POP101
Intelligent Processes on SAP HANA – Overview and Outlook
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Agenda

Overview

• Intelligent Processes & Business Operations

Process Orchestration & BPM today

Intelligent Processes

• Today
• Planned Innovations
• Future Direction

Summary
Business Process Management
In the SAP integration and orchestration portfolio

Process orchestration
NW BPM, NW BRM & NW Process Integration on a single Java instance
BPMN-based, high-volume scenarios, linear scalability, EAI pattern-based modeling, HTML5 (SAPUI5) business user experience, mobile and desktop

Process intelligence
SAP Operational Process Intelligence providing end-to-end process visibility and decision support on instance level for faster and smarter operational business decisions in real-time
Built natively with SAP HANA

User-centric consumption
NW Gateway as SAP standard to connect to SAP software based on REST and OData/Atom
Frontend development support for iOS, Android, PHP, Java, service enabled (RFC, BAPI, BOL, MDX, SAP HANA, ABAP) via Gateway Consumption tools.

Cloud integration
SAP HANA Cloud Integration, an integration bus in the cloud for real-time bi-directional process integration
Packaged integration with BPMN-based iFlows and pre-built adapters
Connecting SAP Cloud Solutions with SAP and non-SAP on-premise

Powered by SAP HANA
A completely re-imagined, modern platform for real-time business
SAP NetWeaver Business Process Management

Product description

SAP NetWeaver Business Process Management enables you to quickly automate and flexibly optimize your business processes – from simple workflows to integrated processes that span applications and organizational boundaries.

Developer productivity

- Intuitive process modeling using BPMN standard
- Integrated business rules
- Automatically generate user interfaces from process context

Easy consumption

- State-of-the-art task inbox based on SAP UI5
- Java API access for processes and tasks
- Standard dashboards for process analytics

Integration with SAP & non-SAP systems

- Support for RFC for web service connectivity
- Process orchestration deployment option
Intelligent Business Process
Infusing Intelligence into Process Orchestration

What Is It?
• Automate and flexibly optimize business processes across applications or organizational boundaries.
• Manage business rules to ensure fast, agile, transparent, consistent enforcement of corporate policies
• Measure and adjust operational processes in real-time

What value does it deliver?
• Increased efficiency and flexibility
• Improved real-time decision support on process instance level
• Easy consumption of process analytics - easy access to tasks

Today
• SAPUI5-based BPM Inbox
• API access to tasks
• PI and BPM on a single Java instance
• Integration pattern support
• BPM as a provider & orchestrator for SAP Operational Process Intelligence

Planned
• Unified Inbox on SAP NW Gateway
• ODATA task services
• BPM / Process Orchestration on HANA
• nZDM for BPM / Process Orchestration
• Co-deployment of Process Orchestration with SAP Operational Process Intelligence on HANA

Future
• Personalized workspace (space.me) across BPM and SAP Operational Process Intelligence
• BPM Accelerators on HANA
• Intelligent processes: deep integration of process intelligence with process execution
Intelligent business operations: infusing intelligence into orchestrated, end-to-end processes

- Gain competitive advantage
- Quickly adapt to changing business dynamics
- Turn big “process” data into actionable information
- Leverage process-aware analytics
- Lead the transformation of your business
- Be proactive instead of crisis management
- Accelerate and optimize operational decisions making

“By 2016, 70% of the most profitable companies will manage their processes using real-time predictive analytics or extreme collaboration.” – Gartner Predicts 2013
Intelligent Processes and Business Operations
Key trends and impacts in business and technology

- **Process visibility**: enhance situational awareness
- **Decision support**: make faster & better operational decisions
- **Process flexibility**: coordinate more flexible business processes

**Steps**
- **Observe, orient**
- **Decide**
- **Act**

**“Big” processes & data**

- **Social computing & networking**
- **Context awareness**

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Continuum of Business Process Control

Traditional Maturity Model

OLAP Systems
ETL, BW
Process Reporting
Monitoring

BPM (Composition)
ESB (Integration)

Workflows
Function Modules

ERp / SCM
SRM / CRM
APO
... HR, FI, CO

Process Analytics

Process Orchestration

Process Automation

Transactional Process

User-centric Consumption

Cloud Integration

Level of Intelligence

Level of Automation

Level of Integration

Level of Consumability

SAP Hana
Suite on HANA, BW on HANA, HANA Apps

The New World
Intelligent Processes

- Today
- Planned
- Future
SAP NetWeaver Business Process Management
New user experience

**BPM inbox**
Modern user experience leveraging
- Advanced search and filter capabilities
- Custom attributes and direct actions (e.g. approve/reject)
- Alternative stream view optimized for occasional users

**Custom task UIs**
- Use any Java or JavaScript framework to implement a task UI
- Interact with the process engine via Java public API

**BPM analytics**
- “Good morning” page for process administrators
- Check average duration, number of instances per status and instances in error
- Directly navigate to SAP NetWeaver administrator to take action
All-new HTML5 (SAPUI5) inbox for SAP NetWeaver BPM
Get context information and complete tasks directly from the inbox.
SAP NetWeaver Business Process Management
Process Orchestration deployment option

