Introduction to SOI-Toolkit

Simplify development of open source based integrations and services

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Background

- Increasing interest for open source based integrations and services
  - Specifically based on Mule ESB
  - For details on Mule ESB see:
    - CADEC 2009: SOA and Open Source
    - CADEC 2010: Replacing a commercial integration platform with an open source ESB

- Experience from many projects indicates need for an initial establishment phase
  - Very much in common for most projects

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Things to consider…

Before or during development (of in worst case afterwards…)

- Code structures and component model
- Dependency management
- Testing (unit and integration tests)
- Property files for environment specific configuration
- Logging, what to log, when and how
- Software configuration, build, release and deploy management
- Various OSS needs to be glued together
- Catalog of standard high level patterns

➔ **Common problems should be given a common solution!**

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Result

- SOI-Toolkit was born…
  - A toolkit for Service Oriented Integration
  - Codebase from Volvofinans Bank AB
  - Initiated in September and first release during October 2010
  - Apache 2.0 license (business friendly)
  - http://soi-toolkit.org

- Vision
  - Simplify development of open source based integrations and services
  - Support all software lifecycle phases of an integration or service
    - Initial development, test, operations and maintenance

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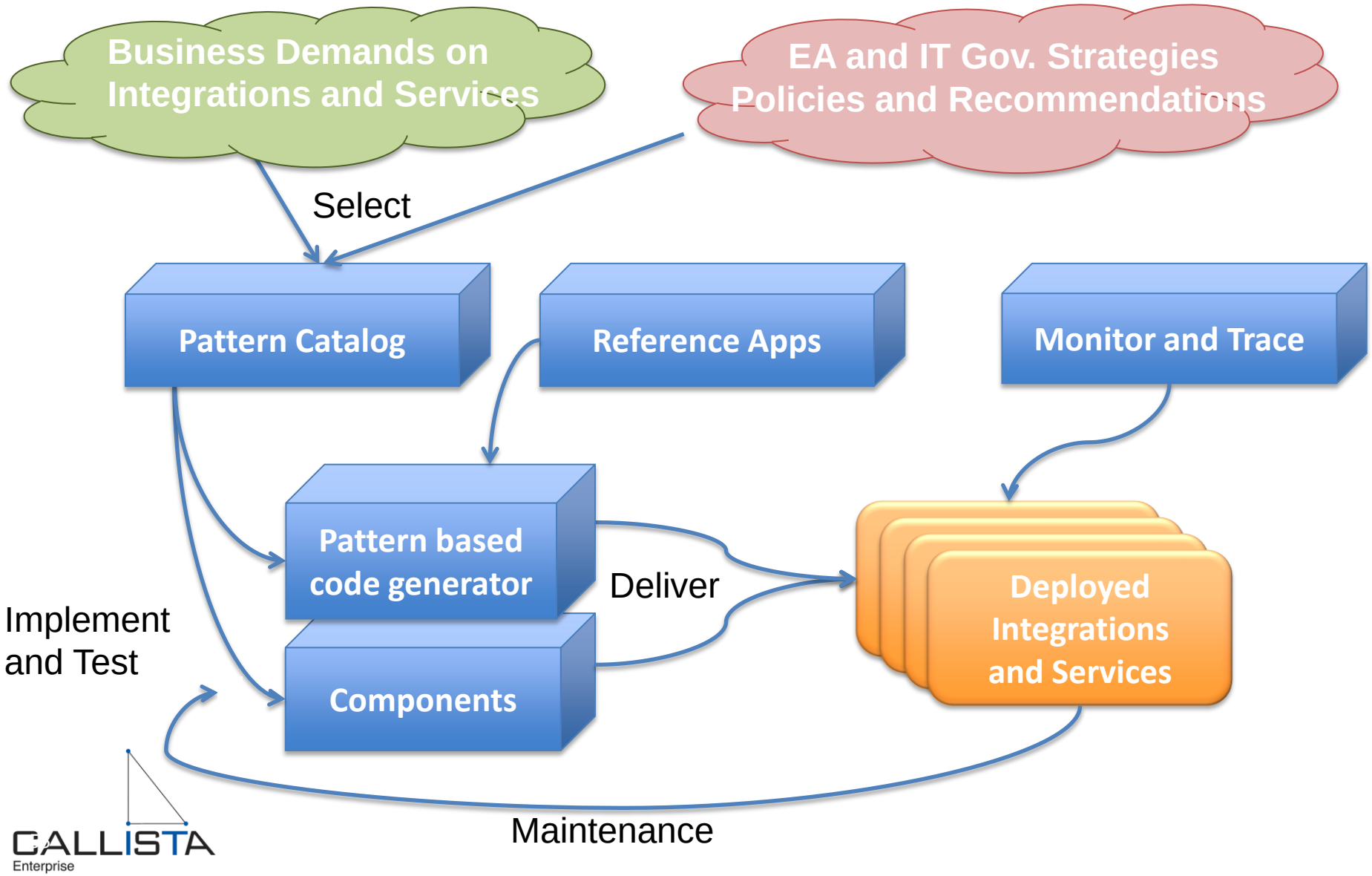
SOI-Toolkit - Building Blocks



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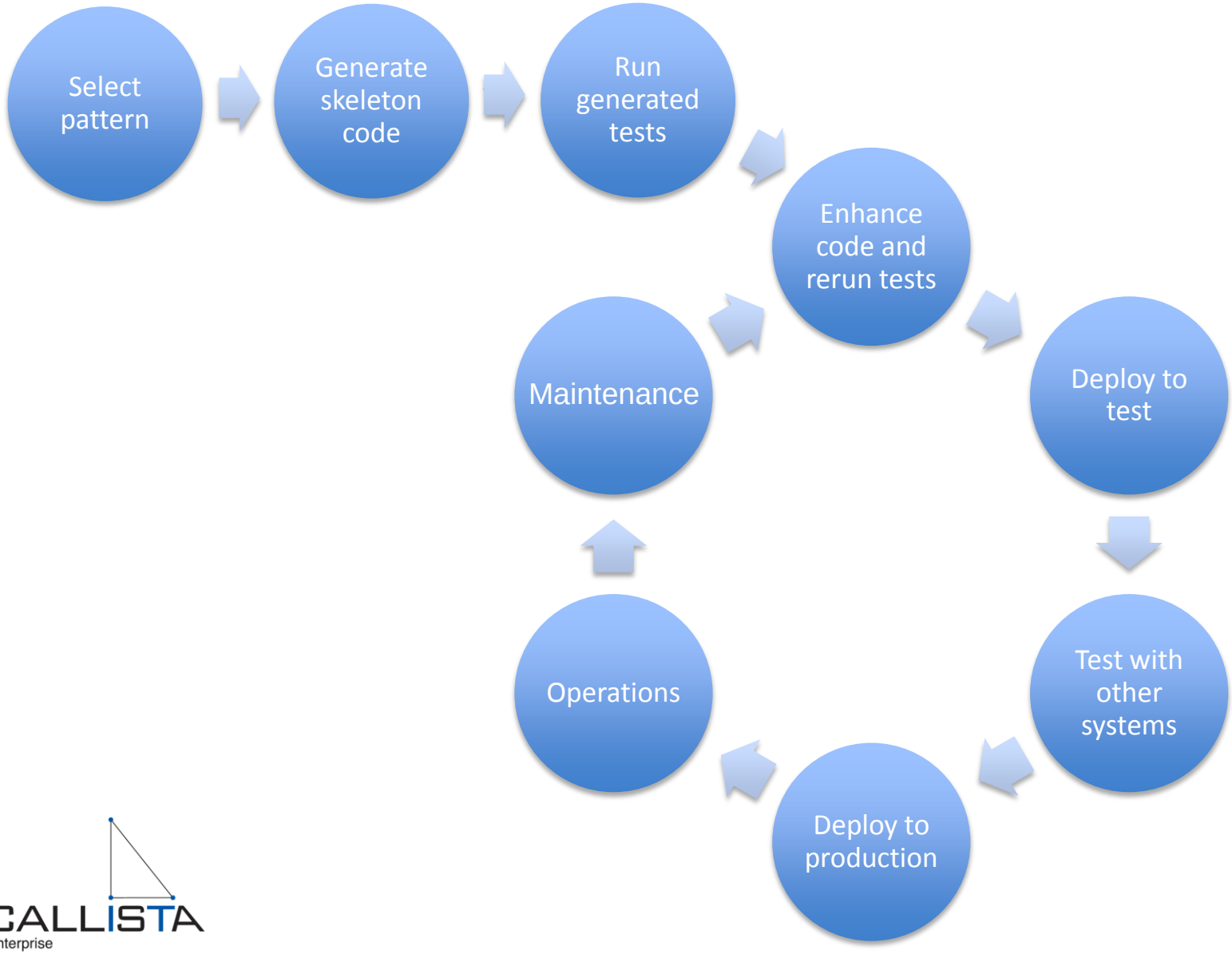
Supporting all lifecycle phases of a service



