

PMC206

A Deep Dive into the Next Generation Process Integration



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SAP NetWeaver Process Integration
SAP AG

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Agenda



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

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SAP NetWeaver Process Integration Adoption

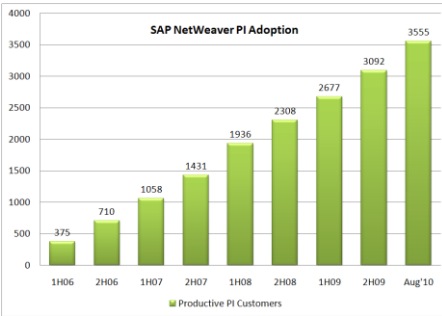
1.2 million messages processed overnight
Replacement of BEA web Logic with
SAP NetWeaver PI

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

Opto Semiconductors
Leverage SAP NetWeaver PI as
Enterprise wide ESB

SAP NetWeaver PI as integration hub:
B2B gateway, EAI and SOA middleware



SAP NetWeaver PI Adoption

- 200 new **productive** customers / quarter
- 39 % of customers use SAP NetWeaver PI 7.1
- 300+ Customer References
- Scenarios: A2A, B2B, ESB, SOA
- SAP and non-SAP integration

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,....

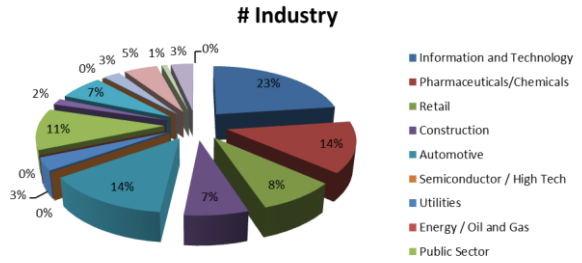
Survey Q3 2010

- 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:
 - <https://www.dsag.de/survey/index.php?sid=13161&lang=en>

Industry



	# Industry
Information and Technology	27
Pharmaceuticals/Chemicals	16
Retail	10
Construction	8
Automotive	16
Semiconductor / High Tech	0
Utilities	4
Energy / Oil and Gas	0
Public Sector	13
Life sciences	2
Consumer products	8
Telecommunications / IT	0
Banking	3
Services	6
Defence	1
Insurance	4
other	0



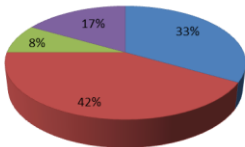
total 118

Business Criticality



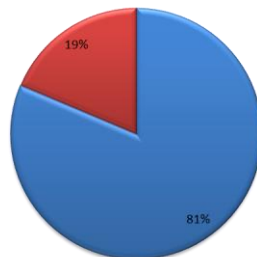
What level of availability are you aiming for?(99,9 %, 99,99 %, 99,999 %)

■ "99" ■ "99,9" ■ "99,99" ■ "99,999"



7x24hrs requirement

■ Ja/Yes ■ Nein/No



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

■ Yes / ja ■ No / nein

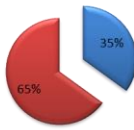


Monitoring



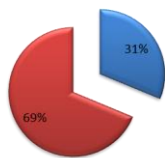
Are the monitoring tools provided sufficient to do the job?

■ Yes / ja ■ No / nein



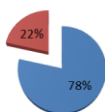
Do you use special tools for monitoring?

■ Yes / ja ■ No / nein



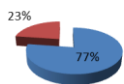
Usage of SAP Alert Framework? (Alert categories, alert rules,...)

■ Yes / ja ■ No / nein



Are the alerts forwarded via e-mail?

■ Yes / ja ■ No / nein

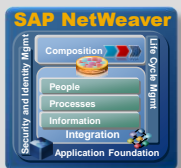


Why are customers choosing SAP NetWeaver Process Integration today?



