



SOA Suite 12c - roadmap

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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.

Agenda

12c Drivers

12c Themes

11g→12c upgrade



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12c Drivers

Market:

- It's no longer "why SOA?" but "how SOA?"
- Cloud solutions are raising expectations around scalability and usability

Ongoing trends:

- Constantly increasing volumes
- More mainstream/conservative, looking for simple, mature, solid and stable products
- Rapid adoption of Service Bus among existing SOA Suite customers
- Development productivity & lifecycle expectations

New trends:

- **Mobile** initiatives are impacting all areas of IT and integration is a major part of it
- **Cloud** applications sprawling everywhere
- **Big Data** is getting a lot of attention and integration has a role to play

Steady increase in volumes

Gvt Agency

- OSB between website and mainframes
- **100+ million msg/day**

OSB

Tax Authority

- **30-38 million msg/day**
- **1.6 M msg/hour**
- **440 msg/ second**

OSB

Logistics Co.

- **60 million BPEL instances/day**
- 20 million with persistence on
- 5TB dehydration database

BPEL

Wireless Op.

- **"Just getting started"**, couple BPEL processes
- **2-3 million instances a day!**

BPEL



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12c Themes

Listening to users and making it easier to deploy, manage and use the wealth of features in Oracle SOA Suite

User Feedback

- Industrial SOA
- Developer Productivity



...and delivering innovation to support new trends

Innovation & Industry trends

- Mobile Enablement
- Cloud Integration
- Embracing Big Data



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Agenda

12c Drivers

12c Themes:

- Industrial SOA
- Developer productivity
- Mobile enablement
- Cloud Integration

11g→12c upgrade



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Diagnosability: new EM SOA Dashboard



Focus on exceptions, improve responsiveness of EM

1. Focus on displaying exceptions rather than business-as-usual
2. Better responsiveness of EM by lazy loading of regions with DB data
3. Consolidated cluster-level view/metrics

The screenshot displays the Oracle Enterprise Manager SOA Dashboard with several key components:

- Key Configuration:** Shows a profile named 'ALL' with tracking set to 'Production' and a 'Default Time Window' of 'Last 24 Hours'. It indicates that 'EDN Paused'.
- Business Transactions And Faults:** A bar chart titled 'Fault Counts' for the 'default Partition'. The chart shows two bars: one green bar reaching approximately 2.0 labeled 'Recoverable Faults', and one red bar reaching approximately 1.0 labeled 'Non-Recoverable Faults'.
- SOA Runtime Health:** Shows a status for 'soa-infra (AdminServer)' which is 'Initialized Successfully'.
- System Backlogs:** Displays 'Messages in Queues' for various BPEL components: BPEL Invoke (0), BPEL Callback (0), Mediator Parallel Routing (0), EDN WLS JMS (0), and EDN AQ JMS (0). A link 'Show Backlogs' is provided.
- Composites and Adapters Availability:** A section showing the status of composites. It includes a summary: 'All Composites are UP' and 'All adapter service endpoints are UP'. It also lists specific alerts: 'Composite: Start-Up Errors 1' and 'EIS Connectivity Errors 2'.
- Fault Alerts:** A table listing recent fault alerts. The table has columns for 'Rules' (radio buttons for All, System, Partition, default), 'Alert ID' (e.g., test2), 'Fault Count' (e.g., 12), and 'Last Occurrence Date' (e.g., 11/8/2012). One entry is highlighted: 'kirit_all_faults_over_3' with 8 faults last seen on 11/6/2012.

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Diagnosability: EM Flow Instances & Fault Recovery



Quickly find specific instances and their exact state

- Improved instance search capabilities
- Ability to save/bookmark queries
- Rationalization of numerous instance “states”
- Clear status of processing status by replacing composite instances with flow instances
- Improve bulk recovery by grouping of faults with different criteria
- Reduce DB growth by allowing to persist state only on error

The screenshot displays two main Oracle Enterprise Manager Cloud Control 12c dashboards:

- Flow Instances Dashboard:** Shows a table of flow instances with columns: Flow ID, Initiating Composite, Flow State, Created, Last Updated, and Partition. One row is highlighted in red with the status "Recovery".
- Error Hospital Dashboard:** Shows a table of faults with columns: Error Message, Fault Owner, Composite, Fault Time, Recovery, and Logs. One fault is shown with the message: "BusinessFault : {http://services.oim.com/Negative} CreditRatingService.FaultFlow [1.0]".
- Search Options and Filter Panel:** A sidebar on the right contains a "Search Options" section with filters for "Instances Within a Time Range", "Time (Options...)", "Composite Starting", "State Active", and a "Faults" dropdown. A red box highlights the "Add/Remove Filters" button.
- Fault Statistics Table:** A table titled "Fault Statistics - For All Instances (3 Days)" showing recoverable and recovered fault counts for various composites.

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industrial SOA

Diagnosability: adapters info in EM

Large portion of “SOA” support calls are due to applications issues

The screenshot shows the Oracle Enterprise Manager (EM) interface for diagnosability reports. It includes sections for Configuration Reports, Deployment Configuration Type (soa_server1 Active), EIS Connectivity (JndiName: eis/FileAdapter, ControlDir: \${user.dir}, IsTransacted: false), and Monitoring Reports.

Monitoring Reports: A red box highlights the "Managed Connections" table under the "Monitoring Reports" section. The table tracks connections across three servers: soaCluster1 (soaserver1, soaserver2, soaserver3). The last row for soaserver3 has a red circle with a question mark icon over it, indicating a problem. A red box also highlights the "Service Properties" and "Activation Properties" for the endpoint.

Node	EIS Connection Status	Managed Connections				Most Recent Time Stamps		
		Currently Open	Avg No. Used	Peak Load	Max Pool Size	Last Msg Publication	Last Service Activation	
soaCluster1	(14 sec)	2	6	12.3	20	Jan 11, 2011, 9:30:35 PM	Jan 11, 2011, 6:09:30 PM	
soaserver1	(4 min 16 sec)	2	5	10	20	Jan 6, 2011, 8:30:45:30 PM	Jan 6, 2011, 4:40:24 PM	
soaserver2	(4 min 16 sec)	2	8	12	20	Jan 11, 2011, 8:30:45:31 PM	Jan 11, 2011, 6:08:30 PM	
soaserver3	(14 sec)	2	5	15	20	Jan 11, 2011, 9:30:30:35 PM	Jan 11, 2011, 6:09:30 PM	

Endpoint config summary

endpoint metrics help identify troublesome applications & services



industrial SOA

Enterprise Scheduler Service (ESS)

Out-of-the-box scheduler

- Powerful scheduler initially built for Fusion Apps now exposed to SOA users
- Scheduling screens in Enterprise Manager
- Pre-built jobs to:
 - Initiate sync/async web-services
 - Activate/deactivate adapters
- Also offers ability to:
 - Schedule ESS jobs from BPEL (JDev)
 - Schedule user-created jobs (PL/SQL, EJB, etc.)
 - Programmatically create, schedule and query jobs through API

The screenshot shows the 'Submit Job Request' screen in the ESSAPP application. The 'Job Request Details' section has a 'Description' field. The 'Job Definition' section shows 'JobWithParams' selected. The 'Parameters' section lists several parameters with their values: parameter_2 (10), parameter_1 (foo), and others like SYS_EXT_executa..., SYS_reprocessDef..., SYS_EXT_executa..., SYS_inputlist, SYS_retries, SYS_priority, SYS_EXT_executa..., and SYS_preProcess. The 'Schedule' section is configured to 'Specify schedule' with a 'Frequency' of 'Monthly'. It includes fields for 'Start Date' (2/2/12 6:13 PM), 'End Date' (checkbox checked), and a 'Customize Times' button. A note at the bottom says 'Enable this flag to save schedule for the selected application.' and there is a 'Save Schedule' checkbox.

