

Java Forum Stuttgart - 7. Juli 2011

DEMOCRATIZE THE ESB TALEND'S OPEN SOURCE ESB

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Agenda

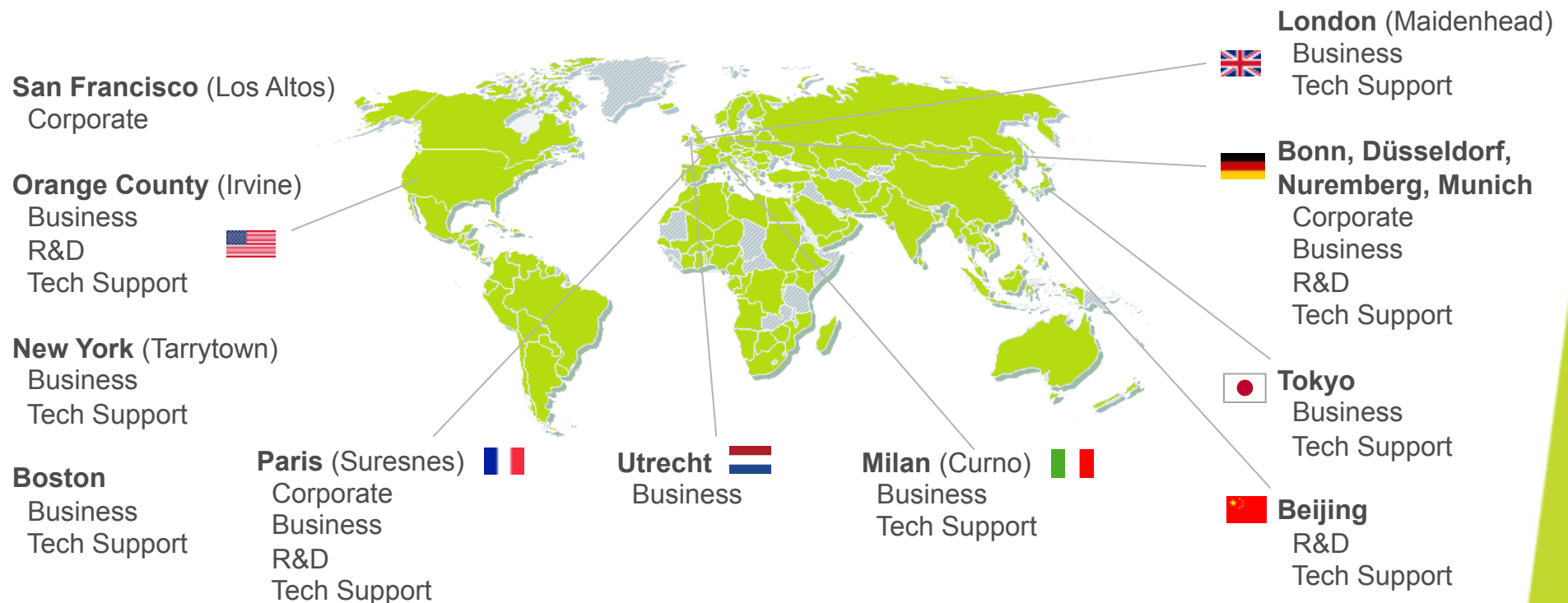
- Kurzvorstellung Talend
 - Company Profile
 - Portfolio
- Service-orientierte Architektur
 - Welche Probleme wollen wir lösen?
 - Welche Rolle spielt dabei der ESB?
- Talend ESB
 - Überblick
 - Komponenten
 - Ausgewählte Features
- Demonstration
- Zusammenfassung und Ausblick
- Q&A

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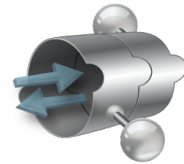
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- **Q&A**

Talend ist ein Open Source Unternehmen

- Führender Hersteller von Open Source Integrationstechnologie
- Historische Wurzeln in Frankreich und Deutschland
- 2 Mio Downloads pro Jahr, 600.000 User, 2.500 Kunden
- Aktuell ca. 450 Mitarbeiter, ca. 550 bis Ende 2011
- Open Source: #1 in Europa – #5 Worldwide
- Gelistet bei Gartner und anderen Analysten



Portfolio Übersicht



Application Integration

Connect applications & services



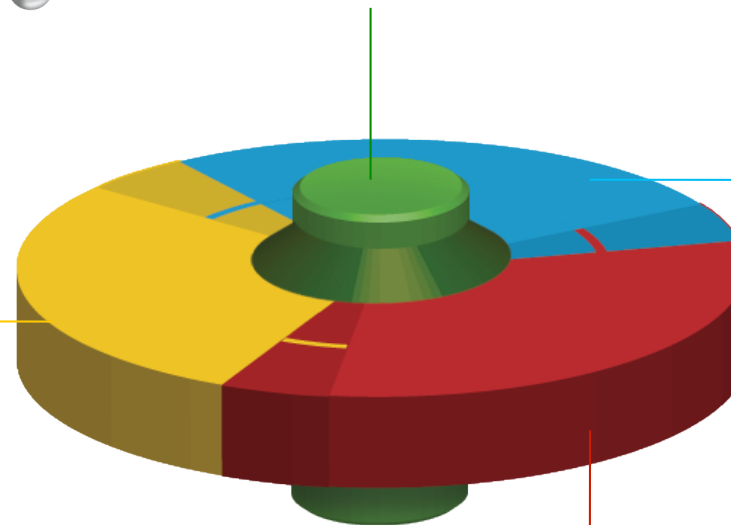
Data Quality

Data profiling
& data cleansing



MDM

Reference data
management



Data Integration

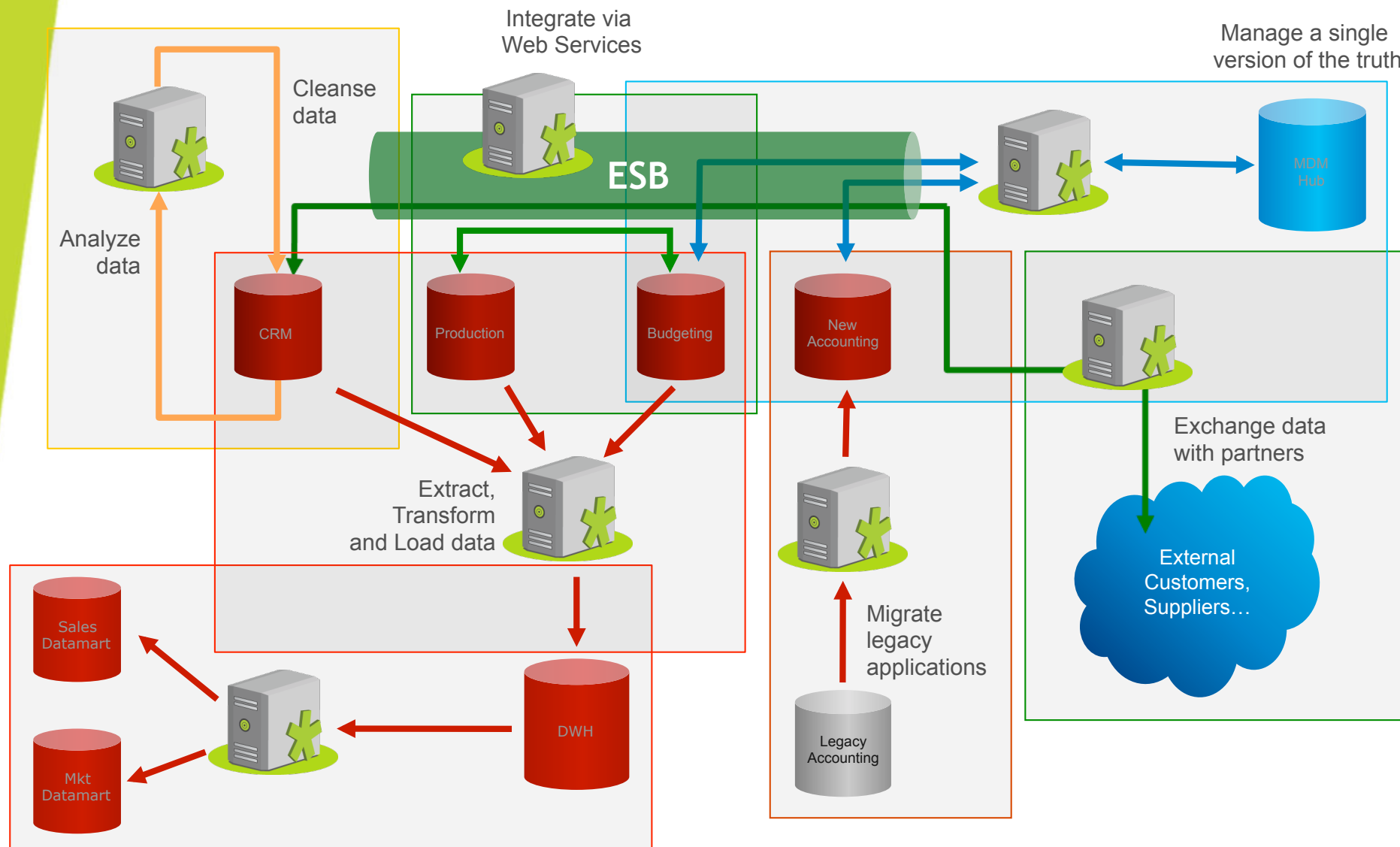
Analytics (ETL)

Extract, Transform & Load for
decision support systems

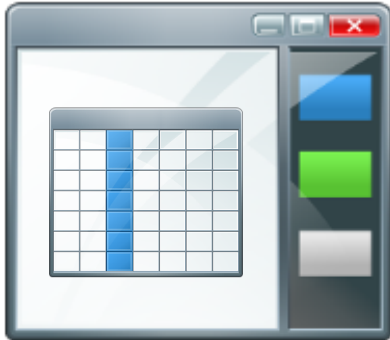
Operational Integration

Data replication & synchronization,
data migration & capture,
application upgrade, etc.

