A Deep Dive into the Next Generation Process Integration

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Product Management
SAP NetWeaver Process Integration
SAP AG

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1. SAP NetWeaver Process Integration today
2. Process Integration Next Generation
3. Summary
SAP NetWeaver Process Integration Adoption

1.2 million messages processed overnight
Replacement of BEA webLogic with SAP NetWeaver PI

Centralized and simplified governance processes for SAP and non-SAP services

Automate processes with SAP NetWeaver PI to save payment processing costs and improve vendor relationships

SAP is 2nd in market presence, tied with IBM & Oracle/BEA, and ahead of Tibco, SAG and others

PI Survey conducted by PI Special Interest Group

Survey Q1 2008
- 81 responses across the globe
- 71 questions
  - # instances; usage, business criticality,…..

Survey Q3 2010
- Why?
  - Details on utilization of SAP PI/XI across the globe
  - Best practices
  - Issues / concerns
  - Strategic direction
- Who?
  - ASUG, DSAG, VNSG, Sweden, Belgium, Norway
- July – Aug 2010
  - Q3
- How?
  - Online link will be distributed:
Industry

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<tr>
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<td>Information and Technology</td>
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<td>Insurance</td>
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<tr>
<td>Other</td>
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</tr>
<tr>
<td>Total</td>
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</tr>
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</table>

Business Criticality

What level of availability are you aiming for? (99.9%, 99.99%, 99.999%)

- 99%: 42%
- 99.9%: 17%
- 99.99%: 8%
- 99.999%: 3%

7x24hrs requirement

- Yes: 19%
- No/No: 81%

Do you use SAP PI for business critical processes in production?

- Yes/Yes: 16%
- No/No: 54%
Why are customers choosing SAP NetWeaver Process Integration today?

**One SOA Backbone**
- ONE Platform for leveraging SAP Enterprise services, build custom services and Service enabling legacy systems
- A central Enterprise Services Repository with built-in rich semantics and content
- Strategic building block of SAP’s SOA infrastructure

**One Integrated Solution**
- Part of an integration platform & solution
- Substantial reduction in TCO due to integrated lifecycle management and operations
- ~30% reduction in TCO for a leading semiconductor company after choosing SAP NetWeaver PI as their central middleware

**Leveraging large SAP installed base**
- Efficient Business Networks – within and beyond the borders of an enterprise
- Customers doing business with the large SAP installed base in their ecosystem
- Pre-delivered content and industry adapters help standardize and jumpstart implementation
Elevator Pitch SAP NetWeaver PI 7.3
Centralized Monitoring, Single Stack ESB, Reduced TCO

→ Extended Design Governance support
  - User Centric perspectives in the ESR
  - Eclipse based standard editors for viewing ES Repository content

→ Single stack ESB capabilities through Advanced Adapter Engine
  - Up to 60% less energy consumption
  - Lower footprint, easy maintenance: 1h installation*, ½ HW requirements* comp. to double stack, 90 sec restart*

→ Centralized monitoring via SAP Solution Manager 7.1
  - Good morning page
  - Monitor multiple PI domains
  - Reduced time for root cause analysis

*Hardware dependent

Single Stack ESB

Solution Enhancements

Key Benefits

Deployment Options
- Java-only, ESB deployment

Continuous Operations
- Integrated scenario configuration
- Programmatic configuration of assets en masse
- Automated XML schema validation
- Additional message persistence
- Streaming of large files
- Resource-friendly communication channels, cache, improved cluster communication

Openness
- Extended standards support for standard-based interoperability

Lower Footprint
- Richer & faster connectivity and reduced sizing

High Productivity & Reliability
- Reduced implementation time
- Faster asset configuration
- Secure, compliant communication
- System robustness for smooth business operations

Cheaper Integration
- Low-touch integration in multi-vendor environment

SAP NetWeaver PI 7.3
Simplified Operations

**Solution Enhancements**

**Logistics**
- Flexible upgrade paths
- Guided installation; simplified post-installation

**Supportability**
- Central monitoring of complex integration landscapes
- ITIL-compliant Process Integration operations in SAP Solution Manager
- Streamlined access to local monitoring, configuration & testing
- Message search by business payload

**Key Benefits**

**Shorter Time-to-Innovation**
- Faster and simpler upgrades

**Continuous Operations**
- Faster, best-practice based incident resolution
- Lower cost of operating even complex deployments
- IT Responsiveness

