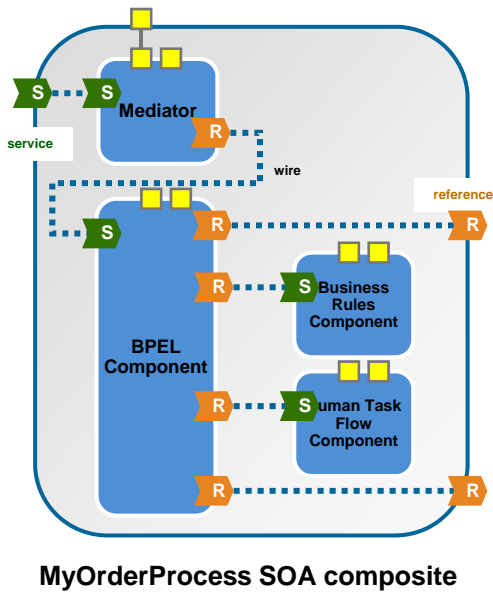
The background shows a BPEL process diagram with a 'receive' activity connected to a 'SOAP2BPEL' activity, which is then connected to an 'emptyBPEL' activity.

Project lifecycle – JSR-88

- Unified **JSR-88 deployment plans** for promoting projects between environments: Development, Test, Production.
- JDev, EM and command-line support (ANT)