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EDN 12c - Improvements

Better Scalability & Flexibility

- Fine-grained tuning for greater scalability:
 - **Events mapped to any number of JMS topics (vs 1 queue in 11g)**
 - Mapping is purely an admin/config/tuning task (no design change)
- Better leverage underlying messaging provider
 - **Extend EDN beyond ADF and SOA (via JMS & EDN APIs)**
 - **Customers can leverage standard features of JMS infrastructure (ex: Store-And-Forward for cross-domain forwarding)**
 - SOA JMS Adapter employed esp. for distributed features
 - Continue to support both AQ JMS and WebLogic JMS



Exalogic - SOA Optimization Strategy

Continuous efforts to make Exalogic the best platform for SOA

- **Address database bottleneck**
 - Reduce direct database interaction (round trips + size of data)
 - Keep state in Coherence with deferred write-behind for long running transactions
- **Accelerate XML Processing**
 - Optimize XML processing (DOM creation, traversal, copy) with XDK
 - Optimize Large (>1MB) XML processing with XDK
 - Stream and remove serialization where possible
- Profile with, drive, and leverage lower stack Exalogic optimizations (automated test framework)
- Profiling done using 3 key scenarios (complex orchestration, large payload, messaging with routing and transformation)

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Exalogic: enhancements

Focus on Performance and Lifecycle

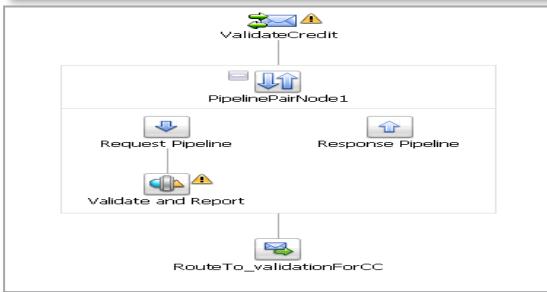
- 11gR1 PS5 & PS6:
 - **Database:** cache BPEL state/messages in Coherence, async audit trail, DB adapter coherence caching
 - **XML/Other:** SDOM large payload optimizations, reduced SDOM CPU usage, better XSLT parallelization, better file adapter parallelization + flash control file, OTD cert
 - **Lifecycle:** OVAB support for SOA, SOA/OSB EDG for EL, scripted provisioning with OOTB settings tuned for EL
- 12c:
 - **Database:** BPEL compiler optimizations to reduce large variable storage, expand async audit capabilities across SOA, Oracle NoSQL prototype
 - **XML/Other:** SDP/Infiniband binding support, RDMA prototype for large documents
 - **Lifecycle:** OVAB support for OSB and ESS

New Service Bus web-based console in 12c



industrial SOA

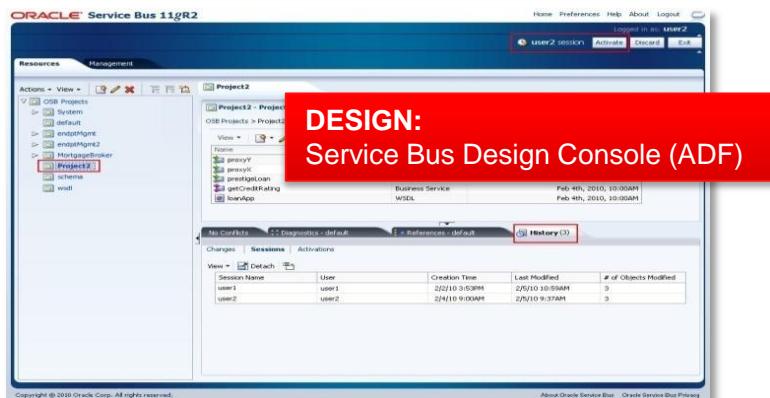
**11g: single console to
configure, manage & monitor
(shared by different roles)**



12c: clear separation of roles

The screenshot shows the Oracle Enterprise Manager 11g Fusion Middleware Control interface. The main window displays the 'WebLogic Domain' page under the 'WebLogic Domains' section. It includes sections for 'General' (with details like Admin Server Host: 192.168.2.2, Admin Server Listen Port: 7001) and 'Services' (listing various components like AdminServer, JMS, and WebLogic Page Application). A red banner at the top right reads 'MONITOR: EM Fusion Middleware Control'. The status bar at the bottom indicates 'Setup | Help | Log Off' and 'Last Refreshed Jan 26, 2009 11:10 (1 min ago)'.

MONITOR: EM Fusion Middleware Control



DESIGN:

Service Bus Design Console (ADF)



Improved SOA Composer

New DT@RT capabilities

- New framework provides consistency to SOA web-based interfaces (sandbox, sessions, etc.)
- Ability to attach sensors at runtime
- Visualization of composites

The screenshot displays three main components of the Oracle SOA Composer interface:

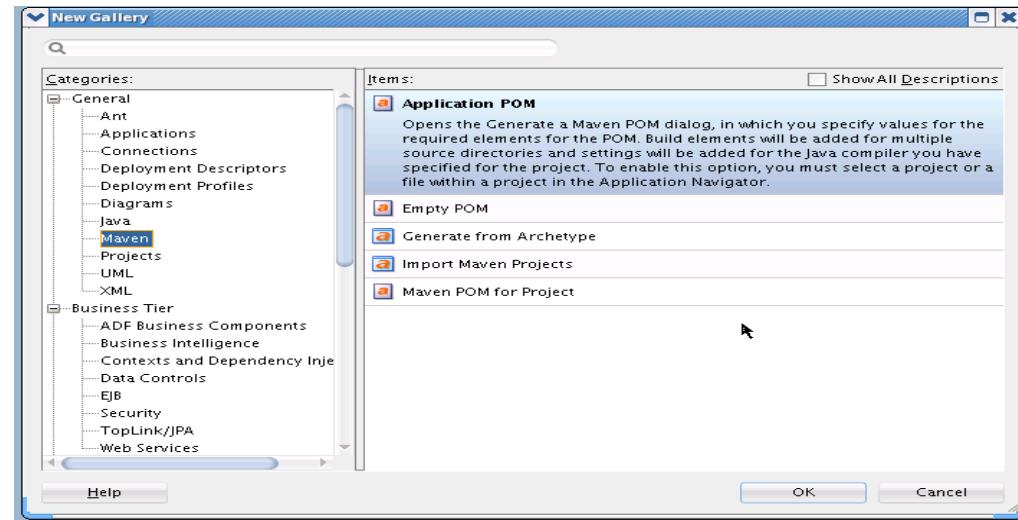
- Expression Builder:** A central window titled "Expression Builder" showing the expression `xp20:upper-case($in.payload/trns:acquireTask/task:task/evidence/ns6:taskStatus)`. It includes a tree view of variables and a list of string functions like `format-string`, `get-content-as-string`, and `upper-case`.
- Deployment View:** A sidebar showing the deployment structure, including "SOA Infra", "default", and a selected composite named "SimpleApproval_rev1.0".
- Composite Sensors:** A table titled "Composite Sensors" listing two entries:

Name	Type	Source	Expression	Filter	Actions	JMS Action target
ownerUser	Service	client.acquireTask	\$in.payload/trns:acquireTask/task:task:ownerUser	EM	EM	
taskPriority	Service	client.acquireTask	\$in.payload/trns:acquireTask/task:task:priority	EM	EM	
- Composite Diagram:** A large window titled "Composite Diagram" showing the visual representation of the composite process. It includes nodes like "OrderPending", "OrderProcess", "orderprocessor", "Internal", and "Approve", connected by various flow lines.

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Continuous Integration with Maven & Hudson

- OOTB Maven support for building SOA projects *
 - Package
 - Compile
 - Deploy
 - Install
 - Run regression tests
- Integration with SVN, CVS, and other SCCS system



Agenda

12c Drivers

12c Themes:

- Industrial SOA
- **Developer productivity**
- Mobile enablement
- Cloud Integration

11g→12c upgrade



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Developer
productivity

Developer Productivity

“We can do it – now we want to do it faster”

Focus on:

- Initial experience
- Repeatability
- Handling always larger projects & artifacts
- Maturation of SOA development practices

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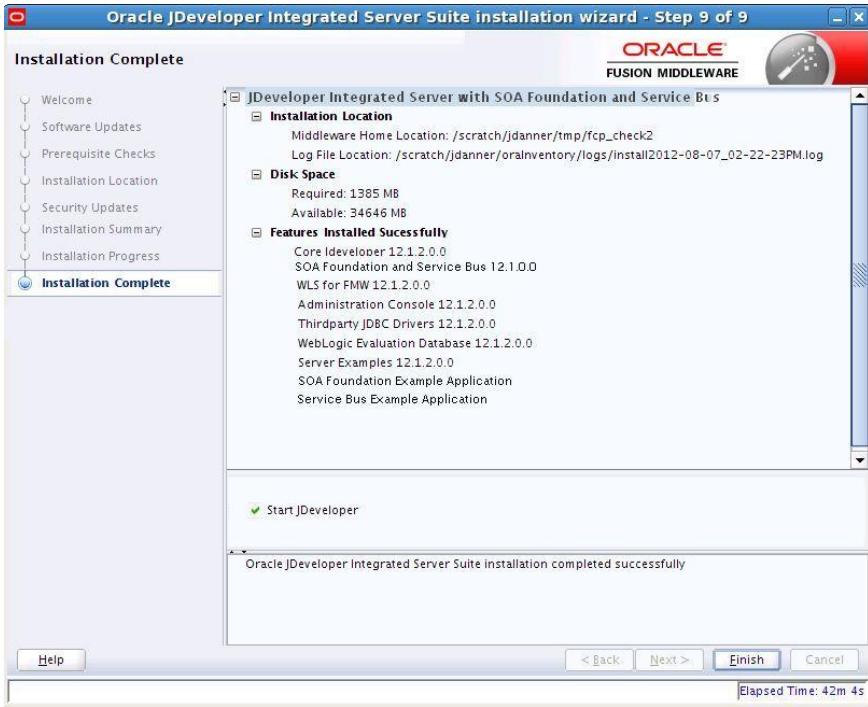
Developer productivity

Dev. Productivity: Install Single download for JDeveloper and DB/WLS/SOA Suite

12c install: 1 single package

- JDeveloper
- WebLogic
- SOA Suite (incl. OSB)
- JavaDB
- Enterprise Manager

'30 minutes to Hello World'





Developer productivity

Dev. Productivity: Service Bus in JDeveloper

A single IDE for all patterns

The screenshot displays two JDeveloper sessions side-by-side. The left session, titled 'backend service.jpr', shows the 'Message Flow' editor for a 'CreditCheckService'. It features a 'Request Pipeline' with a 'stage1' node containing an 'If Then' condition. The 'Replace' option is selected in the 'Property Inspector' for one of the branches. The right session, titled 'DemoApp.jws', shows the 'Composite' editor for a 'LoanProcess'. It includes a 'LoanGateway' service and several business processes ('NormalLoanApprov...', 'ManagerApproval...', 'CreditCheck') connected to a central 'LoanProcess' component. The 'Component Palette' on the right provides a catalog of Service Bus Message Flow components such as Stage Actions, Communication, and Routing Options.

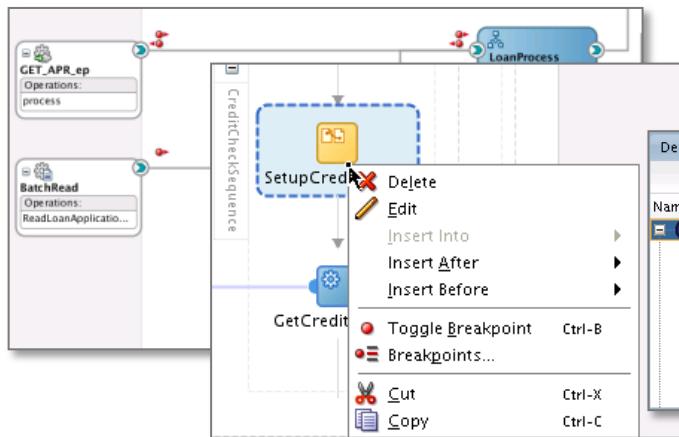
- Bring all design in JDeveloper
- Align terminologies
- Share artifacts (maps, adapters, etc.)