Einsatzgebiete



Alle Produkte basieren auf der Unified Platform



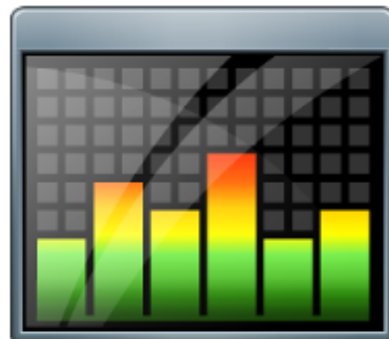
Development



Runtime



Deployment

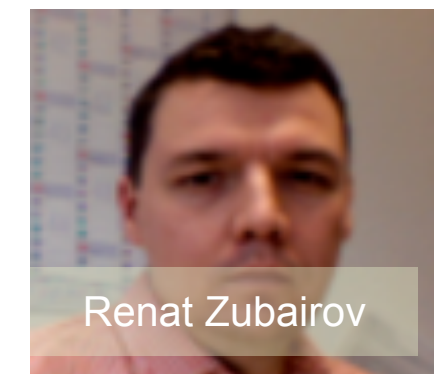
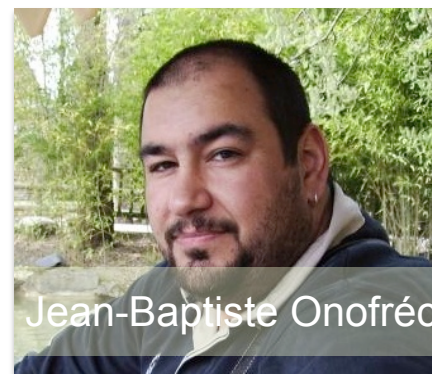
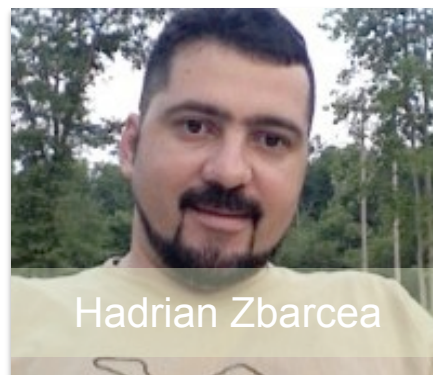
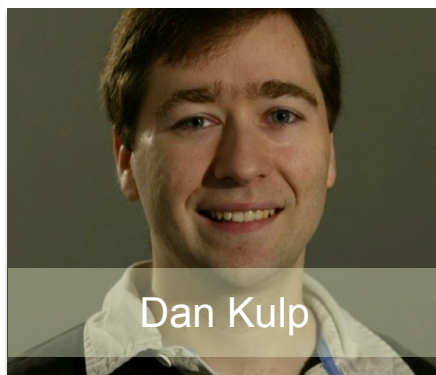


Monitoring



Repository

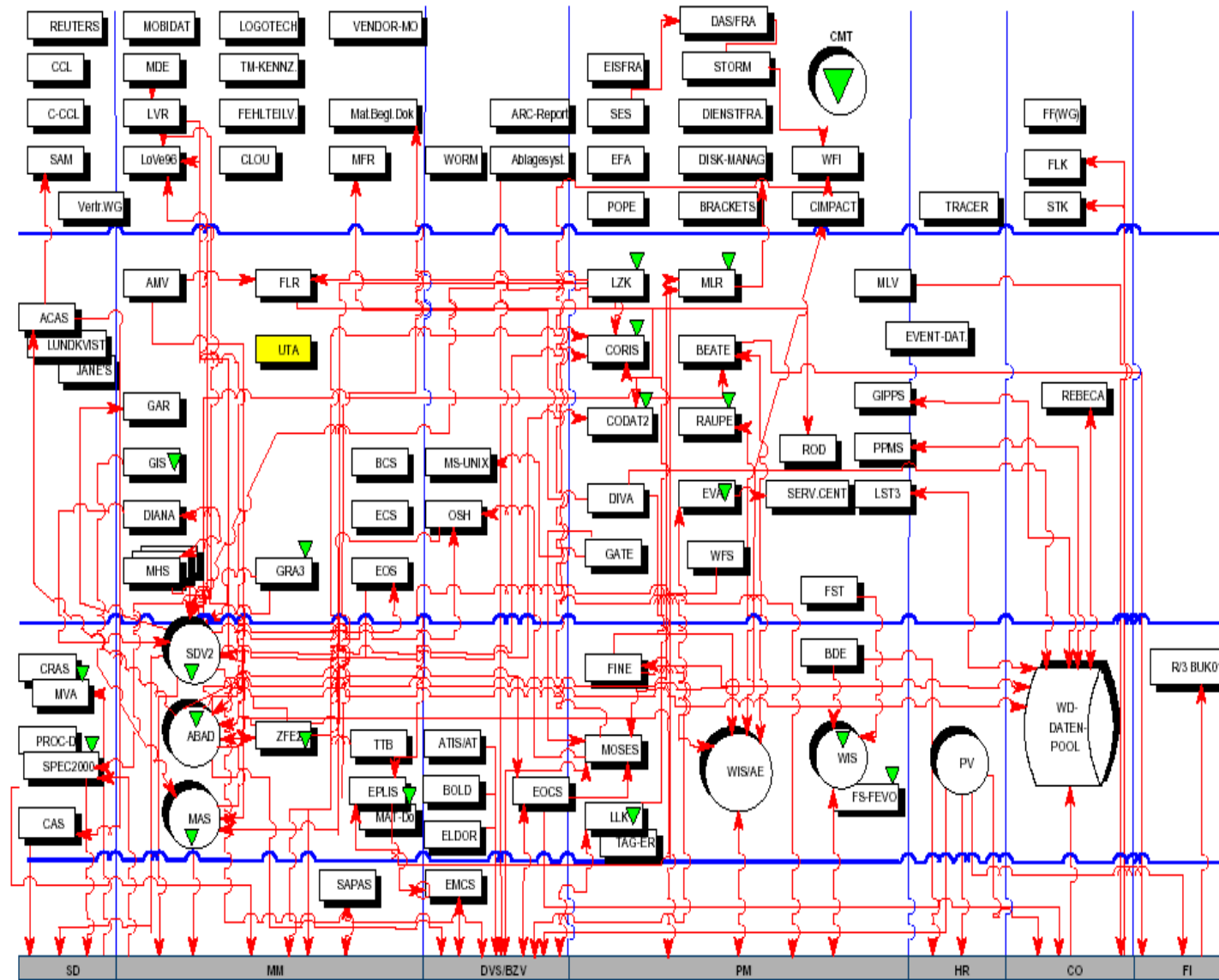
Unser Commitment zu Open Source



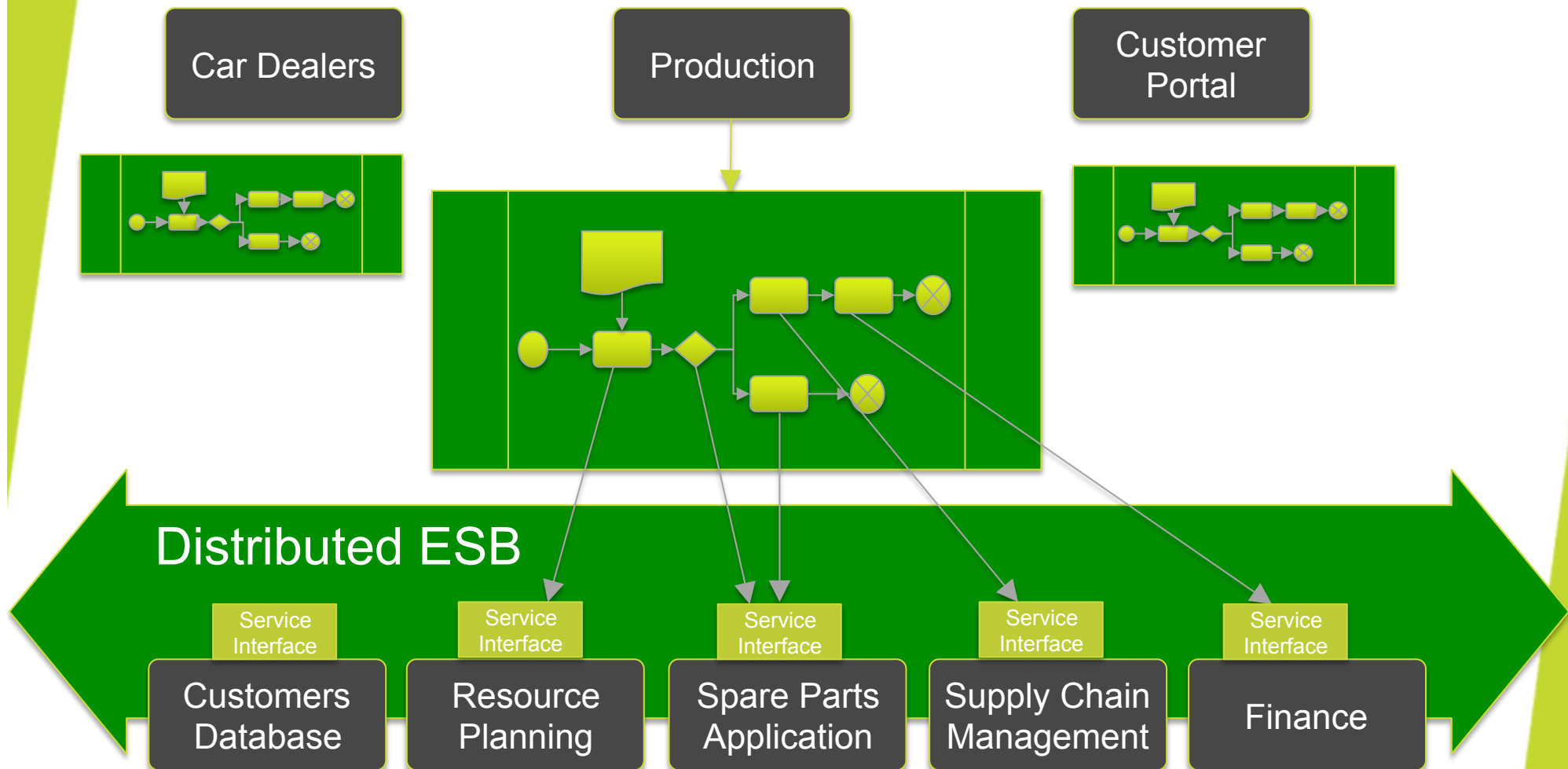
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Point to Point Integration



