

Getting Started with Fuse ESB / Apache ServiceMix 4.x

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FuseSource
A Progress Software Company

Agenda

- What is FUSE?
- Overview of Code Scenario
- Overview of Technologies Used
- Code Walk Through
- Questions and Answers

The Leaders in Open Source Integration and Messaging

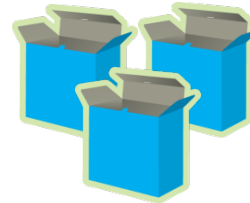
Team behind the projects

- *Leaders at Apache*
- *Product roadmaps*
- *Code contributions*



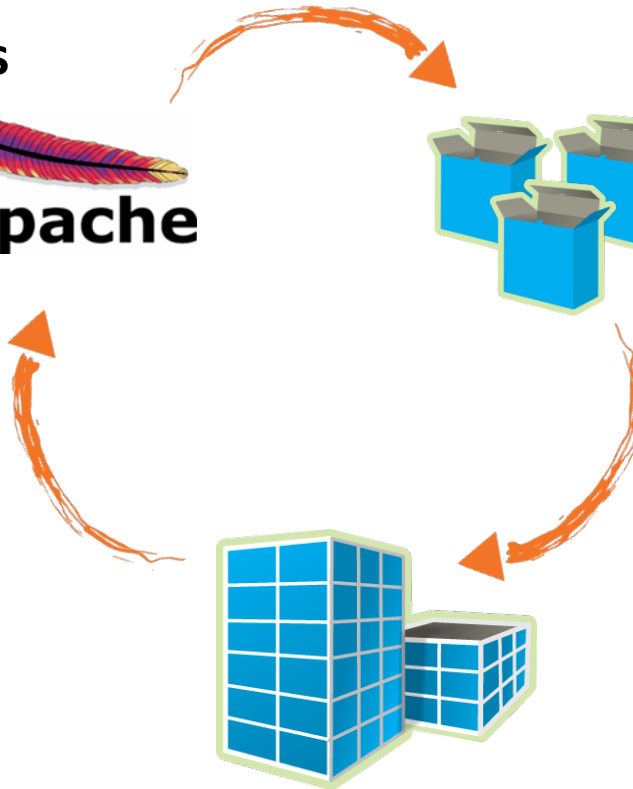
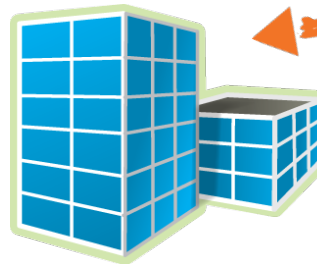
Productized distributions

- *Integrated*
- *Tested*
- *Tooling*



Enterprise support

- *Subscriptions*
- *Training*
- *Consulting*



FuseSource : Open Source Integration and Messaging

Cost-effective, enterprise-class solutions

- Over 25 active Apache committers on staff
- Business-friendly, Apache open source license
- Backed by stable, global software company

Apache Project	Capabilities
ServiceMix	ESB combining the best of Apache Integration projects
Karaf	OSGI-based integration server
ActiveMQ	Reliable messaging for Java / JMS, C++ and .NET
Camel	Enterprise Integration Pattern framework
CXF	SOAP, XML and RESTful web services

FuseSource : Team that Wrote the Code

No one knows the code, or influences the projects at Apache more than FuseSource:

- Co-founders and PMC members of ServiceMix, Karaf, ActiveMQ, Camel, and others
- Over 25 active committers on 11 Apache projects