Developer productivity

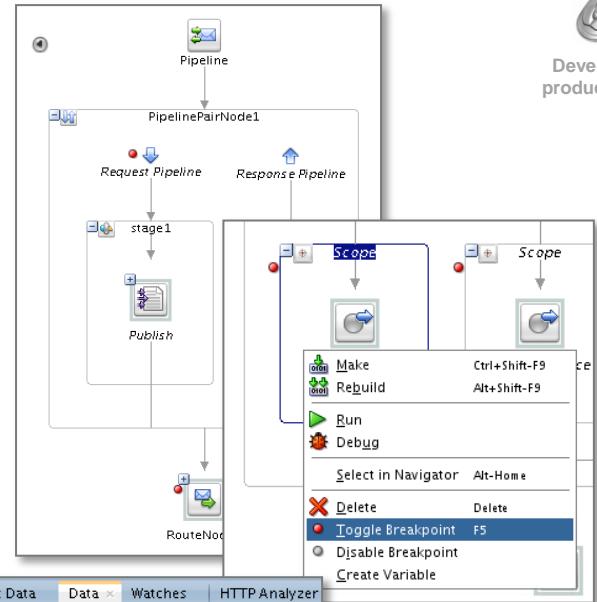
Dev. Productivity: Debugger

- Same experience across OSB, BPEL, BPMN
- Local or remote debugging
- Set break points, trace message flow in Composite and process flow in BPEL/BPMN
- View raw messages (SOAP & Non-XML) entering/leaving the composite
- Change variables in BPEL process while debugging
- View transaction boundaries



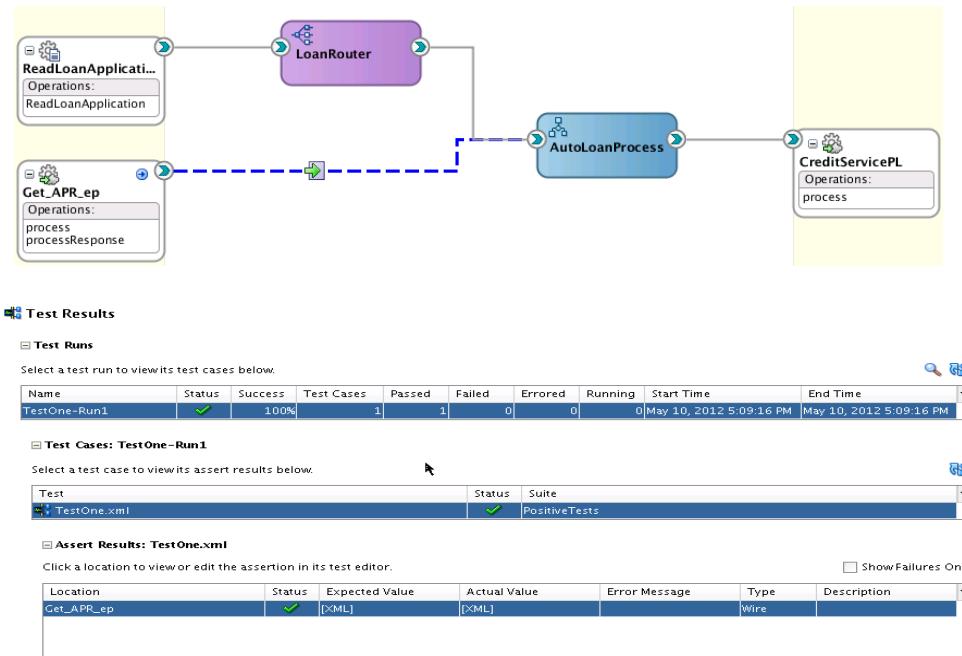
Debugging: AutoLoanApp.jpr - Log | Breakpoints | Smart Data | Data | Watches | HTTP Analyzer

Name	Value
(x) this	CreditCheckReport CreditCheckRequest payload name SSN CurrentCustomer DelinquentCustomer GetRiskLevelInput
	<creditRequest>... John Doe 1111111



12c SOA Tester

- Develop & test without switching to EM
- Auto generate input message or load from sample
- Assert request, response, and fault messages
- Emulate response & fault messages
- Delayed emulation
- Validate format conformance using Java regular expressions
- Accelerate execution using fast forwards
- Initiate tests with real-world payload*
- Generate test cases using real world instance data *



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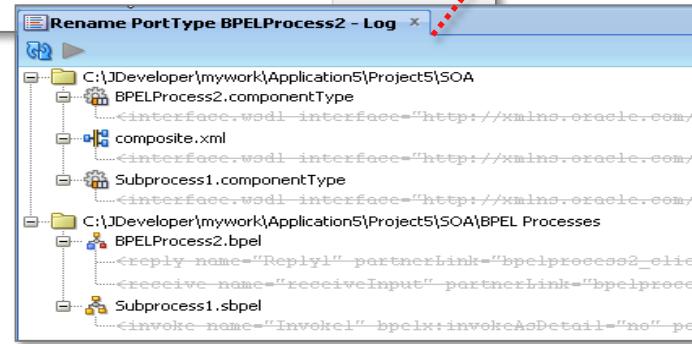
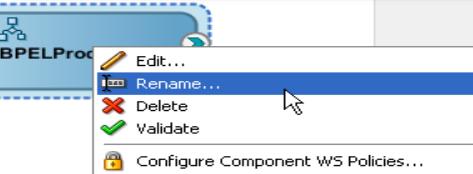
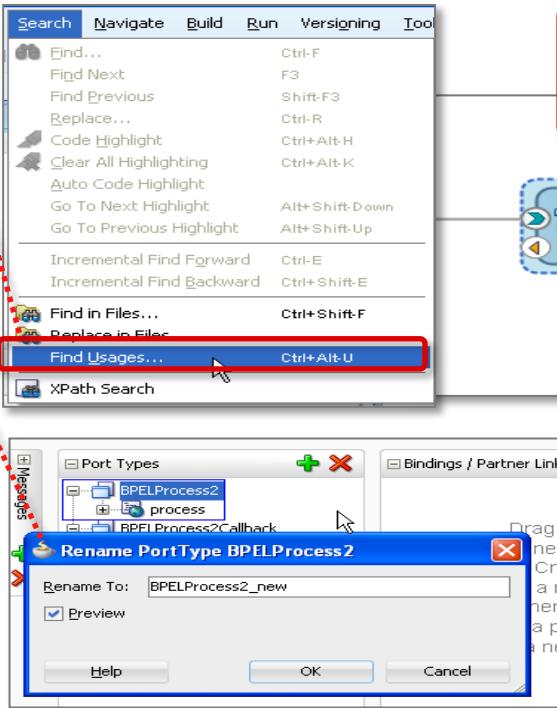
Dev. Productivity: Refactoring

Aligned with Java capabilities

Find Usage

Available for:

- Components
- Composites
- BPEL Activities
- WSDL, EDL
 - Etc.