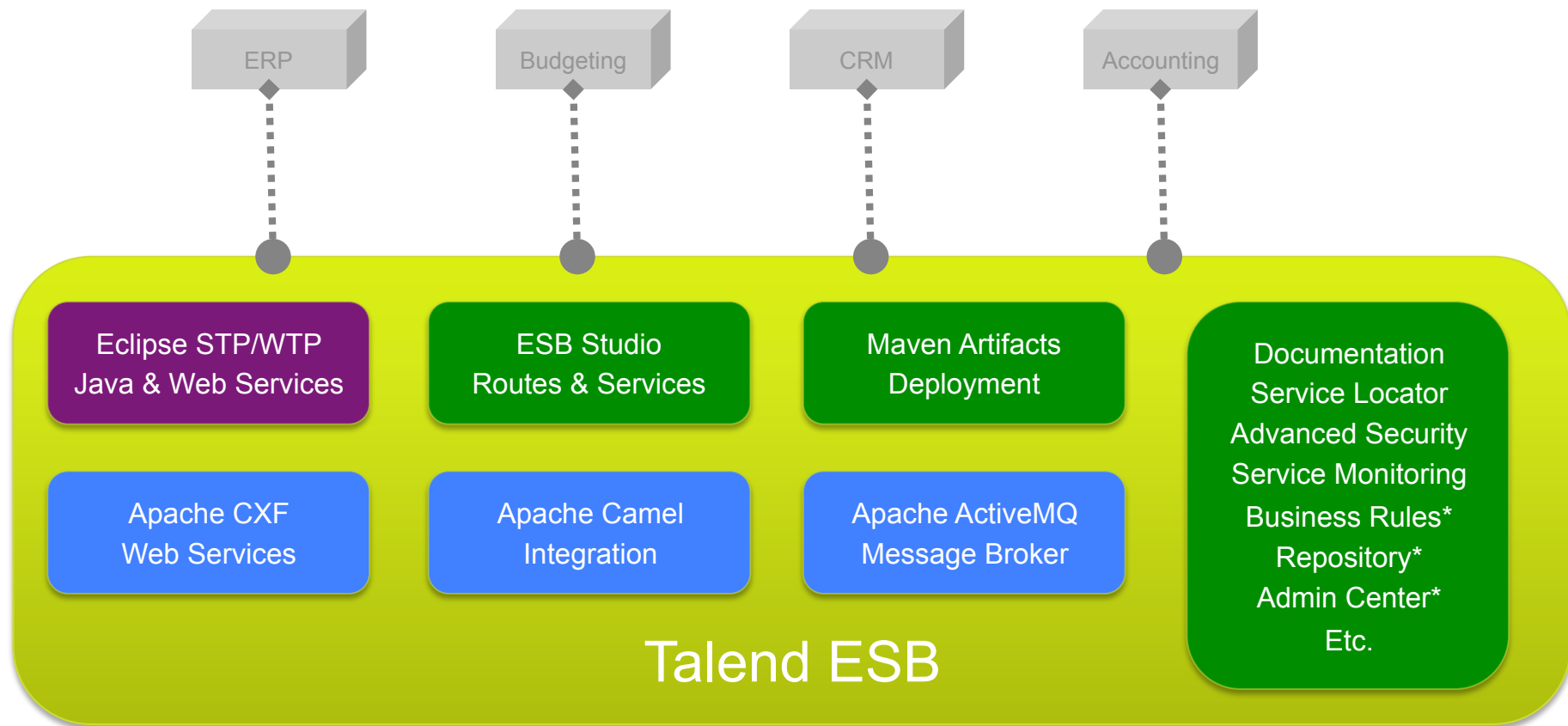
Entkopplung durch Service-orientierte Architektur



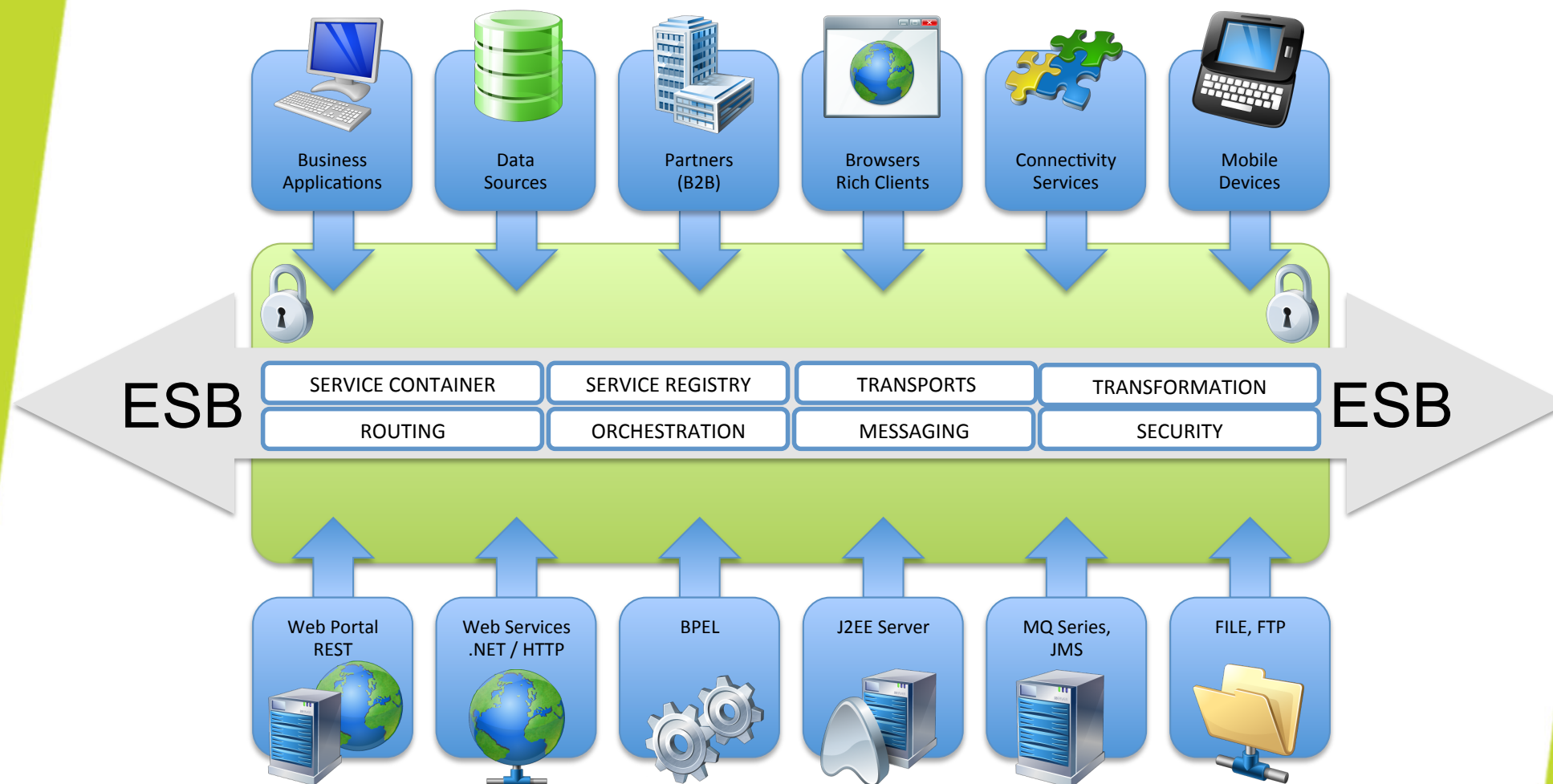
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Talend ESB Komponenten