Guillaume Nodet



James Strachan



Rob Davis



Hiram Chirino



Jon Anstey



Gary Tully



***Dejan
Bosanac***



***Gert
Vanthienen***



Willem Jiang

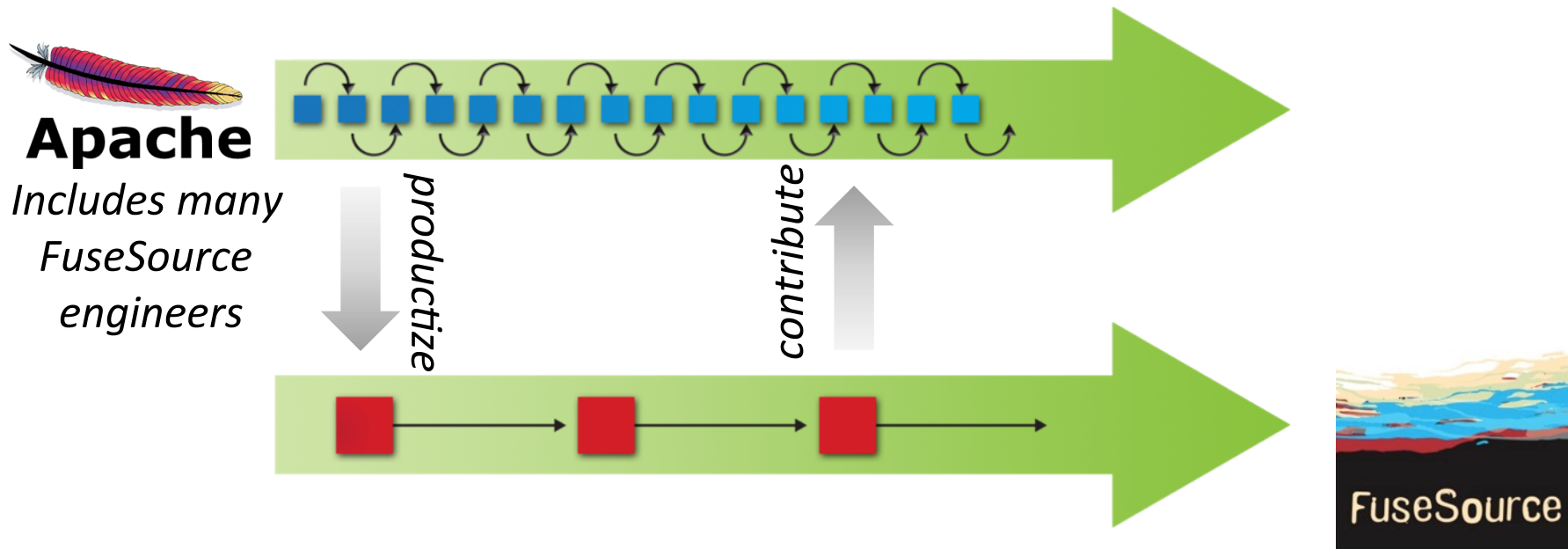


Claus Ibsen

FuseSource : Alignment with Apache

Not just a team of hackers – FuseSource drives the products

- No one knows the internals of the projects better
- FuseSource has access to product road maps
- Customer patches are contributed to Apache
- Customer feedback drives project direction



FuseSource Subscription = Long Term Success

Support

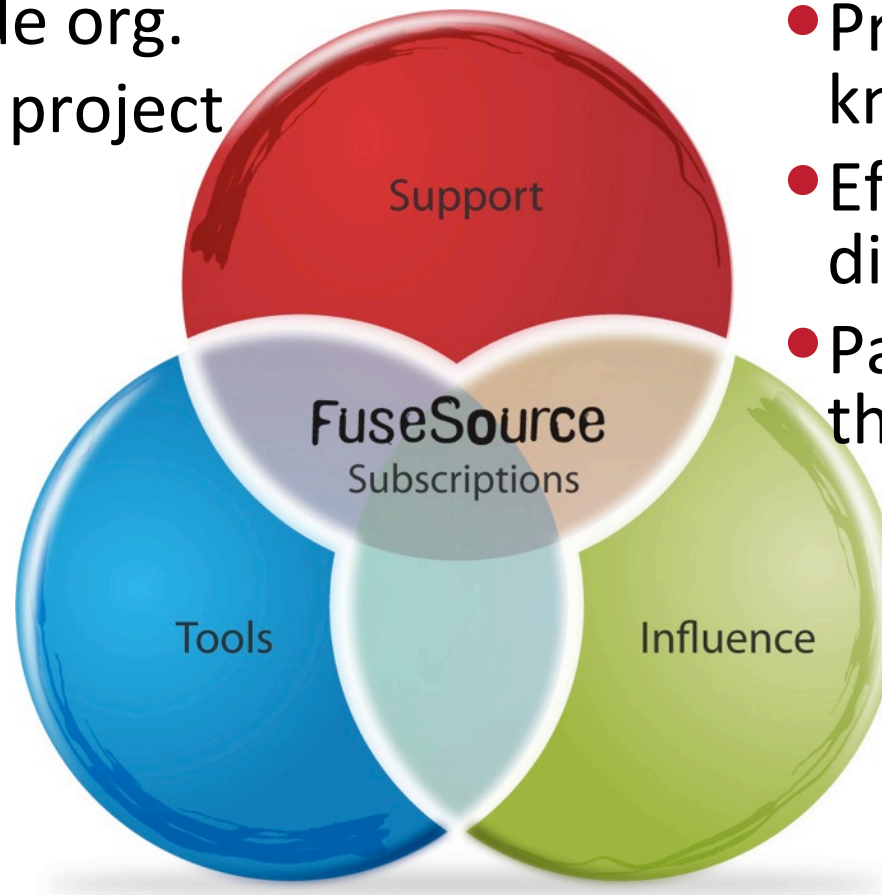
- Enterprise-class
- Worldwide org.
- From the project leaders