Rename
Move
Delete

All references within
the SOA project are
updated
automatically

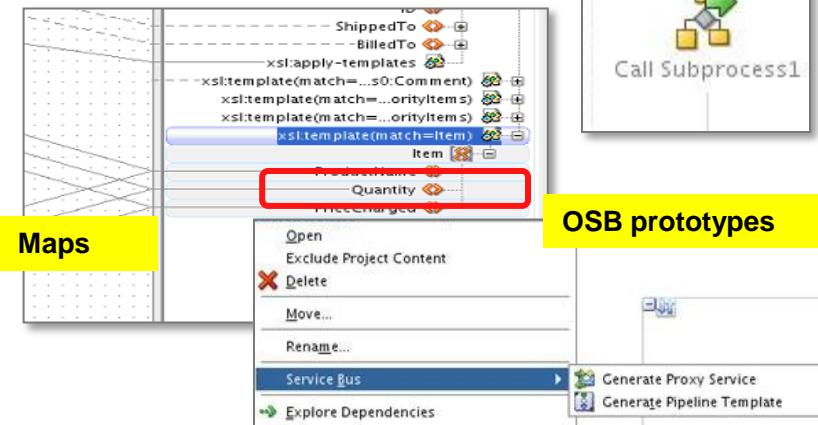
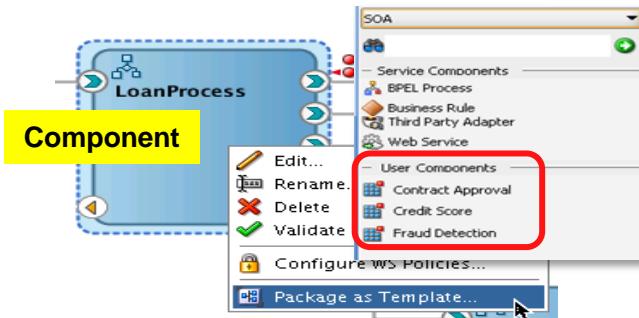
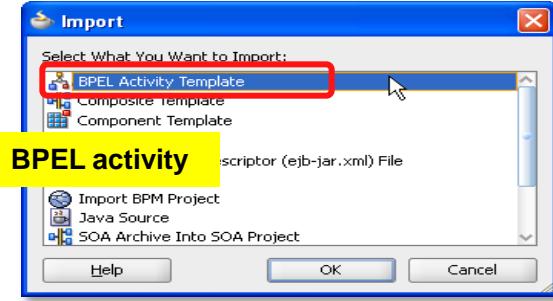
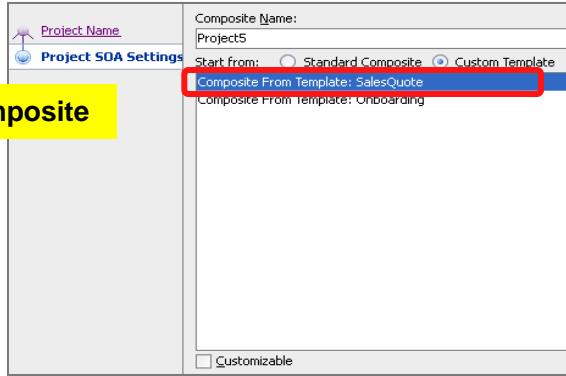


Developer productivity



Templates & sub-processes

Re-use at all levels





Developer
productivity

Dev. Productivity: Continuous Integration

Unit testing improvements & Maven support

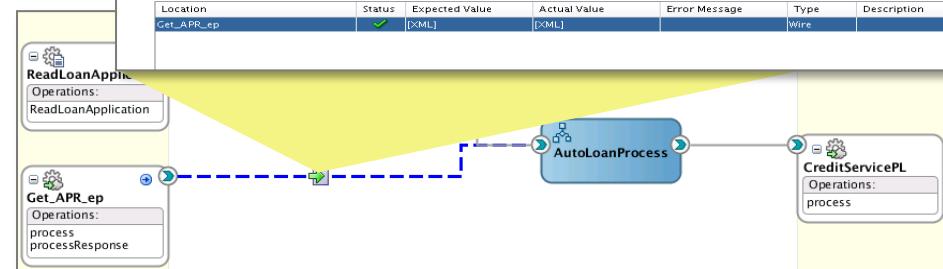
Unit test:

- Develop & test without ever switching to EM
 - Auto generate input message from sample
 - Assert request, response, and fault messages.
Java regular expression to test returns
 - Emulate response & fault messages
 - Delayed emulation

The screenshot shows the 'Test Results' interface. It displays a table for 'Test Runs' with one entry: 'TestOne-Run1' (Status: Success, 100%, 1 Passed, 1 Failed, 0 Errored, 0 Running). Below it, the 'Test Cases' section shows 'TestOne.xml' (Status: Passed) under 'PositiveTests'. The 'Assert Results' section shows an assertion for 'Get_APRequest' with 'Expected Value' and 'Actual Value' both in XML format.

Maven:

- Auto-generation of Maven artifacts for SOA projects (package, compile, deploy, test...)
- Easily integrate SOA design in Continuous Integration frameworks (Hudson, ...)



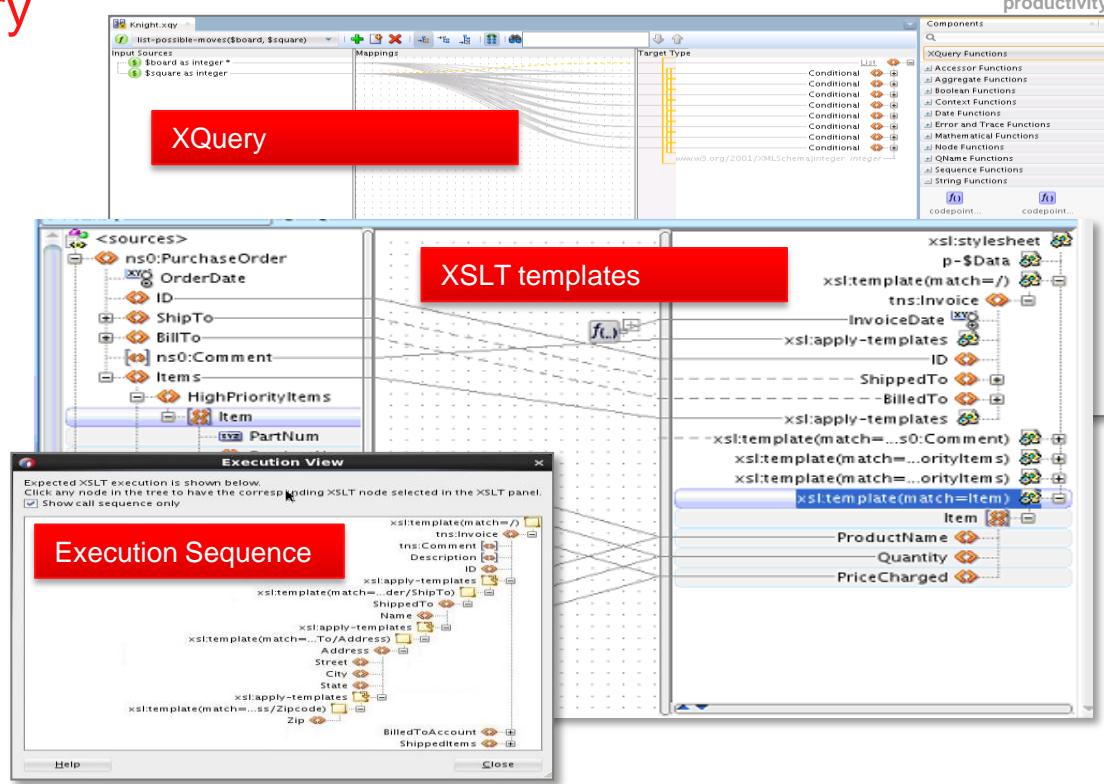
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Dev. Productivity: Mapping Improvements