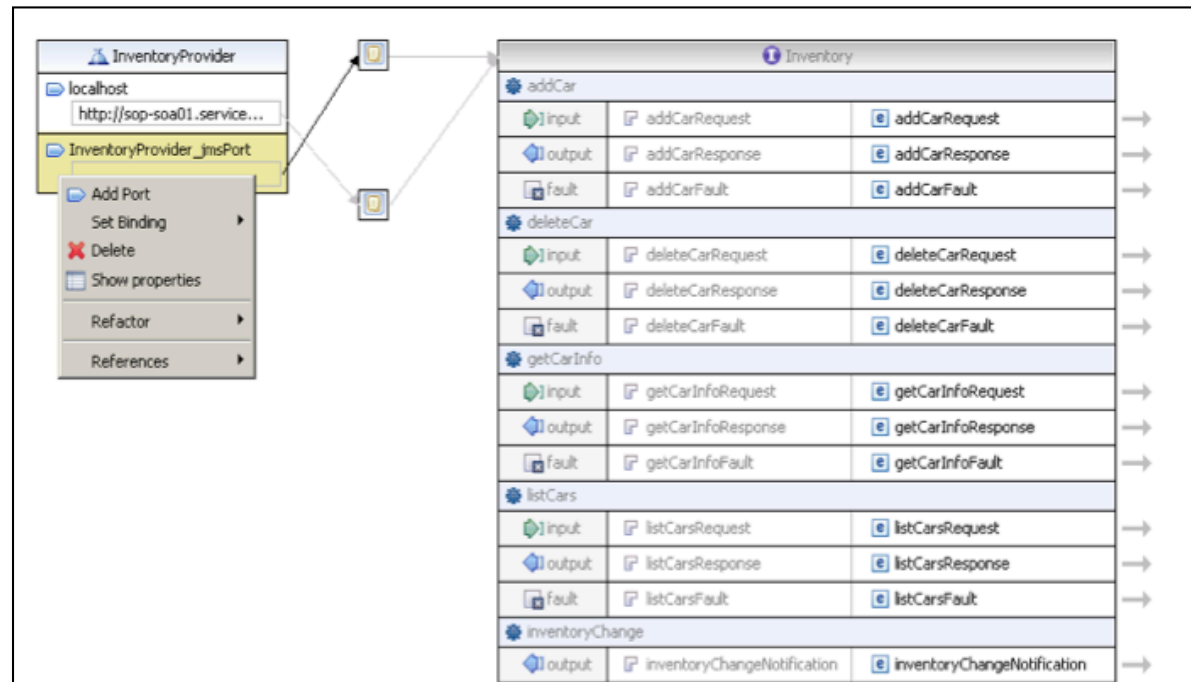
ESB Run-time Features



Web Services

■ Apache CXF

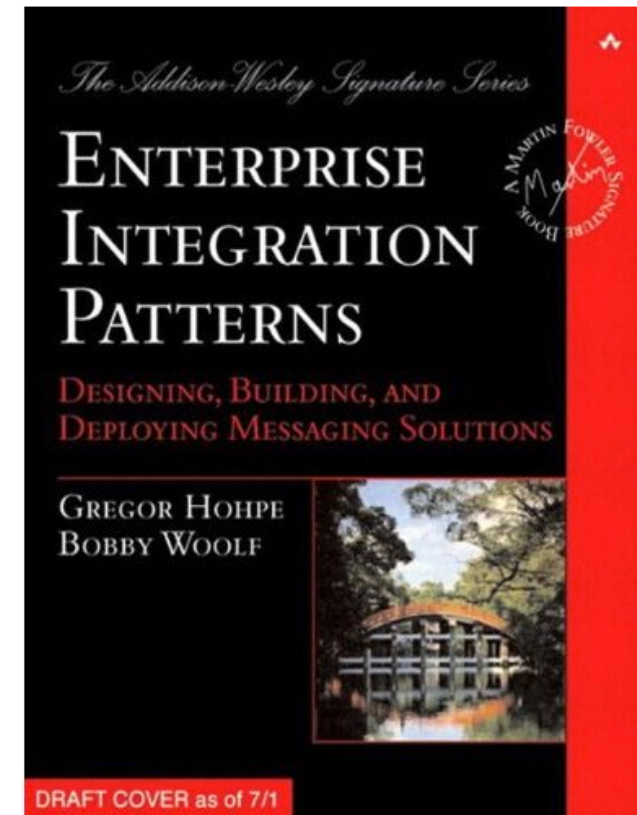
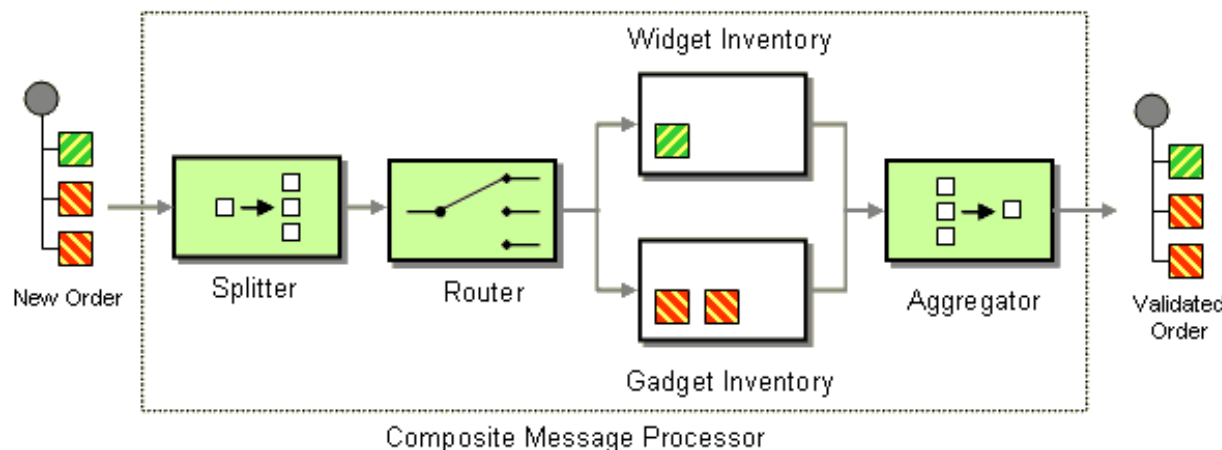
- Open Source Framework zur Erstellung von SOAP and REST Web services
- Breite Unterstützung für WS-* Standards
- Unterstützt JAX-WS und JAX-RS
- Leichtgewichtig, performant und “embeddable”
- Modular und erweiterbar
- “Code first” oder “Contract first”
- Spring-basiert



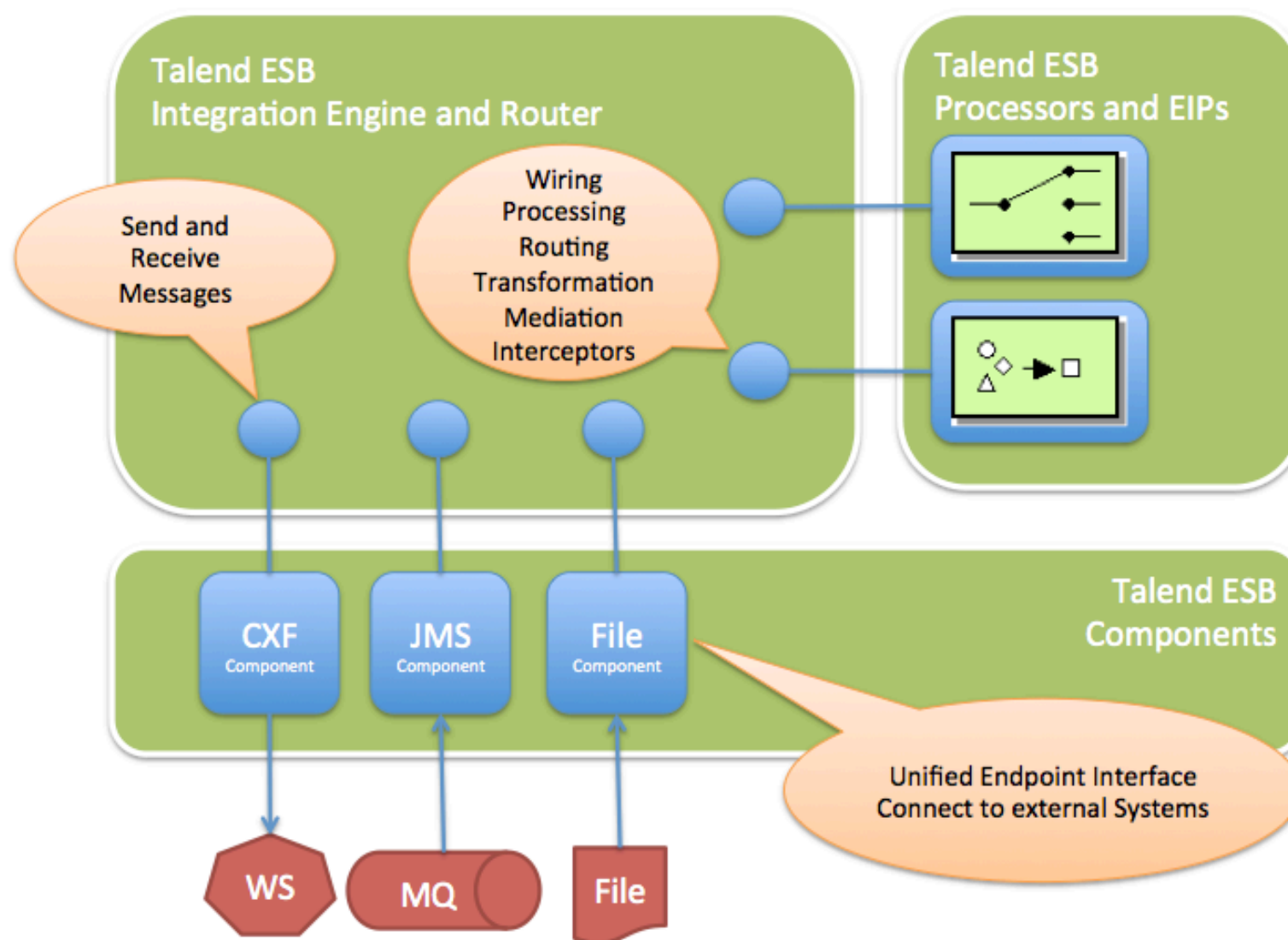
Integration und Mediation

■ Apache Camel

- Open Source Integration Framework
- Implementiert die Enterprise Integration Patterns
- Einfaches Programmiermodell
- Erweiterbar
- Leichtgewichtig, performant und “embeddable”
- Java- und XML-DSL (Domain Specific Language)
- Spring-basiert
- Mehr als 60 Komponenten



Mediation Architektur



Mediation Routes in Java

```
// Put the message from loanRequestQueue to the creditRequestQueue
from("jms:queue:loanRequestQueue").to("jms:queue:creditRequestQueue");

// Now we can let the CreditAgency process the request, then the message will be put into creditResponseQueue
from("jms:queue:creditRequestQueue").process(new CreditAgency()).to("jms:queue:creditResponseQueue");

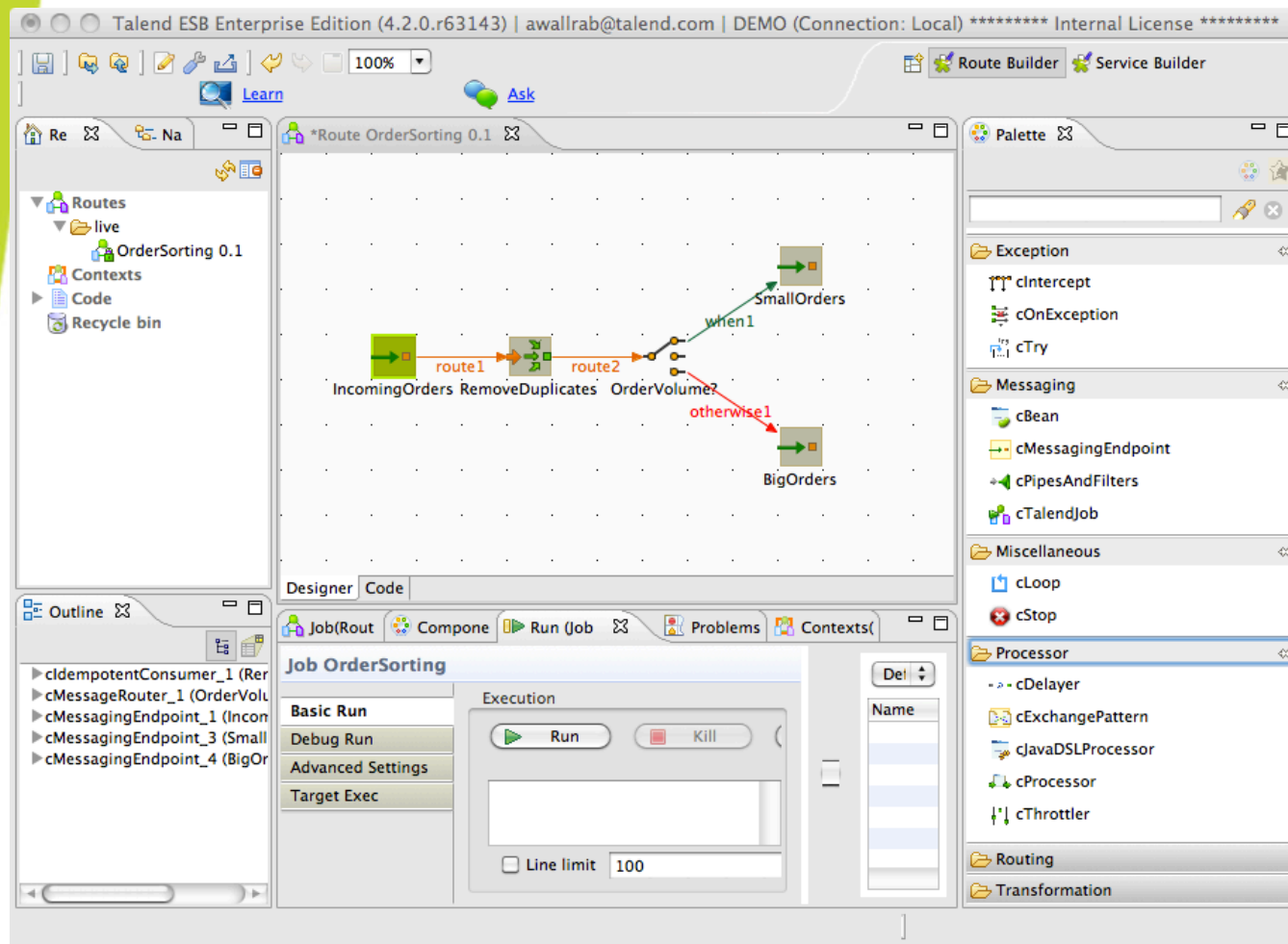
// Here we use the multicast pattern to send the message to three different bank queues
from("jms:queue:creditResponseQueue").multicast().to("jms:queue:bank1", "jms:queue:bank2", "jms:queue:bank3");

// Each bank processor will process the message and put the response message into the bankReplyQueue
from("jms:queue:bank1").process(new Bank("bank1")).to("jms:queue:bankReplyQueue");
from("jms:queue:bank2").process(new Bank("bank2")).to("jms:queue:bankReplyQueue");
from("jms:queue:bank3").process(new Bank("bank3")).to("jms:queue:bankReplyQueue");

// Now we aggregate the response message by using the Constants.PROPERTY_SSN header.
// The aggregation will be complete when all the three bank responses are received
from("jms:queue:bankReplyQueue")
    .aggregate(header(Constants.PROPERTY_SSN), new BankResponseAggregationStrategy())
    .completionPredicate(header(Exchange.AGGREGATED_SIZE).isEqualTo(3))

// Here we do some translation and put the message back to loanReplyQueue
    .process(new Translator()).to("jms:queue:loanReplyQueue");
```