Influence

- Product knowledge
- Effect product direction
- Partner with the developers

Tools

- Pilot projects
- Development
- Deployment



CamelOne – Open Source Integration Conference



First conference event for enterprise users of Apache Camel, ServiceMix, ActiveMQ and CXF

- **Keynote speaker:** Gregor Hohpe
Software Engineer at Google and author of *Enterprise Integration Patterns*
- **Conference activities:** technical sessions by committers, networking events
- **On-site training:** 2-day training classes delivered by FuseSource engineers

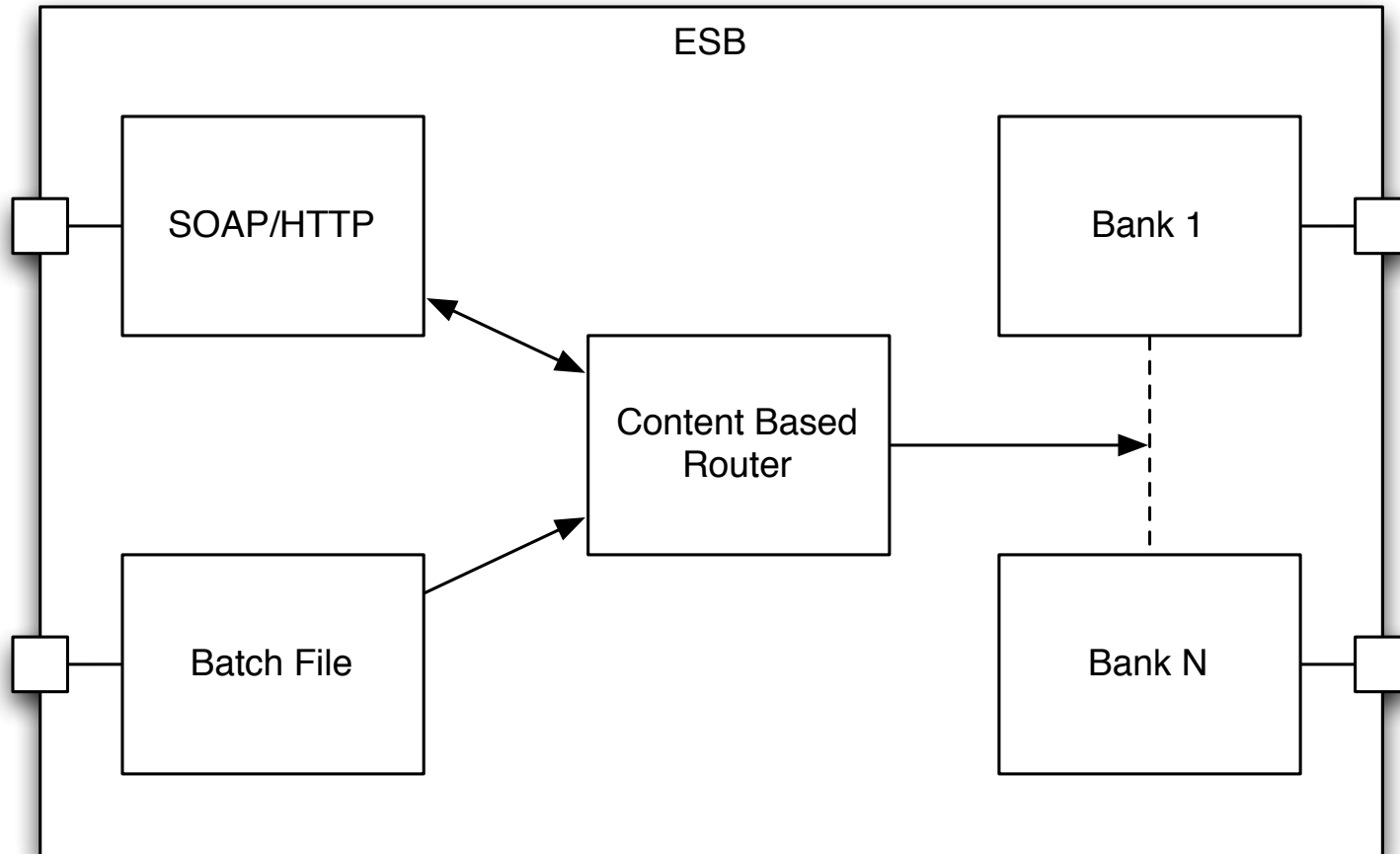
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Scenario : Problem to be Solved