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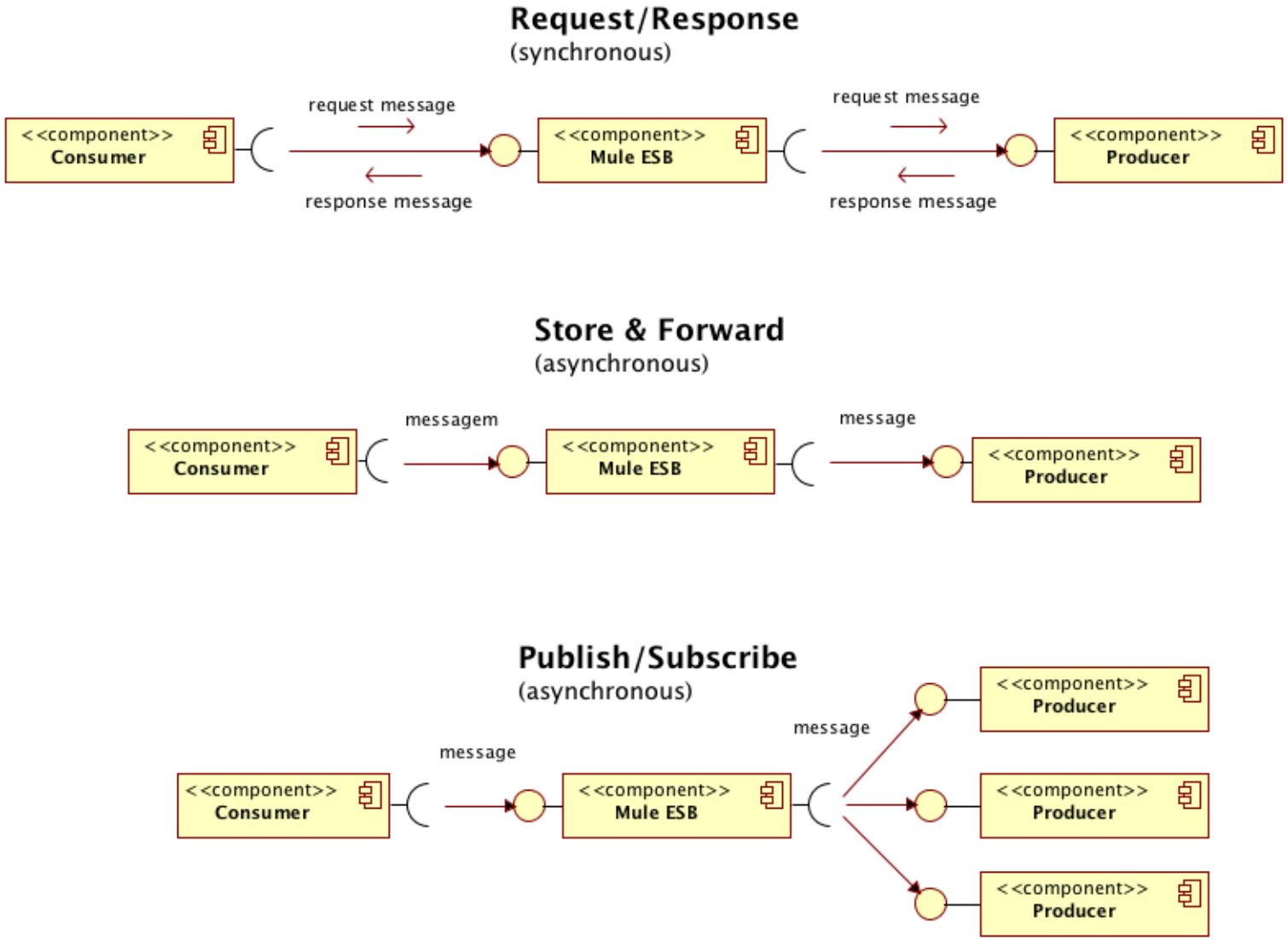
Sample high-level Patterns



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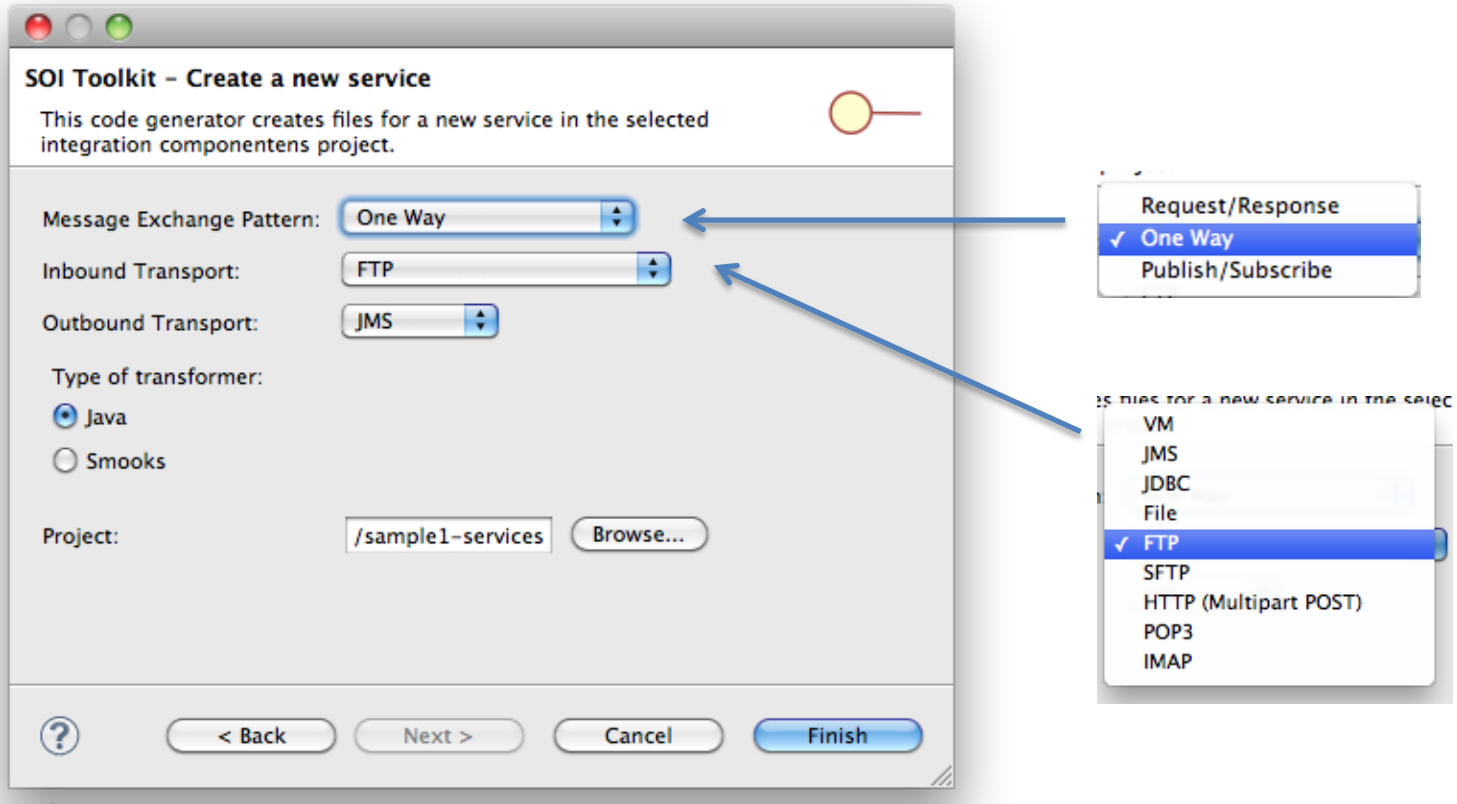
Pattern based Code Generator

Eclipse plugin



Pattern based Code Generator

- Generates
  - Code structures
  - Maven build files
  - Services
  - Tests
  - Test consumers and test producers
  - Logging
  - Property files
  - Deployable files
- Developer can focus on developing integrations and services using standard Mule functionality!

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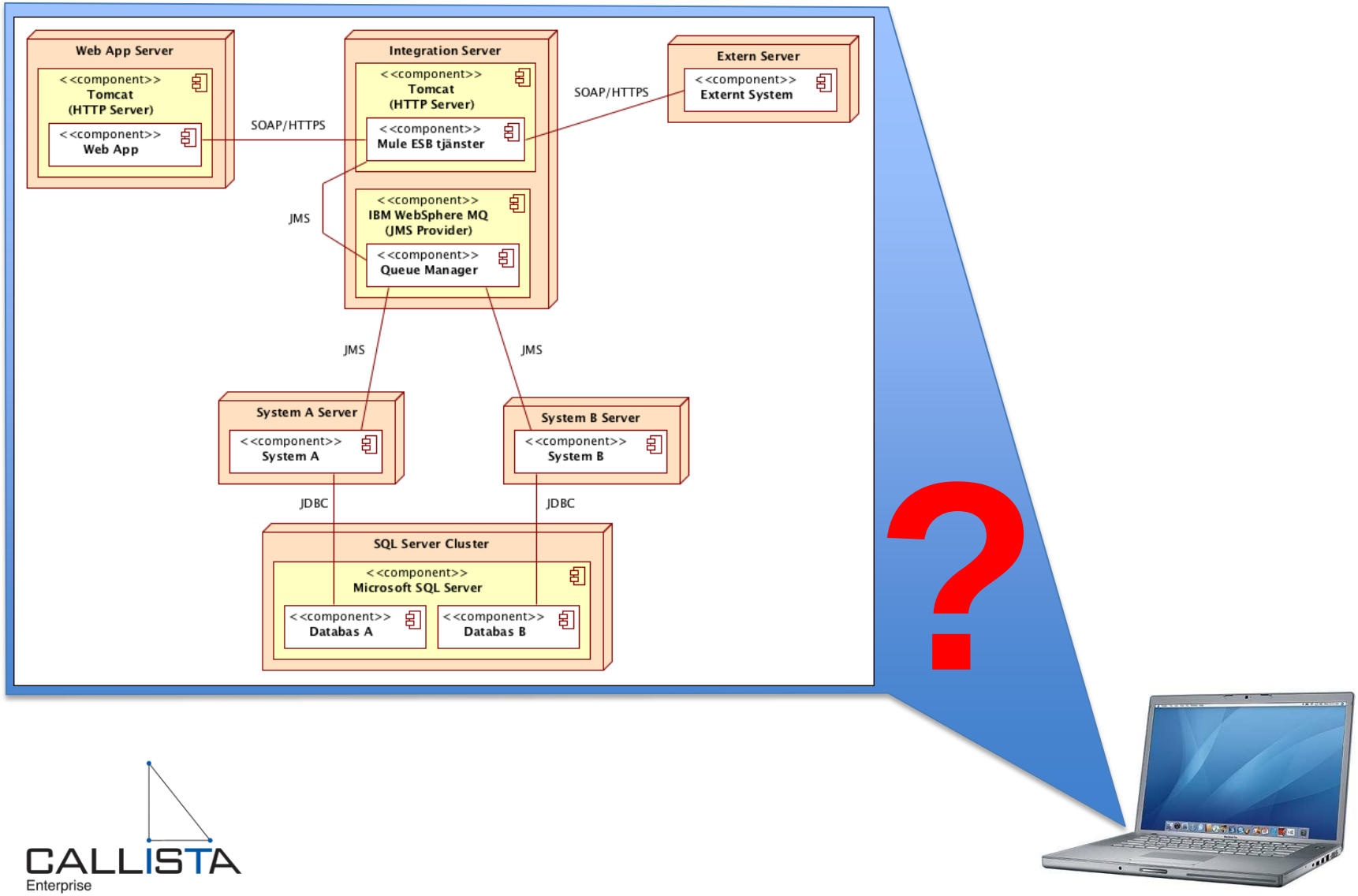
Testing