Talend ESB Route Builder



Route Builder

- Endpoints
- EIPs
- Custom Components

Configuration

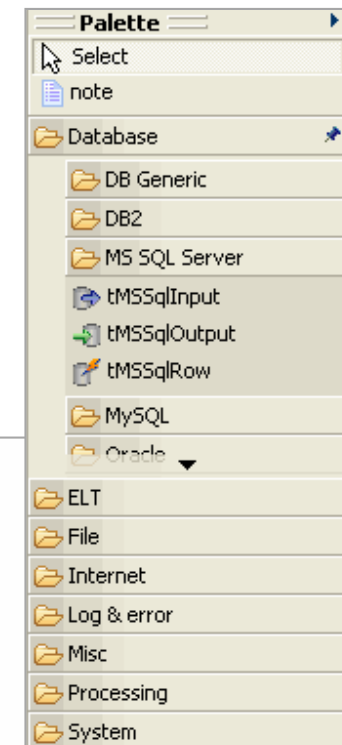
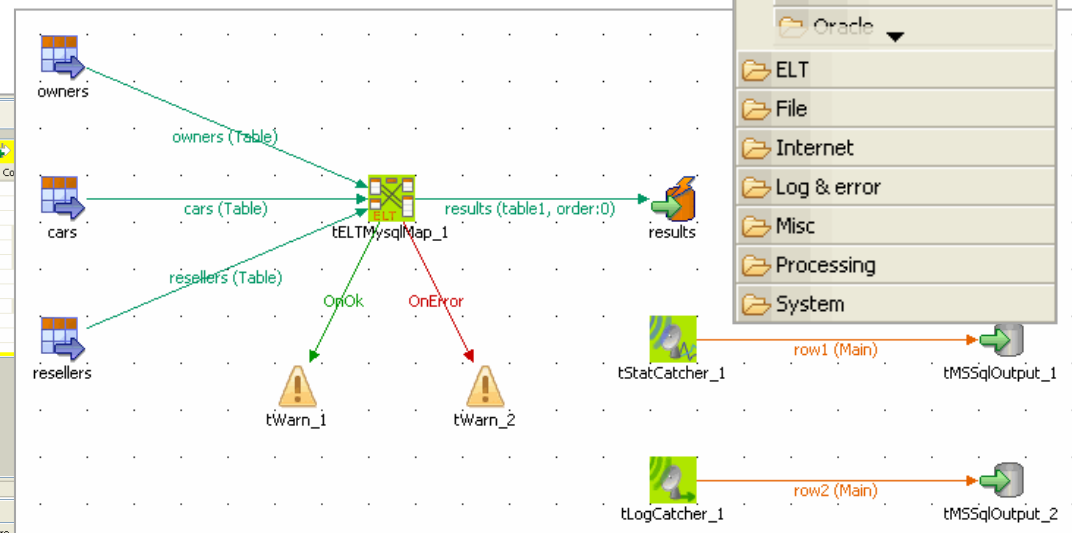
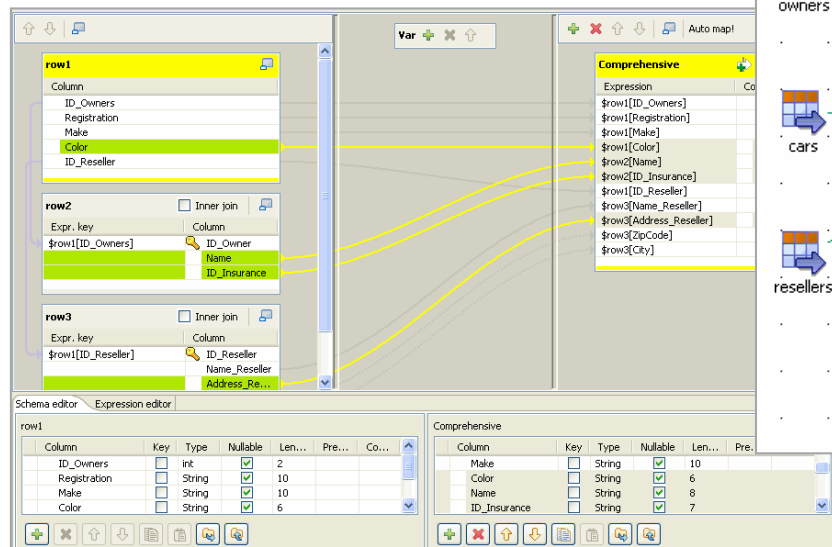
- Components
- Endpoints

Code Generation

- Java

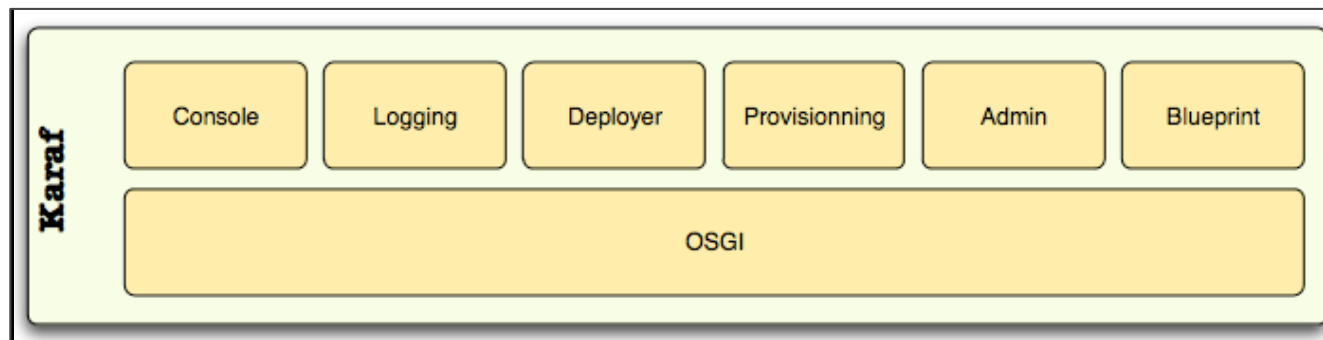
Talend ESB Service Builder

- “Daten-zentrische” Services
- 100% Java (OSGi Bundles)
- 450+ Komponenten
 - Business Applications: SAP, Salesforce, Sugar CRM, Sage X3, etc.
 - Datenbanken: Oracle, MySQL, DB/2, LDAP, Teradata, AS/400, etc.
 - Inhalte & Mapping: Positional, delimited, Excel, EDIFACT, XML, etc.
- Können an den ESB gehängt werden



Laufzeitumgebung

- Apache Karaf (mit Eclipse Equinox)
 - OSGi-basierte Umgebung
 - Modularisierung durch Bundles
 - Modulares Deployment
 - Management und Auflösung von technischen Abhängigkeiten
 - Hot Deployment
 - Dynamische Konfiguration
 - Provisioning von Konmandozeile oder aus einer Web Console



Message Broker

■ Apache ActiveMQ

■ JMS compliant

■ „Enterprise-grade“ Messaging

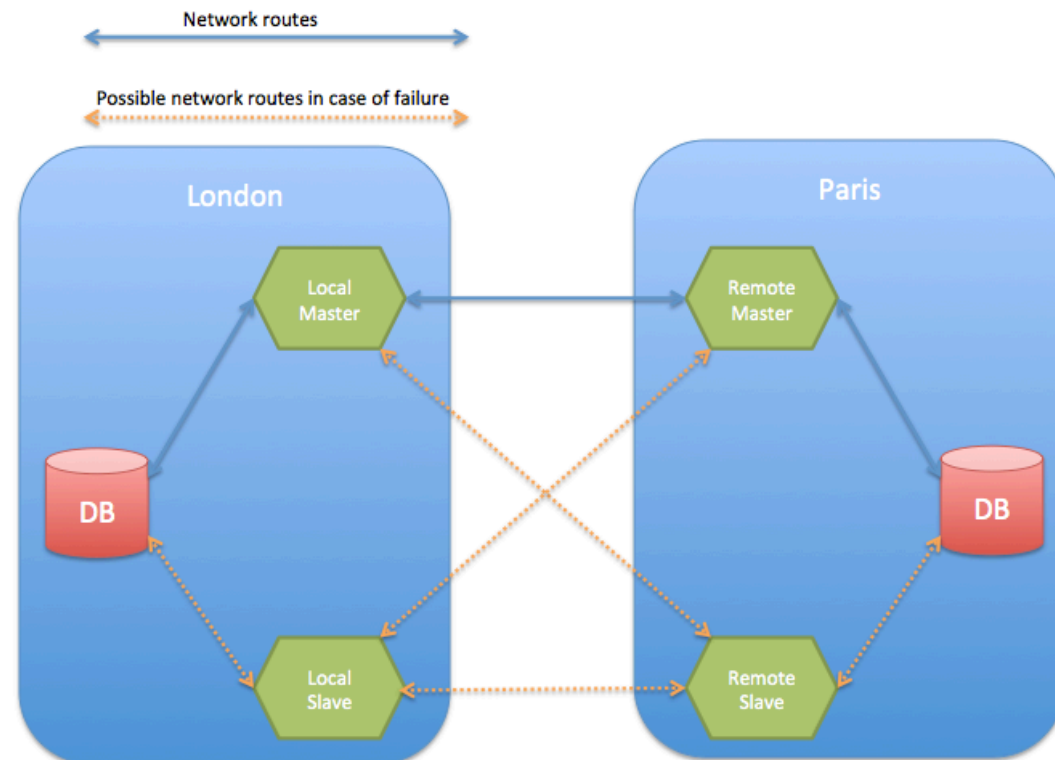
- Security, Persistenz, Clustering, „store-and-forward“, „once-and-only-once“, Verteilung, ...