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



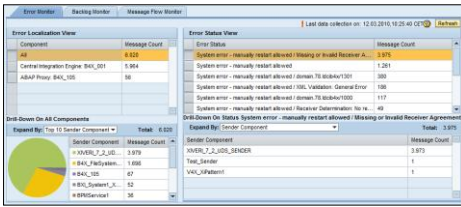
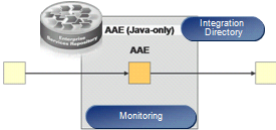
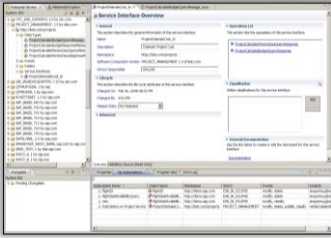
Leveraging large SAP installed base

- 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

TODAY

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*, 1/2 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

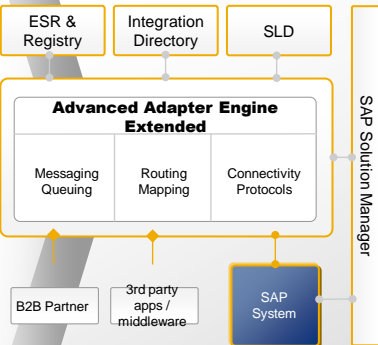
*Hardware dependent

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

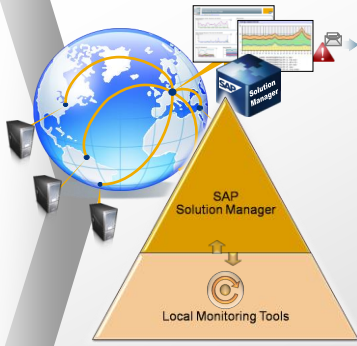
- Reduced implementation time
- Faster asset configuration
- Secure, compliant communication
- System robustness for smooth business operations

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

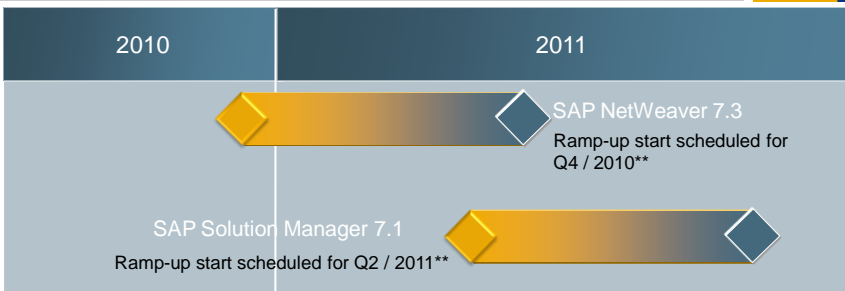
- Faster and simpler upgrades

Continuous Operations

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

SAP NetWeaver PI 7.3

Planned Timeline*



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>

*Future dates are subject to change.

** Ramp ups are scheduled up to 6 months – might be closed earlier depending on fulfillment of KPIs

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2. Process Integration Next Generation
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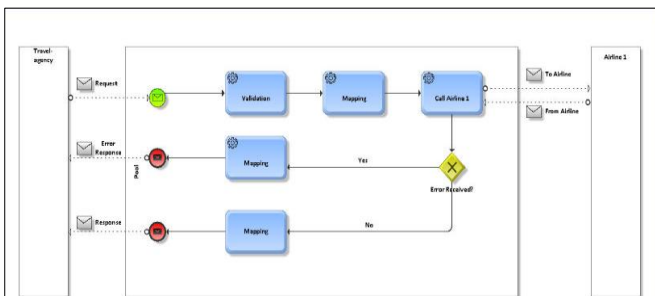
Areas of Investment SAP NetWeaver PI Next Generation

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

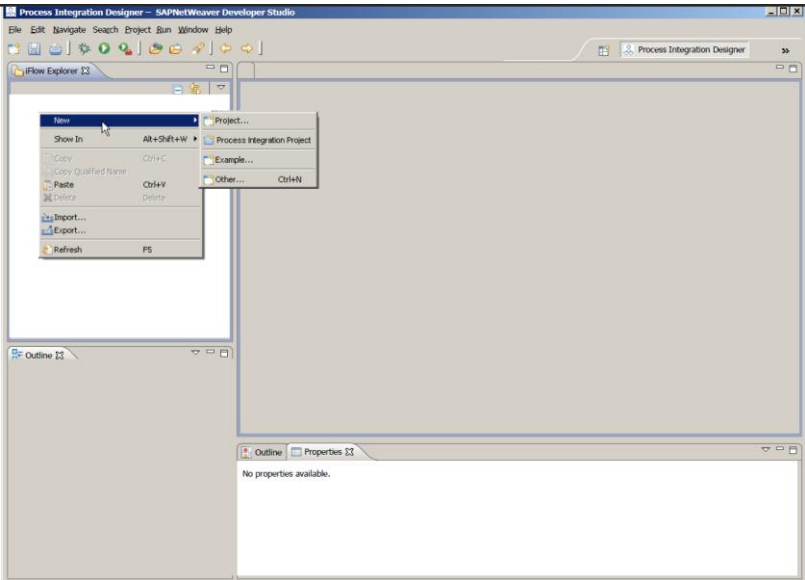


Provide one single “face” (concept) to work with across the TCD life cycle (and later in monitoring and operations)