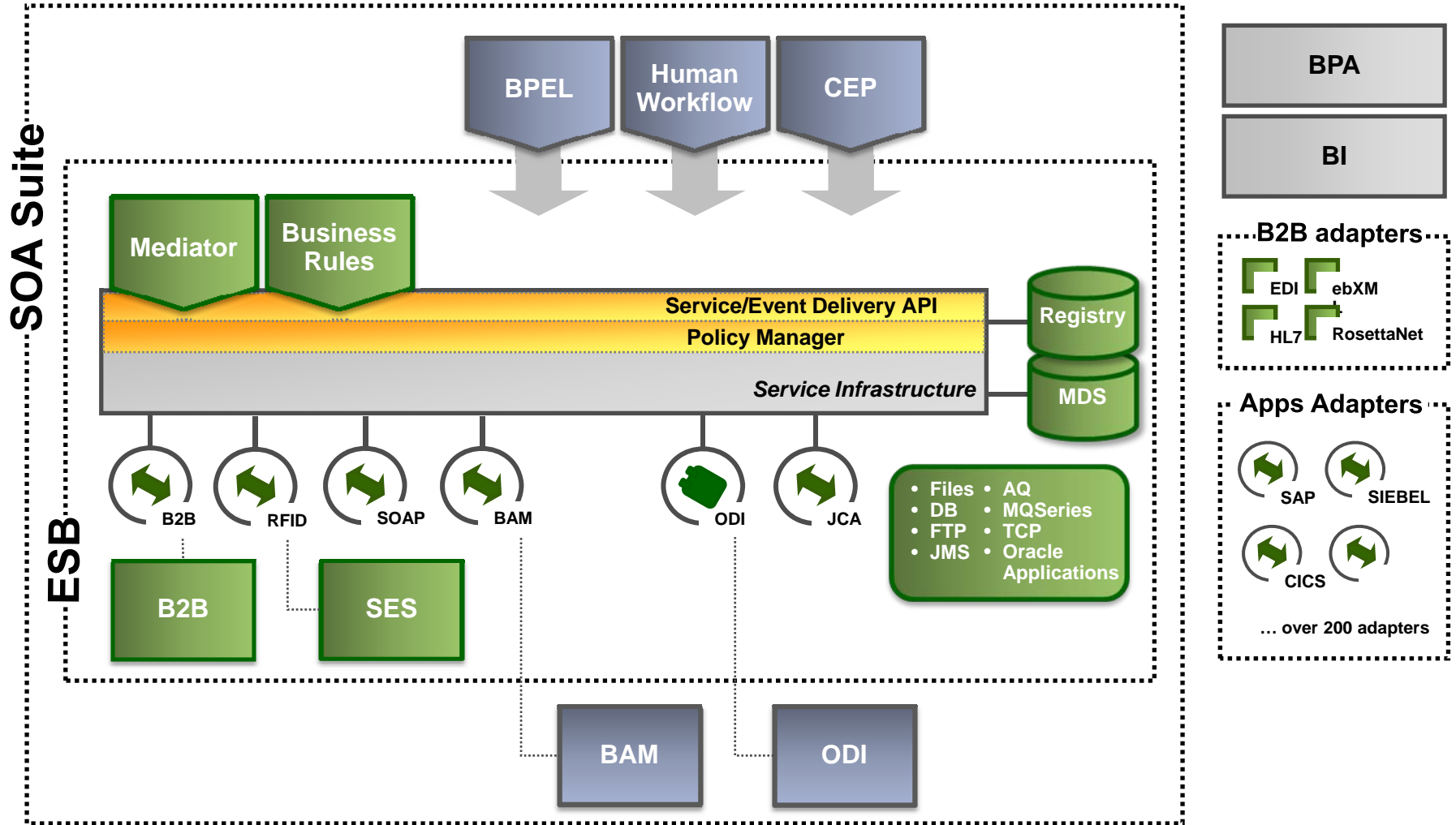
Packaging, Versioning & Deployment



Runtime benefits of the service platform

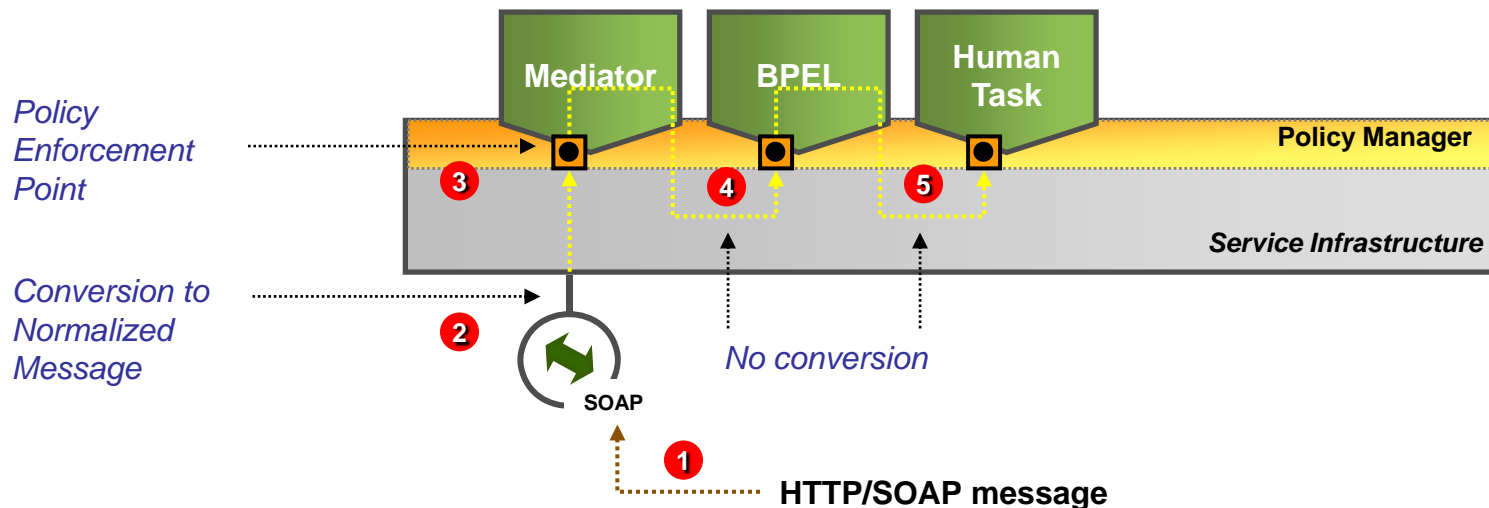


Oracle SOA Suite 11g



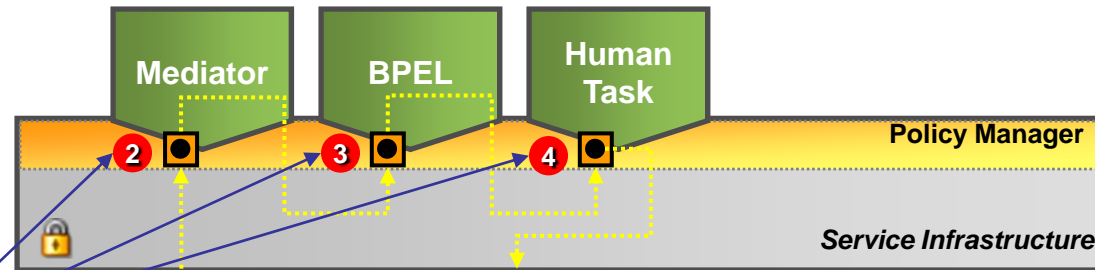
Benefits of the Service Infrastructure

- Performances (minimum marshalling/unmarshalling)
- Global policies
- Coherence for dehydration
- Infrastructure features made available to all components
- Side-by-side versioning model across suite
- Unified Tracking, Logging and monitoring



Securing SOA Composites: Oracle WSM Policy Manager

- Clearly separates process logic from security concerns
- Secures endpoints
- Sets and propagate identity



Service Component Interceptors:

- Authorization

Web Service Interceptor:

- Authentication
- Authorization
- Message Integrity & Confidentiality (signatures, encryption/decryption)
- Publish security requirements as WS-Policy in WSDL



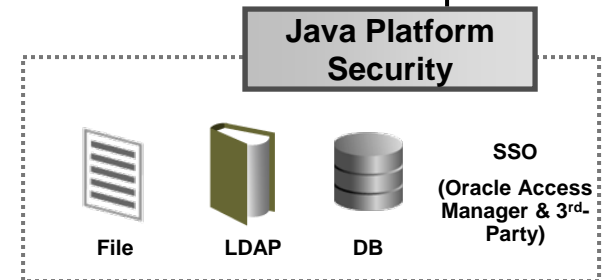
HTTP/SOAP message



HTTP/SOAP message

Web Service Interceptor:

- User token insertion (such as SAML)
- Integrity & Confidentiality (signatures, encryption/decryption)



Monitoring benefits of the service platform



Monitoring fully-integrated in Fusion Middleware Control

- Service monitoring across all SOA components: ESB, BPEL, Human Workflow, etc.
- Integral part of Enterprise Manager FMW Control
- Instances tracking (“what happened when”):
 - Each instance uniquely identified with ECID
 - Instances’ journey tracked through all SOA components: ESB, BPEL, adapters, workflow, ...
- “Error hospital”: to search, manage, resubmit failed instances (including batch)
- Can be used to execute and review unit tests

Fusion Middleware Control

Application Deployments

75% Up (6) Down (2)

Name	Status	Version
SOA-101-beta3	Up	11.0.0.0
oar_FODOrderProcessingApp	Down	11.0.0.0
soa-infra-b2bui	Up	11.0.0.0
HelloWorldApp	Down	11.0.0.0
default	Up	11.0.0.0
SimpleWorkflowApp	Up	11.0.0.0
default	Up	11.0.0.0
wsm-pm	Up	11.0.0.0

Fusion Middleware

100%

Targets not being Monitored 1

Name
Application Servers
ilk20
oc4j_soa
oc4j_admin
OC4Js
oc4j_soa
oc4j_admin

Farm Resource Center

Before You Begin

- Introduction to Oracle Fusion Middleware
- Understanding the Oracle Fusion Middleware Farm

Typical Administration Tasks

- Starting and Stopping Middleware Components
- Creating Additional Administrative Users
- Configuring Oracle Instances and Farms

