Open Source Support in the SAP NetWeaver Platform

Platform Ecosystem from SAP
Learning Objectives

- Understand how to use some best-of-breed open source development frameworks and products with Java EE technology and the SAP NetWeaver platform
  - Hibernate
  - STRUTS
  - Axis
  - Log4J
  - Tomcat
  - Joram

- SAP NetWeaver Application Server (SAP NetWeaver AS) is open for open source technology
Openness and SAP

Open Source Bases Applications on SAP NetWeaver
- Struts
- Hibernate
- Axis
- JORAM
- Ant

Other Open Source Frameworks and SAP

Benefits for Developers
Openness and SAP

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Other Open Source Frameworks and SAP

Benefits for Developers
What Does Openness Mean for SAP?

- Support of all major open source frameworks
- Robustness for enterprise business applications
- Support of all major standards (WS-I, WS-Management, and so on)
- Benefits for developers, partners, and customers
SAP Commitment to Open Source

SAP Global Open Source Office
- Established in 2004
- Cross-organizational team to coordinate all open source–related activities

Strategic competence hub for our partners
- Generate joint concepts and go-to-market strategies
- Long-term partnership projects

The operational focal point for the field and our customers
- Roll-in and roll-out from and to customers through SAP’s field organization
Open Development Environment

SAP NetWeaver Developer Studio embeds the Eclipse development framework and extends it with hundreds of plug-ins providing developers with productivity tools that accelerate development and increase agility.

SAP is a board member and major sponsor of the Eclipse foundation.
SAP’s internal development and services leverage open source software where appropriate

- SAP hosted solutions run Linux
- SAP development internally uses open source software
  - JUnit
  - Python
  - gcc
  - And so on
Typical Open Source Development Scenario

Development

Change and release mgmt.

Runtime

Connectivity and back end

Extensions

SAP back-end systems

JMS provider

Web services

...
SAP and Open Source Development Scenario

Development

Change and release mgmt.

Runtime

Connectivity and back-end

SAP NetWeaver: development infrastructure

Extensions

SAP back-end systems

JMS provider

Web services

...
Java EE Open Source Based Application and SAP

- Leave your open source–based application as is
- Deploy the open source libraries

SIMPLE and EASY
Openness and SAP

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Benefits for Developers

THE BEST-RUN BUSINESSES RUN SAP™
An Example: Employee Management Demo Application

**Deployment**

1. Deploy
   - SAP deployment API
   - SAP deployment and ANT API

**Runtime**

- **View**
  - Struts JSPs

- **Controller**
  - Struts actions

- **Model**
  - Hibernate POJOs

- **Custom Libs**
  - Hibernate API
  - Joram API
  - AXIS API
  - Log4J
  - Helper libs
  - And so on

- **Persistent data**
- **App server**

- **AXIS API consume**

- **Hosted Web service**

- **Send message**

- **JMS destinations**

- **Consume message**

- **JMS receiver stand-alone client**

- **Employee**
- **Department**
Openness and SAP

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Benefits for Developers
Struts Parts of the Demo Application

Struts JSPs as view components

Controller components
- Struts Web service beans
- Action servlets and action mappings
- Action form beans
- Action beans

Deploy `struts.jar` in the application context (`WEB-INF/lib`)

No SAP-specific configurations needed

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Benefits for Developers
Hibernate Parts of the Demo Application

Runtime

Struts
- View: Struts JSPs
- Controller: Struts actions

Model
- Hibernate POJOs

Custom Libs
- Hibernate API
- Joram API
- AXIS API
- Log4J
- Helper libs
- And so on

Persistent data

App server

- Deploy Hibernate package (Hibernate API and helper libraries as shared libraries)
- Deploy your own JDBC driver for the database you are running
- Deploy your own data source with
  - vendor_sql SQL support layer or
  - native_sql SQL support layer

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Benefits for Developers
Axis Parts of the Demo Application

**Runtime**

**Struts**
- **View**
  - Struts JSPs
- **Controller**
  - Struts actions

**Model**
- Hibernate POJOs

**Custom Libs**
- Hibernate API
- Joram API
- **AXIS API**
- Log4J
- Helper libs
- And so on

**App server**

**Hosted Web service**

- **Deploy the Web service on Tomcat**
- **Axis API calls are in the Struts parts**

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Openness and SAP

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Other Open Source Frameworks and SAP

Benefits for Developers
The JORAM Parts of the Demo Application

JORAM API calls are in the Struts parts

Implement your message receiver

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Benefits for Developers
Deployment of the Demo Application Using ANT

**Deployment**
1. Deploy
   - SAP Deployment API
2. Deploy
   - SAP deployment and ANT API

**Runtime**

**Extensions**

- Use deployment client from SAP
- Client invocation in an ANT task
- Download from SAP Developer Network
  - Sample deployment client package
  - Utility libraries
  - Sample ANT project

Leverage your existing build and deployment infrastructure
Openness and SAP

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Benefits for Developers
Other Open Source Frameworks

Other frameworks that were explored

- Log4J – logging framework
- The Spring framework

Good news

- How-tos for all frameworks are available on SAP Developer Network:
  https://www.sdn.sap.com/irj/sdn/docs?rid=/webcontent/uuid/e081a4b6-0801-0010-7fa4-c3c7a0454815
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Benefits for Developers
Open source: known benefits

- Innovation
- Vibrant and growing community
- And so on

SAP benefits

1. No additional reimplementation efforts
2. No lock-in to SAP NetWeaver
3. Easy access to SAP installed base

Where do I start?
Many Roads Lead to Rome: But This Is an Exciting One

Join SAP Developer Network

Download the software, tools, and information

Migrate or deploy your solution on SAP NetWeaver

Contact an SAP representative
Further Information

Public Web

SAP Developer Network: [www.sdn.sap.com](http://www.sdn.sap.com)

- Forums
- Web Application Server
- Web AS Migration
- Developer Area Web Application Server
- Quick Link [J2EE Migration Kit](http://www.sdn.sap.com)