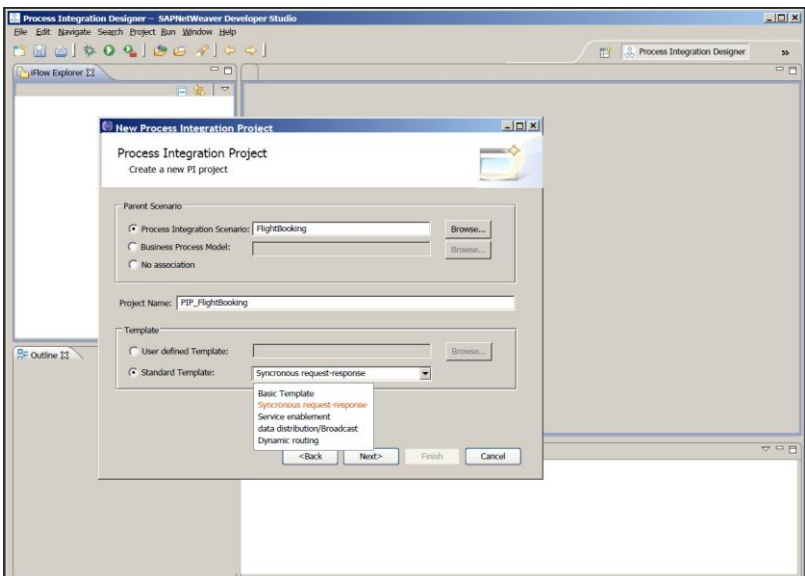
Internal working term : Integration Flows

- 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

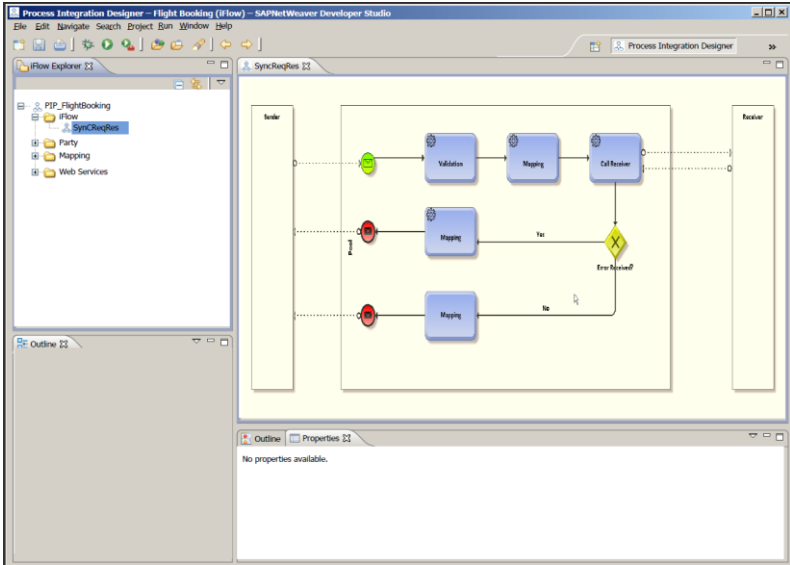
SAP NetWeaver Process Integration – Next Generation Tooling Mockup



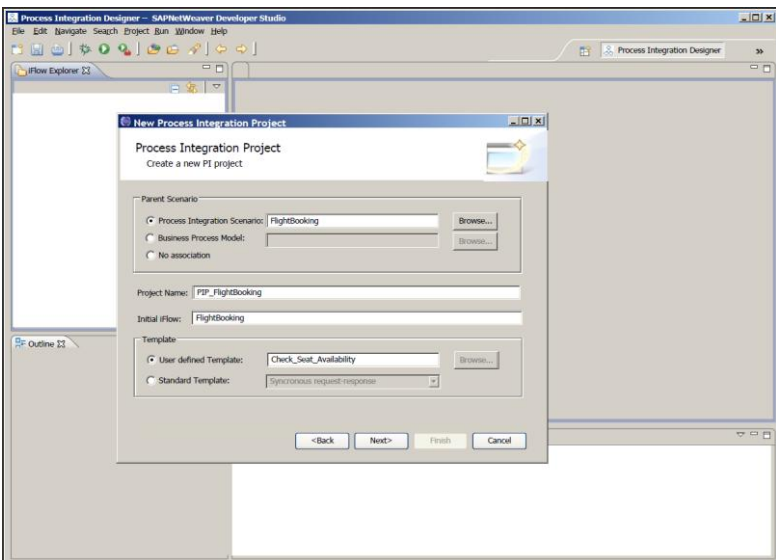
SAP NetWeaver Process Integration – Next Generation Tooling Mockup