Other Resources

- Configuring Routing Relationships
- Deploying an Application to OC4J Through Fusion Middleware Control
- Configuring Settings for Log Files
- Oracle Fusion Middleware Resources on OTN
- Oracle Fusion Middleware Forums

Flow Trace

Instance of SimpleWorkflowProcess

Instance ID: lpe6501
Initiated: 28-Oct-07 13:45:01 PDT

Flow Diagram

```
graph TD; Start(( )) --> receiveInput((receiveInput)); receiveInput --> SimpleWorkflowTask_1[SimpleWorkflowTask_1]; SimpleWorkflowTask_1 --> initiateTask[initiateTask]; initiateTask --> receiveComple[receiveComple]; receiveComple --> Switch{Switch};
```

Oracle SOA Suite 11g: SOA Service Platform

SCA as key enabler of the 11g integration:

- Single deployment unit (SCA composite)
- Single design-time environment
- Single runtime
- Single monitoring console

SERVICE PLATFORM

Native Eventing Capabilities



Event Delivery Network (EDN)

publish-subscribe abstraction

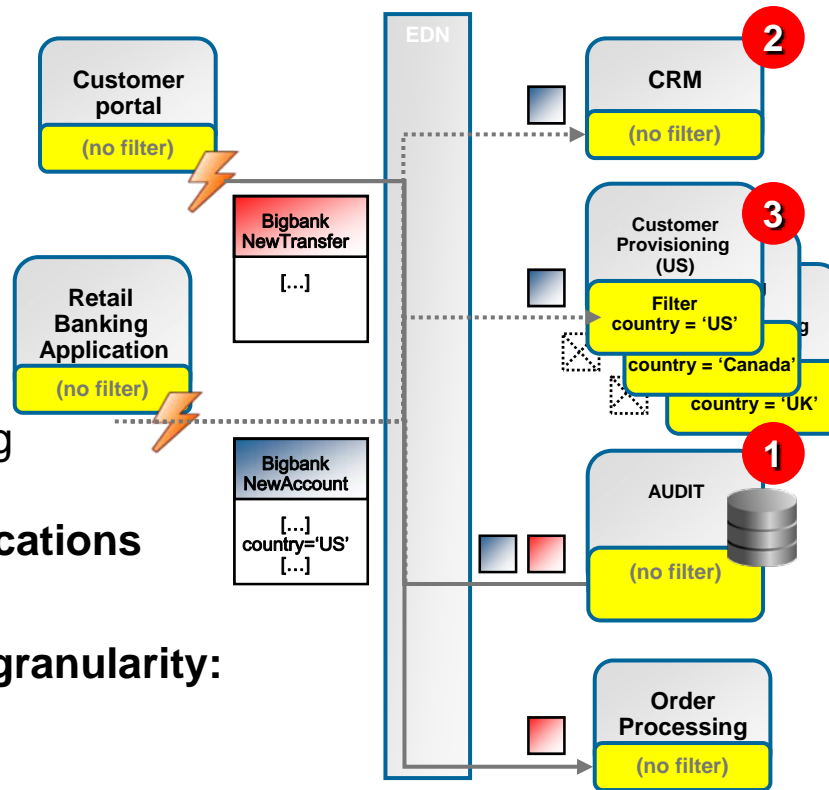
- Developers do not need to know about underlying eventing infrastructure

- Fully **declarative**

- No need for explicit wiring between components:
→ **truly decoupled applications**

- **3 level of subscription granularity:**

- 1 **Namespaces**
- 2 **Events Names**
- 3 **Content-based XPath filters**



```
<subscribe
xmlns:bb="http://bigbank.com/events"
name="bb:NewAccount">
```

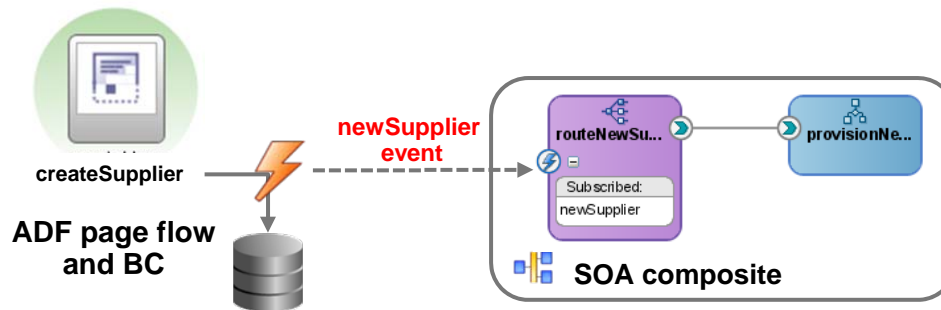
```
<subscribe
xmlns:bb="http://bigbank.com/events"
name="bb:NewTransfer">
+ XPath filter:
$in/tr:NewTransfer/tr:Address/po:Country='
US'
```

```
<subscribeNamespace
namespace="http://bigbank.com/events"
```

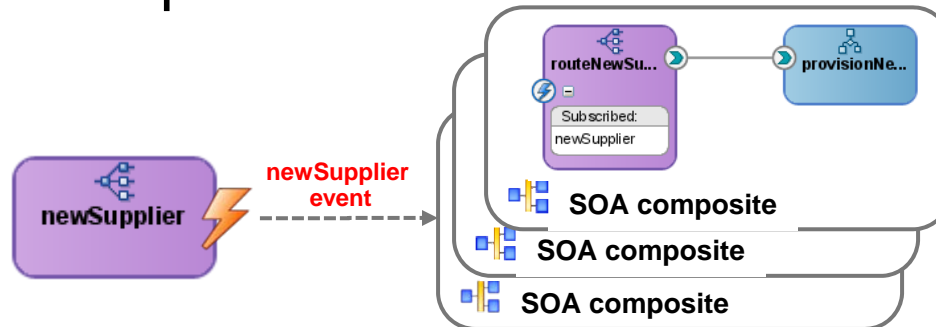
```
<subscribe
xmlns:bb="http://bigbank.com/events"
name="bb:NewTransfer">
```

EDN support across the stack

- Update operations on ADF-BC objects trigger events, initiating SOA composites



- ESB fan-out patterns



- Etc.