■ Network of Brokers

■ Language Bindings für

- Java, C#, C++, Phyton, Ruby, AJAX, etc.

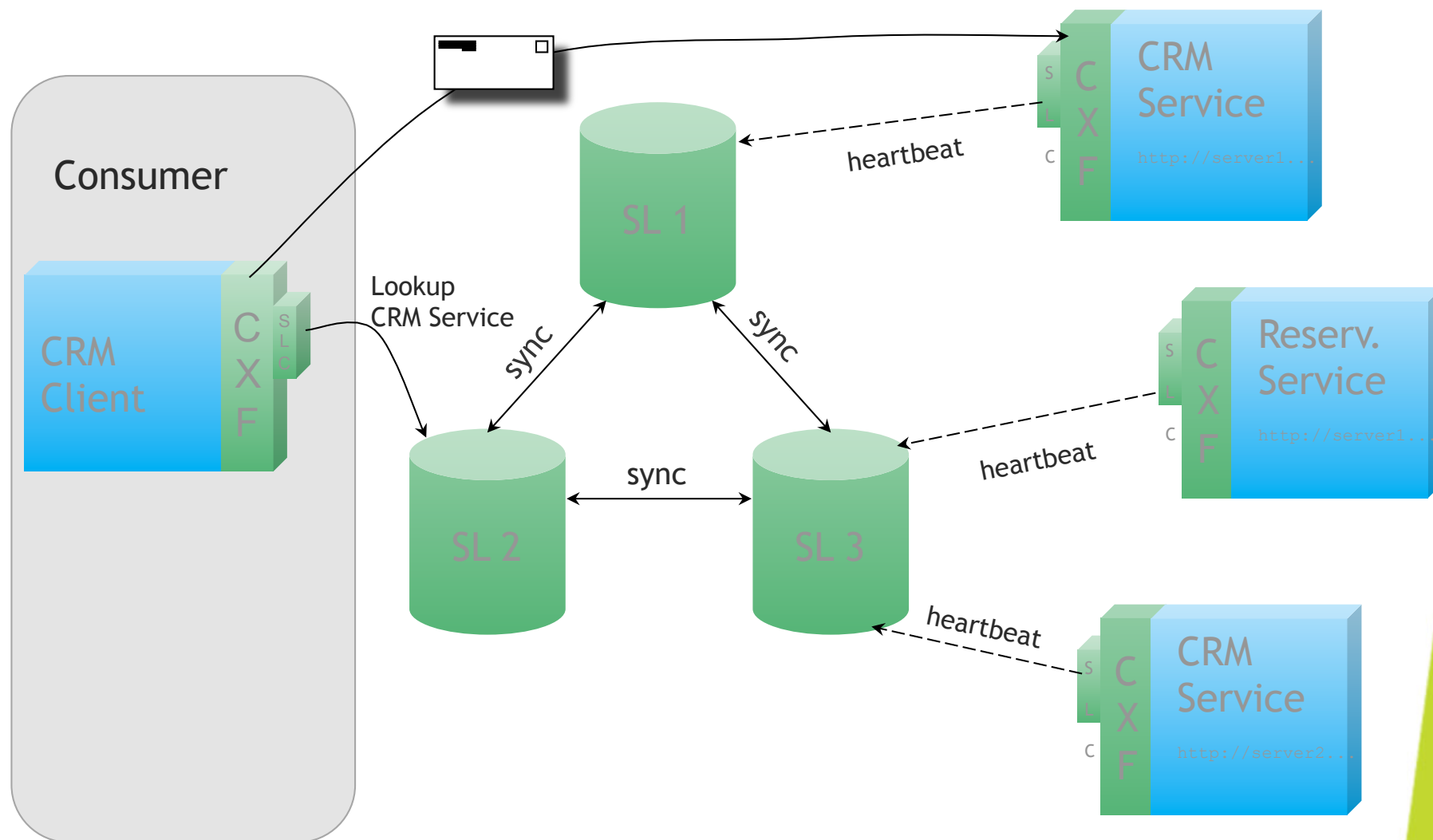
■ Modulare erweiterbare Architektur



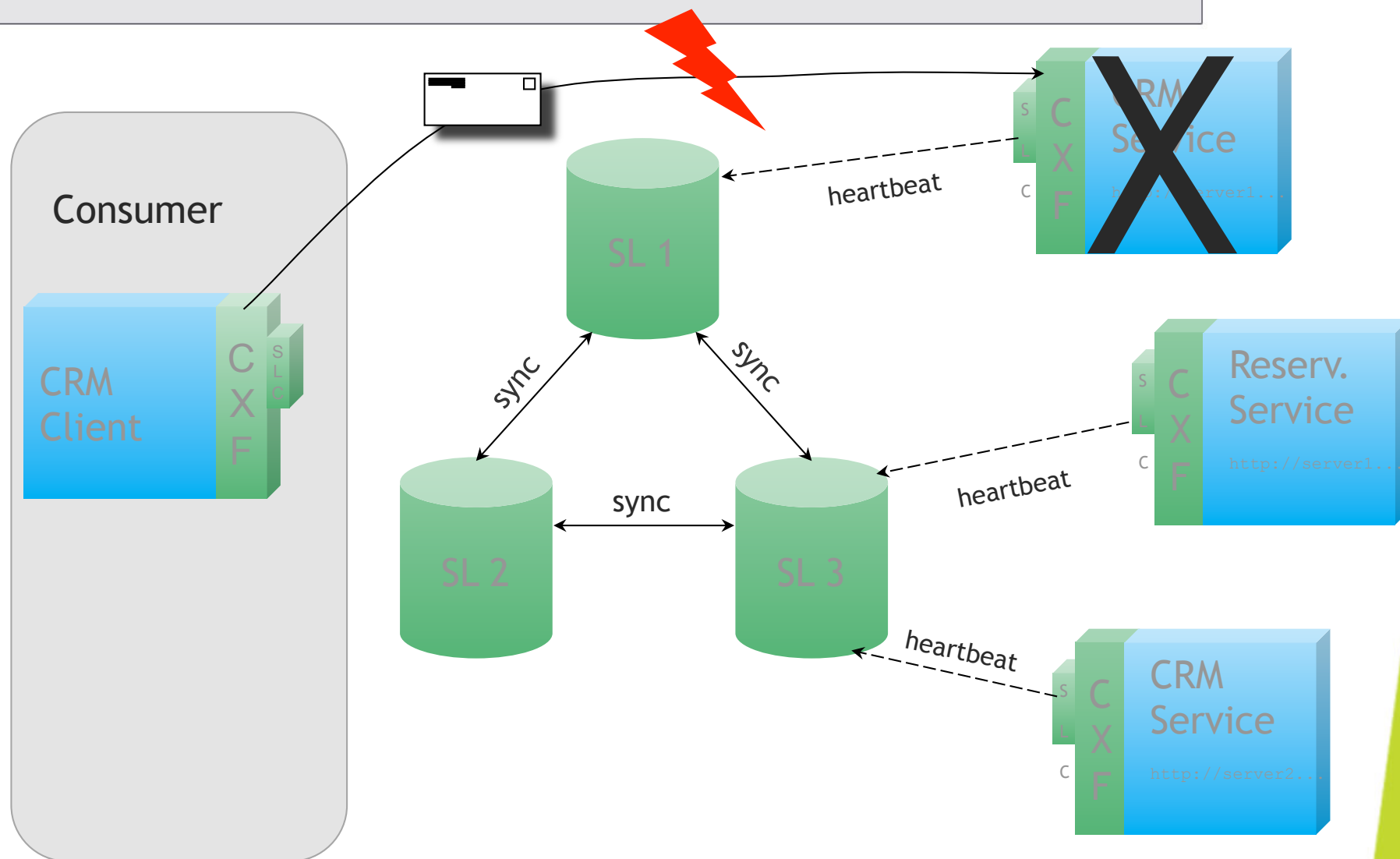
Location Transparency

- Service Locator
 - Transparente CXF Erweiterung
 - Implementiert einer verteilte Service Registry
 - Basiert auf Apache Zookeeper
 - Dynamische Registrierung von Endpoints
 - Dynamischer Lookup von Endpoints
 - Entkopplung von Service Provider und Consumer
 - Automatisches und transparentes Failover
 - Load Balancing