Large maps, XSLT, XQuery

- XSLT or XQuery? → User preference
- 100% support for XSLT and XQuery 1.0
- Graphical support for largest maps (incl. AIA and FA)
- Layered customization
- Re-usable templates
- Source & target structures from sample XML
- Refactoring abilities
- XSLT execution sequence



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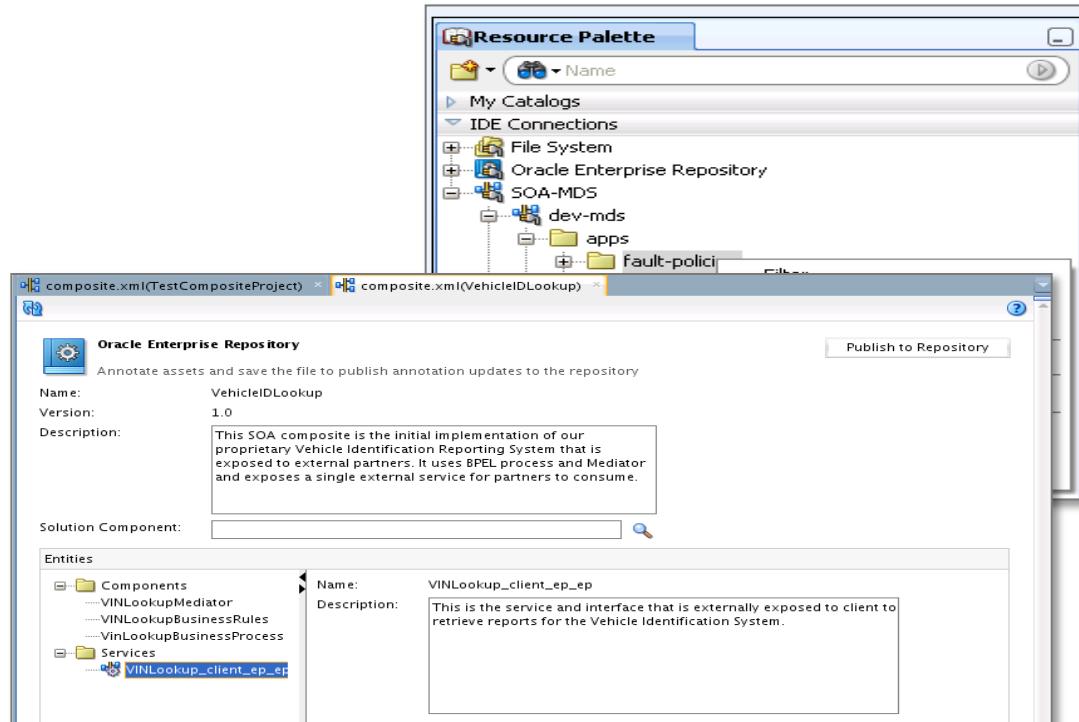


Developer productivity

Sharing, discovery & re-use

Graphical tooling to publish, search & consume from MDS or OER

- Connect to MDS or OER using Resource Palette
 - Browse or Search (access OER server-side saved searches)
 - Publish
 - Consume
- Move shared artifacts in MDS – references get automatically updated



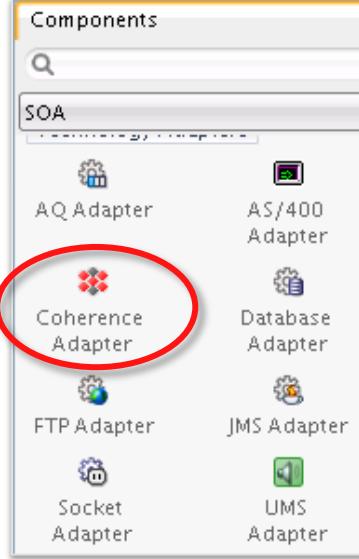
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Developer productivity

Coherence Adapter

Explicit access to Coherence clusters



The screenshot shows the Oracle SOA Suite Components palette. The 'SOA' category is selected. Within this category, the 'Coherence Adapter' is highlighted with a red circle. Other adapters listed include AQ Adapter, AS/400 Adapter, Database Adapter, JMS Adapter, UMS Adapter, FTP Adapter, and Socket Adapter.

Coherence Adapter Configuration Wizard - Step 4 of 6

Operation Type

The Coherence Adapter supports four operation types. A Put operation type that puts an item in the cache, a Get operation type that gets an item from the cache, a Remove operation type that removes one or more items from the cache, and a Query operation type that retrieves one or more items from the cache.

Operation: Put
 Get
 Remove
 Query

Operation Name: Put

Coherence Adapter Configuration Wizard - Step 5 of 6

Configure Put Operation

Enter configuration parameters for putting an item in the coherence cache.

Cache Type: POJO

Cache Name: bookCache

Auto-generate key

Key Type: string

Time To Live: DEFAULT

0

Operations:

- Put
- Get
- Remove
- Query

Cache types:

- POJO
- XML

Other 12c adapters:

- LDAP
- MSMQ
- Cloud apps

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REST Support in 12c

- REST Binding: Extend REST support to SOA Composites
 - REST enable new / existing services
 - Integrate with external REST APIs
 - Orchestrate a set of RESTful state transitions (RPC / HATEOAS approach)
 - JSON support with automatic translation to/from XML
- Developer productivity
 - Wizard for modeling REST interface and WSDL mapping
 - Human readable API published on deployment
 - Ability to browse and consume Oracle REST endpoints from within JDev
- REST APIs for HWF tasks
- OWSM policy support for REST security (**no OAuth**)

Agenda

12c Drivers

12c Themes:

- Industrial SOA
- Developer productivity
- **Mobile enablement**
- Cloud Integration