How to test large and complex integrations and services?



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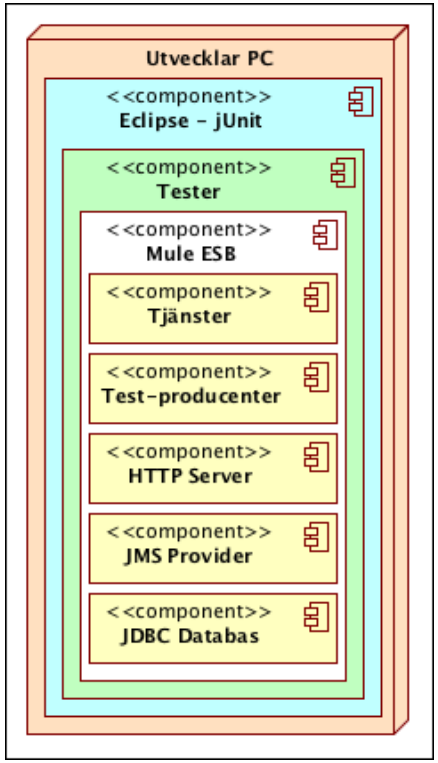
Testing

Mule ESB uses Spring, Maven, Eclipse and jUnit to support local automated unit testing of integrations and services!



Infrastruktur-komponenter exekverar inbäddat i testerna

Ingen infrastruktur att installera
- Allt som behövs laddas ner av Maven (med undantag för ftp och sftp server…)

Ingen deploy-fil att skapa…
- Alla tester kör direkt inne i Eclipse

Ingen deploy behöver göras…
- All infrastruktur är inbäddad i Eclipse

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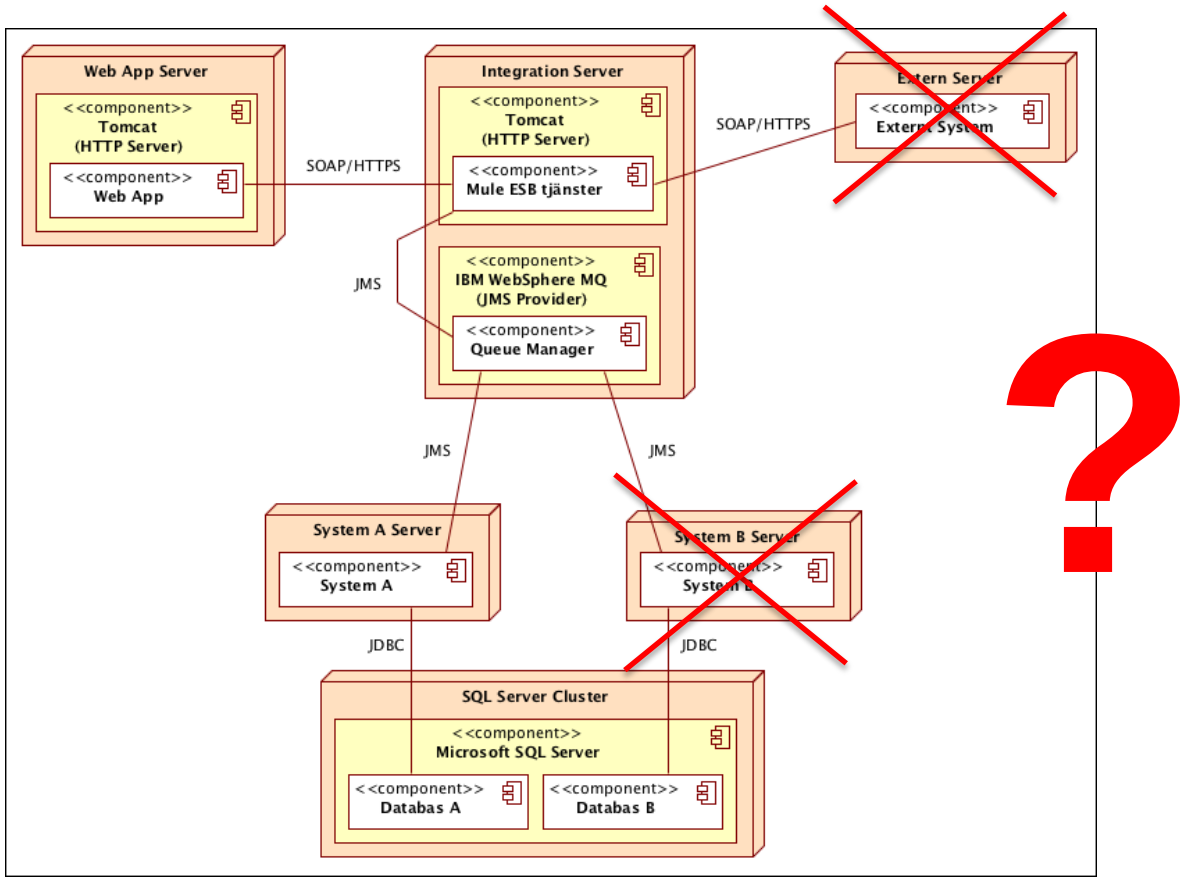
Testing

- Integration tests
  - **PROBLEM:** Very often all systems are not ready for test…



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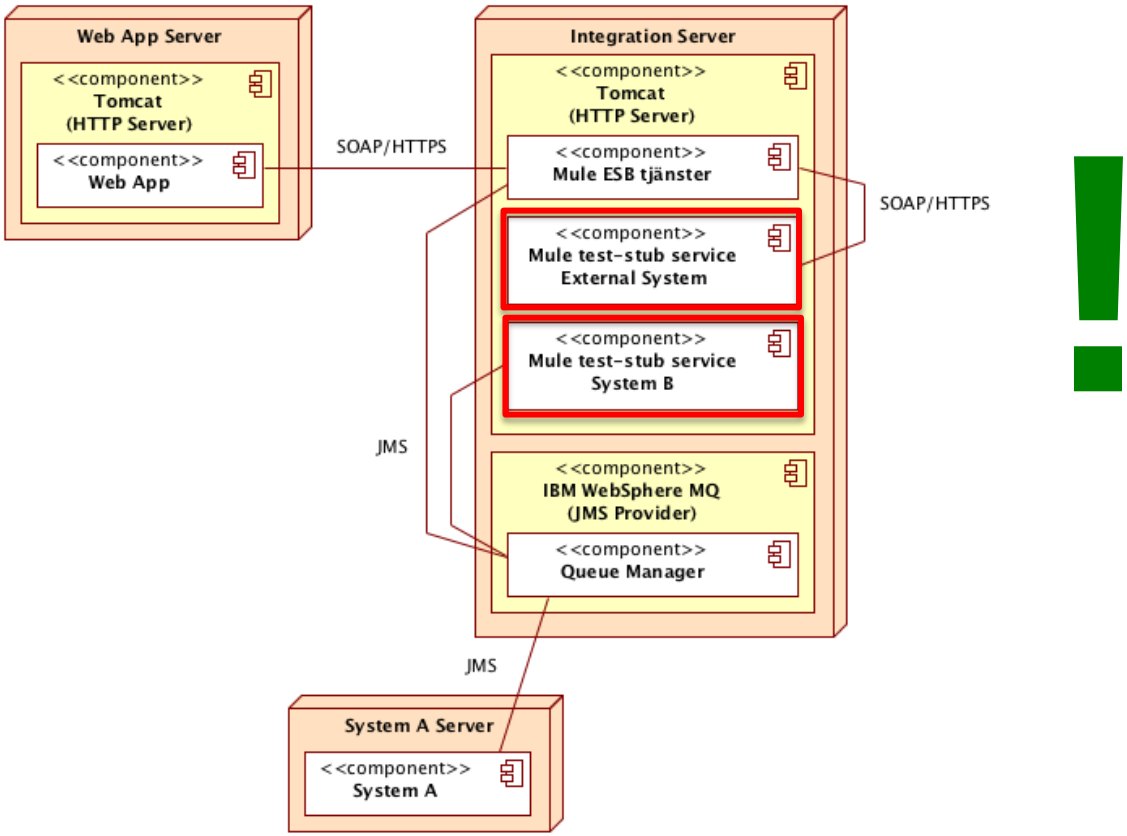
Testing

- **SOLUTION:** Deploy test-producers (test-stubs) for affected systems in Mule ESB
  - Deploy as separate war-file



Tutorial overview

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Demo time!