Payment Service – route transfer messages to bank

- Receive message from one of two front endpoints
 - SOAP/HTTP endpoint
 - Batch File
- Through a Content Based Router (CBR)
 - Analyze message to determine bank endpoint to route
- Route to a dynamic bank endpoint for processing
 - List of bank endpoints changes at runtime
- System needs to always be running, so all components (endpoints and CBR) should be runtime replaceable

Scenario : Conceptual Architecture



Scenario: Technology Used

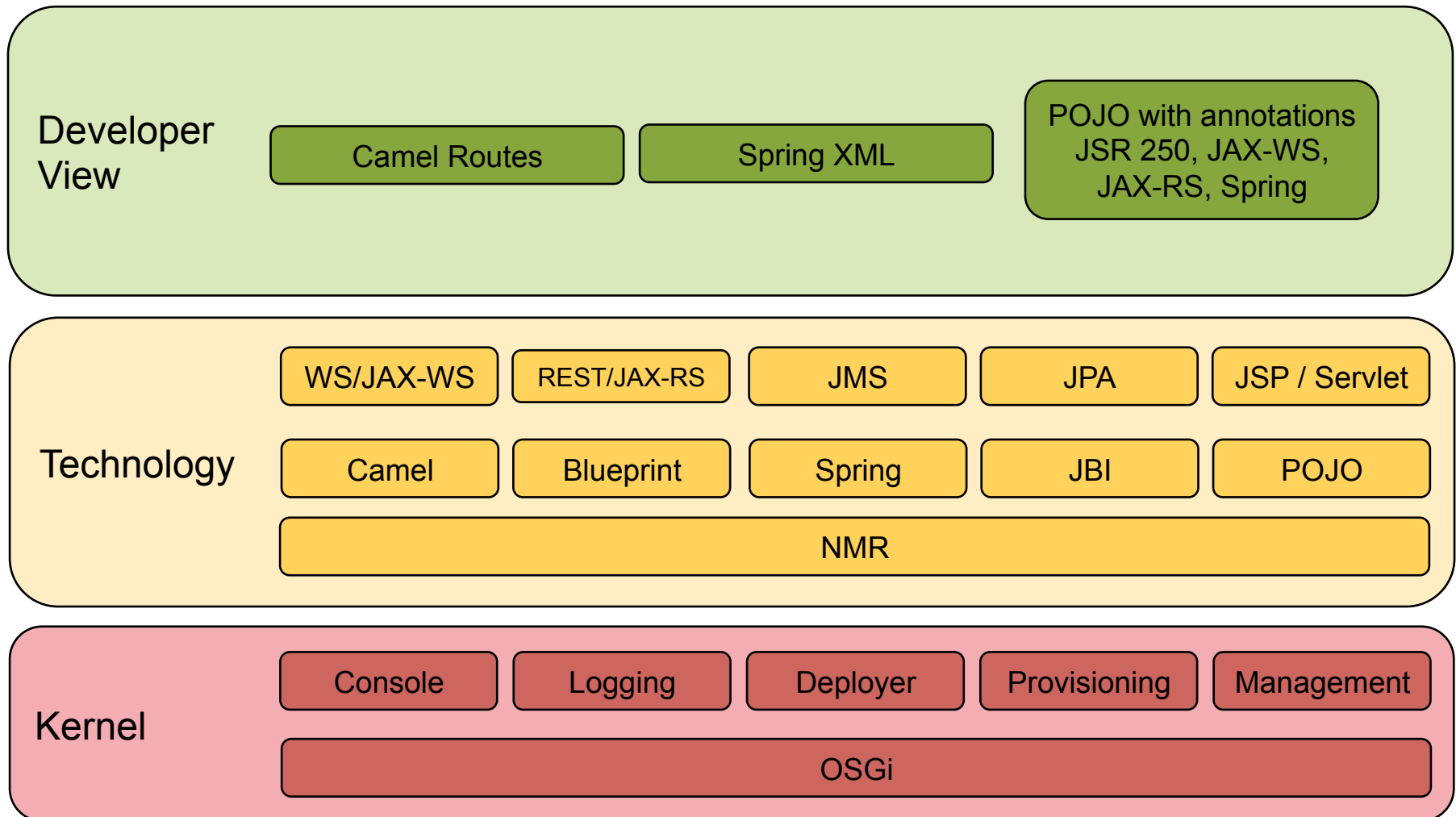
- Runtime – Apache ServiceMix 4.3.1-fuse-01-09 (Fuse ESB)
 - Apache Karaf 2.1.4-fuse-00-09
 - OSGi Enterprise 4.2.0 support through Apache Felix and Apache Aries
 - Apache Camel 2.6.0-fuse-01-09
 - Apache CXF 2.3.3-fuse-01-09
 - Spring 3.0.5.RELEASE (Beans and OSGi)