SAP NetWeaver PI 7.3

Planned Timeline*

<table>
<thead>
<tr>
<th>2010</th>
<th>2011</th>
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</thead>
<tbody>
<tr>
<td>SAP Solution Manager 7.1 Ramp-up start scheduled for Q2 / 2011***</td>
<td>SAP NetWeaver 7.3 Ramp-up start scheduled for Q4 / 2010**</td>
</tr>
</tbody>
</table>

Support and maintenance:

- SAP XI 3.0: Mar. 2010 (+ 3 years ext. maint.)
- SAP NetWeaver PI 7.0x, 7.1x: Dec. 2015 (+ 2 years ext. maint.)
- SAP NetWeaver 7.3: Dec. 2017 (+ 2 years ext. maint.)

Planned Upcoming Enhancements (*):

- Once a year via new releases, enhancement packages (EHPs)
- Further information at [http://service.sap.com/pam](http://service.sap.com/pam)

*Future dates are subject to change.
** Ramp ups are scheduled up to 6 months – might be closed earlier depending on fulfillment of KPIs
**Agenda**

1. SAP NetWeaver Process Integration today
2. Process Integration Next Generation
3. Summary

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**Areas of Investment**

**SAP NetWeaver PI Next Generation**

1 – 3 Year Roadmap

**Reduce TCD: Simplified Configuration**

- Next generation tooling for PI
- Simplify the overall user experience and reduce the learning curve for a novice user
- Significantly improve productivity levels for an expert user
SAP NetWeaver Process Integration – Mediated message flows today

Setting up a mediated message flow via SAP NetWeaver PI today involves
- A set of artifacts modeled in ESR – Services, Mappings, Context objects etc
- A set of configuration objects created in the Integration Directory – Party, Business systems, Routing, channels, agreements etc.
- Understanding the role of these artifacts in the message processing requires specialized expertise
- Deployment happens via cache refresh
- Testing requires specialized expertise

The target is to simplify the overall effort in this process via next generation tooling in SAP NetWeaver PI

SAP NetWeaver Process Integration – Next Generation Tooling

Provide one single “face” (concept) to work with across the TCD life cycle (and later in monitoring and operations)

Internal working term: Integration Flows
- Graphical visualization of the processing within SAP NW PI
- Based on predefined templates and patterns
- Integration flows along with new interoperable tooling helps in end-to-end simplification
  - Modeling / Development simplification
  - Configuration simplification
  - Life cycle simplification
  - Monitoring & Operations simplification
Areas of Investment

SAP NetWeaver PI Next Generation

1–3 Year Roadmap

- Tighter integration with SAP Solution Manager
- Centralized E2E monitoring and alerting via PI Workcenter in SAP Solution Manager
- Reporting based on Root-cause and workload analysis and Early Watch alert data
Reduce the cost of operating your PI landscape

1. Central Monitoring with SAP Solution Manager
2. Message Alerting
3. Central User Defined Message Search

SAP NW PI Monitoring with SAP Solution Manager – Requirements & Motivation

- Growing PI landscape complexity and distribution leads to requirements towards a central monitoring approach
- Reduce the TCO by simplification of the operations processes e.g. providing one central entry point combining monitors for PI overall status with drill-down options up to host level
- Enable tight integration with:
  - System Monitoring and Root Cause Analysis
  - Alerting Infrastructure
  - Notification / Incident Management
- Relieve productive systems from individual monitoring activities by a central collection of monitoring data
- Reduce the time
  - For regular system health checks
  - For hand-over procedures
  - From incident detection to root cause
How much time and manual effort would you need to answer these questions?

- What's the overall status of all PI components of the productive PI domain? Do you have issues in the underlying technical systems?
- What's the error trend for your business critical interfaces?
- Which are the most prominent errors this year? Did these errors occur in the last 7 days? At what point in time during the day do these errors typically occur?
- What is the message backlog today? Is there a relation between the message backlog and the overall message volume?
- Business department calls you and wants to know if and since when messages stuck for their business critical interface? On which PI components did those messages fail?
- How many communication channels do have an issue and which are the relevant local monitors?
- On which PI components do you have most error messages and which interfaces are affected?
- How many messages have been received this month via communication channel "xyz"?
SAP NetWeaver PI Monitoring in SAP Solution Manager – PI Domain Overview