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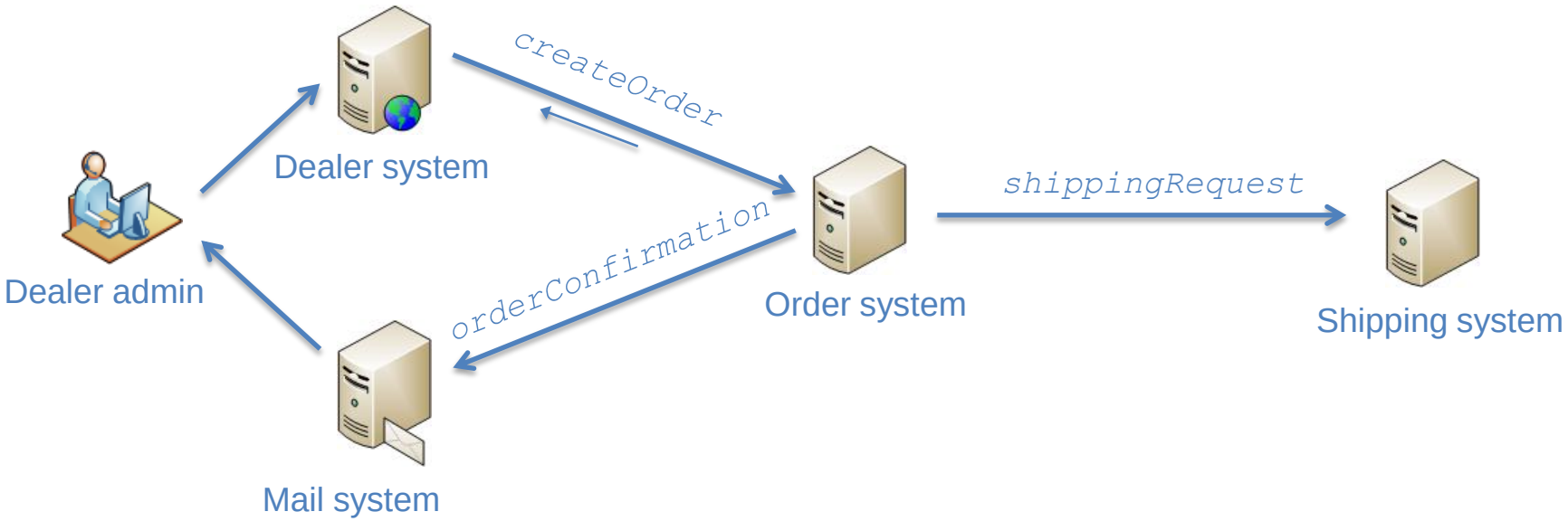
Tutorial/Demo – SOI Toolkit Ref App

Logical view



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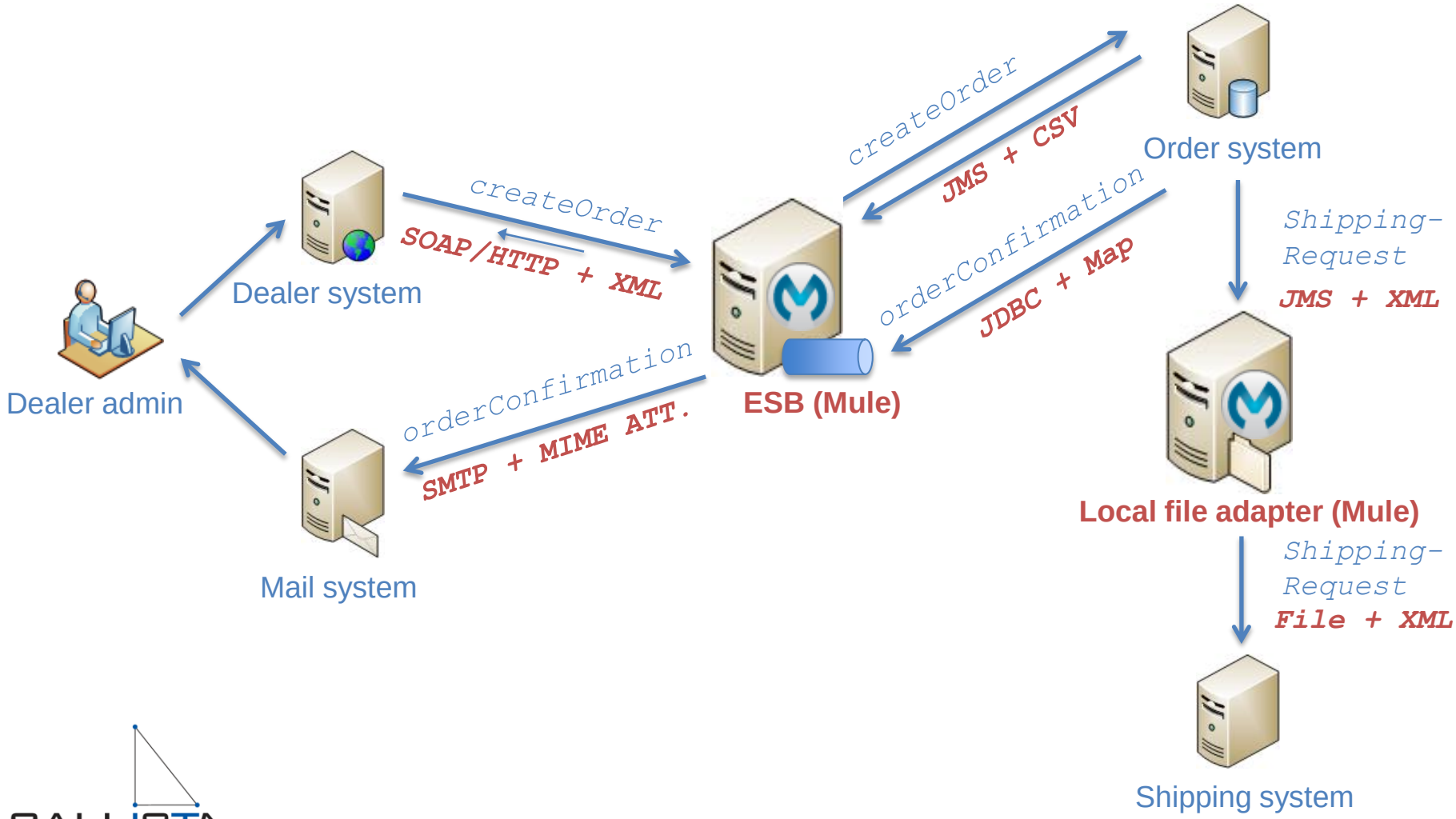
Physical view



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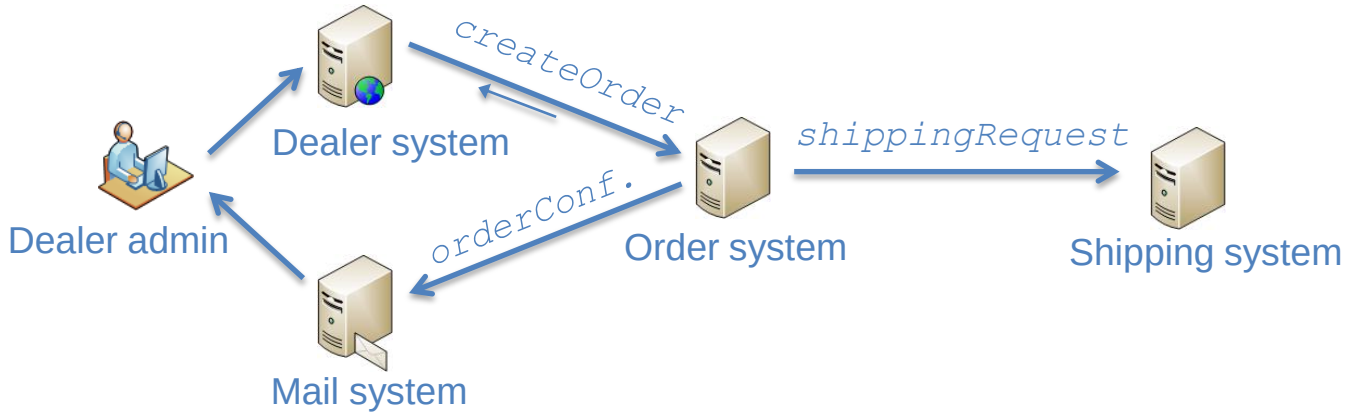
Tutorial/Demo – SOI Toolkit Ref App

Technical overview



Name	Transports	Transformation	Quality of Service
CreateOrder (Dealer → Order)	Sync SOAP ←→ Asynch JMS	XML ←→ CSV	• Idempotent Receiver, eliminating duplicate requests.
ShippingRequest (Order → Shipping)	JMS → File	None (XML)	• JMS Retry + max retries → DLQ. • Self healing connection. • Mule acts as a local file-adapter.
OrderConfirmation (Order → Dealer)	JDBC → SMTP	DB → Mime with attachment	• Resend of mail. • Self healing connection.