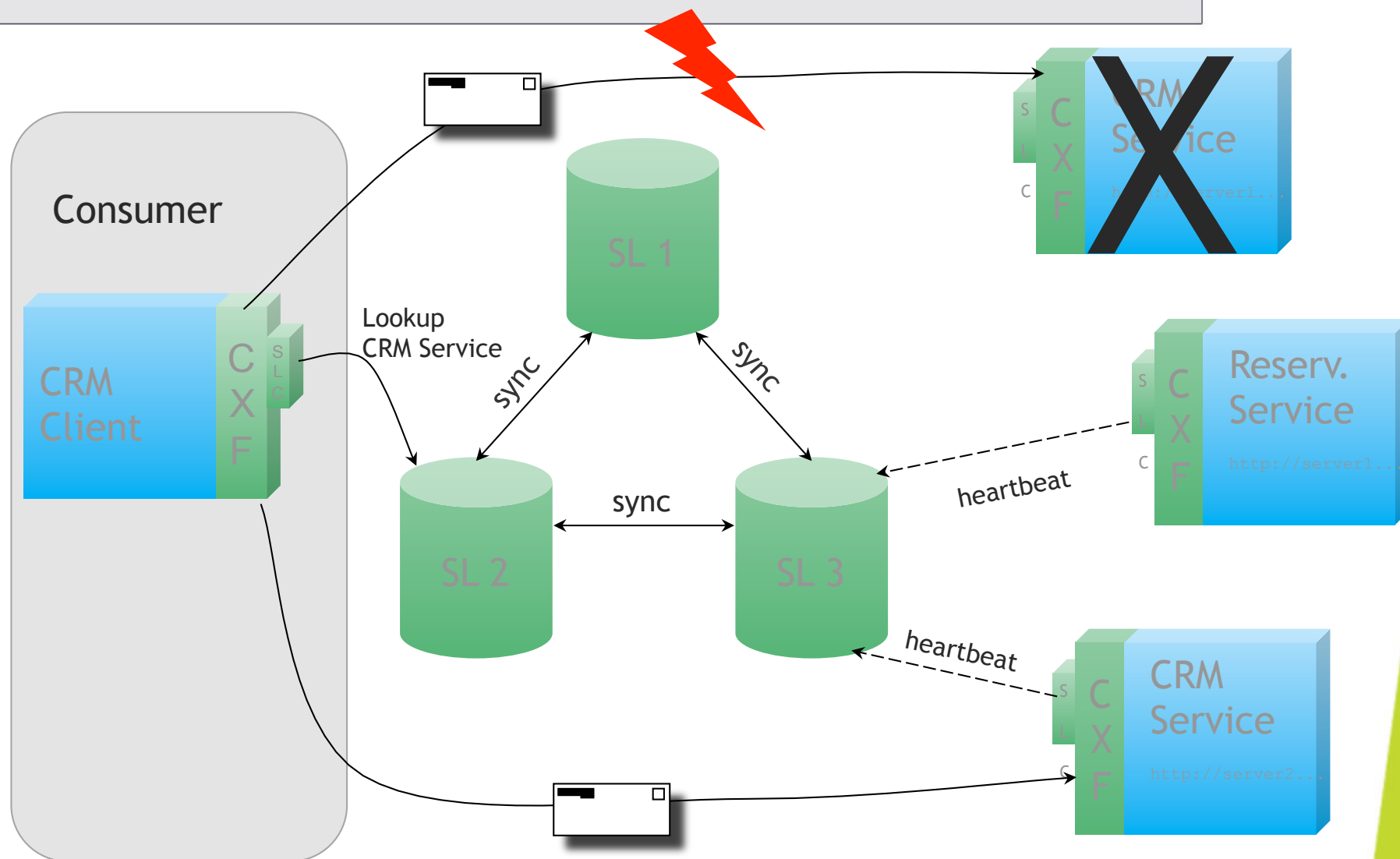
Service Locator



Service Locator



Service Locator



Talend Administration Center

Administration Center

The screenshot displays the Talend Administration Center (TAC) interface. The top navigation bar includes the 'Menu' and 'SAM' (Service Activity Monitor) tabs. The 'Menu' on the left lists various administrative functions such as Settings, Users, Projects, Locks, License, Configuration, Notification, Job Conductor, Execution Plan, Servers, Business modeler, Dashboard, Connections, Jobs analyses, CommandLine, Task execution monitoring, Audit, User settings, ESB, Service locator, and Service Activity. The main area shows a table of service activities with columns for Date / Time, PortType, Operation, Transport, Elapsed, and Type. A context menu is open over the table, showing options like Columns, Filters, Before, After, and On. Below the table, the 'Details' panel provides information about a specific flow, including the Flow ID, Service, Operation, and Transport. It also displays the Request OUT, Request IN, Response IN, and Response OUT messages, along with their timestamps and message IDs. The bottom status bar shows the user 'Administrator/Viewer/Operation manager/Designer' and the current page 'Page 1 of 47'.

Service Endpoints

- Consumer
- Provider
- Detailed Metrics
- Message Content

Filters

- Date
- Content
- Endpoint
- Transport Type
- etc

Service Locator

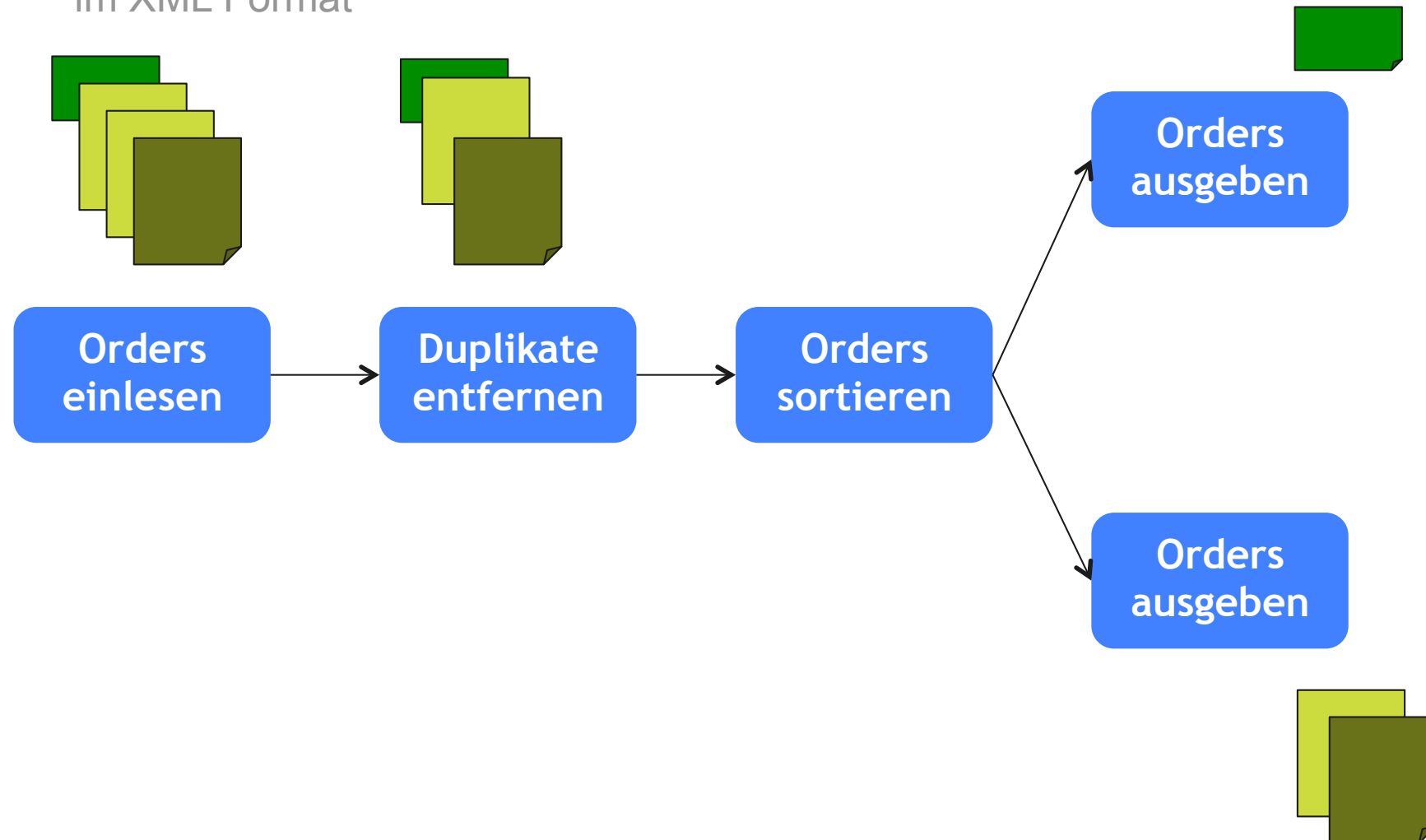
- Service Interfaces
- Endpoint Statistics

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Wir möchten Orders sortieren...

Order Dokumente
im XML Format



Wie integrieren wir SAP?

Access over SAP interfaces (JCo)

SAP Connectors for

- tSAPInput
- tSAPOutput
- tSAPConnect
- tSAPCommit
- tSAPRollback

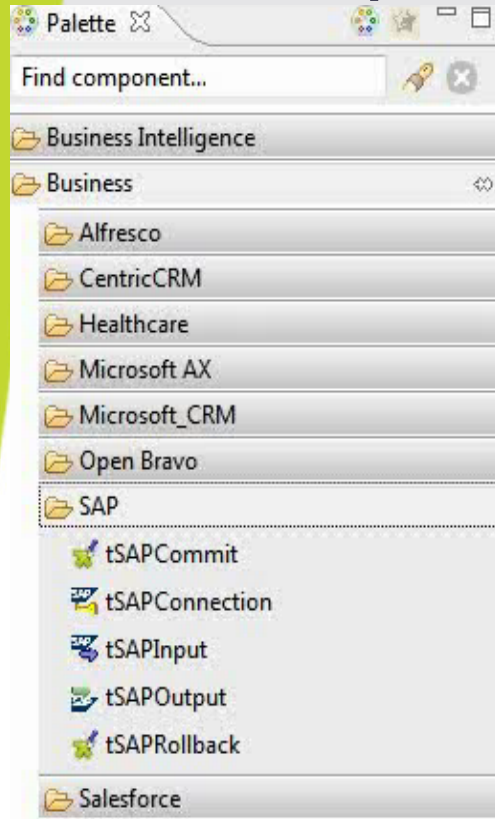
Access to

- Tables
- RFCs
- BAPIs
- IDOCs

Use Cases

- Data Warehouse and Business Intelligence, e.g.
 - Management Information System
 - Sales Information System
- Integration of other Applications and Technologies, e.g.
 - salesforce.com
 - MS Dynamics
 - Web Shop
- Data Quality and Data Cleansing

SAP Komponente aus der Palette nehmen...



SAP Verbindung konfigurieren...

