ORACLE

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

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

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

Agenda

12c Drivers
12c Themes:

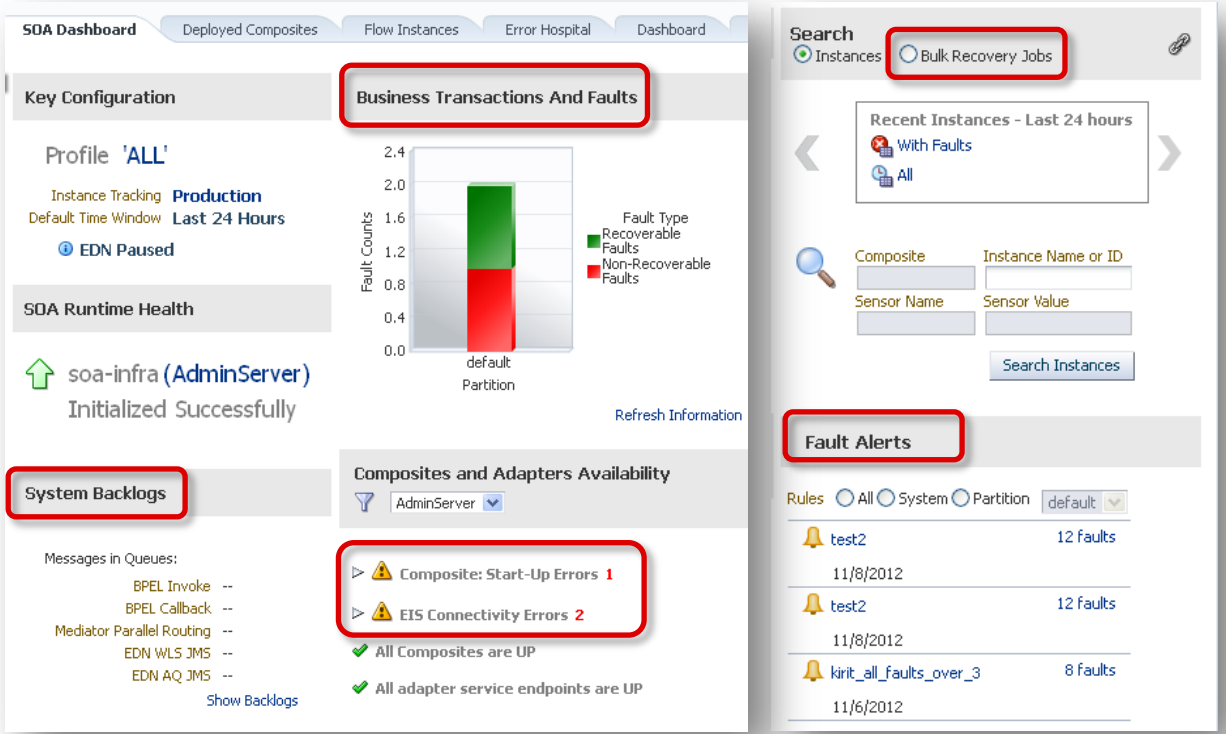
- Industrial SOA
- Developer productivity
- Mobile enablement
- Cloud Integration

11g→12c upgrade

Diagnosability: new EM SOA Dashboard

Focus on exceptions, improve responsiveness of EM

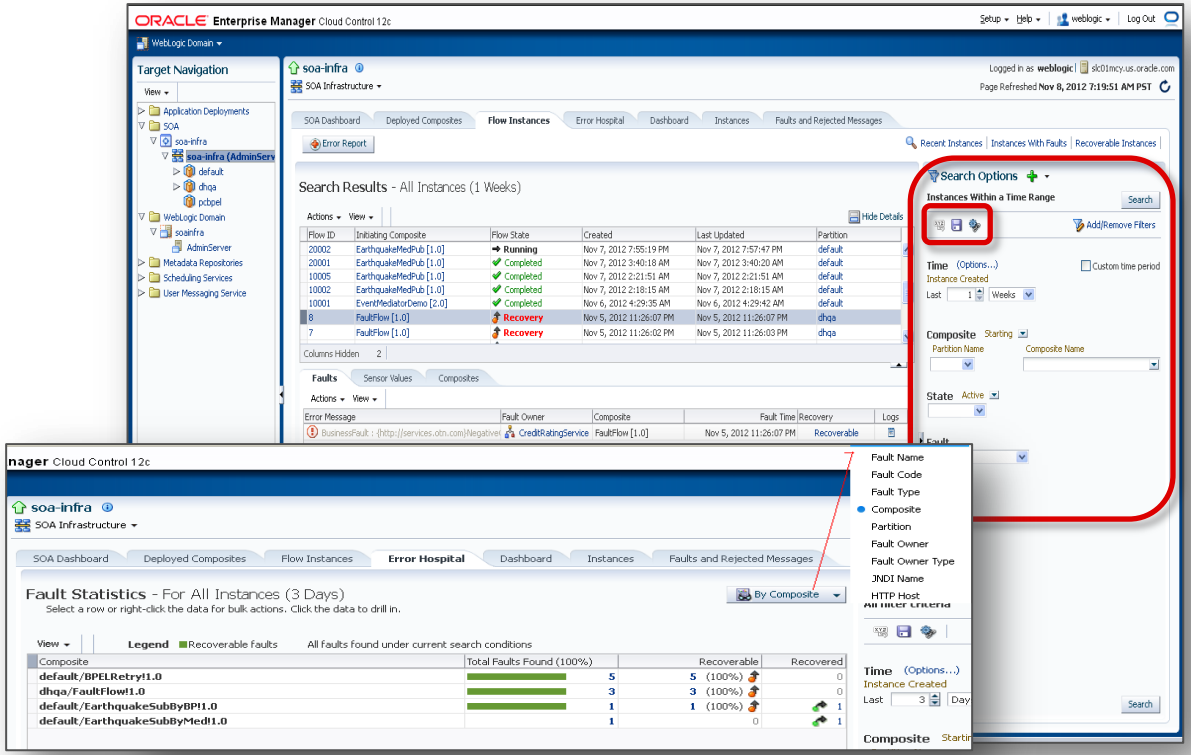
1. Focus on displaying exceptions rather than business-as-usual
2. Better responsiveness of EM by lazy loading of regions with DB data
3. Consolidated cluster-level view/metrics



Diagnosability: EM Flow Instances & Fault Recovery

Quickly find specific instances and their exact state

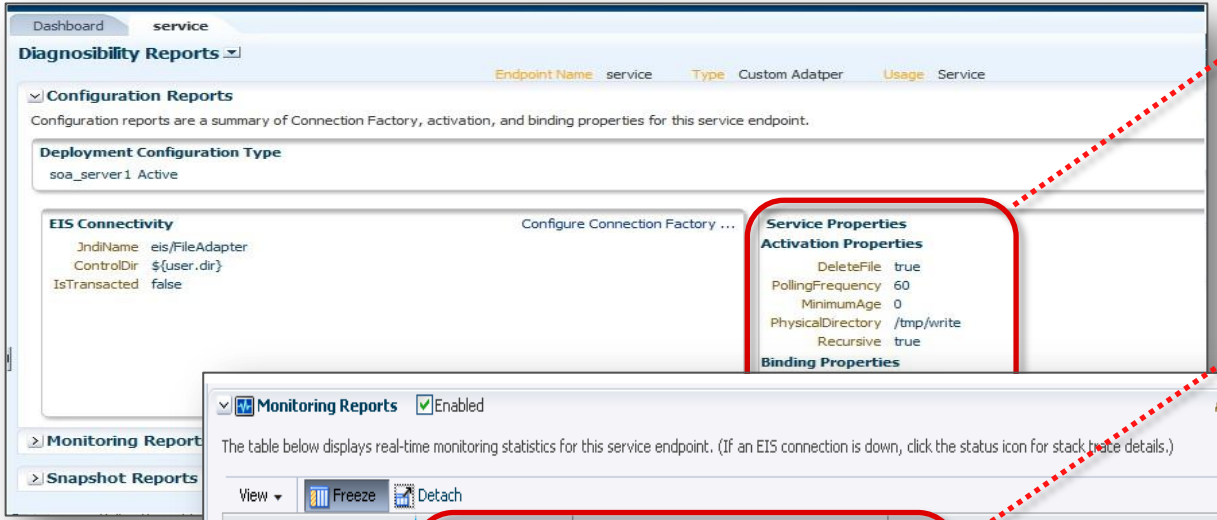
- **Improved instance search capabilities**
- **Ability to save/bookmark queries**
- **Rationalization of numerous instance "states"**
- **Clear status of processing status** by replacing composite instances with flow instances
- **Improve bulk recovery** by grouping of faults with different criteria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