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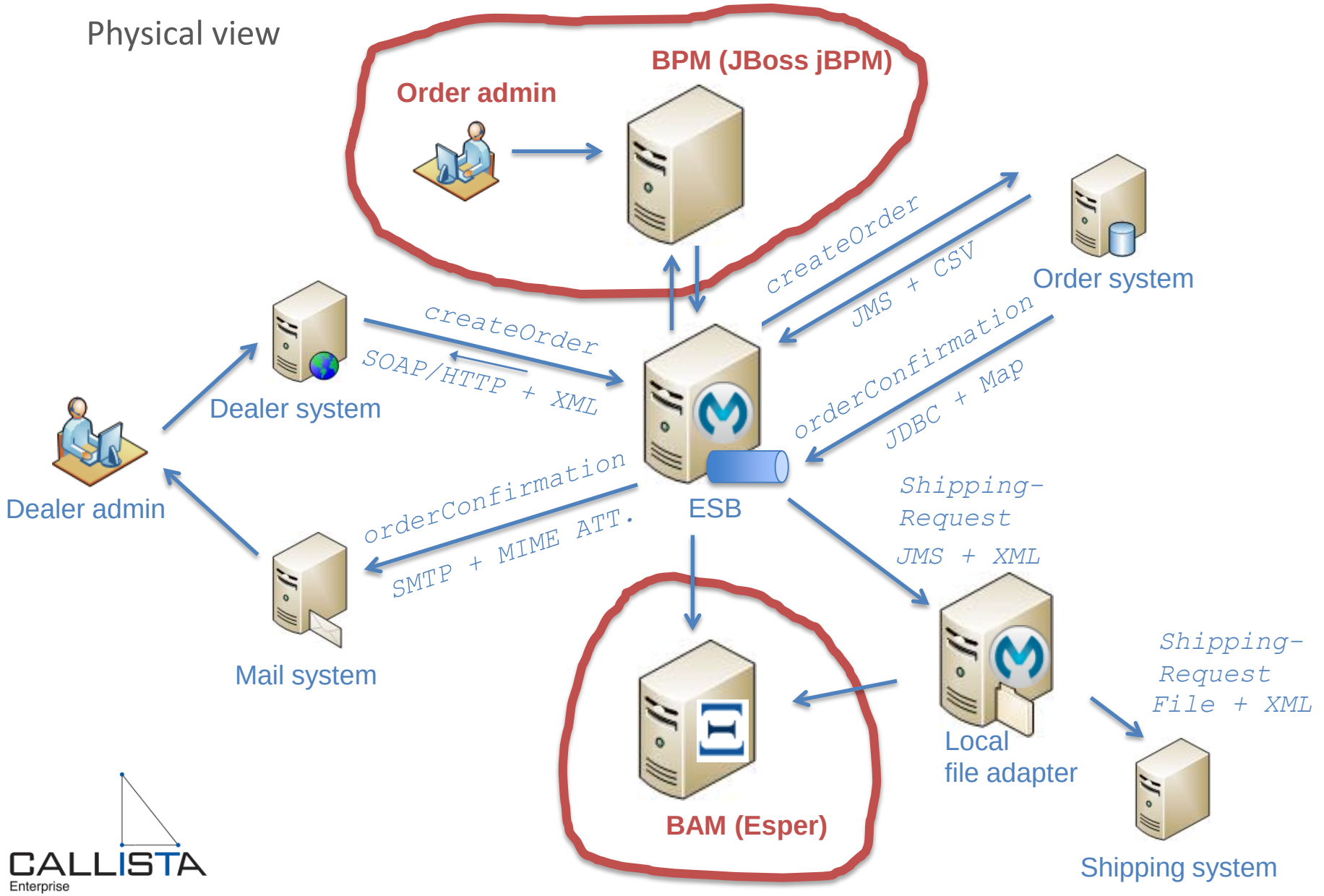
Extended Demo – SOI Toolkit Ref App

Physical view



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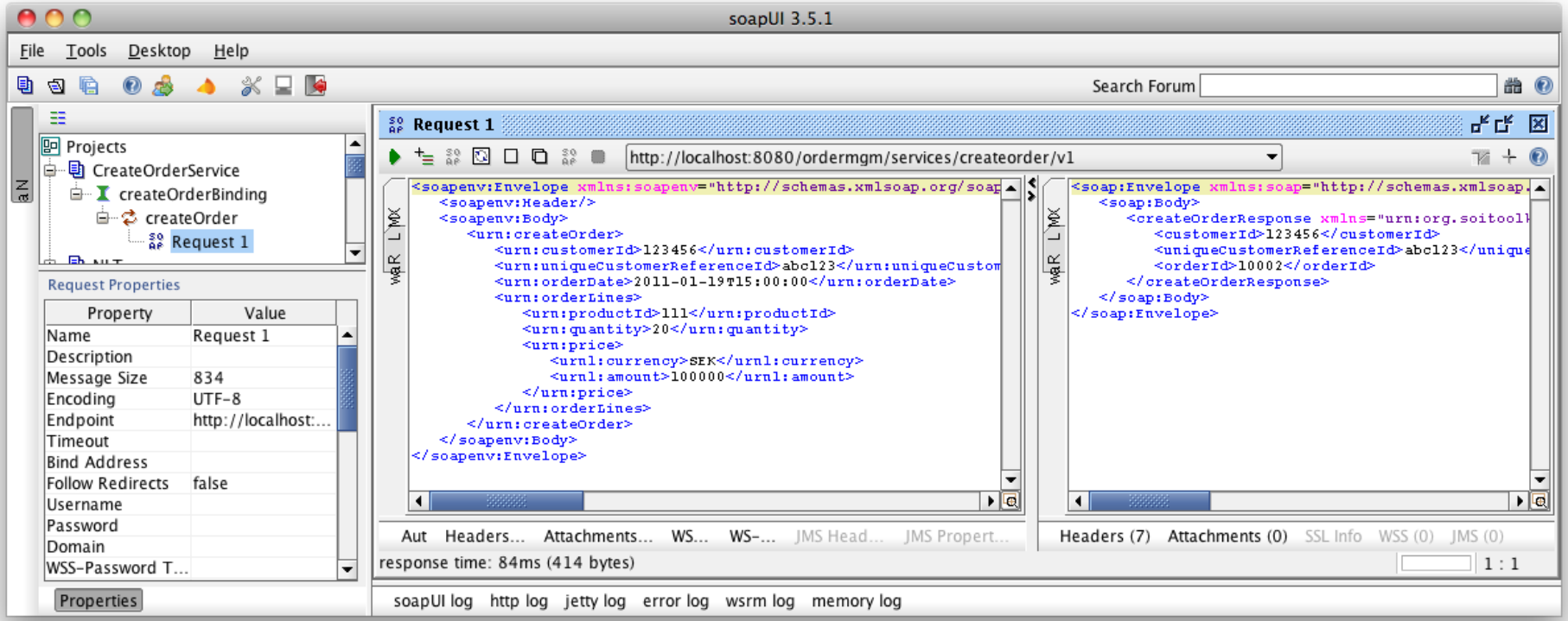
Extended Demo – SOI Toolkit Ref App

soapUI instead of a Dealer web-app…



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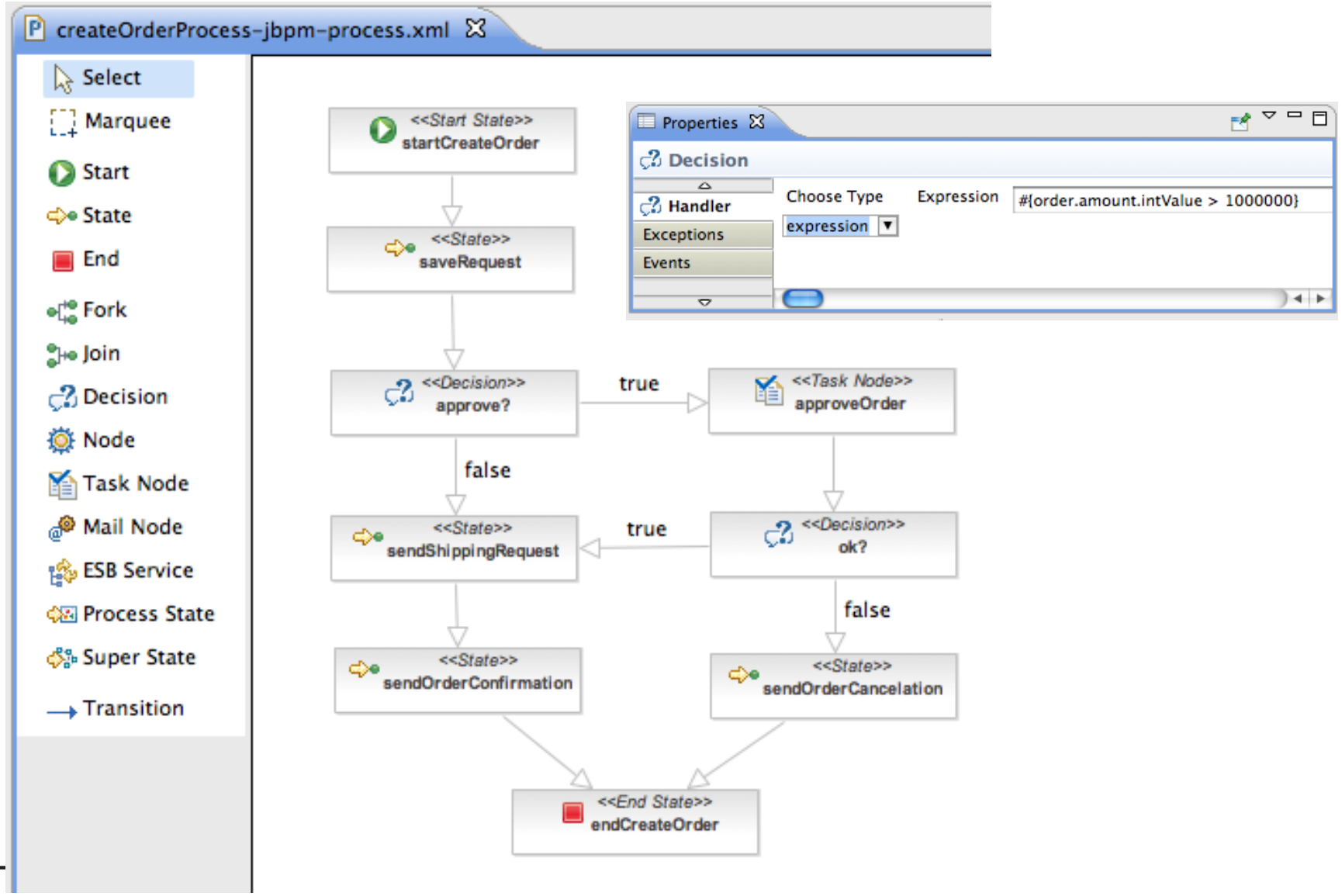
Extended Demo – SOI Toolkit Ref App