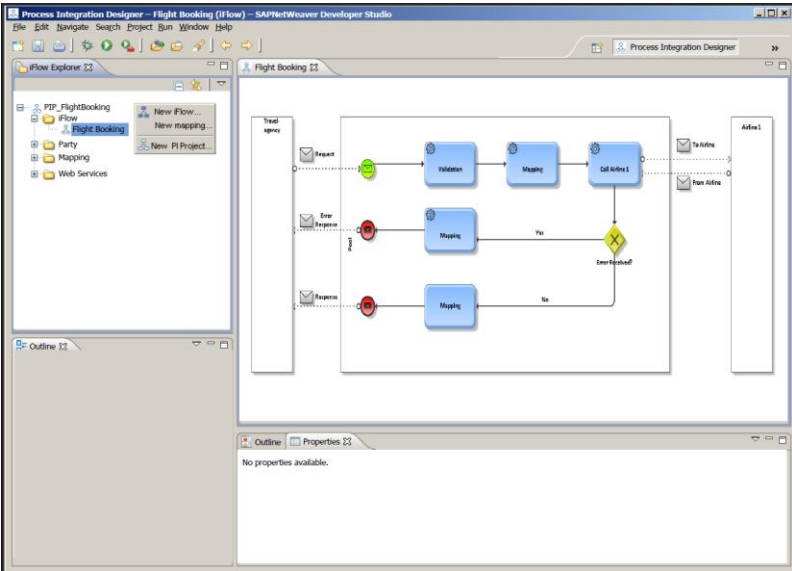
SAP NetWeaver Process Integration – Next Generation Tooling Mockup



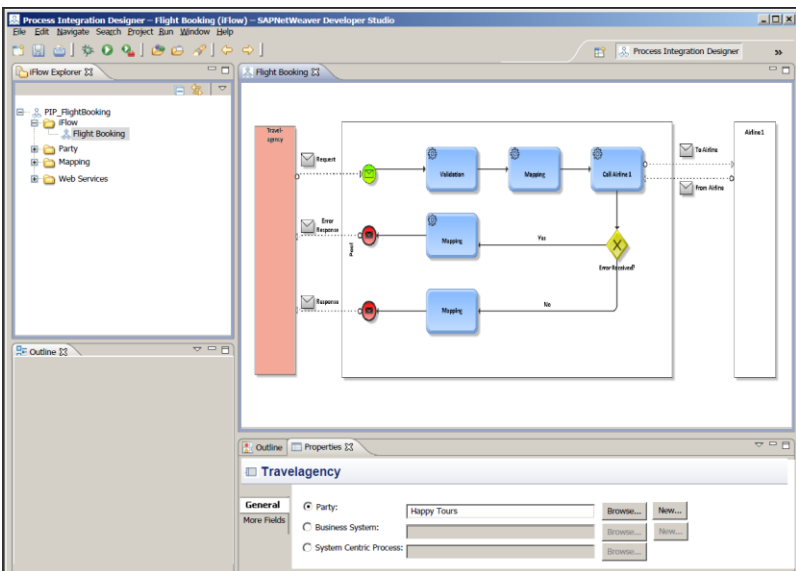
SAP NetWeaver Process Integration – Next Generation Tooling Mockup