Diagnosability: adapters info in EM

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

industrial SOA



Endpoint config summary

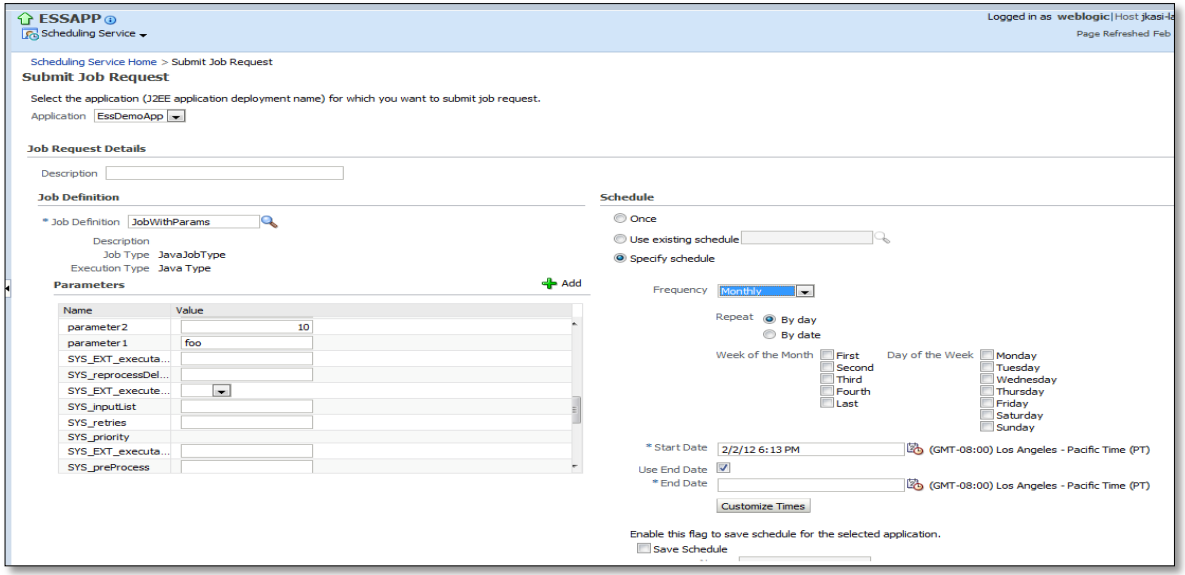
endpoint metrics help identify troublesome applications & services

9

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



EDN 12c - Improvements

Better Scalability & Flexibility

industrial SOA

- 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)

Exalogic: enhancements

Focus on Performance and Lifecycle

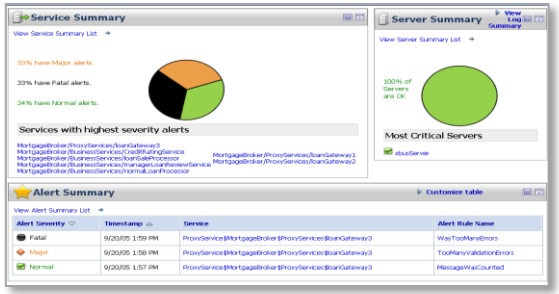
industrial SOA

- 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

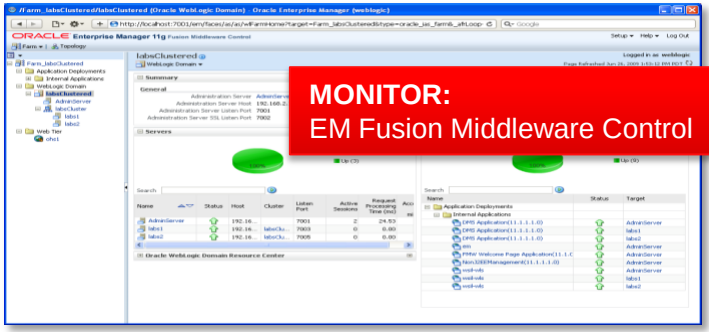
New Service Bus web-based console in 12c

industrial SOA

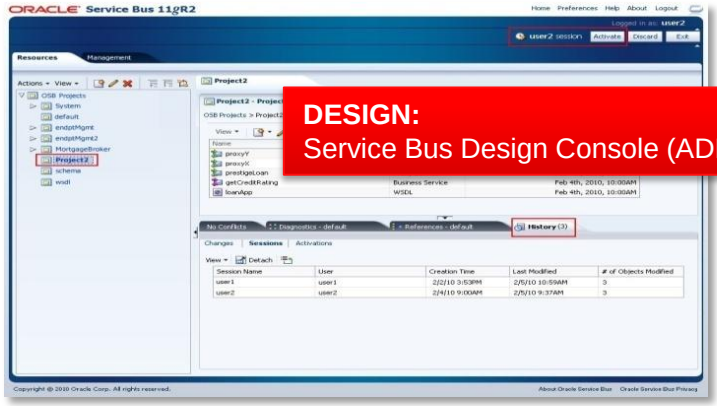
11g: single console to configure, manage & monitor (shared by different roles)



12c: clear separation of roles



MONITOR:
EM Fusion Middleware Control



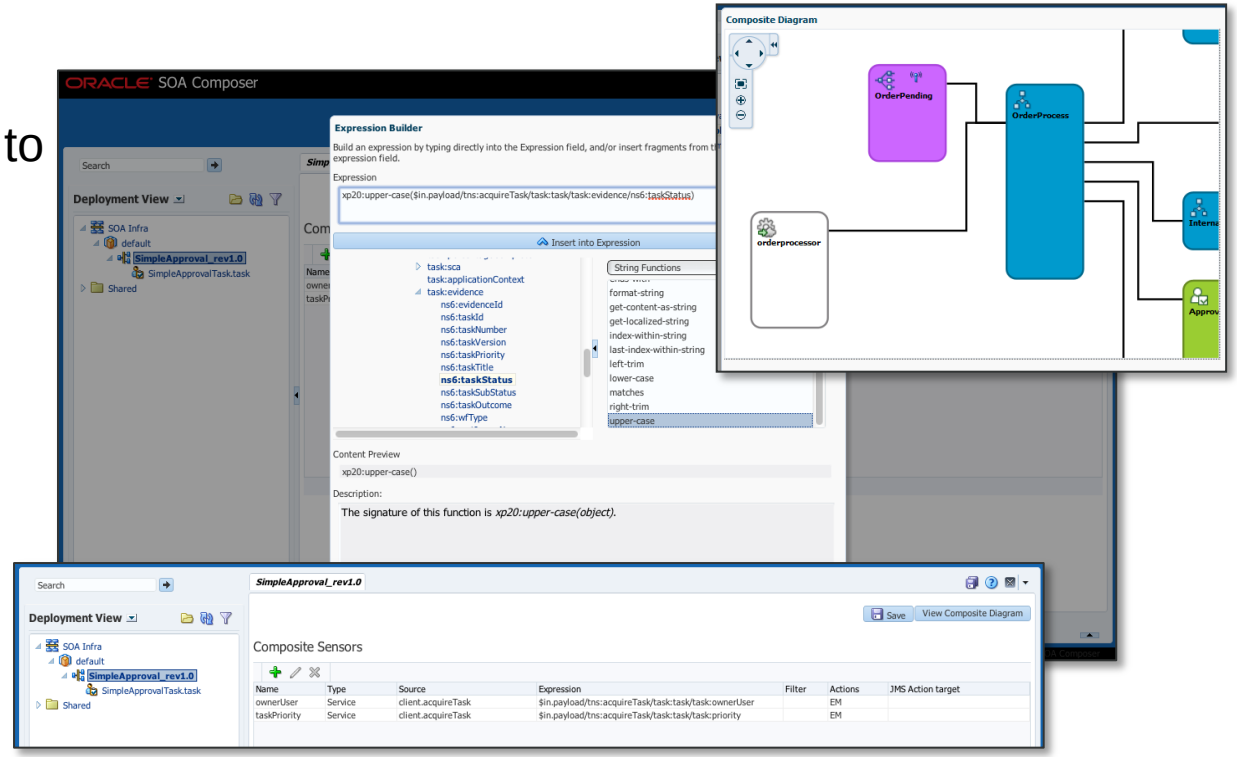
DESIGN:
Service Bus Design Console (ADF)