BPM – Process Orchestration with Mule ESB + JBoss jBPM



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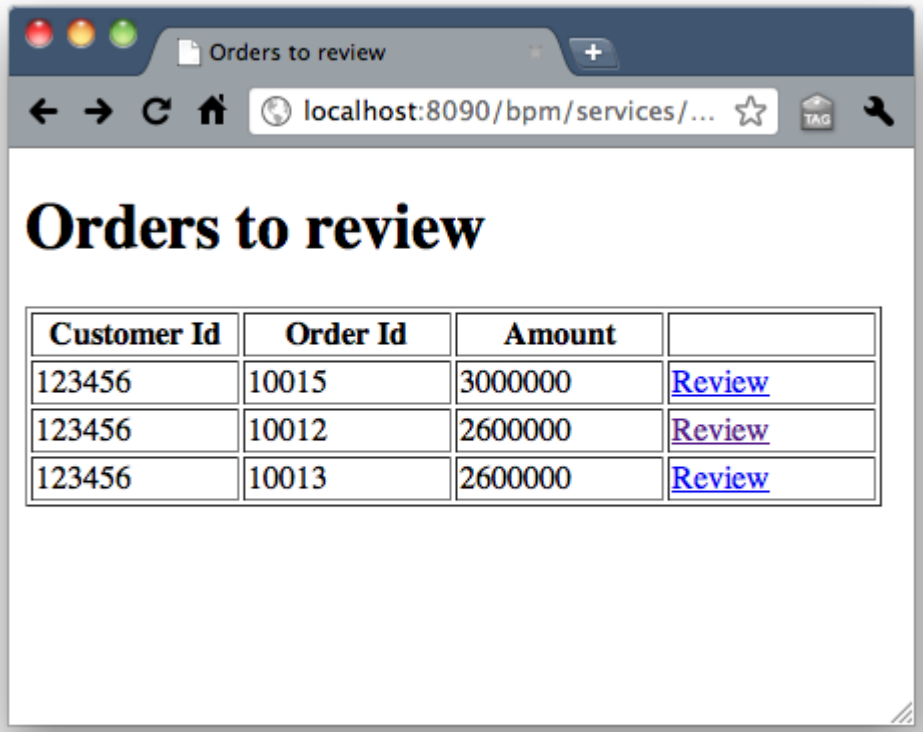
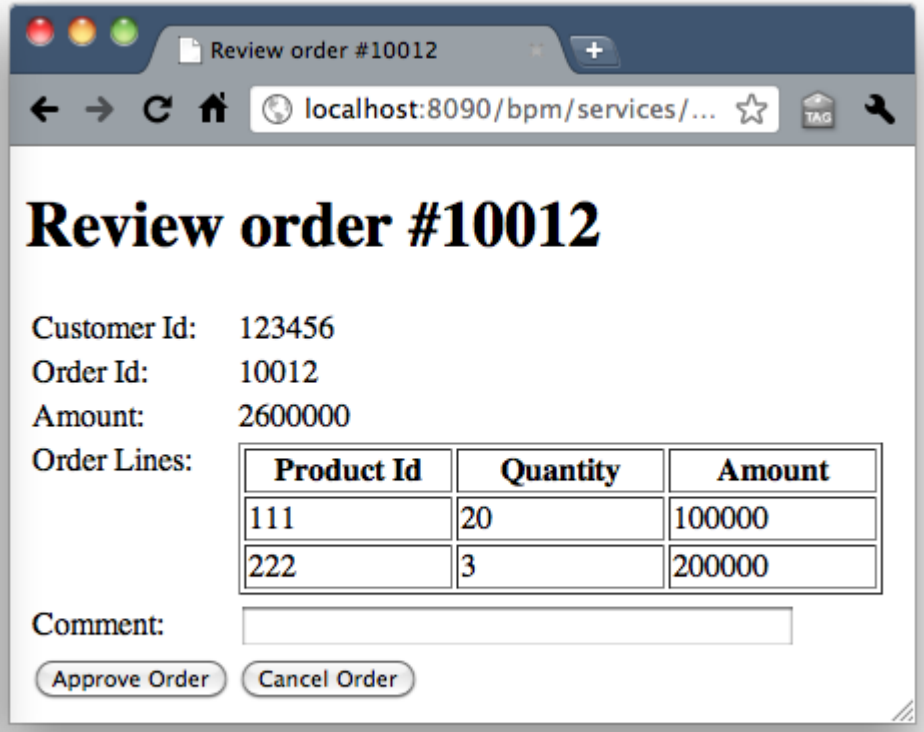
Extended Demo – SOI Toolkit Ref App

BPM – Process decides that Order Admin needs to review an Order





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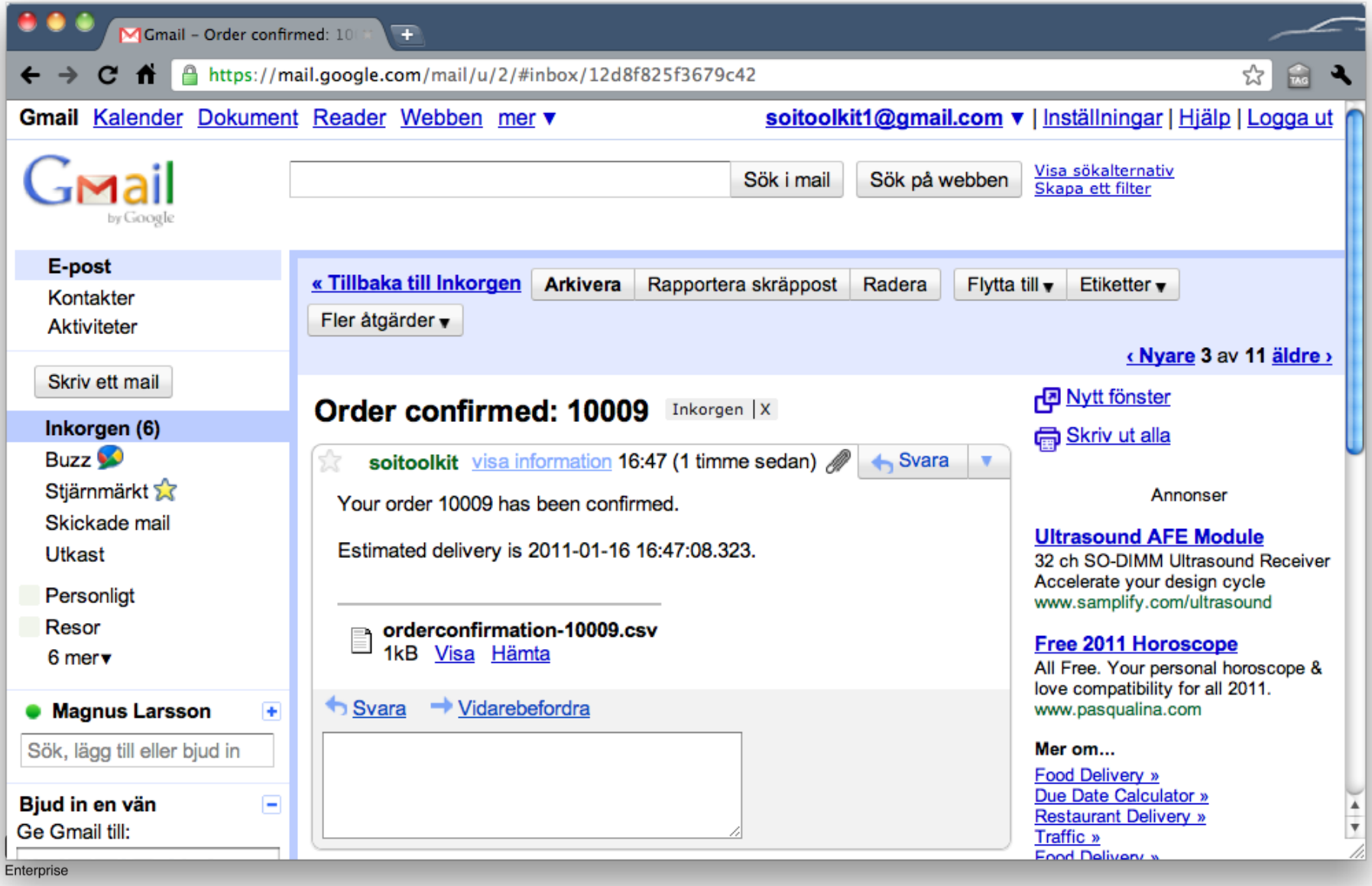
Mail as Order Confirmation