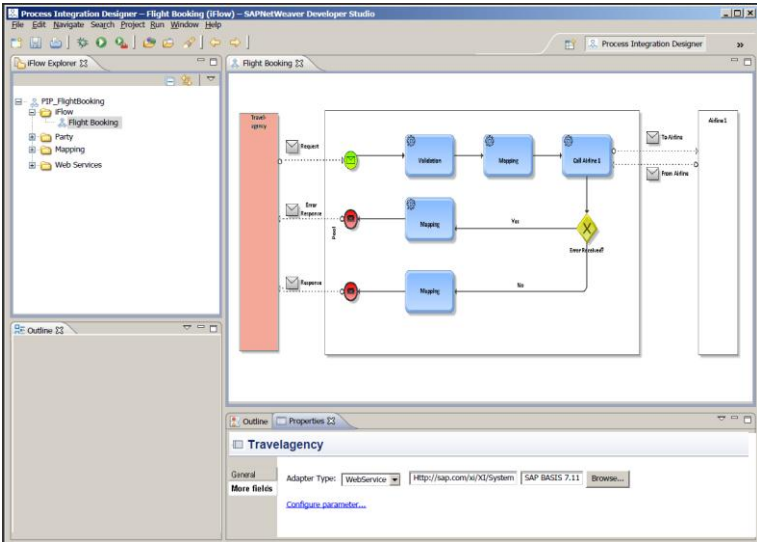
SAP NetWeaver Process Integration – Next Generation Tooling Mockup



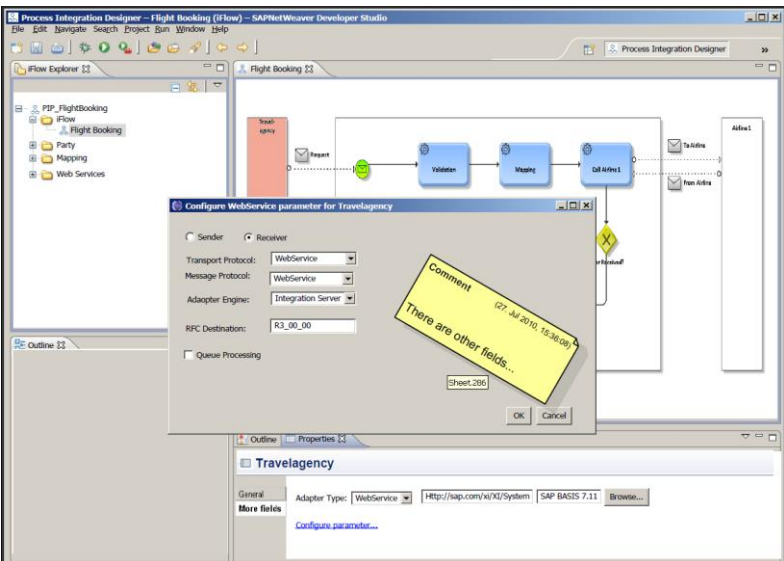
SAP NetWeaver Process Integration – Next Generation Tooling Mockup



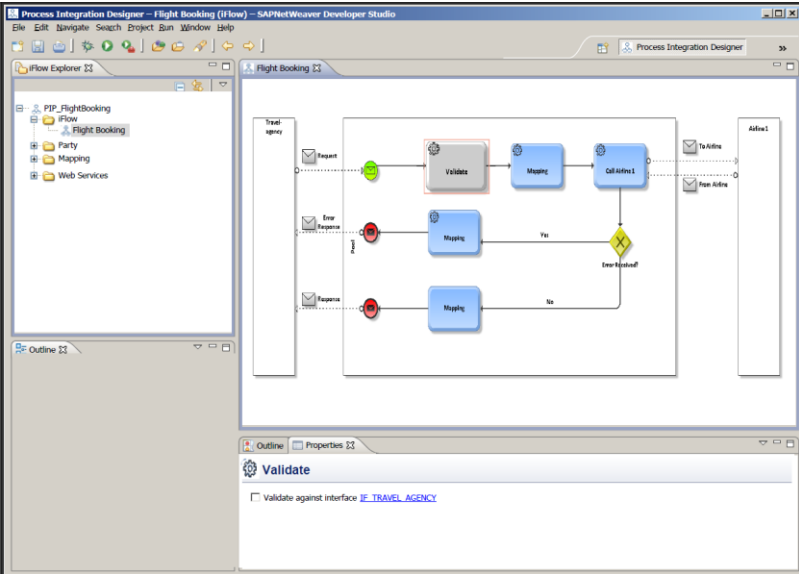
SAP NetWeaver Process Integration – Next Generation Tooling Mockup