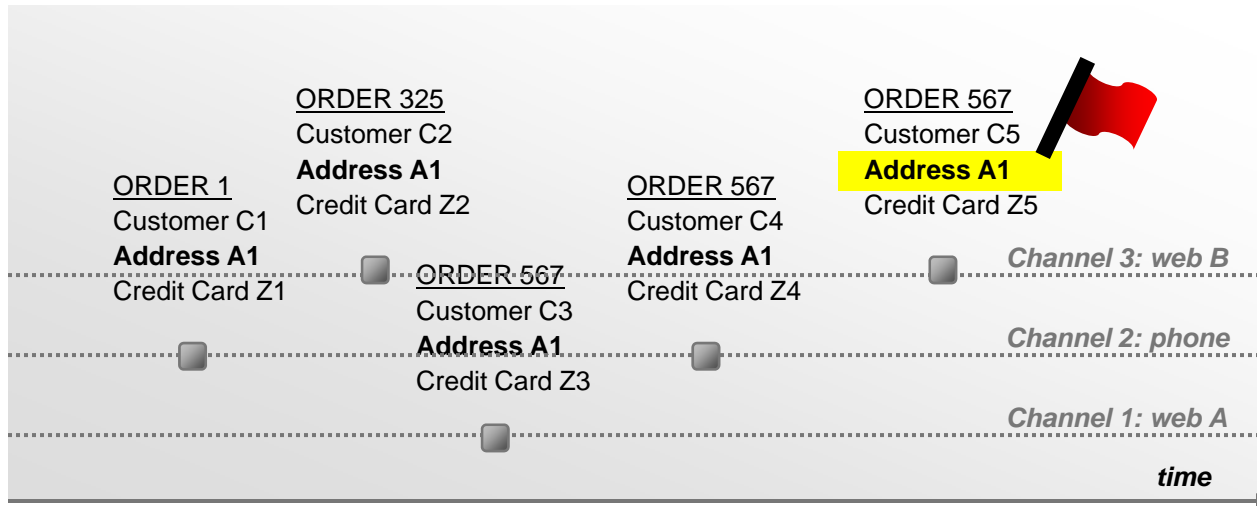
Complex Event Processing (CEP)

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

Complex Event Processing



```
CREATE STREAM S ( order_id int,  
                ship_address char(64),  
                credit_card_id BigInt,  
                [...]);
```

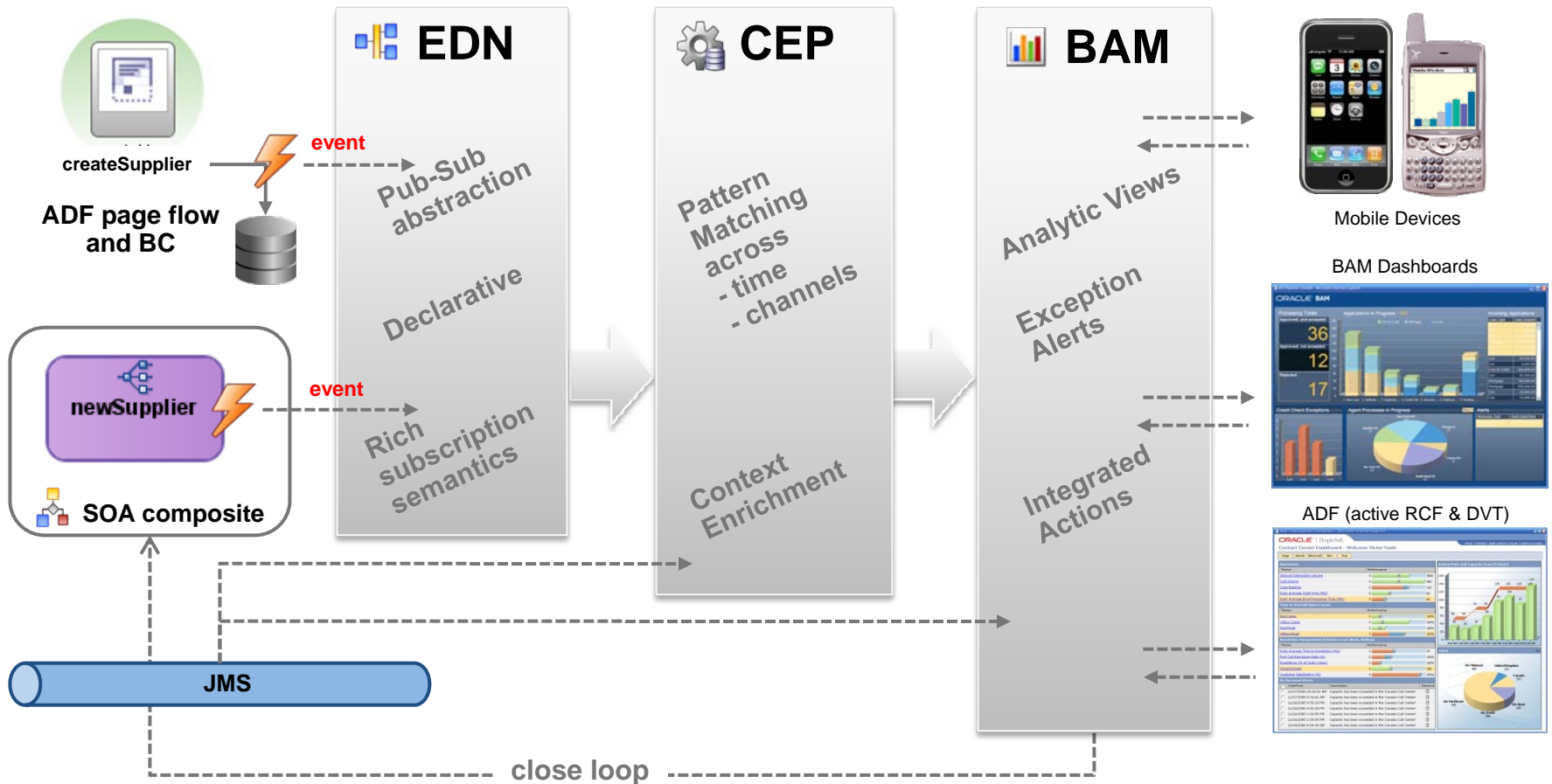
```
CREATE VIEW V1 (ship_address, credit_card_id) RStream (SELECT DISTINCT ship_address,  
credit_card_id FROM S [RANGE 180 DAYS]);
```

```
CREATE VIEW V2 (ship_address, Xcount)  
RStream (SELECT ship_address, COUNT(*) FROM V1 [RANGE 180 DAYS] group by ship_address;
```

```
CREATE QUERY Q SELECT Xcount, credit_card_id FROM V2, V1 WHERE Xcount > 5 AND V2.ship_address =  
V1.ship_address;
```

