SAP NW PI 7.1: Major Enhancements

Summary and Further Information
New Capabilities of SAP NW PI 7.1 – Part 1

Enterprise Services Repository
- Enhanced Design Capabilities
- Service Enabling
- Services Registry – UDDI V3.0

Additional WS Standards
- WS Reliable Messaging
- WS Policy
- WS Security and SAML

High Volume Support
- Local processing in Adapter Engine
- Message packaging
- Improved performance for ccBPM
- Reduced sizing

User Interaction (for example, Business Task Management)

Service Automation

Service Bus
- Dynamic Routing
- Transformation
- Connectivity
- Reliable Messaging and Queuing

Process Integration

Infrastructure Services
- Software Lifecycle
- Security
- User Management

Java EE5 / ABAP
- Scalability
- High Availability
- Archiving
- Configuration
- Monitoring
- Administration

BAM

B2B Partner

SAP

3rd Party Application

3rd Party Middleware
New Capabilities of SAP NW PI 7.1 – Part 2

User Interaction (for example, Business Task Management)

Service Bus
- Dynamic Routing
- Transformation
- Connectivity
- Reliable Messaging and Queuing

Infrastructure Services
- Software Lifecycle
- Security
- User Management
- Scalability
- High Availability
- Archiving

Java EE5 / ABAP
- Configuration
- Monitoring
- Administration

Process Integration

Event provisioning and consumption for BAM
- Local container
- Subscription and handling of business process events
- Milestone Monitoring

Next steps towards central configuration and administration

Functional Enhancements
- XML payload validation
- BPEL modeling enhancements

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THE BEST-RUN BUSINESSES RUN SAP
Enterprise Services Repository
Additional WS Standards & High Volume Support
Business Process Management
Further Enhancements
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Evolution of the Enterprise Services Repository

Enterprise SOA

- The ES Repository is based on the Integration Repository
- The ES Repository stores objects, such as GDTs and message interfaces
- Re-use existing data and leverage existing investment
- New and enhanced objects in the ES Repository include
  - Process Component Models
  - Service Interfaces
The ES Repository provides a comprehensive metadata repository that can be used for SOA provisioning.

Objects in the ES Repository include:
- Integration Scenarios
- Process Component Models
- Service Interfaces (Enterprise Services)
- Global Data Types (CCTS based)
- Interface Mappings
- Executable Integration Processes (BPEL)
Process Component Models in the ES Repository

Based on SAP’s process component architecture methodology

References to

- Integration Scenario Models
- Process Components
- Business Objects
- Service Interfaces
- Global Data Types

Functionality of Process Components exposed through enterprise services

The Process Components in the SAP Business Suite are described in SDN

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Enterprise Services:

- Are mapped to the Service Interface object in the ES Repository
- Are built using a consistent enterprise model based on
  - GDTs
  - Process Components
  - Business Objects
- Ensure quality and stability
- Are based on open standards
- Are well documented
Global Data Types – Building blocks for Service Interfaces

Global Data Types are:

- Defined company-wide based on open standards (ISO 15000-5, UN/CEFACT CCTS)
- Defined in the ES Repository
- Approved SAP-wide using the Governance process
- Reusable semantic building blocks for service interfaces and message types
Process Component Models

- Process component architecture models enable SOA governance
- Drill down from high-level models to service interfaces and operations
The Services Registry – Benefits

Services Registry – Key Benefits

- Based on UDDI 3.0
- Naming standards and classifications
- Service evolution and versioning
- Classification system search
- Keyword search services
- Service management and governance
- Procedures for backend publications
- Procedures for client development
- Service configuration
- Documentation
Enterprise Services Repository and Registry

CONSUMER TOOLS (Composition Environment)

REFERENCE SERVICES REGISTRY
- SERVICE MODEL PUBLICATIONS
- SERVICE ENDPOINT PUBLICATIONS

CONSUMER
- APPLICATION

DIRECT CONNECTION
- INVOCATION
- Process Integration
- ROUTING MAPPING BPM

PUBLISH

PROVIDER
- SERVICE IMPLEMENTATION

SAP NetWeaver ES Repository Tools

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Enterprise Services Repository

Additional WS Standards & High Volume Support

Business Process Management

Further Enhancements
Web Services Reliable Messaging (WS-RM)