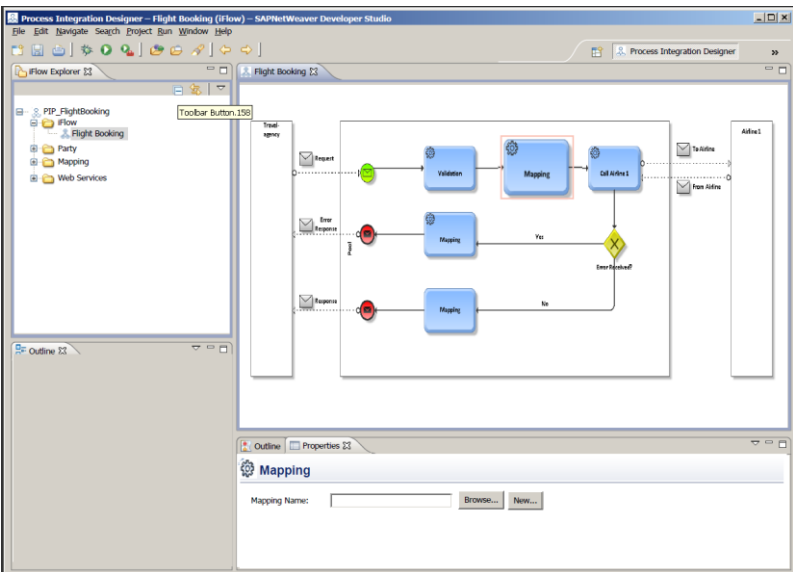
SAP NetWeaver Process Integration – Next Generation Tooling Mockup



SAP NetWeaver Process Integration – Next Generation Tooling Mockup



SAP NetWeaver Process Integration – Next Generation Tooling Mockup



SAP NetWeaver Process Integration – Next Generation Tooling Mockup



Integration Builder: Configuration

Message Type: BookingOrderRequest

Structure	Occurrences	Type
BookingOrderRequest	1..1	p4: BookingOrderRequest
AgencyID	1..1	xsd:string
OrderNumber	1..1	xsd:string
FlightClass	1..1	xsd:string
FlightDate	1..1	xsd:date
ConnectionID	1..1	xsd:string
PassengerData	1..1	p4: PassengerData
Surname	1..1	xsd:string
FirstName	1..1	xsd:string
Birthdate	1..1	xsd:date

Message Type: FlightBookingOrderRequest

Structure	Occurrences	Type
FlightBookingOrderRequest	1..1	p5: FlightBookingOrderRequest
AgencyData	1..1	p5: AgencyData
OrderNumber	1..1	xsd:string
OrderType	1..1	xsd:string
FlightID	1..1	p5: FlightID
AirlineID	1..1	xsd:string
ConnectionID	1..1	xsd:string
FlightID	1..1	xsd:date
ClassCode	1..1	xsd:string
PassengerName	1..1	xsd:string
PassengerBirthdate	1..1	xsd:date
PassengerFormOfAddress	0..1	xsd:string

Mapping Name: Browse... New...

SAP NetWeaver Process Integration – Next Generation Tooling Mockup



Request

Name	BookingOrderRequest_Out
Namespace	http://sap.com/xi/XI/DemoAgency
Software Component Version	SAP BASIS 7.11
Description	Booking order request - Out (only for use in XI Demo)

SAP NetWeaver Process Integration – Next Generation Tooling Mockup



The screenshot displays the SAP NetWeaver Process Integration Designer interface. The main window shows the configuration for a 'Request' object named 'BookingOrderRequest'. The configuration includes the following details:

- Name:** BookingOrderRequest
- Namespace:** http://sap.com/xi/DemoAgency
- Software Component Version:** SAP BASIS 7.11
- Description:** Booking order request (only for use in XI Demo)
- Data Type Used:** BookingOrderRequest
- XML Namespace:** http://sap.com/xi/DemoAgency

Below the configuration, there is a table showing the structure of the request object:

Name	Category	Type	Occur...	Default	Deletable	Details	Busine...	Descrip...
BookingOrderRequest	Element	BookingOrc	1					
AgencyID	Element	xsd:string	1		<input type="checkbox"/>	min_Length:	Agency ID	
OrderNumber	Element	xsd:string	1		<input type="checkbox"/>	min_Length:	Order num	
FlightClass	Element	xsd:string	1		<input type="checkbox"/>	min_Length:	Flight clas	
FlightID	Element	FlightID	1		<input type="checkbox"/>		Flight ID	
PassengerData	Element	PassengerInf			<input type="checkbox"/>		Passenge	

The 'Outline' pane on the left shows the 'Request' object and its properties, including Name, Namespace, Software Component Version, and Description.