Real-Time Process Agility

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



What else is new?

Hundreds of new features
based on customers' feedback

“it's not just about the platform”



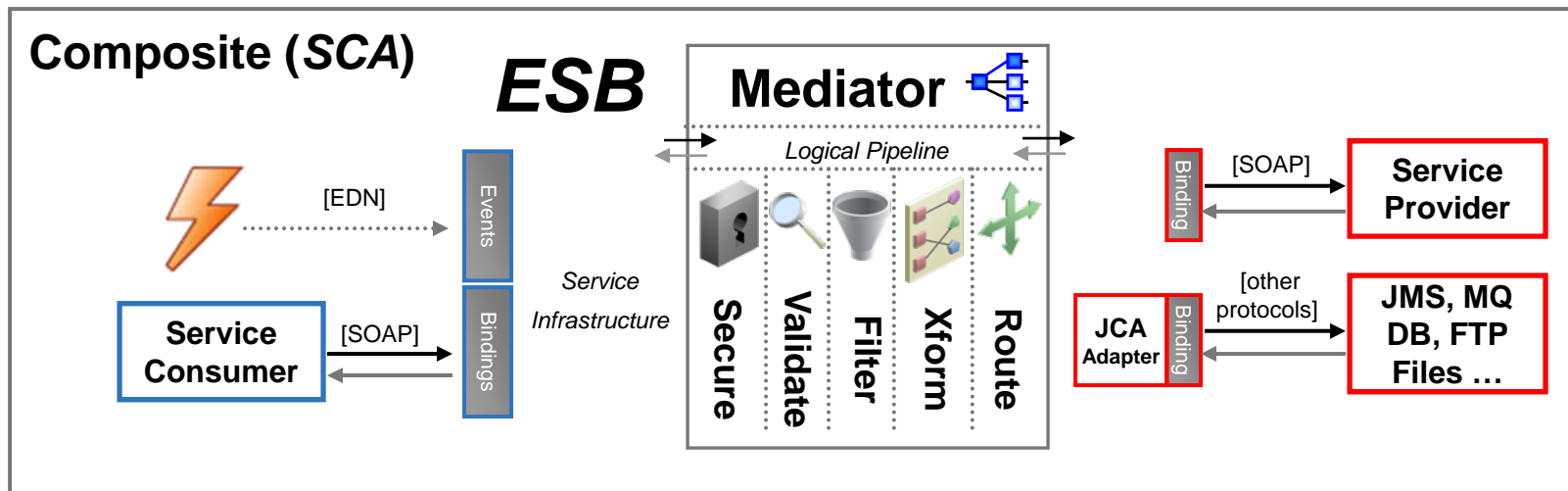
ESB Mediator Overview

- **Service Intermediation Infrastructure for SOA**

Reduce impact of provider changes with intermediate service layer

- **Functionality and Patterns**

- ❑ MEP: Synch/Async Request/Response, Store and Forward, Events
- ❑ Secure, Validate, Filter, Transform/Enrich, Dynamic Routing
- ❑ Exception Handling: Automated Retry, Batch Resubmit
- ❑ Dynamic and Static Code Translations: DVM, System XREF



BAM AS11gR1 Update

J2EE BAM Server

- ✓ ActiveDataCache
- ✓ ReportCache
- ✓ EventEngine
 - ✓ Notification Services
 - ✓ Invoking any WebService (BPEL)
 - ✓ Invoking ODI Scenarios
- ✓ HA for all services
- ✓ JPS Security
- ✓ EM Integration
 - ✓ Configuration
 - ✓ Monitoring

Framework

- ✓ OC4J Asynchronous Servlets with OHS support
- ✓ Complete i18n and l10n
- ✓ Automatic upgrade from 10.1.3
- ✓ Over 2100 unit tests
- ✓ Selenium tests for the webapps
 - OUI Installer
 - Error messages

J2EE BAM WebApps

- ✓ ActiveViewer
- ✓ ActiveStudio
- ✓ Architect
- ✓ Administrator
- ✓ Alerts
- ✓ ReportServer
 - ✓ Over 40 view types
 - ✓ Robust ActiveData Channel
 - ✓ Report load time improvements
- ✓ Online Help

ActiveData in ADF

- ✓ BAM DataControl
 - ✓ Design time flat and hierarchical queries wizards
 - ✓ Runtime support for push, polling, and paging
- ✓ ADF performance
- ✓ ActiveDataService
- ✓ Active ADF Table
- ✓ Active Graphs & Gauges
- ✓ Active Maps

J2EE EnterpriseLink

- ✓ WebServices API
 - ✓ WSIL & Dynamic WSDLs
- ✓ ODI (Sunopsis) Integration
 - ✓ Insert, Update, Delete
 - ✓ Read & Lookup
 - ✓ Batching & Transactions
- ✓ BAM Adapter for SOA Integration
 - ✓ BPEL-BAM Sensors
 - ✓ BPEL Partner Links
 - ✓ Business Events
 - ✓ ESB Pipeline Interceptors
- ✓ Direct JMS Connectivity
 - ✓ Queues & Topics
 - ✓ Batching & Transactions
- ✓ ICommand