Improved SOA Composer

New DT@RT capabilities

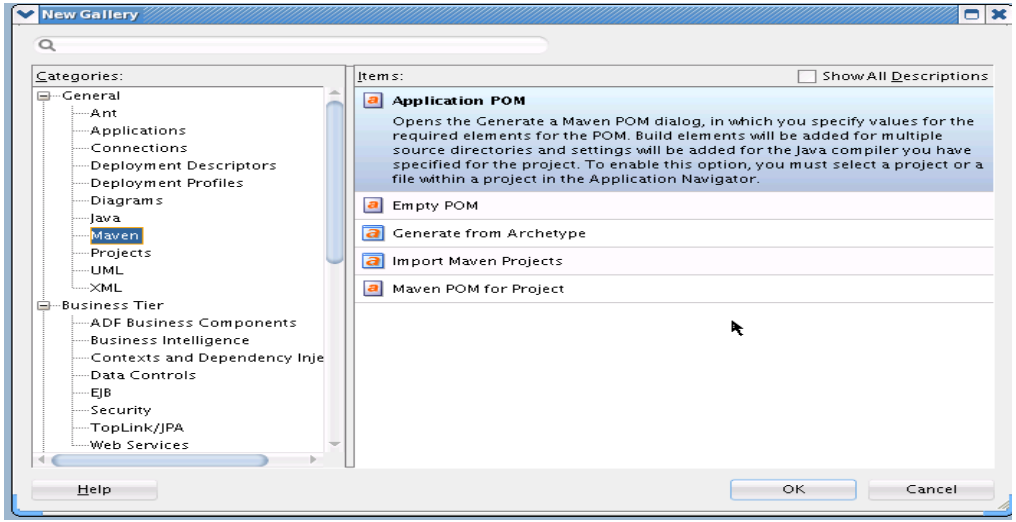
industrial SOA

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



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

Developer Productivity

"We can do it – now we want to do it faster"

Developer productivity

Focus on:

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

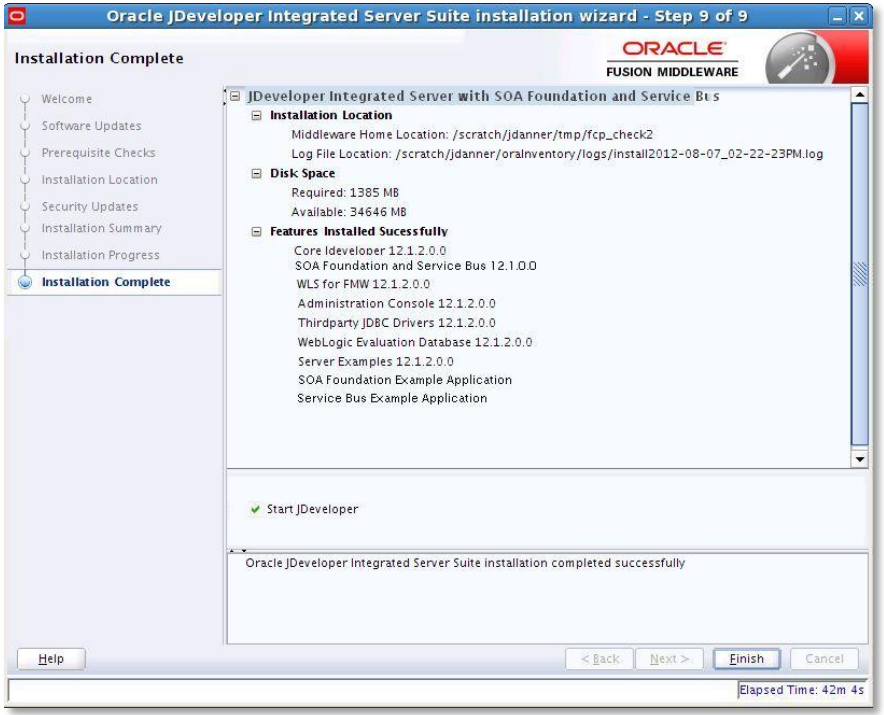
Dev. Productivity: Install

Single download for JDeveloper and DB/WLS/SOA Suite

12c install: **1 single package**

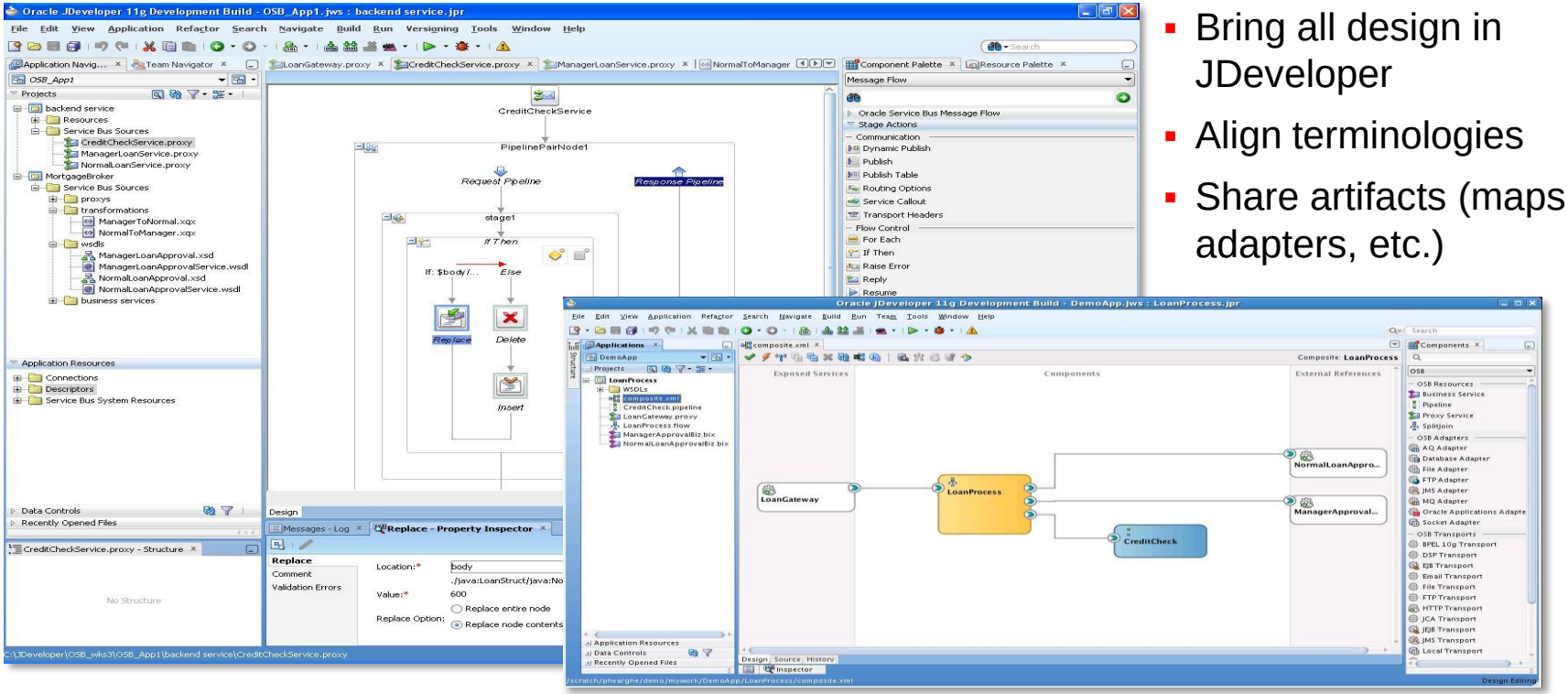
- JDeveloper
- WebLogic
- SOA Suite (incl. OSB)
- JavaDB
- Enterprise Manager