SAP NetWeaver Process Integration – Next Generation Tooling Mockup



The screenshot displays the SAP NetWeaver Process Integration Designer interface showing a process flow diagram. The diagram illustrates the flow of data between various components:

- Start:** A 'Request' message enters the process.
- Validation:** The request is processed by a 'Validation' component.
- Mapping:** The validated request is then processed by a 'Mapping' component.
- Call Action:** The mapped request is processed by a 'Call Action' component.
- Decision:** The process then reaches a decision point (diamond shape) labeled 'Is Approved?'. This decision is based on the condition: `! DO_InvstmentApprovalProcess`.
- Flow:** If the condition is met (Yes), the process continues to the 'Call Action' component. If not (No), the process is terminated.

The 'Outline' pane at the bottom shows the properties for the 'Yes' condition, including the condition expression and the associated call action details.

Reduce the cost of operating your PI landscape



SAP

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

SAP



- Growing PI landscape complexity and distribution leads to growing 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?

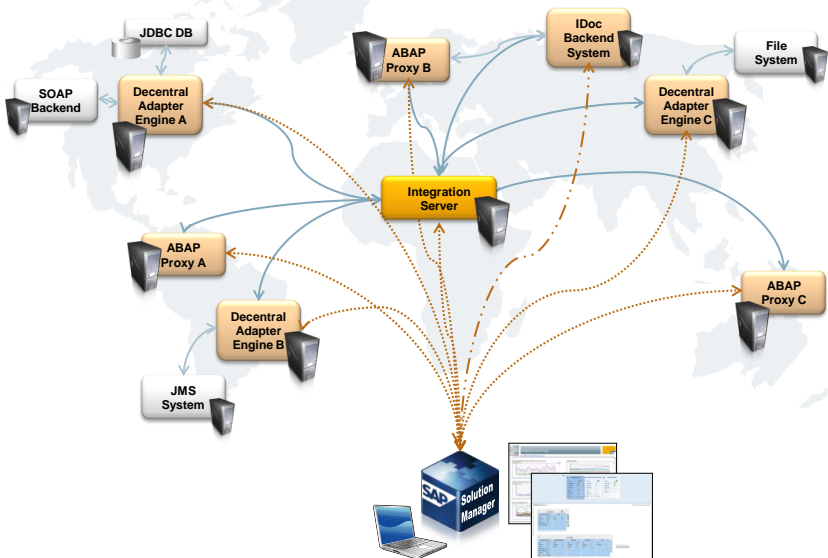


- What's the overall status of all PI components of the productive PI domain? Do you have issues in the underlying technical systems?
- What's the error trend for your business critical interfaces?
- Which are the most prominent errors this year? Did these errors occur in the last 7 days? At what point 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"?



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SAP PI Monitoring Architecture & Scope



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SAP NetWeaver PI Monitoring in SAP Solution Manager – PI Domain Overview



Monitoring of multiple PI Domains

Access to PI Monitoring applications

SAP Solution Manager

My Home | Root Cause Analysis | SAP Engagement and Service Delivery | **Technical Monitoring**

Detailed Selection

PI Domains (6)

View: [STANDARDVIEW] | Overview Monitor | Component Monitor | Channel Monitor | Message Monitor

Name	Technical Systems	Alerts	SLD URL
domain.28.l0cbxj	AET-JAVA,BXJ-JAVA,BXJ-ABAP,LKG-JAVA	0	http://l0cbxj:52800/sld
domain.28.uscu0r	BJE-ABAP,L1F-ABAP,LU6-JAVA,MII-JAVA,QWA-ABAP,U6R-JAVA,U6R-ABAP	0	http://uscu0r:50020/sld
domain.40.l08134	AAE-JAVA	0	http://l08134:54000/sld
domain.50.l08134	AEX-JAVA,AEX-ABAP	0	http://l08134:55000/sld
domain.78.l0cb4x	B4X-JAVA,B4X-ABAP,V4X-JAVA	0	http://l0cb4x:57800/sld

Last Refresh 18.02.2010 09:45:49 CET Refresh

SAP NetWeaver PI Monitoring in SAP Solution Manager – 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)