ActiveData Push and Polling

- ✓ Messaging Framework
- ✓ ActiveDataCache
- ✓ ReportCache
- ✓ ReportServer
- ✓ BAM DataControl

New Human Workflow Features

ADF-based task forms

- Sophisticated task display forms using RCF components
- Task flows for multi-page forms

New out-of-the-box AJAX Worklist application

- Based on ADF Rich Client Framework
- Significant usability enhancements

MS Office/Excel integration

- Based on Oracle FDI plugin for Microsoft
- Initiate workflows from Excel
- Access worklist tasks from Excel

Security Enhancements

- Support for JPS and OVD (multiple sources for user/group attributes) means that you can keep separate the HWF user and roles from the corporate directory.
- Digitally sign task contents using certificates
- Finer-grain access-level policies (who can see and act on different part of a task)

State based WF routing

- Ability to use **Business Rules** to define complex task routing scenarios (previously had to use BPEL or custom code for this).

Task service enhancements

- Support for to-do tasks
- Support for sub-tasks

Improved Management and Monitoring

- End to end instance tracking from BPEL, mediator, workflow
- Engine configuration and monitoring in Enterprise Manager

Notification and Messaging

- Multi-channel, multi-device support: email, SMS, etc. thanks to integration with messaging service.
- Detection of auto-reply, badly formatted responses, spam

Reporting

- New report for task productivity and assignee time distribution

New Business Rules Features

Authoring: focus on usability

- Decision Table
- Rules authoring integrated with JDev
- Simplified user experience for common scenarios (simple vs. advanced mode)
- Nested conditions
- Complex actions
- Editor for building RL Functions

The screenshot shows a decision table editor for 'LoanAdvisorTable'. The table is titled 'Decision Table for loan advisor' and has a 'Show Details' checkbox. The table is divided into 'Conditions' and 'Actions' sections. The 'Conditions' section has two columns, R1 and R2. The 'Actions' section has three columns, R1, R2, and R3.

Conditions	R1	R2
LoanApplication.creditRisk	Medium	High
LoanApplication.creditRating	(350..550]	(0..350]

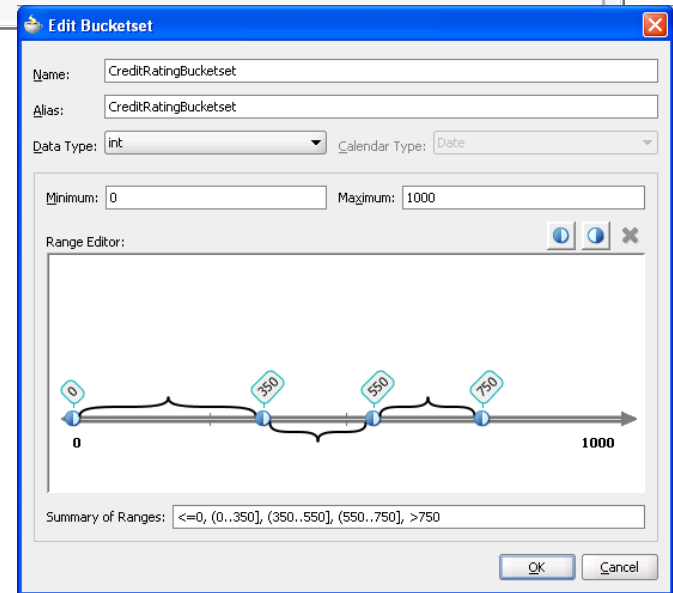
Actions	R1	R2	R3
Assert New LoanOffer (APR:?, ap...)	4.0, "Premium Bank"	8.9, "Bankrupters Bank"	

Decision Service

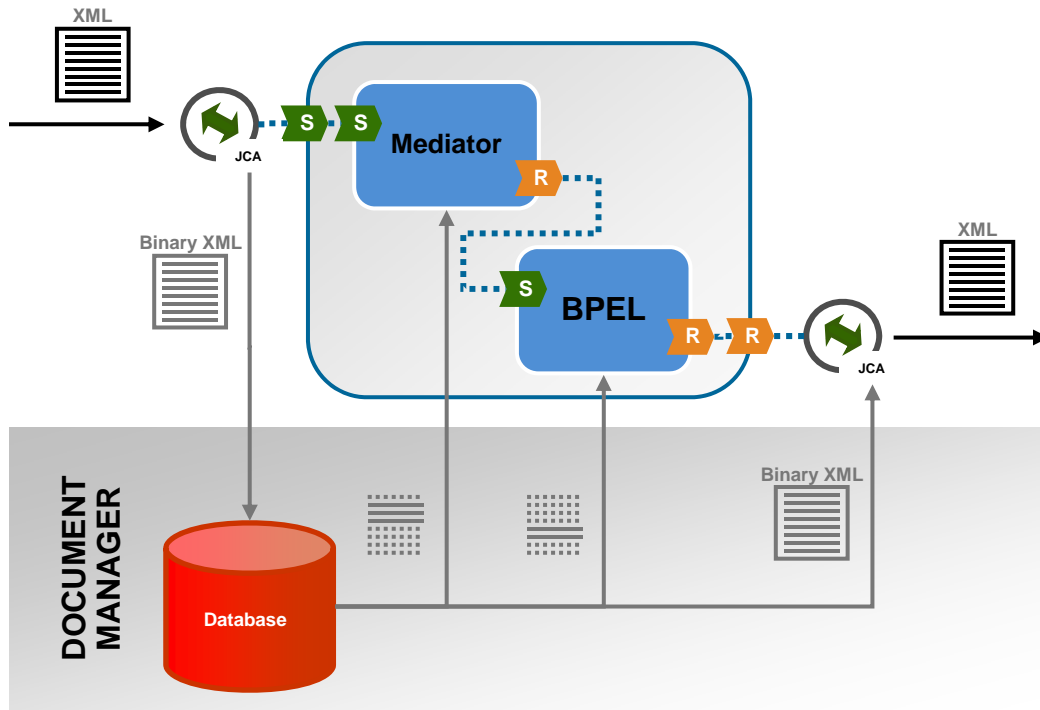
- Simplified experience for BPEL users
- Support for primitive types (in addition to XML)
- Service Editor - specify inputs, outputs, rulesets, etc.