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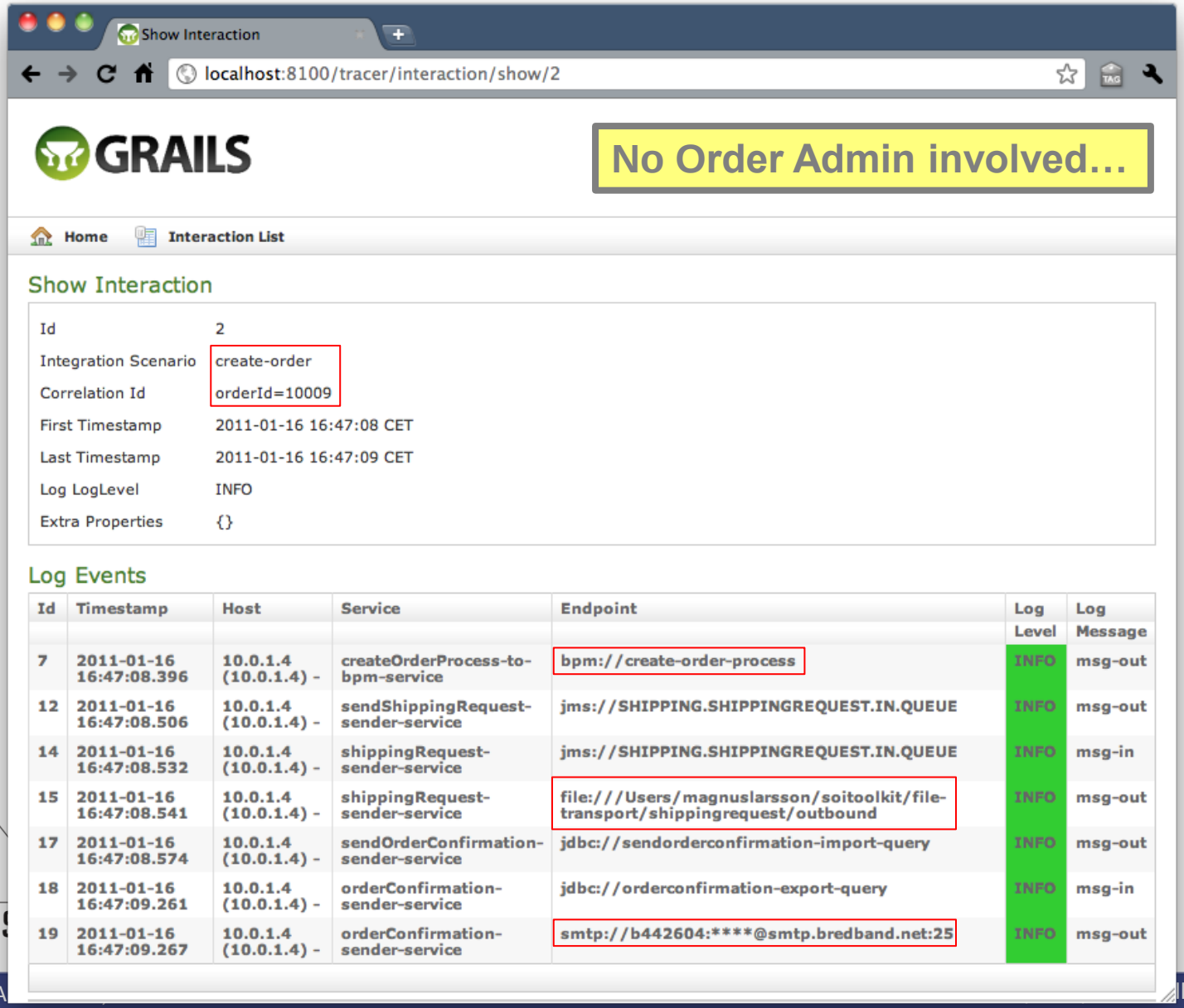
Extended Demo – SOI Toolkit Ref App

BAM – Business Activity Monitoring with Esper + Grails



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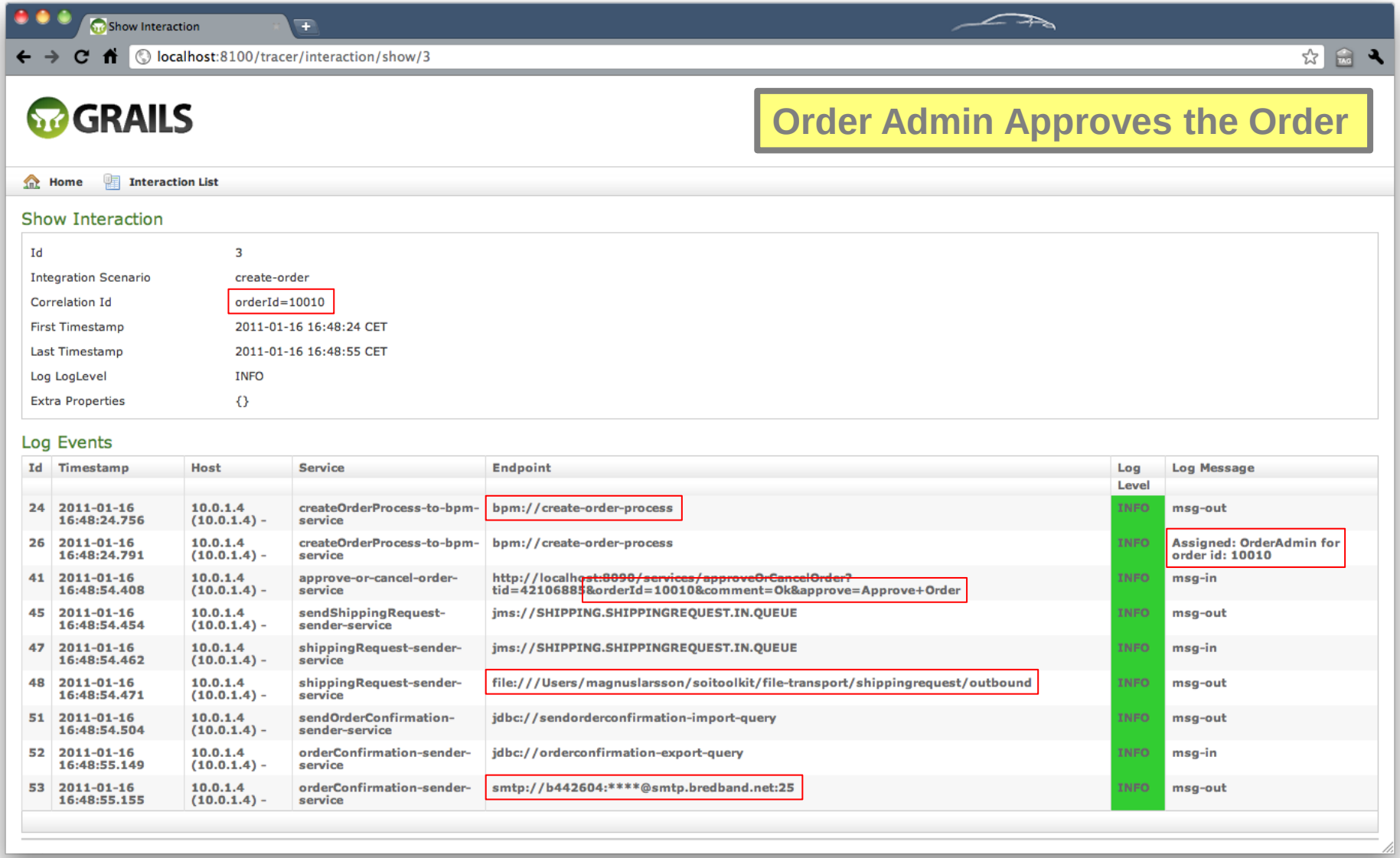

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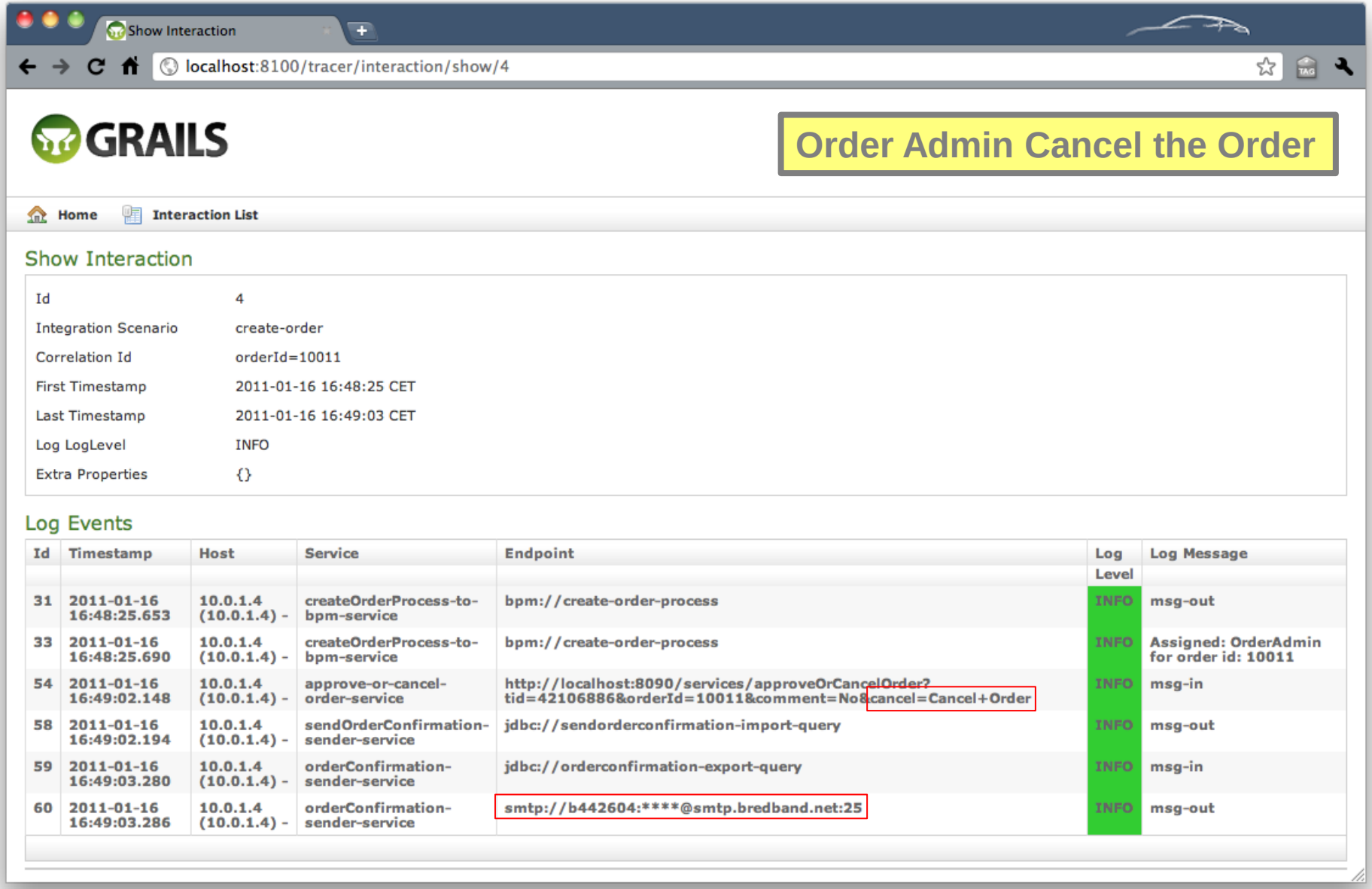