11g→12c upgrade

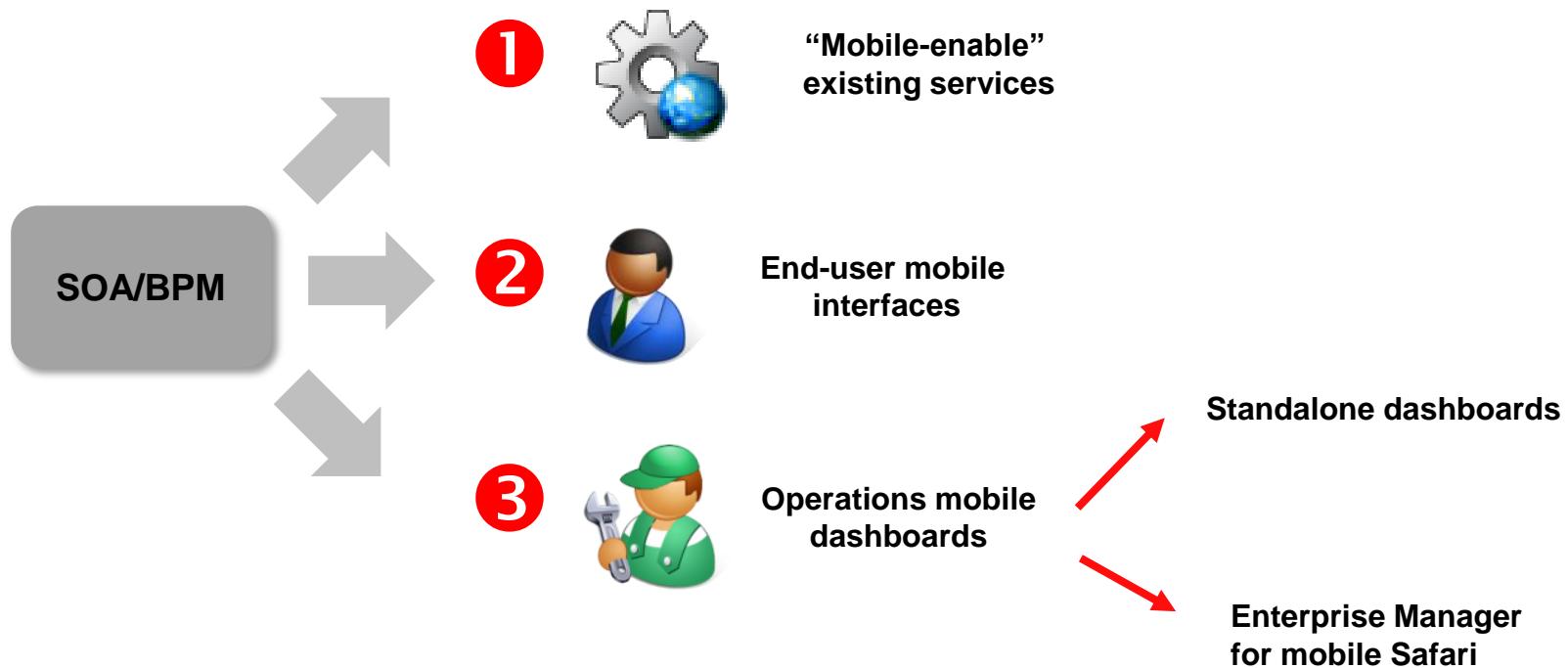


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Mobile: 3 distinct dimensions and audiences



Mobile





Mobile

1. Mobile-enable existing services

Improved REST & JSON capabilities

- HTTP verb to operation mapping, wizard for modeling REST interface and WSDL mapping
- Automatic format translation to and from XML (JSON, URL-encoded)
- Automatic fault to HTTP error code mapping (can be overridden by developer)
- No impact to service components such as BPEL
- Human readable API published on deployment
- REST APIs for HWF tasks
- OWSM policy support for REST security



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2. End-users mobile interfaces

Support mobile workforce by bringing BAM dashboards and Worklist to tablets



Mobile

The screenshot shows the Oracle BAM mobile interface. On the left, a sidebar lists various performance trends: Orders trending up by 10%, Shipping down 20%, Late orders, Orders trending up twice consecutively by 10%, Orders trending up twice consecutively by 10%, Orders trending up twice consecutively by 10%, Sales down 10% in 2 weeks, Orders trending up twice consecutively by 10%, and Orders trending up twice consecutively by 10%. The main area displays a chart titled "Sales Down 10% in 2 weeks" with the subtitle "Sales Overview" and the date "October 12, 2012 9:13 am PDT". The chart shows "Global Sales" with two bars: Region 1 at approximately 375 and Region 2 at approximately 250. Below this is a section titled "Notifications" with four small charts: Global Product Performance (Region 1: ~120, Region 2: ~160), Analytic Performance (Sept: ~160, Oct: ~180, Nov: ~160), Global Performance (March 8, 2012), and Global Sales (Region 1: ~375, Region 2: ~250).

BAM

The screenshot shows the Oracle Worklist mobile interface. It features a grid of "Task Card 1" entries for "Travel for James Cooper" with a total cost of \$1,289. Each card includes a profile picture, the task name, the amount (\$1,289), the time ago (3 hours ago), and two buttons: "Approve" and "Reject". To the right of the cards is a "Actions" button. Below the cards is a summary table:

Item	Price	Date
Flight	598.00	10/03/2012
Hotel	636.00	10/03/2012
Taxi		

At the bottom right is a red button labeled "Worklist". To the right of the cards are several other interface elements: "Approve" (with a "Promotion" card), "Reject" (with a "Project Expenses" card), "Later" (with a "PO 45E5389" card), and "Reassign". A "See History" button is located at the bottom right of the main card area.

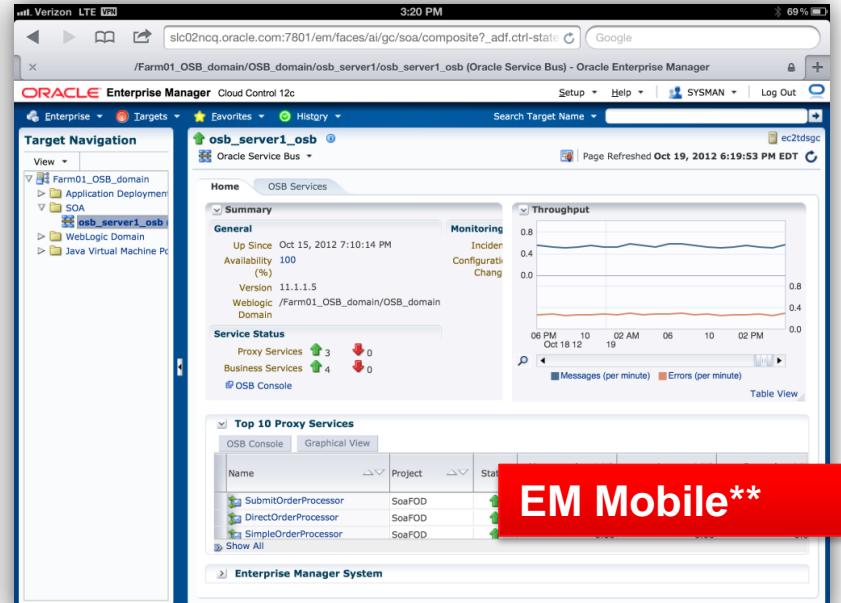
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3. Operations mobile dashboards