Palette

Find comp

Business

Business

Alfre

Cent

Healt

Micro

Micro

Oper

SAP

tS

tS

tS

tS

tS

Sales

SAP Connection

New SAP Connection on repository - Step 2/2

Define the SAP connection parameters

Client: 000

Host: 192.168.1.32

User: bcuser

Password:

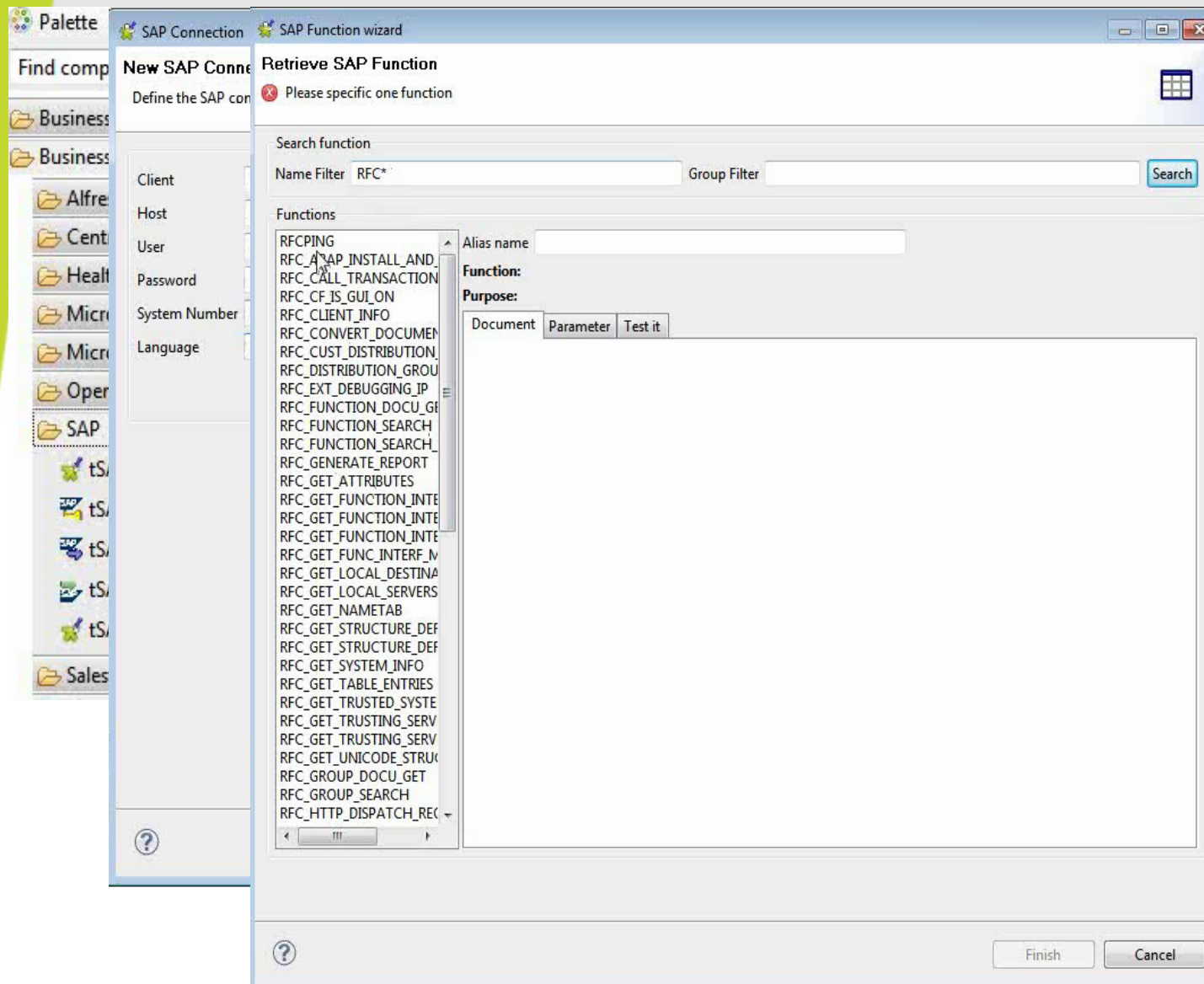
System Number: 00

Language: EN

Click

? < Back Next > Finish Cancel

SAP Funktion auswählen...



Mal ausprobieren, was da so kommt...

Retrieve SAP Function
Search function by name and group and browse function detail for SAP connection "SAP_VM"

Search function
Name Filter: RFC_READ* Group Filter: Search

Functions

- RFC_READ_DEVELOPMENT_OBJECT
- RFC_READ_DYNPRO
- RFC_READ_REPORT
- RFC_READ_TABLE**
- RFC_READ_TRUSTED_SYSTEM_ENTRY
- RFC_READ_TRUSTING_SYSTEM_ENTRY

Alias name: RFC_READ_TABLE
Function: RFC_READ_TABLE
Purpose: External access to R/3 tables via RFC

Document Parameter Test it

Name	Parameter Type	JCO type	Structure Table	Length	Value	Purpose:
DELIMITER	input.single	CHAR		1		Sign for indica...
QUERY_TABLE	input.single	CHAR		30	SFLIGHT	Table read
ROWCOUNT	input.single	INT		4	0	If <> SPACE, o...

Add Remove

Name	Parameter Type	JCO type	Structure Table	Length	Value	Purpose:
WA	table.output	CHAR	DATA	512	000 AA 0017 20060510	422.94 ... Character field...
FIELDNAME	table.output	CHAR	FIELDS	30	MANDT	Field Name
OFFSET	table.output	NUM	FIELDS	6	000000	Offset of a field
LENGTH	table.output	NUM	FIELDS	6	000003	Length (No. of...
TYPE	table.output	CHAR	FIELDS	1	C	ABAP data typ...
FIELDTEXT	table.output	CHAR	FIELDS	60	Client	Short Descripti...
TEXT	table.output	CHAR	OPTIONS	72		Text line of a ...

Add Remove

Output type: table.output Constructure|Table: DATA Launch

SAP Service an den ESB hängen...

The screenshot displays the Talend Studio interface with the 'SAP Function wizard' open. The wizard is configured to search for functions in the 'SAP_VM' connection. The 'Name Filter' is set to 'RFC_READ*', and the 'Group Filter' is empty. The search results list various RFC functions, with 'RFC_READ_TABLE' selected. The function details show its purpose as 'External access to R/3 tables via RFC'.

Below the wizard, a data flow diagram is shown on a grid. It illustrates the integration of SAP with an ESB (Enterprise Service Bus) and SAP Output. The flow starts with an 'SAP Connect' component, which triggers an 'OnSubJobOk' event. This event is connected to an 'ESB Provider' component. The 'ESB Provider' outputs to an 'XML Mapping' component, which then outputs to an 'SAP Output' component. The 'XML Mapping' and 'SAP Output' components have red 'X' marks, indicating they are not yet configured or are in error.

The diagram components and their connections are as follows:

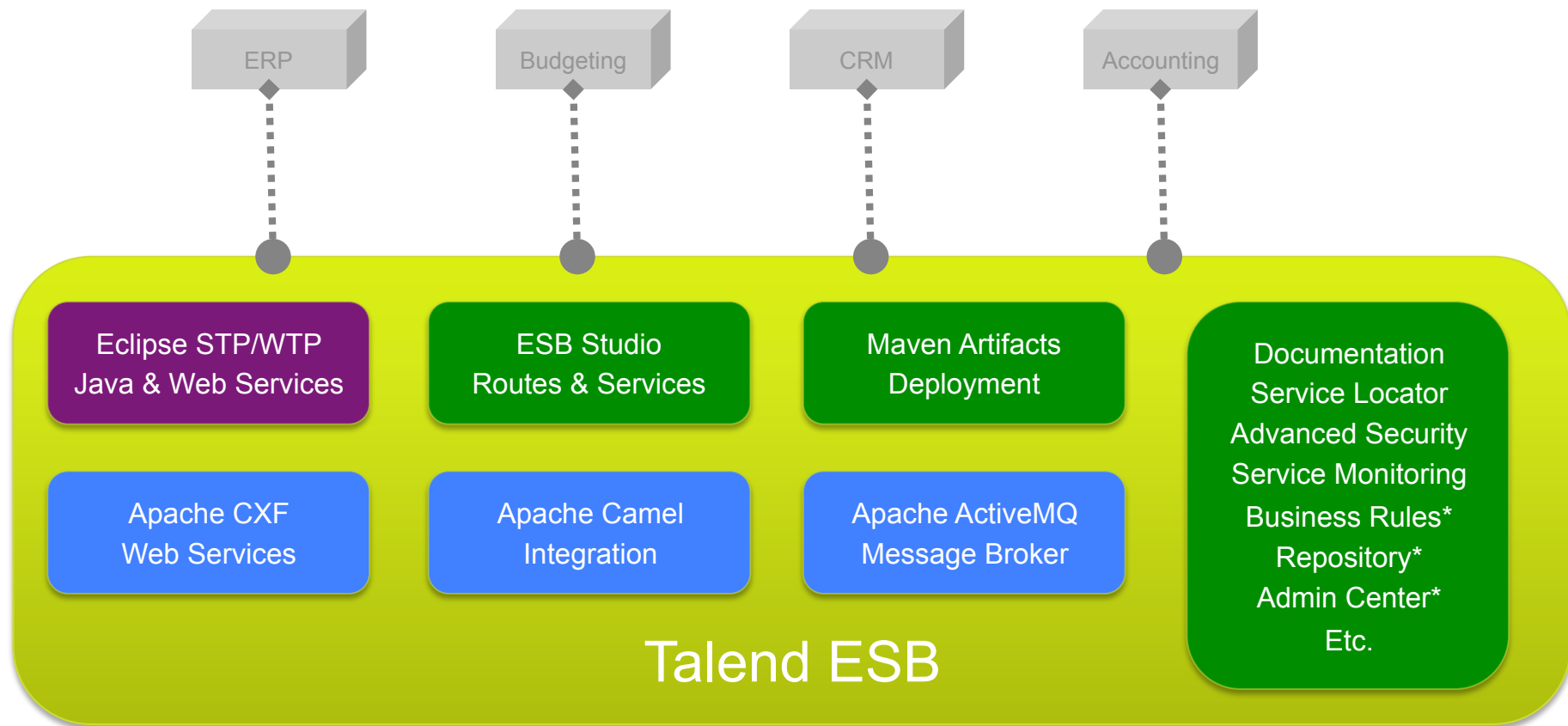
- SAP Connect** (SAP icon) is connected to **ESB Provider** (ESB icon) via a green arrow labeled **OnSubJobOk**.
- ESB Provider** is connected to **XML Mapping** (XML icon) via an orange arrow labeled **row1 (Main)**.
- XML Mapping** is connected to **SAP Output** (SAP icon) via an orange arrow labeled **row2 (Main)**.

The 'Launch' button is visible at the bottom right of the diagram area.

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Talend ESB Komponenten



Zusammenfassung

- Talend ESB ist vielseitig und flexibel
 - Mehr Flexibilität mit einer leichtgewichtigen, erweiterbaren Architektur
 - Vermeidung unnötiger Komplexität
 - Einfacher Zugriff auf Daten, Applikationen und Systeme
- Talend ESB eröffnet neue Möglichkeiten
 - Open Source sorgt für breite Unterstützung durch Apache und Talend Communities
 - Wettbewerbsvorteile für Sie durch neueste Integrationstechnologien
 - Befreien Sie sich von proprietärer Technologie
- Talend Software ist Enterprise-Class
 - Talend garantiert getestete, stabile, integrierte, kompatible und sichere Versionen der besten und verbreitetsten Open Source Komponenten
 - Dokumentation, Beispiele, technische Integration und Vorkonfiguration erleichtern Ihnen den Einstieg
 - Talend gibt Ihnen die notwendige Sicherheit für Produktionsumgebungen

Danke für Ihre Aufmerksamkeit!