- Development – Fuse IDE for Camel
 - Eclipse IDE Helios SR2 (3.6.2) (Java EE edition)
 - m2eclipse plugin 0.12.0
 - Apache Maven 3 (should work on 2.2)

ServiceMix – Leading Open Source ESB

- Best used as runtime container for your services and integration flows
- Strong track record with standards and innovation
 - Early adopter of JBI and OSGi Enterprise
 - Value add innovation with ServiceMix Kernel becoming Apache Karaf
 - Provides a dynamic, OSGi-based runtime
- Pre-integrated with:
 - Camel – service and integration flow framework
 - CXF – SOAP, XML and REST services
 - ActiveMQ – reliable messaging
 - JBI and NMR
 - Transaction Manager
 - And much more...

ServiceMix Architecture



JBIG and OSGi

Complementary Standards

JBIG

Java Business Integration

- Standard component model (JSR 208)
 - Binding Component (BC)
 - Service Engine (SE)
 - Normalized Message Router (NMR)
- Well defined lifecycle
 - Service Bundles
 - Service Assemblies

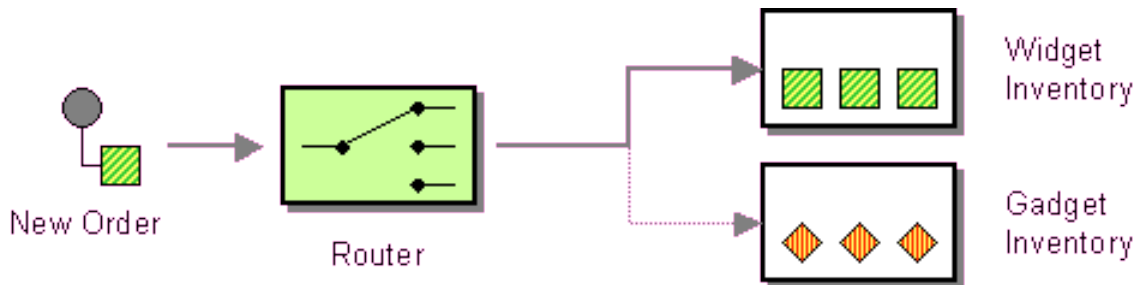
OSGi

Open Services Gateway Initiative

- Standard Services
 - Logging, admin, event, preferences, ...
- Service Registry
 - Dynamic service discovery
- Lifecycle
 - Install/uninstall, start/stop, update, ...
- Modules
 - Class loading, classpath, ...