'*30 minutes to Hello World*'



Dev. Productivity: Service Bus in JDeveloper

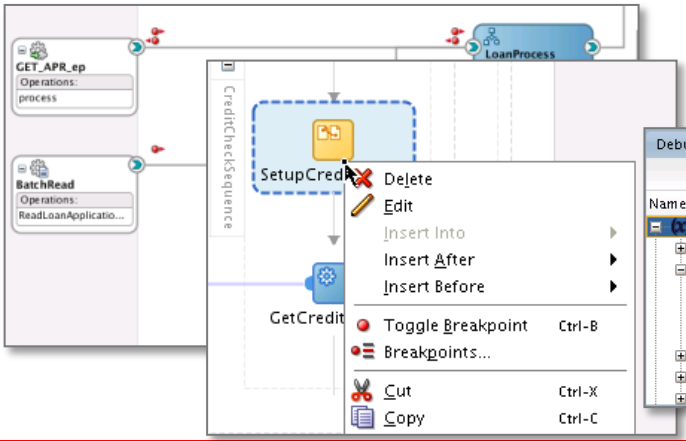
A single IDE for all patterns

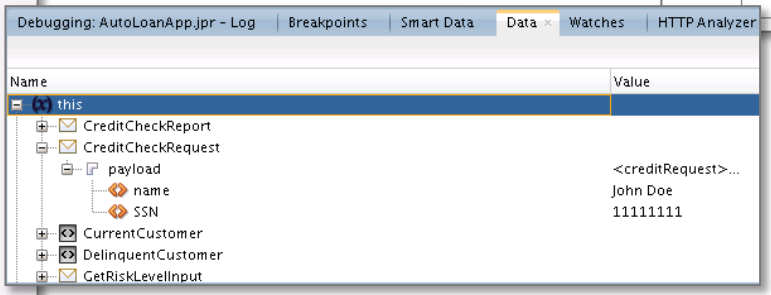


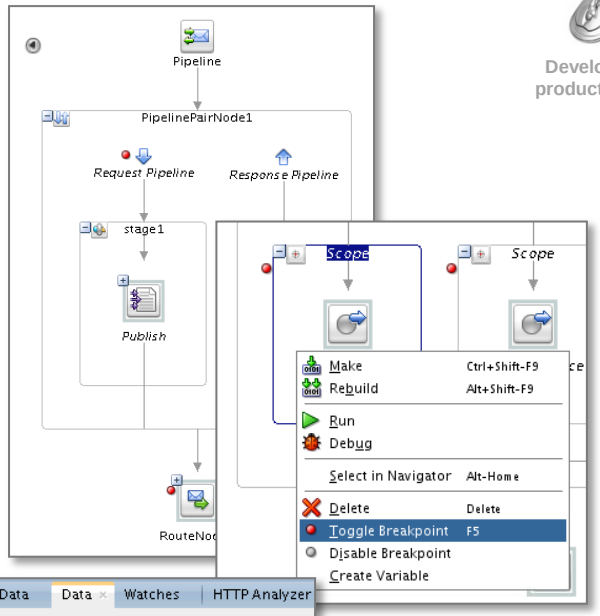
- Bring all design in JDeveloper
- Align terminologies
- Share artifacts (maps, adapters, etc.)

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

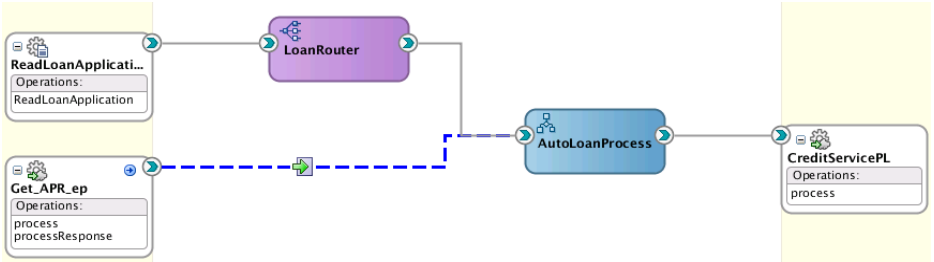


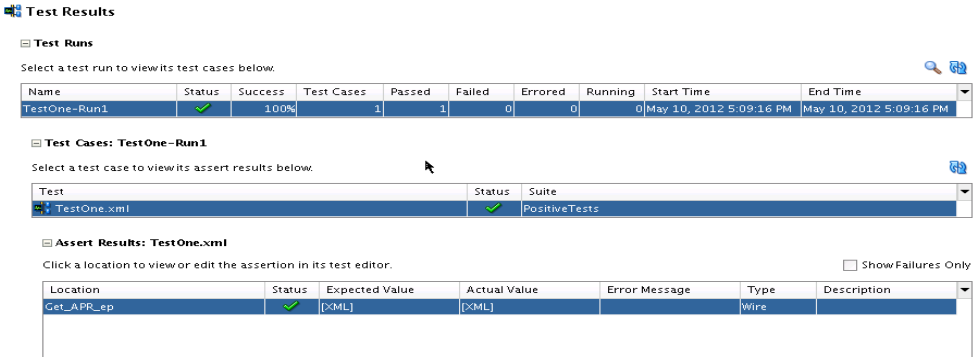




12c SOA Tester

- 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 *





Dev. Productivity: Refactoring

Aligned with Java capabilities

Rename
Move
Delete

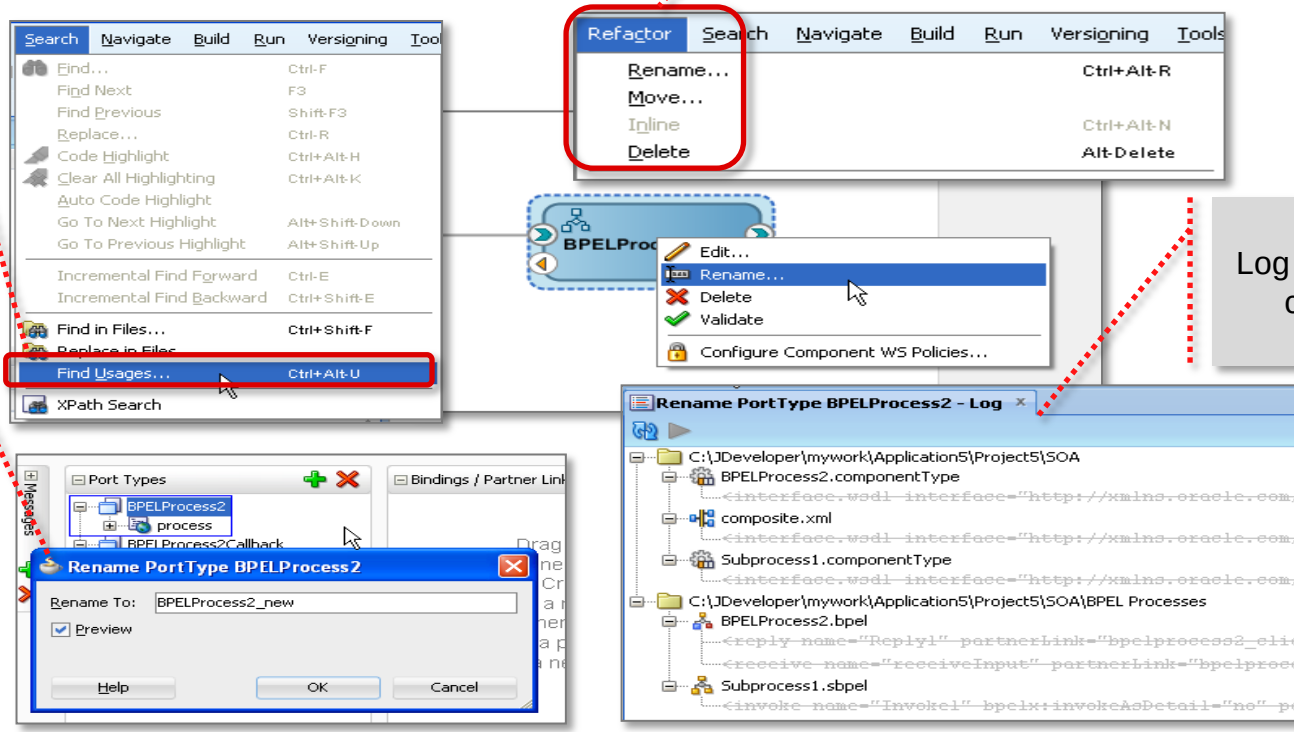
All references within the SOA project are updated automatically