Repository

- MDS as Rules Repository
- Rule activation/de-activation
- Rule effective period



Large Document Handler



Samples:

adapters\adapters-file-102-File Adapter XML Debatching
adapters\adapters-file-103-File Adapter Scalable DOM
adapters\adapters-ftp-101-FTP Adapter Debatching

Most SOA products, XML and messaging-oriented, do not handle well large documents. Oracle SOA Suite covers all use cases using 3 mechanisms:

1. Scalable DOM
2. Adapter debatching (including XML)
3. XML chunk reading

Scalable DOM:

- one-time infrastructure config only
- Pages to DB large payload
- Fetches only what is required, when required
- Broadband XML: Uses binary XML and compact DOM for perf

Notification Services

- Provides SOA customers with rapid enablement for innovative messaging services
 - Custom alerts
 - Multi delivery type interaction
- Can deliver and receive messages from multiple channels
 - SMS, IM, Email, Voice
- Composition capabilities with SOA
 - Outgoing notifications from a BPEL process
 - Outgoing and incoming messages for tasks assigned to users

Updated Standards Support

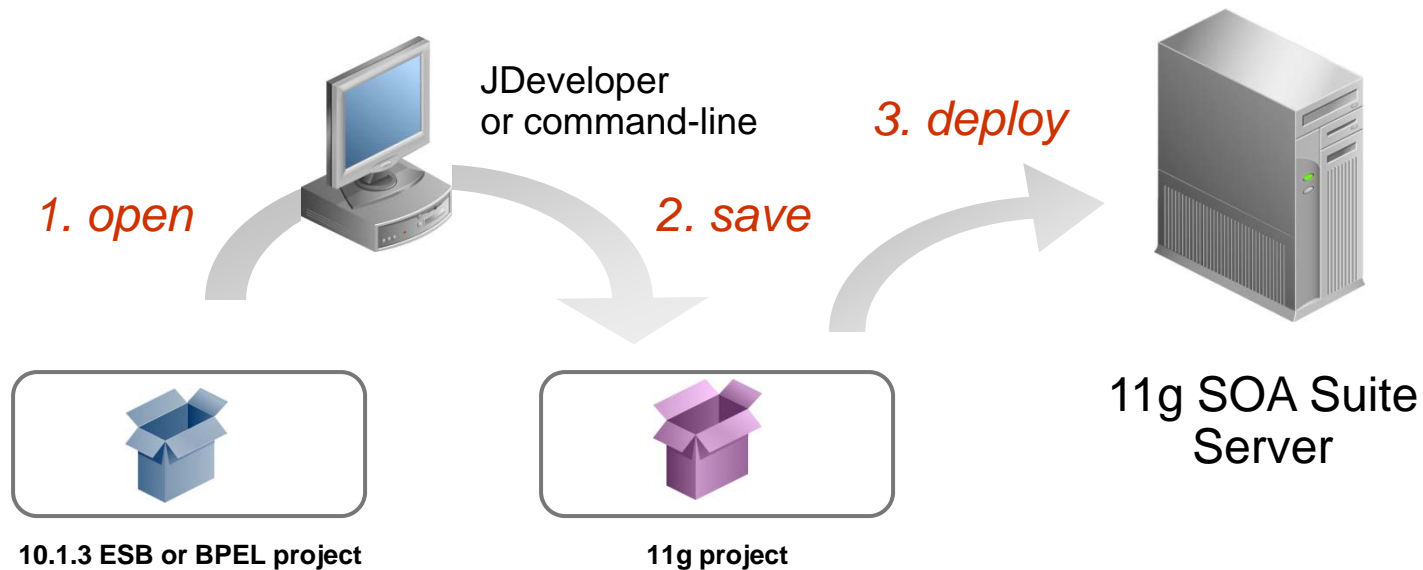
- SCA
- BPEL 2.0
- WS-ReliableMessaging
- WS-PolicyAttachment
- WS-Addressing*
- WS-MetadataExchange
- WS-SecurityPolicy
- Etc.

Upgrade Path



10.1.3 → 11g Upgrade Path

Transparent project upgrade in JDeveloper, or from command-line.



Oracle SOA Suite 11g

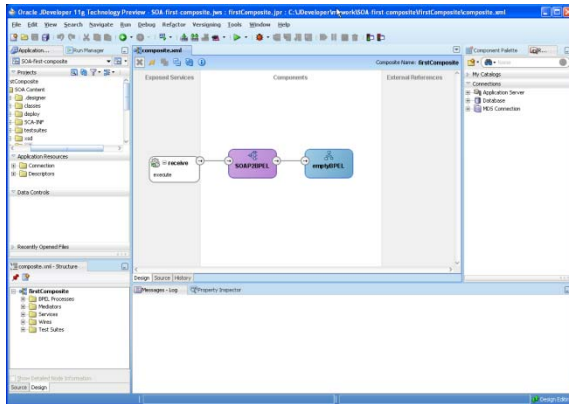
- 1 Natural evolution from 10.1.3**
- 2 Leverages SCA to deliver the industry first full Service Platform**
- 3 Offers a range of new features based on customers' feedback**