- Asynchronous messaging (EO, EOIO) based on open WS standard
- Native support through Integration Engine (w/o adapter)
Principle Propagation based on SAML

- Forward user context from sender to receiver
- Authorization check in receiving system based on original user

**Integration Server**

- Principal Propagation Properties

**Request status of order xyz??**

**Authorized??**
High Volume Support (1)

**Message Packaging**
- Process bulk of messages in one service call (mapping, routing, ..)
- Reduce context switches
- Enable mass operations on database
- For async scenarios
Local Processing in Adapter Engine

- Natural evolution of adapter engine
- Provides mapping, routing to by-pass Integration Server
- Adapter to adapter communication
- For sync and async scenarios
Enterprise Services Repository
Additional WS Standards & High Volume Support
Business Process Management
Further Enhancements
Major Enhancements for Process Automation

**Human interaction**
- Generic user decision
- Language dependent texts for end-user display, enriched with variables
- Integration paradigm (design/configuration)

**Step groups (modeling enhancements)**

**Configurable parameters**

**BPEL adoption**
- BPEL4WS 1.1
- WS-BPEL 2.0 Preview and implementation
- BPEL4People planned
Event Provisioning and Consumption for BAM

**Event Correlation**
- Subscription and handling of business process events
- Milestone Monitoring Process Definition

**Embedded Event Infrastructure**
- Collecting, pre-filtering and publication of events across SAP and non-SAP systems
Example: Multi-backbone Order Handling

Monitoring Process Instance (tracks Orders > 10,000 €)

- Order
- Order Confirmation
- Raise Alert
- Get customer KPIs: A-customer Complaints statistics
- A-customer and Complaints?
  - Yes: Raise Alert
  - No: Timeout After 24 h
- Delivery
- Invoice

Monitoring Event Provider

- Application
- Org. Mgmt.
- User Mgmt.

Application System 1

Integration Server

XI Runtime

Transaction
...
...

Application System 2
BAM Milestone Modeling (BPEL)

Modelled Event Correlation

Rule and Alert Trigger
Enterprise Services Repository
Additional WS Standards & High Volume Support
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Further Enhancements
Major Enhancements for Mapping

- **Function libraries**
  - Re-usable user defined functions

- **Synchronous DB/RFC look-ups**
  - Use graphical function to model look-ups

- **Parameterizable mappings**
  - Specify mapping parameters at configuration time

- **Functions with multiple results**
  - Look-up function reads multiple fields
XML Payload Validation

- Validate incoming/outgoing messages against XML schema
- Forward/Backward error handling
Process Integration and Enterprise SOA – Runtime

One service runtime for **point-to-point** and **‘brokered’** communication

![Diagram](image)
Centralized Configuration of Services

Centralized Configuration of Point-to-Point Connections

- Optimize message processing through de-centralized runtime
- ... but keep control through centralized configuration
Unified Administration

- Key monitoring functionalities integrated in SAP NW Administrator
- One place to monitor and administrate SAP NetWeaver
Upgrade paths to SAP NW Process Integration 7.1

Upgrade paths will be offered for

**SAP NW ’04** and

**SAP NW 7.0 (2004s)**

to go to SAP NW Process Integration 7.1.
SAP NW PI 7.1: Major Enhancements

Summary and Further Information
Why use SAP NetWeaver Process Integration 7.1?

5 Reasons for using SAP NetWeaver Process Integration 7.1

- Use Process Integration as an SOA backbone
- Establish ES Repository as the central SOA repository in customer landscapes
- Leverage support of additional WS standards such as UDDI, WS-BPEL and tasks, WS-RM
- Enable high-volume and mission-critical integration scenarios
- Benefit from new functionality such as principal propagation, XML validation and BAM capabilities
Further Information

Public Web

http://www.sdn.sap.com ➔ IT Practices and IT Scenarios ➔
End-to-End Process Integration, Business Event Management,
ESA Design and Deployment
http://www.sdn.sap.com ➔ Enterprise SOA, SAP NetWeaver,
Partners and ISVs, Forums

SAP Service Marketplace


Training http://service.sap.com/education

BIT400 (SAP XI)
BIT430 (SAP XI – BPM)
BIT450 (SAP XI Development)
BIT460 (SAP XI Mapping)