Developer productivity

Find Usage

Available for:

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

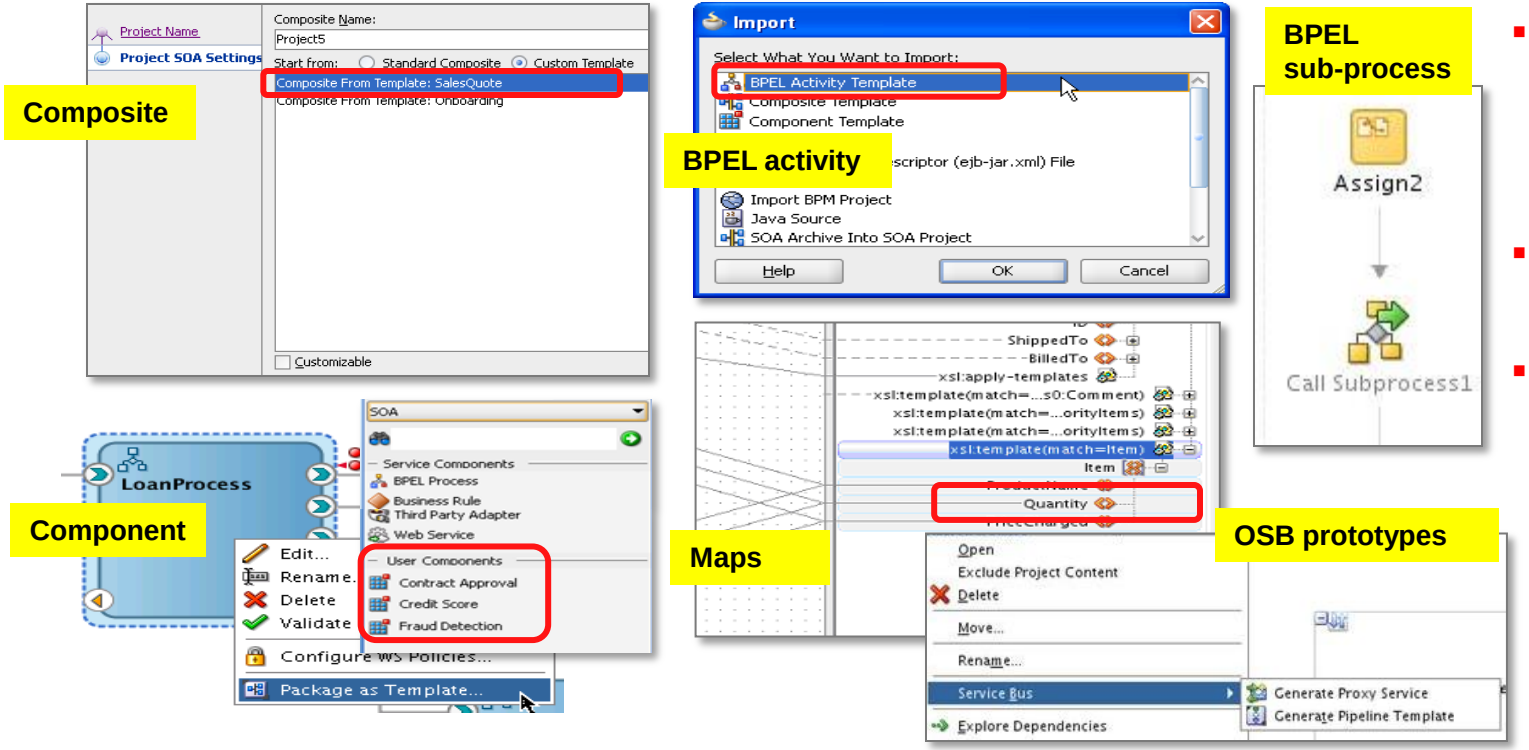


Log of resulting changes

Templates & sub-processes

Re-use at all levels

Developer productivity



- "Starter" templates as well as inheritable
- Share using MDS or OER
- Available in the palette as user defined components

Dev. Productivity: Continuous Integration

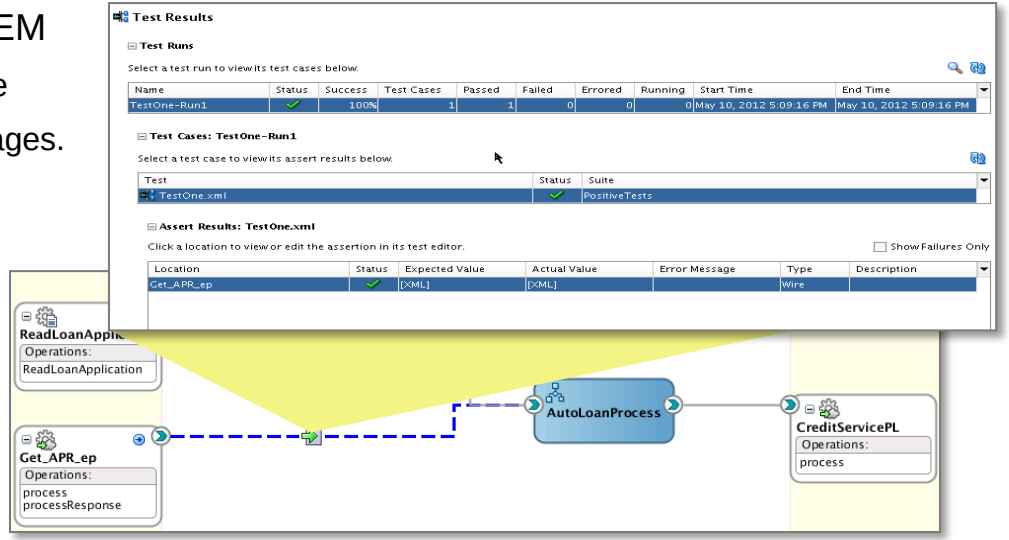
Unit testing improvements & Maven support

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

Maven:

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

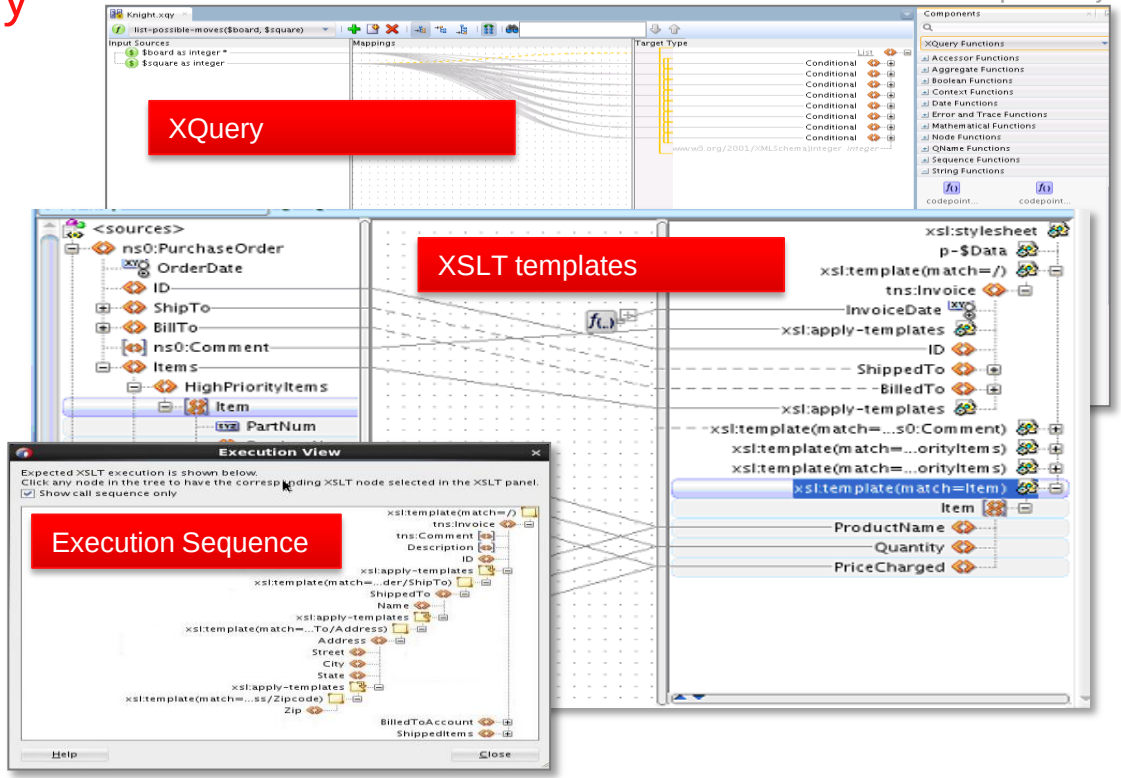


Dev. Productivity: Mapping Improvements

Large maps, XSLT, XQuery

Developer productivity

- XSLT or XQuery? → User preference
- 100% support for XLST 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

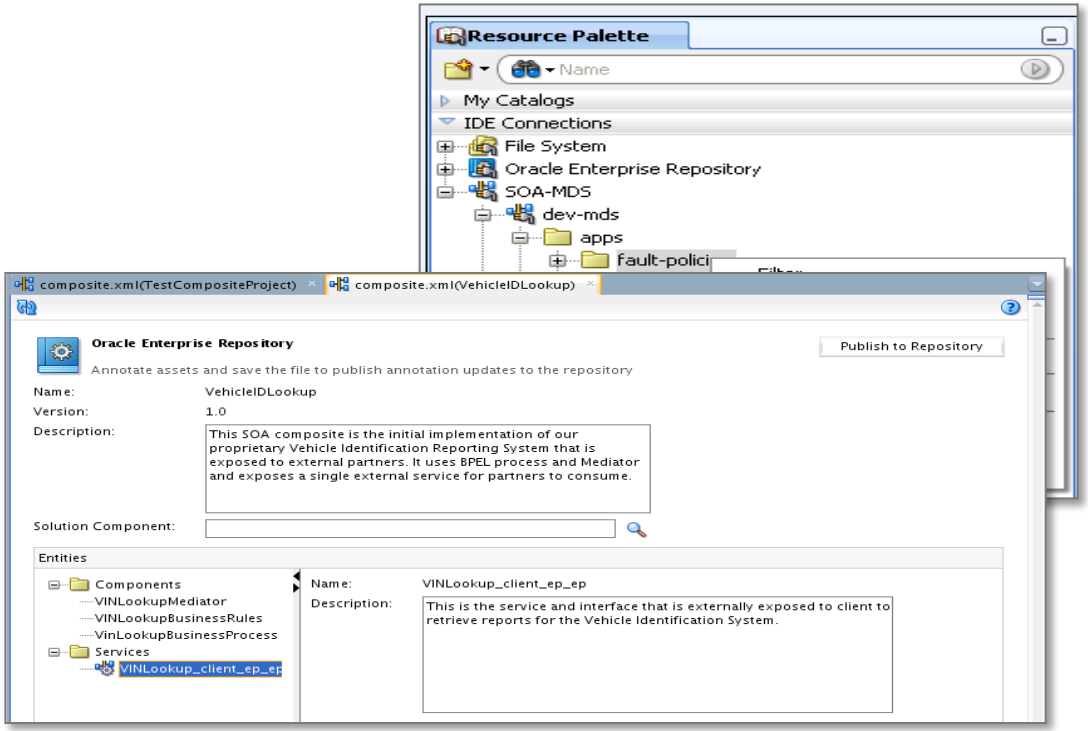


Sharing, discovery & re-use

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

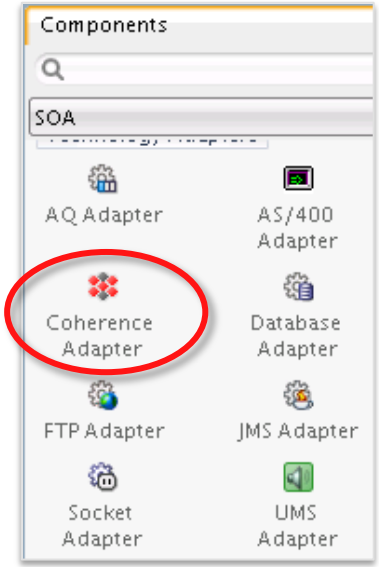
Developer productivity

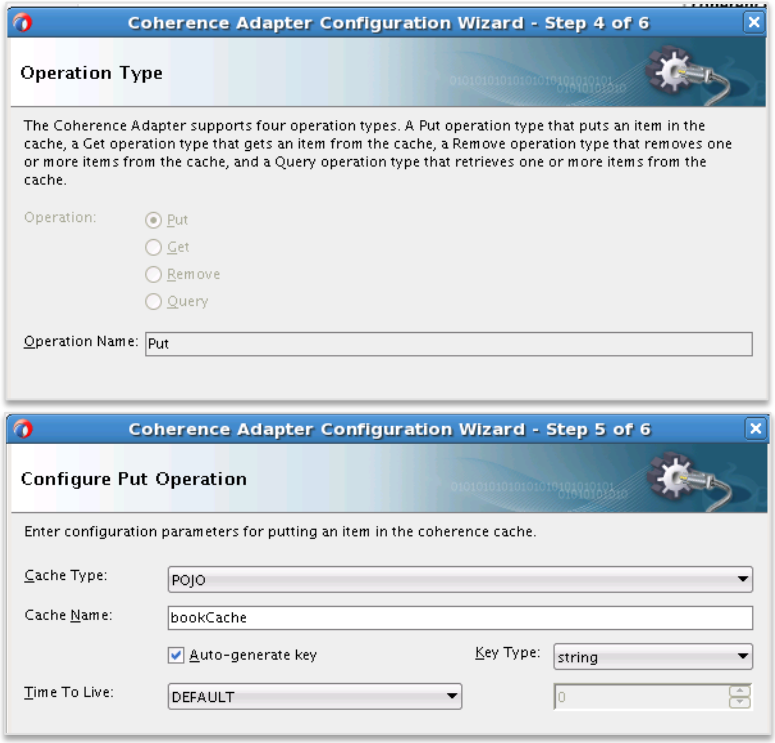
- Connect to MDS or OER using Resource Palette
  - Browse or Search (access OER server-side saved searches)
  - Publish
  - Consume
- Move shared artifacts in MDS – references get automatically updated



Coherence Adapter

Explicit access to Coherence clusters





Operations:

- Put
- Get
- Remove
- Query

Cache types:

- POJO
- XML

Other 12c adapters:

- LDAP
- MSMQ
- Cloud apps

REST Support in 12c

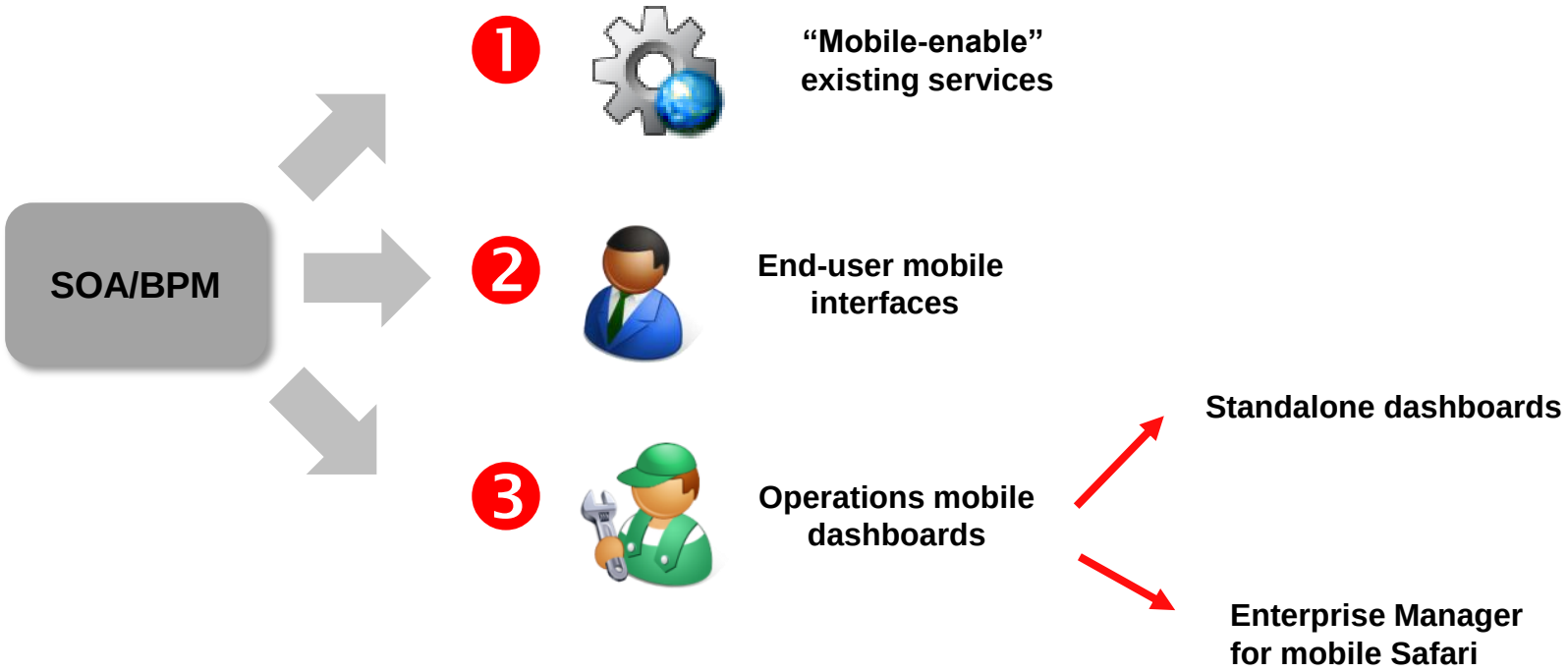
- REST Binding: Extend REST support to SOA Composites
  - REST enable new / existing services
  - Integrate with external REST APIs
  - Orchestrate a set of RESTful state transitions (RPC / HATEOAS approach)
  - JSON support with automatic translation to/from XML
- Developer productivity
  - Wizard for 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

Mobile: 3 distinct dimensions and audiences



1. Mobile-enable existing services

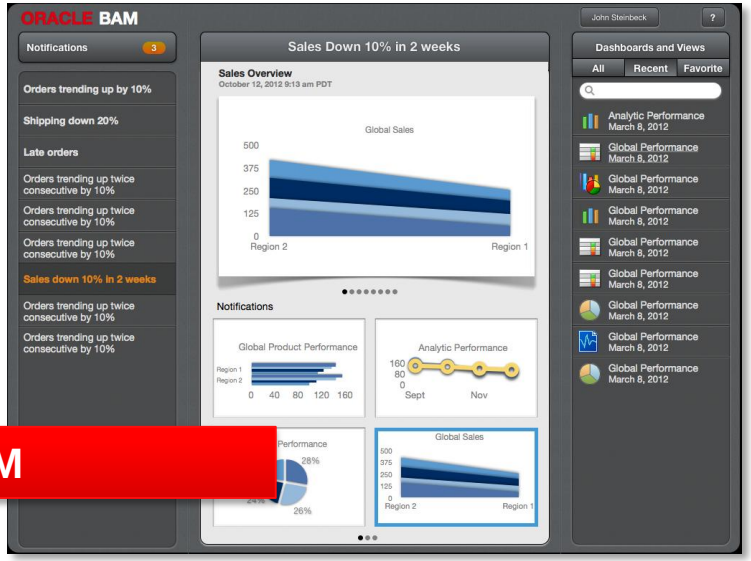
Improved REST & JSON capabilities

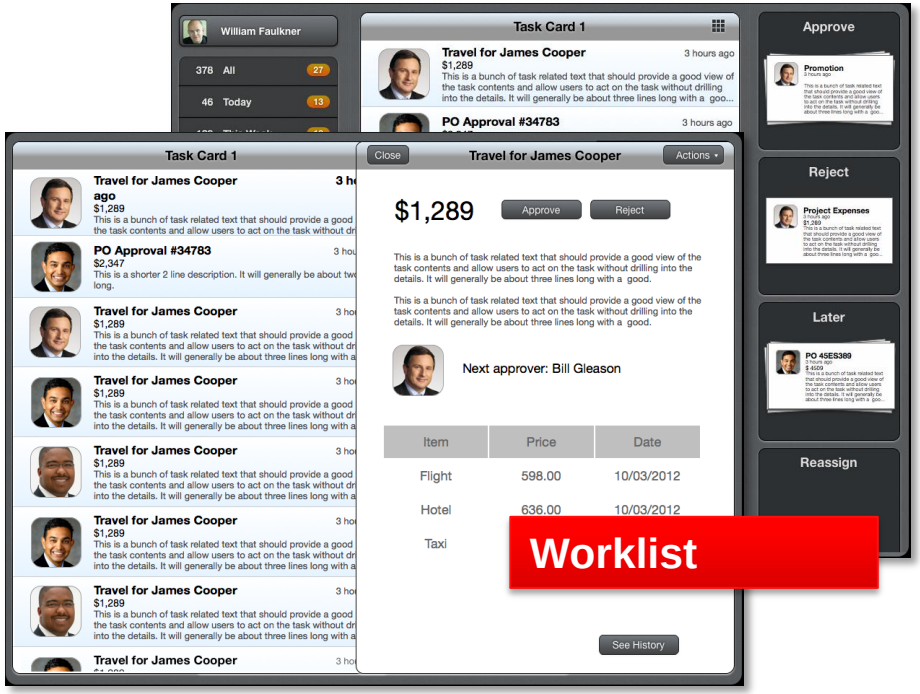
- HTTP verb to operation mapping, wizard for modeling REST interface and WSDL mapping
- Automatic format translation to and from XML (JSON, URL-encoded)
- Automatic fault to HTTP error code mapping (can be overridden by developer)
- No impact to service components such as BPEL
- Human readable API published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