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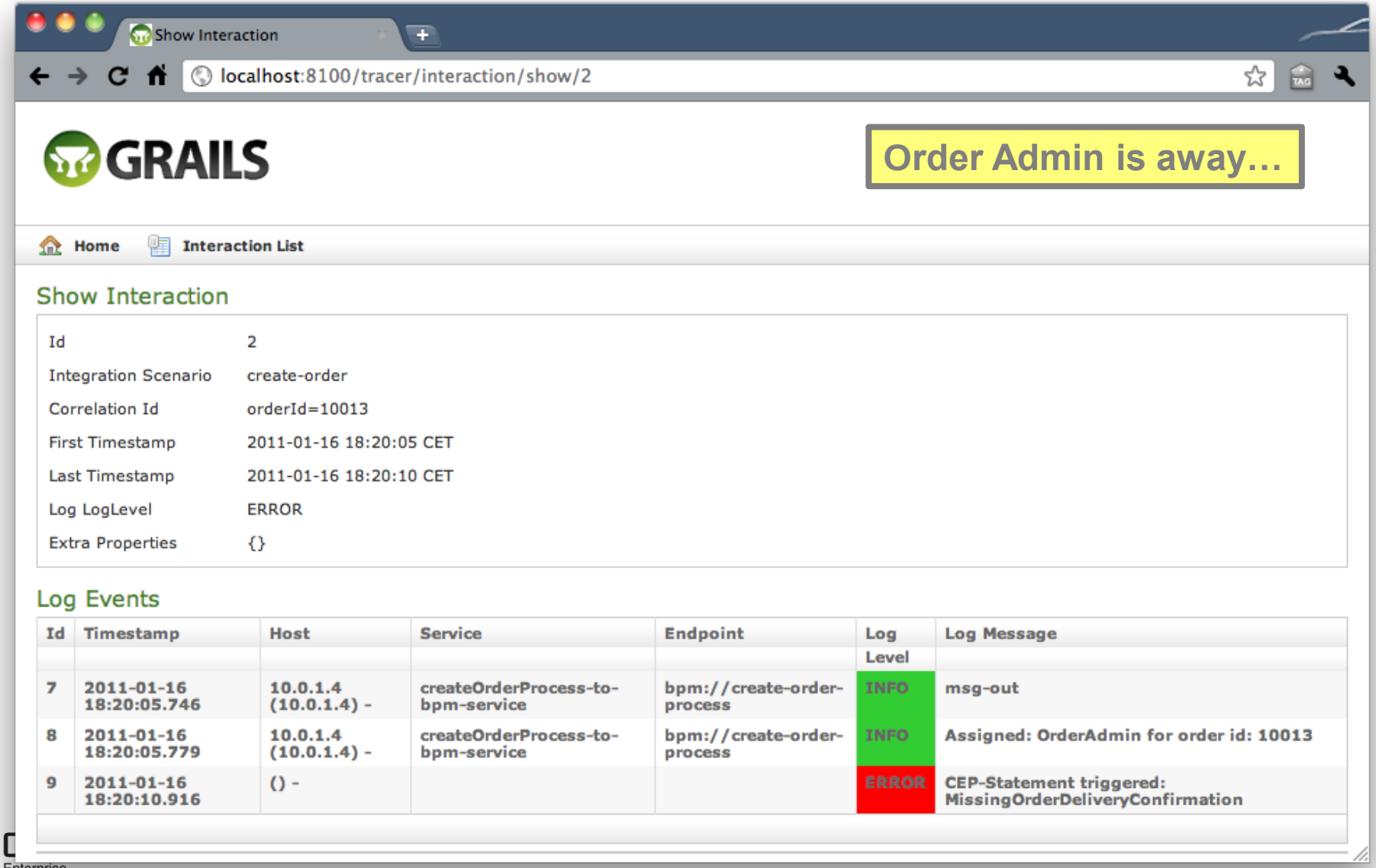

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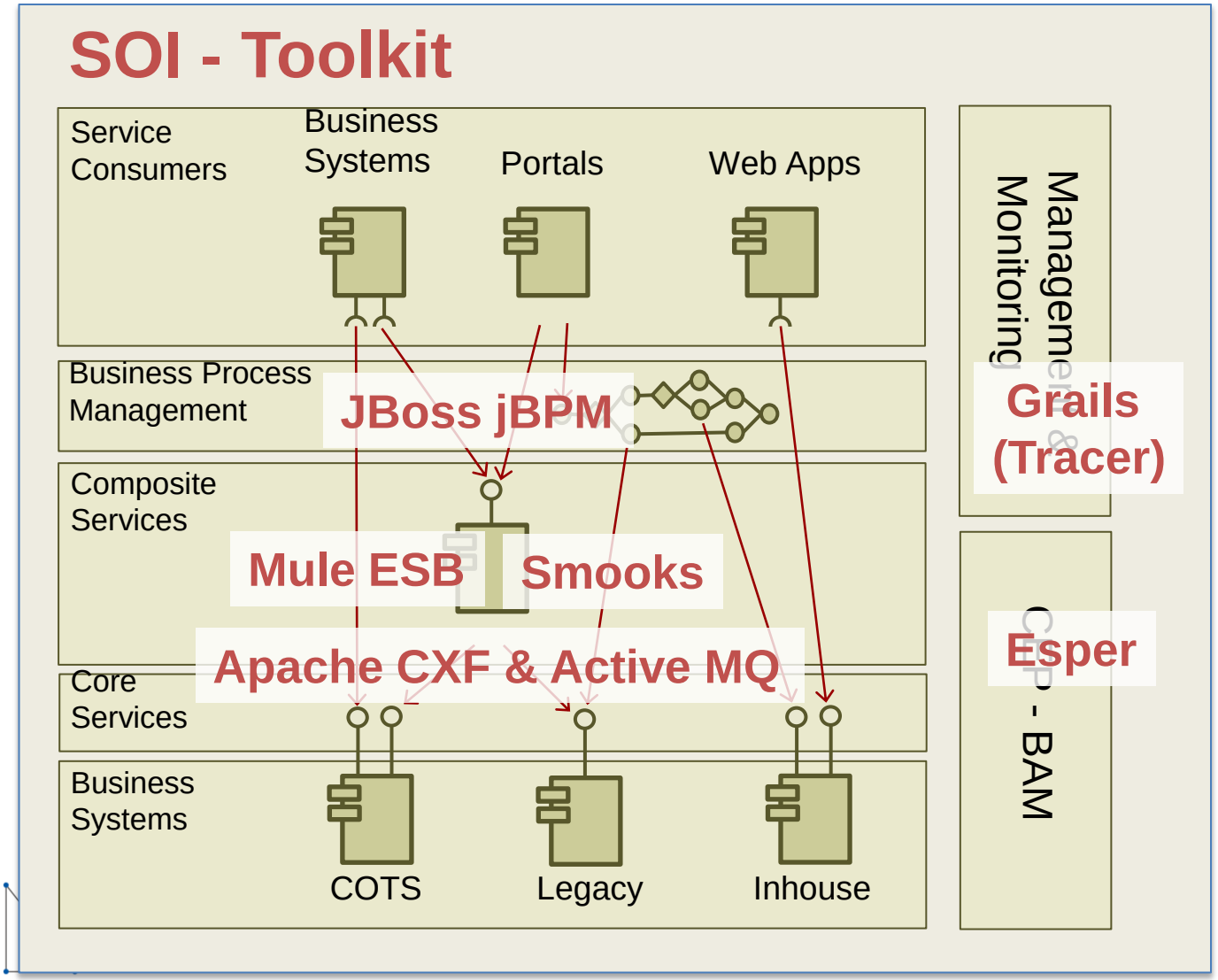
You have seen the following in action…



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Want to know more?

Visit http://soi-toolkit.org!