**BPM, BRM and PI on a single Java instance**
- Java-only installation option for BPM, BRM and PI
- Reliable message exchange using the XI 3.0 protocol
- Call PI mappings from BPM process
- Use business rules in PI
- End-to-end monitoring of processes and related messages
- Handling of large messages

**Advantages**
- Reduced development and operations cost
- Improved performance
Enterprise integration patterns

- Do help in solving recurring problems faced in the integration of enterprise applications
- See: [Enterprise Integration Patterns: Designing, Building, and Deploying Messaging Solutions](#) by Gregor Hohpe and Bobby Woolf

Enterprise integration patterns on Process Orchestration

- Blog on SCN describing how to best implement enterprise integration patterns on PI/PO
- See [SAP Process Orchestration patterns](#) on SCN

### Stateful patterns

<table>
<thead>
<tr>
<th>Pattern</th>
<th>Available from this release</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aggregator</td>
<td>SAP NetWeaver 7.3 EhP1 SP5</td>
</tr>
<tr>
<td>Claim Check</td>
<td>SAP NetWeaver 7.3 EhP1 SP5</td>
</tr>
<tr>
<td>Composed Message Processor</td>
<td>SAP NetWeaver 7.3 EhP1 SP5</td>
</tr>
<tr>
<td>Scatter-Gather</td>
<td>SAP NetWeaver 7.3 EhP1 SP5</td>
</tr>
<tr>
<td>Synchronous/Synchronous Bridge</td>
<td>SAP NetWeaver 7.3 EhP1 SP4</td>
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</table>

### Stateless patterns

<table>
<thead>
<tr>
<th>Pattern</th>
<th>Available from this release</th>
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</thead>
<tbody>
<tr>
<td>Content Enricher (w/BPM)</td>
<td>SAP NetWeaver 7.3 EhP1 SP4</td>
</tr>
<tr>
<td>Splitter (w/BPM)</td>
<td>SAP NetWeaver 7.3 EhP1 SP4</td>
</tr>
<tr>
<td>Async/Sync Bridge</td>
<td>SAP NetWeaver 7.3 EhP1 SP4</td>
</tr>
<tr>
<td>Pure AEX implementation of these stateless patterns: - Content Based Router - Recipient List - Dynamic Router - Splitter - Message Filter - Content Enricher - Content Filter - Message Translator</td>
<td>SAP NetWeaver 7.3 EhP1 SP4</td>
</tr>
</tbody>
</table>
SAP NetWeaver Business Process Management
End-to-end monitoring in Process Orchestration

Improve TCO by monitoring scenarios across PI and BPM

**Context sensitive navigation**
- For a given BPM process instance, show details of all associated PI messages
- For a given PI message, show details of the associated BPM process

**Prerequisites**
- Mark the communication component as integration-centric process
- PI and BPM have to communicate with each others using XI 3.0 message protocol
SAP NetWeaver Business Process Management
BPM in high-volume scenarios*

Improved performance and reliability

<table>
<thead>
<tr>
<th>Hardware</th>
<th>IBM Power 750</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPU cores</td>
<td>32</td>
</tr>
<tr>
<td>Response time</td>
<td>0.26 sec</td>
</tr>
<tr>
<td>Process instances/hour</td>
<td>~37,000</td>
</tr>
<tr>
<td>Task instances/hour</td>
<td>~112,000</td>
</tr>
<tr>
<td>Concurrent users</td>
<td>2,800</td>
</tr>
</tbody>
</table>

* Standard configuration template for high-volume BPM available
Provide real-time process visibility to line-of-business users enabling faster and better-informed operational decisions

**Process discovery**
- Search and import process models directly from an SAP NetWeaver BPM system or via SAP NetWeaver Gateway
- Use process events to define business scenarios and KPIs

**Runtime events**
- During process execution, process events and context data are available for replication into SAP Operational Process Intelligence

**Correlation**
- Automatic correlation between BPM main flow and referenced sub-flows
Demo
Intelligent Processes

- Today
- Planned
- Future
Planned innovations
Inbox enhancements, unified inbox and task services

Further enhancements in BPM inbox and harmonized access to tasks from SAP NetWeaver BPM and SAP Business Workflow

Inbox enhancements
- Task initiator – users can see who created a task
- Support for user photos
- Mass approval – execute an action on multiple tasks
- Comments and attachments

Unified inbox
- Standard inbox on SAP NetWeaver Gateway to manage tasks from BPM and workflow systems
- Manage substitution rules for multiple provider systems

ODATA task services
- Access and manage tasks via standard ODATA services

PLANNED INNOVATIONS
This is the current state of planning and may be changed by SAP at any time.
Planned innovations
Further enhancements in Process Orchestration

Additional platform options and minimized system down time

**Process orchestration on HANA**
- SAP HANA added as supported database platform in the Platform Available Matrix (PAM)

**Near-zero down time maintenance**
- Applying support and enhancement packages to the Process Orchestration stack with minimal system downtime