Camel – Integration Framework

- Camel provides an embedded DSL (in Java & Spring) for implementing enterprise integration patterns
 - The DSL uses URIs to define endpoints which are combined by form integration flows

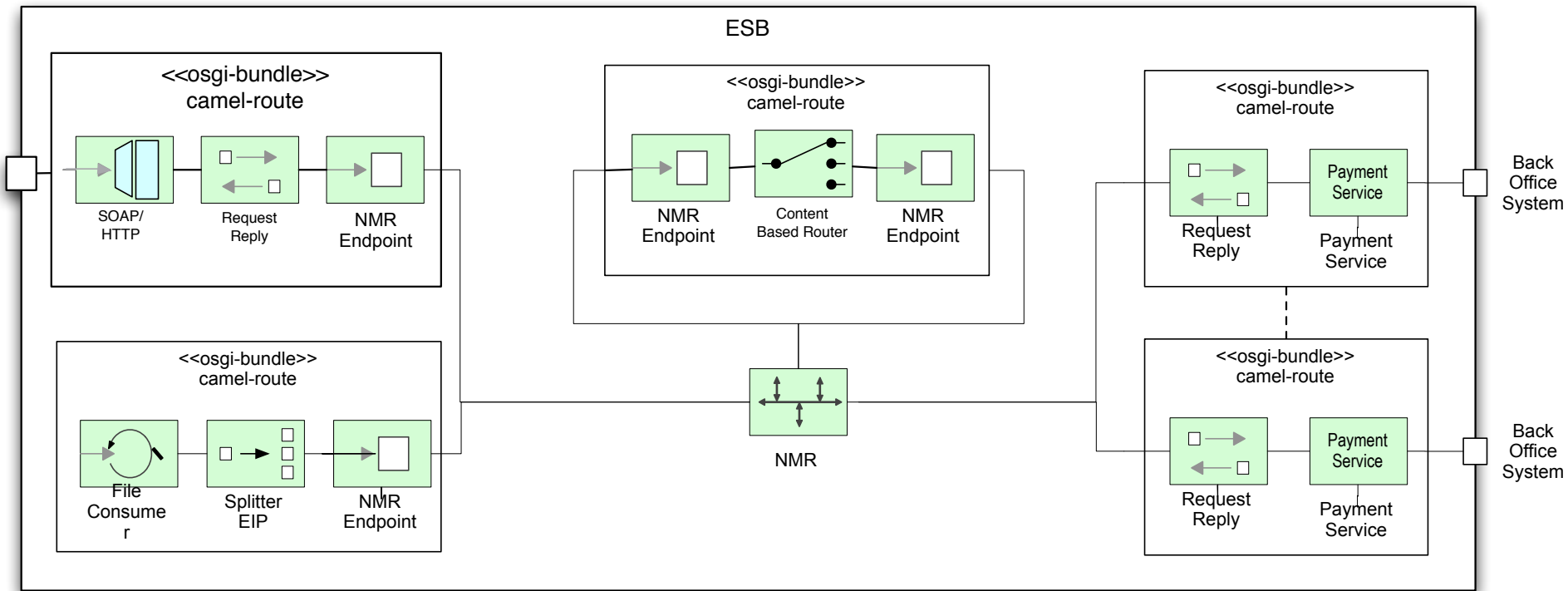


```
from("activemq:topic:Quotes")
    .filter().xpath("/quote/product = 'widget'")
    .to("mqseries:WidgetQuotes")
    .filter().xpath("/quote/product = 'gadget'")
    .to("mqseries:GadgetQuotes");
```

Scenario : Implementation Details

- ServiceMix as ESB and OSGi Container
- Camel as integration framework
- Each major subsystem deployed as separate OSGi bundle
- Use OSGi Services for dynamic back end bank endpoint
 - OSGi provides robust support for dynamic services
 - Can use OSGi Service Registry for endpoint discovery
- XML messaging (canonical) between subsystems
- Leverage ServiceMix NMR to decouple subsystems

Scenario : Deployment Architecture



What is the ServiceMix NMR?

- Facilitates decoupling of components
- Supports Message Exchange Patterns (MEP)
 - In-only, in-out, robust-in-only, optional-in-only
- Enables consistent Security and Auditing between components
- Provides efficient threading model for asynchronous message passing

CamelOne – Open Source Integration Conference

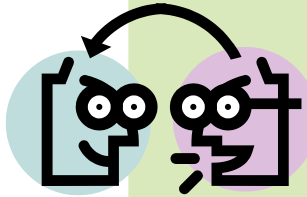


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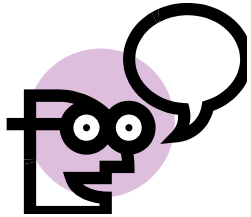
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Samples, Demos



Blogs from our
Community Leaders



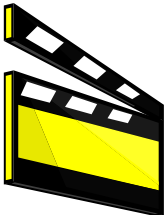
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