- Monitoring of multiple PI Domains
- Access to PI Monitoring applications

SAP Solution Manager

Overview
- Detailed Selection
- PI Domain Overview

Integration with system monitoring on level of technical systems

Overview Monitor
- Aggregated View as entry point with most important status information on Integration Server, Decentral Adapter Engines and connected SAP Business Systems
- Individual view per PI component (e.g. Integration Server)
SAP NetWeaver PI Monitoring in SAP Solution Manager – Component Monitor

Central view on availability and self-test status of all PI components

Central view on availability and self-test status of all PI components

Reworked specific Self-Test details per PI component

Follow-Up actions like context sensitive navigation to further monitors - start/stop/ping of channels

Channel Details and Short-Log per server node

Overview Monitor – Component Monitor

Channel Monitor

Central view on availability of all channels of different adapter engines

Follow-Up actions like context sensitive navigation to further monitors - start/stop/ping of channels
SAP NetWeaver PI Monitoring in SAP Solution Manager – Message Error Monitor

- Allows for detailed filtering
- Error Localization view points out PI components with messages in error
- Better root-cause detection using new status details

Drill-down options

SAP NetWeaver PI Monitoring in SAP Solution Manager – Integration with Incident Mgmt

- All known context information is filled in automatically
All known context information is filled in automatically.

Pre-defined POWL queries per category and per monitored object type.

Several personalization capabilities for content and look-and-feel.

Number of occurrences per alert type and number of status changes.

Status, processor, and comments to track status of alert group directly in alert inbox.

Incident Ticket ID and status directly in alert inbox.
Reduce the cost of operating your PI landscape

1. Central Monitoring with SAP Solution Manager
2. Message Alerting
3. Central User Defined Message Search

Message Alerting – Requirements (high-level)

- **Detect**
  - Incidents go undetected
  - Core event lack payload and error context

- **Filter**
  - Core events are too unspecific, leading to too many alerts.
  - Cannot specify the filter rules which signal alert based on condition

- **Notify**
  - We cannot add docu and other context to alert.
  - We cannot aggregate alerts, or streamline, one-by-one. Inbox is flooded.

- **Respond**
  - Unified alert inbox is missing
  - We need to integrate with ticketing system
  - We want Web2.0 user-collaboration for alert-inbox.

- **Inbox & Ticketing**
  - Offer default alerting
  - Simple rule creation without rule overlapping

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Message Alerting – Configuration Mockup (1)

Incident Data Collection

Rules Overview

<table>
<thead>
<tr>
<th>Name</th>
<th>Rule Active</th>
<th>Last Processed By</th>
<th>Last Change</th>
<th>Time</th>
<th>Techn. Consumer</th>
<th>Error Label</th>
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<tr>
<td>BookingOrderRequest</td>
<td>X</td>
<td>20.02.2020</td>
<td></td>
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<td>PI</td>
<td>all</td>
</tr>
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</table>

Rule Details

Properties

- Name: BookingOrderRequest
- Severity: High

- Allow multiple value combinations with AND/OR

Message Alerting – Configuration Mockup (2)

Incident Data Collection

Rules Overview

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<td>all</td>
</tr>
</tbody>
</table>

Rule Details

Properties

- Name: BookingOrderRequest
- Severity: High

- Allow multiple value combinations with AND/OR

Create alert rules using Integration Directory objects
Message Alerting – Configuration Mockup (3)

Incident Data Collection

<table>
<thead>
<tr>
<th>Name</th>
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<th>Last Change</th>
<th>Time</th>
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Rule Details

<table>
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<tr>
<th>Technical Name</th>
<th>Description</th>
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<tr>
<td>SOLMAN</td>
<td>Central Monitoring via Solution Manager</td>
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<tr>
<td></td>
<td>3rd party ticketing system</td>
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</table>

Message Alerting – Alert Inbox Mockup

Aggregated View / Collective Alerts

Alert Details

<table>
<thead>
<tr>
<th>Alert Details</th>
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<tbody>
<tr>
<td>Name:</td>
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<tr>
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<td>Status:</td>
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<td>Start Date:</td>
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<td>End Date:</td>
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<tr>
<td>Description:</td>
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Last Refresh 04.08.2010 13:55:04 CET Refreshing
Message Alerting – New Local PI Message Monitor View Mockup

Find most important attributes at one glance

Message Alerting – Trend Graph Representation Mockup

Graph View

Tabular View
Reduce the cost of operating your PI landscape

1. Central Monitoring with SAP Solution Manager
2. Message Alerting
3. Central User Defined Message Search
Central User Defined Message Search –
Search upon predefined attributes (Mockup)

Overview:
End-to-End Alerting
System Monitoring
Host Monitoring
Database Monitoring
End-user Monitoring
Scenario Monitoring
SAP PI Monitoring
End-to-End Reporting

Common Tasks
Further Monitoring
Wily Introscope Workstation
Wily Introscope WebView
SAP Management Console
SolMan Root
cause Analysis
Setup and Operation
SolMan Operation
SolMan Setup
SolMan Landscape Main.