Demo



Demo: Design, Deploy, Test/Monitor

1. Design (Adapter + ESB + BPEL)



JDeveloper

2. Create EAR

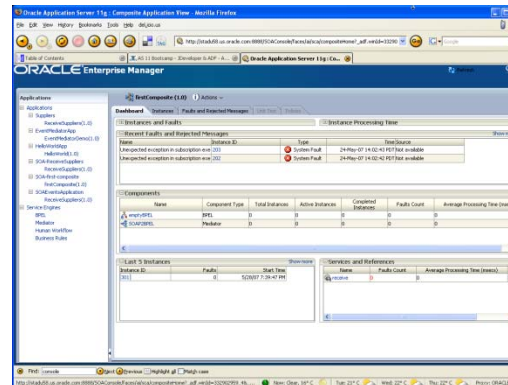


3. Deploy

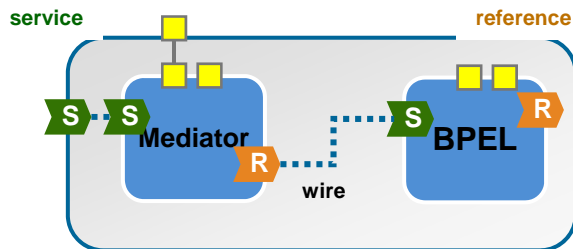


11g SOA Suite Server

4. Test & Monitor



SOA Console (web browser)



SOA composite

Learn More

www.oracle.com/soa

- Whitepapers
- Webcasts
- Buyers Guides
- Analyst Reports
- Case Studies

▲ ORACLE FUSION MIDDLEWARE

▶ Application Server	▶ Content Management	▶ Middleware for Small & Medium Businesses
▶ Business Integration	▶ Data Integrator	▶ Oracle Fusion Middleware for Applications
▶ Business Intelligence	▶ Developer Tools	▶ Portal
▶ Business Process Management	▶ EDA Suite	▶ Service Delivery Platform
▶ Coherence In-Memory Data Grid	▶ Identity Management	▶ SOA Suite
▶ Collaboration Suite	▶ Master Data Management	▶ WebCenter

- Podcasts



- Technical Information & Forums

- www.oracle.com/technology/products/middleware/index.html

Backup Slides



What is SOA?

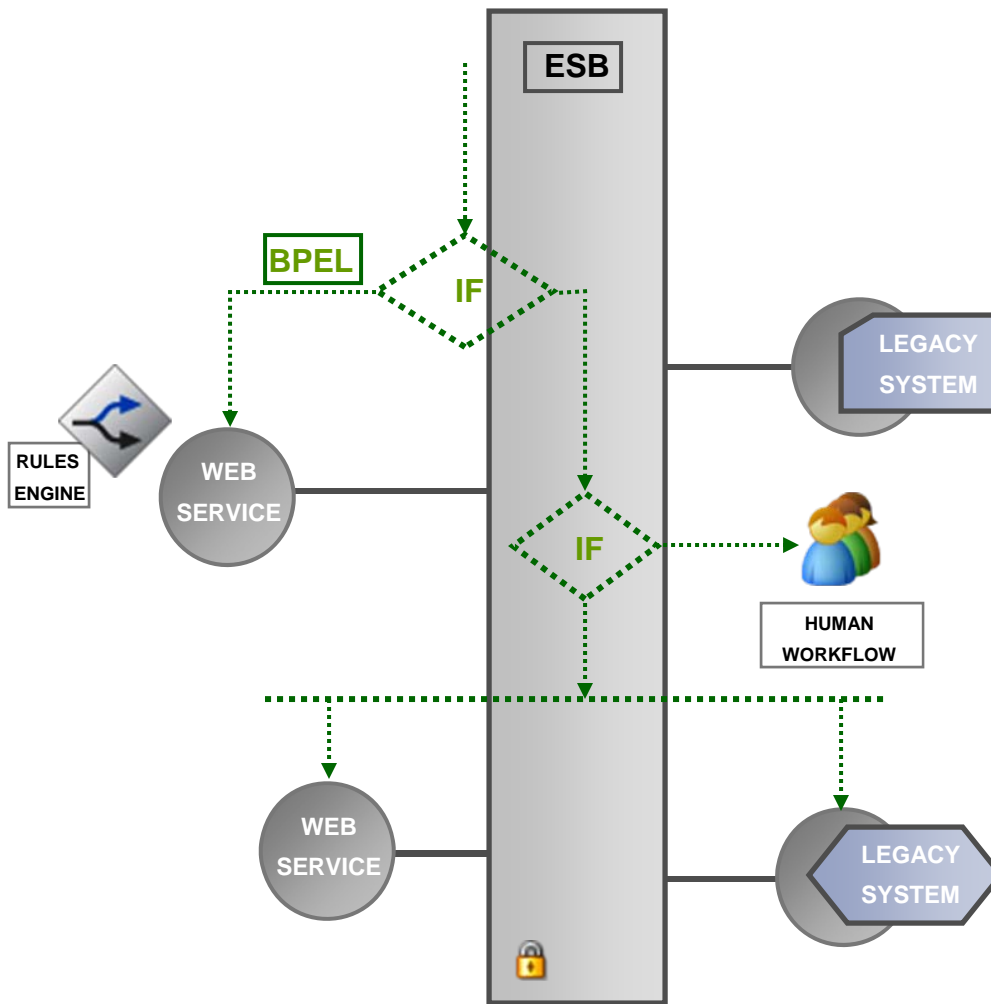
Service-Oriented Architecture is an approach to:

- Rationalize enterprise integration
- Enable new breeds of process driven applications
- Re-use existing services to build new value

*mainframe credit check + CRM + web portal + extra logic
= new online instant credit check*

- SOA heavily relies on standards to ease system connectivity and preserve investment:
 - Standard data format
 - Standard interface definitions
 - Standard wire protocols
 - Standard security protocols

Basic Components of a SOA Infrastructure



Build/re-use Services
Web or Legacy Services

Connect
ADAPTERS

Route & Transform
ESB

Externalize business rules
RULES ENGINE

Orchestrate
BPEL/BPM ENGINE

Involve human beings
**HUMAN
WORKFLOW**

Secure
**GLOBAL SECURITY
FRAMEWORK**