2. End-users mobile interfaces

Support mobile workforce by bringing BAM dashboards and Worklist to tablets

Mobile

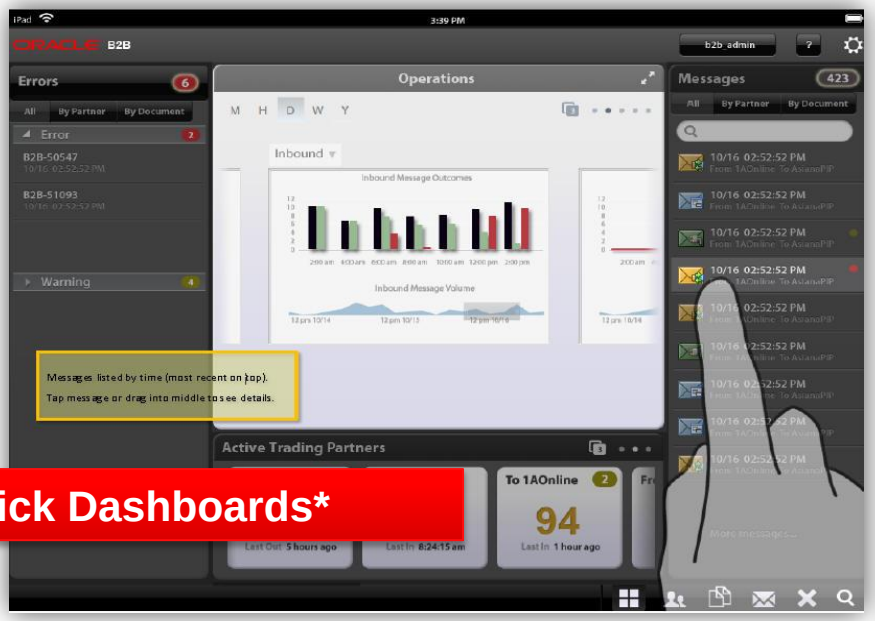




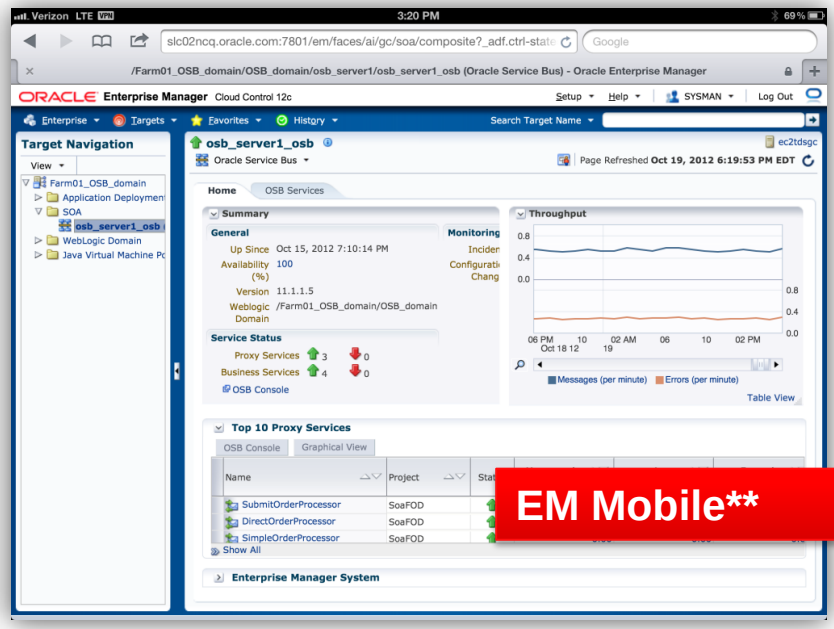
3. Operations mobile dashboards

Monitor SOA infrastructure - anytime, anywhere

Mobile



Quick Dashboards*



EM Mobile**

*: prototype only; actual plans still under discussion

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

Agenda

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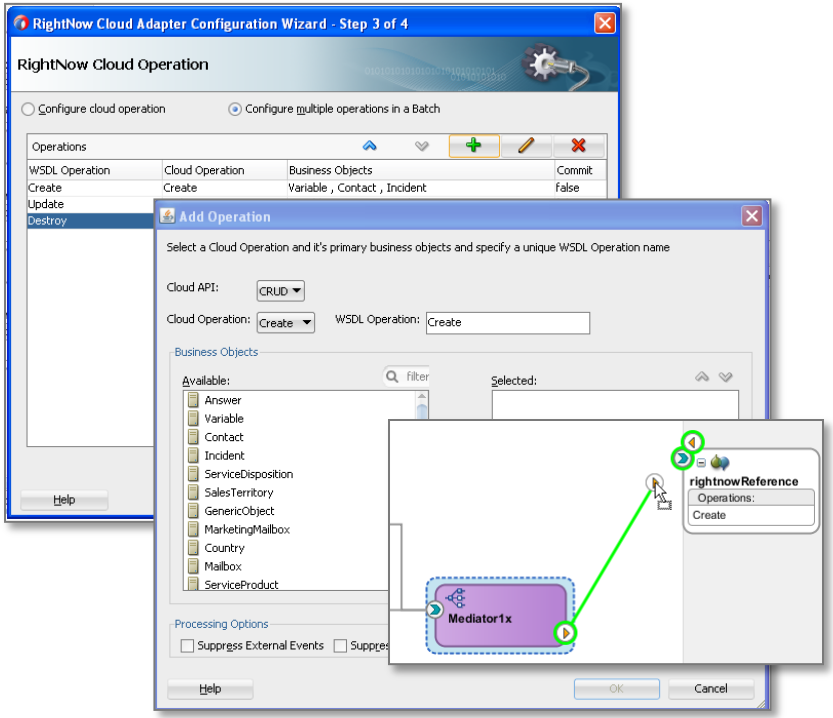
11g→12c upgrade

Cloud Adapters

Value-add above WS, REST, FTP

Cloud integration

- ***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 - C****omplex / large Polymorphic WSDLS*
- ***Fault handling*** *– Retries etc. – pre-seeded fault policies*



RightNow

salesforce

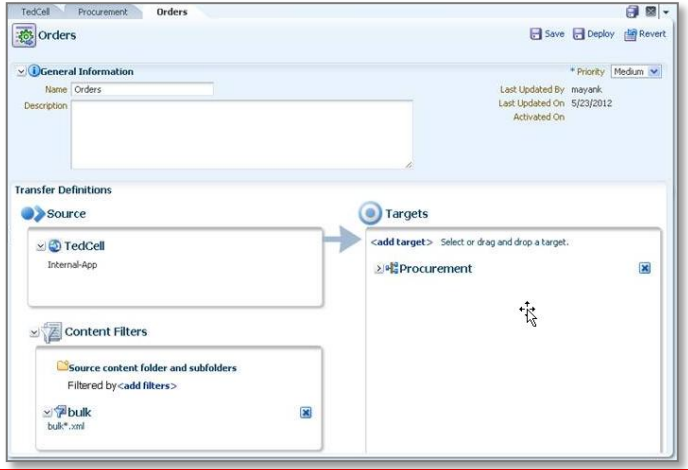
ORACLE
FUSION APPLICATIONS

Managed File Transfer (MFT)

Reliably exchange your files to and from the cloud

Cloud integration

- 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.

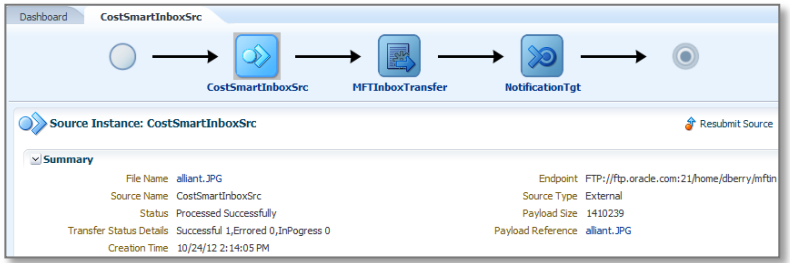


Simple and secure end-to-end file gateway:

- 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

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



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

Agenda

12c Drivers
12c Themes:

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- Developer productivity
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11g→12c upgrade

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 (Façade 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:
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