**Improved technical error handling for BPM**
- Catch technical exceptions during service calls (e.g. system down, timeout) via boundary event
- Define escalation workflow to handle the exception (e.g. retry)
Planned Innovations
Intelligent processes on HANA

Process execution and process intelligence combined on HANA

Co-deployment on SAP HANA
- Transactional data (processes and messages) locally available for visibility scenarios – no replication required

In-flight process intelligence
- Use actual and predicted KPIs to influence running process instances

Virtual data model
- HANA views on processes and tasks for real-time analytics and custom applications

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Purpose of SAP Operational Process Intelligence powered by SAP HANA

Operational Decision Support in Real-time

SAP Operational Process Intelligence powered by SAP HANA empowers process participants, such as line-of-business people, solution architects and process experts to:

- Make faster and better-informed operational decisions by providing real-time process information across SAP and non-SAP systems, within and beyond the enterprise
- Safeguard critical processes by detecting situations in real-time relating to end-to-end business processes
Demo
Combining orchestration with operational intelligence
Intelligent processes powered by SAP HANA

Benefit from SAP HANA, providing accelerators for specific BPM scenarios (e.g. analytics) and VDM (Virtual Data Model) for BPM.
Integrated user experience for tasks, actions, alerts and notifications.

User experience
- Harmonized, integrated and personalized user experience
- All-new, modern SAPUI5-based UIs
- Responsive across devices (desktop, tablet, mobile)

New scenarios
- Closed loop between process execution and insight
- Actively driving processes towards goals, enabling navigation and integration back into process execution
- New real-time analytical applications via virtual data models

Performance & TCO
- High-performance, in-memory HANA database
- Selective optimization of performance-critical application code
- Native execution of rules on HANA database
- All data in HANA - no replication of data across multiple systems
### User experience
- BPM-inbox based on HTML5
- Java API for tasks
- Build task UIs in any UI technology

### Process orchestration
- SAP NW Process Orchestration installation option (PI+BPM+BRM)
- Integration pattern support
- End-to-end monitoring
- BPM for high-volume scenarios

### Process intelligence
- BPM as source for SAP Operational Process Intelligence
- Standard dashboards for process owners
- Analytics API for custom dashboards

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<thead>
<tr>
<th>Today</th>
<th>Planned Innovations</th>
<th>Future Direction</th>
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<td>(SAP NetWeaver 7.4 SP02)</td>
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### User experience
- BPM inbox functional enhancements
- ODATA task service
- Unified inbox on SAP NW Gateway

### Process orchestration
- BPM and Process Orchestration on HANA
- nZDM for BPM and Process Orchestration
- Enhanced support for handling technical errors in BPM

### Process intelligence
- Co-deployment option with SAP Operational Process Intelligence on HANA
  - Virtual data model for BPM
  - In-flight process intelligence

### Process orchestration
- Continuous enhancements based on customer feedback
- Accelerators for HANA (e.g. BPM analytics, monitoring)

### Process intelligence
- Intelligent processes – deep integration of process intelligence with process execution
- Goal-driven phases and milestones, navigation actions into business applications

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This is the current state of planning and may be changed by SAP at any time.
Summary

SAP NetWeaver Business Process Management is part of SAP NetWeaver Process Orchestration – a solid and widely adopted integration and orchestration platform

- The latest release offers additional enhancements in the BPM inbox, end-to-end monitoring across processes and messages and support for common integration patterns

- Continued improvements to user experience and additional enhancements based on customer feedback

- In the future, SAP NetWeaver Process Orchestration and SAP Operational Process Intelligence can be combined on the HANA platform for enabling intelligent business operations.

This is the current state of planning and may be changed by SAP at any time.
### Related Sessions on SAP NetWeaver Business Process Management

<table>
<thead>
<tr>
<th>POP160</th>
<th>SAP NetWeaver BPM – Build and Run a Simple Business Process End-to-End (Hands-On)</th>
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<tbody>
<tr>
<td>POP360</td>
<td>Advanced SAP NetWeaver Business Process Management Development (Hands-On)</td>
</tr>
<tr>
<td>POP260</td>
<td>Mobilizing NW BPM Processes (Hands-On)</td>
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### Related Sessions on SAP NetWeaver Process Orchestration

<table>
<thead>
<tr>
<th>POP201</th>
<th>A Deep-Dive into the New Features of SAP NetWeaver Process Orchestration (Lecture)</th>
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<tbody>
<tr>
<td>POP261</td>
<td>SAP NetWeaver Process Orchestration – Build a Complete Integration Scenario (Hands-On)</td>
</tr>
<tr>
<td>POP266</td>
<td>Operating SAP NetWeaver Process Orchestration in a Productive Environment (Hands-On)</td>
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### Related Sessions on SAP Operational Process Intelligence

<table>
<thead>
<tr>
<th>POP102</th>
<th>SAP Operational Process Intelligence, powered by SAP HANA (Lecture)</th>
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<tbody>
<tr>
<td>POP161</td>
<td>Building a Business Scenario in SAP Operational Process Intelligence (Hands-On)</td>
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