Monitor SOA infrastructure - anytime, anywhere



Mobile



*: prototype only; actual plans still under discussion

**: Full EM 12c can be used on Mobile Safari

Agenda

12c Drivers

12c Themes:

- Industrial SOA
- Developer productivity
- Mobile enablement
- **Cloud Integration**

11g→12c upgrade



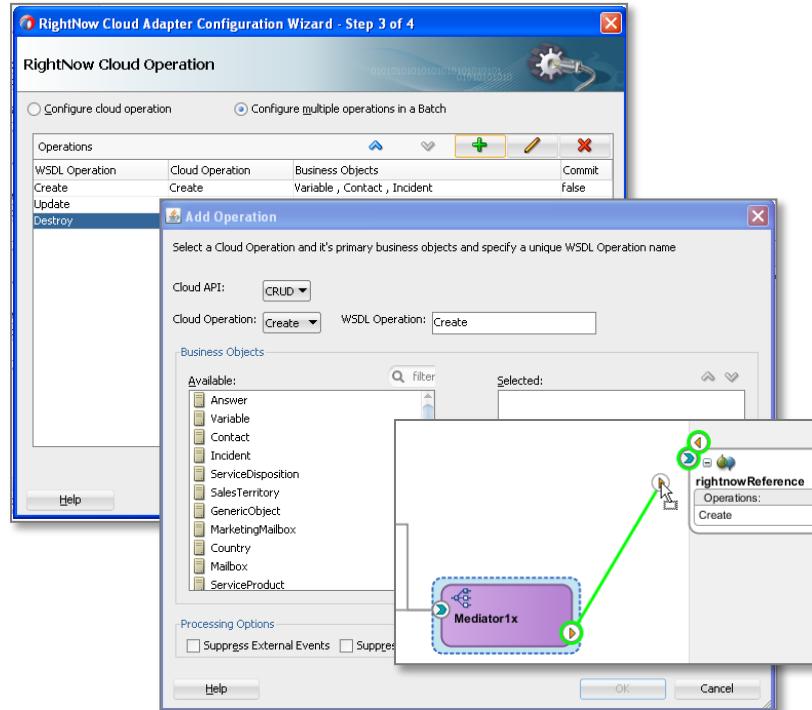
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Cloud Adapters

Value-add above WS, REST, FTP

- **Pre-built connectivity** – pre-seeded binding type, endpoint address, connection management
- **Security** – credential management, token / session management, pre-seeded policies
- **Meta-data browsing** – Ability to browse application APIs with associated entities, ability to uptake customizations (A-la EBS adapter)
- **Normalize** - Complex / large Polymorphic WSDLs
- **Fault handling** – Retries etc. – pre-seeded fault policies



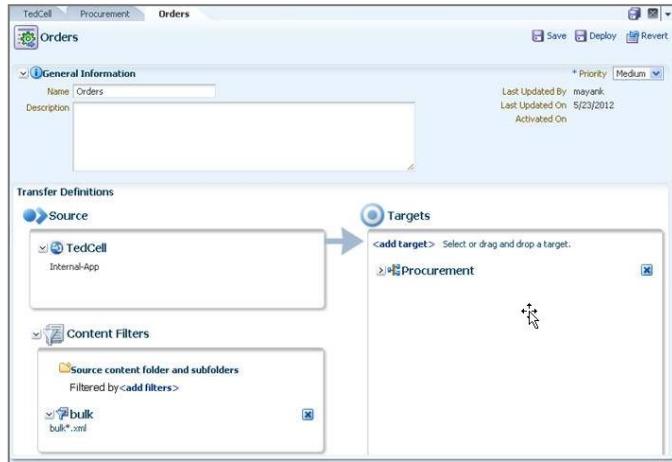
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FUSION APPLICATIONS

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Managed File Transfer (MFT)

Reliably exchange your files to and from the cloud

- File integration gaining momentum with cloud application integration
- Oracle MFT meets requirements from various FA teams (CRM) but would need to be released on 11g.
- Product code complete. Early release vehicle under investigation.



Simple and secure end-to-end file gateway:

- Supports **very large files** (10GB+)
- Complete audit & monitoring** dashboards
- Entirely **web-based design** & monitoring (ready for cloud)
- Standards-based**: (s)FTP, WS
- Embedded sFTP server** (+ FTP proxy)
- Scheduling**
- Pause, Resume, Resubmit

NOTE: MFT 12c will be a new product, sold independently of SOA Suite

Fully integrated with Fusion Middleware:

- Encryption & integration with IdM for security
- Highly-available (HA), using WLS
- Pass-by-reference for advanced orchestration use cases using SOA Suite or OSB
- Pre-integrated with Oracle B2B & Healthcare



Agenda

12c Drivers

12c Themes:

- Industrial SOA
- Developer productivity
- Mobile enablement
- Cloud Integration

11g → 12c upgrade



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SOA Suite 11g → 12c upgrade

Improvements over last major upgrade

- Specific improvements over 10g → 11g upgrade:
 - **Long running instances** in 11g can finish execution on 12c
 - **No need to edit, upgrade and re-deploy** existing composites
 - **Custom client scripts and apps** should run as-is (Facade API, worklist API, WLST and WebServices)
- **No app server shift**
 - 10g to 11g upgrade moved customers from OC4J to Weblogic
 - Required completely different skill set and learning of different platform/tools
 - Many artifacts/scripts were not automatically upgraded (adapters, etc.)
- **No major SOA re-architecture between 11g and 12c**
 - 10g to 11g was a complete re-architecture, consolidating disparate products to the common sca/composite platform

12c FMW Upgrade – High Level Flow

1. Take a complete backup of 11g environment
2. Install 12c products – into a new Oracle Home
3. Optionally, run RCU and create any new schemas that are introduced in 12c
4. Optionally, execute any component specific pre-upgrade manual steps*
5. Stop 11gR1 servers
6. Run 12c Upgrade Assistant to upgrade Component Schemas
 - Updates schema tables
 - Performs any data transformations
7. Run 12c Configuration Wizard to Reconfigure Domain
 - Upgrades WLS config.xml and start-up scripts
 - Re-wires domain to point to 12c Oracle Home (Step 2)
8. Start Admin Server
9. Run 12c Upgrade Assistant to Upgrade Component Configuration artifacts
 - Updates component specific configuration information
10. For other machines in the domain, do pack/unpack to replicate the domain config
11. Optionally, execute any component specific post-upgrade manual steps*
12. Start the upgraded servers

Do you know where to go for information on Oracle SOA Suite?

- **OTN Product page:**
<http://bit.ly/soaotn>
Downloads, link to doc library, list of new features, whitepapers, etc.
- **Advanced Oracle SOA Suite:**
<http://bit.ly/advancedsoasuite>
- All other downloads:
<http://edelivery.oracle.com>



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