Related Links
SAP Service Marketplace
SAP Support Portal
SAP Help Portal

Central User Defined Message Search –
Output (Option) Mockup

Overview:
End-to-End Alerting
System Monitoring
Host Monitoring
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Related Links
SAP Service Marketplace
SAP Support Portal
SAP Help Portal
Areas of Investment
SAP NetWeaver PI Next Generation

Reduce TCD: System Centric Process Support

- Address ccBPM scenarios coverage using the BPM core engine
- Focus on known customer use cases around stateful process orchestration use cases

System Centric Process Support

1. Introduction
2. Integration Pattern Examples
Definition of an Integration Process

An Integration Process is composed of a specific flow of steps (including the sending and receiving of messages), during which the status of the process is persisted on the Integration Server.

Example: Flight Booking Coordination Using BPMN
Comparing ccBPM with BPMN

Transformations and Container Operations covered By Mappings

System Centric Process Support

1. Introduction

2. Integration Pattern Examples
Enterprise Integration Pattern - Resequencer

BPM Pattern Collect Multiple Interfaces
Synch/Asynch and Asynch/Synch Bridges

System Centric Processes – Key Points

- System Centric Processes **orchestrate stateful integration processes** of systems, applications, and services across SAP and non-SAP environments

- The Model-driven development environment based on the BPMN-standard **improves developer productivity** for implementing System Centric Processes

- System Centric Processes allow us to gain **adaptability**, increase **reusability**, and **reduce cost**

- System Centric Processes provide **integration process patterns** to jumpstart the design and implementation of customer’s integration processes

- System Centric Processes **compliment optimally Human Centric Processes** in composition scenarios
Areas of Investment
SAP NetWeaver PI Next Generation

Further Enhancements

Integrated SOA Stack
- Deploy both the products (PI and CE/BPM) together on a single box
- Holistically address aspects around tooling and also lifecycle management around these applications

Scalability for high volume use cases
- Look at dedicated use cases and bring in scalability of magnitude compared to the current performance
- Look at new runtime environments to further boost performance

Enhanced B2B support
- Tighter integration into partner capabilities
- Deliver key B2B capabilities out of the box in PI

On Demand / On Premise Integration
- Enable PI to bridge the connectivity between SAP Networked applications and onPremise SAP and non-SAP systems
- Introduce ready-to-use content and one-click installation of onDemand configuration to existing PI instances

Agenda

1. SAP NetWeaver Process Integration today
2. Process Integration Next Generation
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### PLANNED INNOVATIONS

<table>
<thead>
<tr>
<th>Key Needs</th>
<th>Key Innovation</th>
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<td>Reduce total cost of Development</td>
<td>Simplified configuration</td>
</tr>
<tr>
<td></td>
<td>Eclipse based tools</td>
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<td>System centric process support</td>
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<tr>
<td>Reduce total cost of operations</td>
<td>Enhanced integration with SAP Solution Manager</td>
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<tr>
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<td>Central message based alerting, reporting, task management via SAP Solution Manager</td>
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<tr>
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<td>Functional completeness of Java stack</td>
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<tr>
<td>Further enhancements</td>
<td>Scalability for high volume use cases</td>
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<td>Enhanced B2B</td>
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<td>On-Demand integration</td>
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### Further Information

**SAP Public Web:**


**Related SAP Education and Certification Opportunities**


**Related Workshops/Lectures at SAP TechEd 2010**

- PMC102  SOA Governance Overview and Roadmap ➔ 1h Lecture
- PMC207  What's new in SAP NetWeaver PI? ➔ 1h Lecture
- PMC214  B2B Support Today and Roadmap Moving Forward ➔ 1h Lecture
- PMC262  Using the Advanced Adapter Extended ➔ 2h Hands-on
- PMC263  Full End-to-End Monitoring for Your Integration Scenarios ➔ 2h Hands-on
Feedback

Please complete your session evaluation.

Be courteous — deposit your trash, and do not take the handouts for the following session.

THANK YOU!