Overview Monitor - domain.78.l0cb4x

Selected Time Range: Current Year | Set as Default

Graphical View | Show Tabular View

Last refreshed on: 18.02.2010, 18:08:15 CET Refresh

Integration Server	Decentral Adapter Engines	Business Systems
Alerts: 4 Availability: ● Self Test: ● Channel: 171 ▲ 37 ■ 366 Messages: Error 6190, Backlog 10442	Alerts: 2 Availability: ● Self Test: ● Channel: 0 ▲ 0 ■ 0 Messages: Error 6, Backlog 0	Alerts: 2 Availability: ● Self Test: ● Messages: Error 21, Backlog 0

Integration Server (7)

B4X (ABAP)

Integration Engine	BPE
Alerts: 1 ●	Alerts: 1 ●
Availability: ●	Availability: ●
Self test: ●	Self test: ●
Error messages: 604	
Backlog messages: 232	

B4X (JAVA)

Adapter Engine	Mapping Runtime	Directory	Repository	SLD
Alerts: 1 ●	Alerts: 0	Alerts: 1 ●	Alerts: 0	Alerts: 0
Availability: ●	Availability: ●	Availability: ●	Availability: ●	Availability: ●
Self test: ●	Self test: ●	Self test: ●	Self test: ●	Self test: ●
Channel: 0				
Error messages: 2288				
Backlog messages: 10050				

Integration with system monitoring on level of technical systems

SAP NetWeaver PI Monitoring in SAP Solution Manager – Component Monitor



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

Overview Monitor - domain.78.l0cb4x Component Monitor - domain.78.l0cb4x

Component Overview

Expand All | Navigate To | Create Notification | Export

Refresh on: 18.02.2010, 18:08:42 CET [Refresh]

Visible Rows: 10

Component Name	Component Type	Availability	Self-Test
Integration Server	Technical System	■	■
B4X-ABAP	Technical System	■	■
B4X-JAVA	Technical System	■	■
Central Adapter Engine: B4X	Central Adapter Engine	■ 18.02.2010, 18:06:34 CET	■ 18.02.2010, 18:05:35 CET
Mapping Runtime: B4X	Mapping Runtime	■ 18.02.2010, 18:06:34 CET	■ 18.02.2010, 18:05:33 CET
Integration Directory: B4X	Integration Directory	■ 18.02.2010, 18:06:34 CET	■ 18.02.2010, 18:05:33 CET
Enterprise Services Repository: B4X	Enterprise Services Repository	■ 18.02.2010, 18:06:34 CET	■ 18.02.2010, 18:05:33 CET
System Landscape Directory: B4X	System Landscape Directory	■ 18.02.2010, 18:06:34 CET	N/A
Decentral Adapter Engines		■	■
Business Systems		■	■

Self-Test details on Central Adapter Engine: B4X

Test Results: Summary | For: All

Visible Rows: 10

Status	Self-Test	Details
■	Is the Advanced Adapter Engine running?	Advanced Adapter Engine Selftest could not be executed. Reason: Could not get AAE MBean
■	Are Adapter Framework Jobs running without errors?	337 running ok, 2 advanced and 5 with errors. Advanced Adapter Engine Selftest could not be executed. Reason: Could not get AAE MBean
■	Is the exchange profile available?	Exchange profile
■	Is a user defined for component AF?	com.sap.adapter.framework.serviceuser.name = PIATUSER.com.sap.adapter.framework.serviceuser.pwd = *****
■	Are registrations of connections and protocol handler without errors?	42 of 42 connection(s) registered successfully 9 of 9 protocol handler registered successfully no errors reported while re...
■	Is the XI Adapter operational?	--- Current Connection Setting --- Integration Server URL: http://63c1b4x.wdf.sap.corp:57800/sap/xi/engine/monentry/Inte...
■	Are Messaging System Deletion Jobs running without errors?	1 running ok, 0 with warnings and 0 with errors.
■	Are Messaging System Archival Jobs running without errors?	3 running ok, 0 with warnings and 0 with errors. No status information available for 1 job(s).
■	Are Messaging System Restart Jobs running without errors?	0 running ok, 0 with warnings and 0 with errors.
■	Are Messaging System Recover Jobs running without errors?	1 running ok, 0 with warnings and 0 with errors.

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Reworked specific Self-Test details per PI component

SAP NetWeaver PI Monitoring in SAP Solution Manager – Channel Monitor



Central view on availability of all channels of different adapter engines

Overview Monitor - domain.78.l0cb4x Channel Monitor - domain.78.l0cb4x

Channel Filter

Filter Name: <Select Filter> Save Filter Manage Filter

Adapter Engine: Central Adapter Engine: B4X Channel Name: Channel Status: Error

Apply Clear

Advanced filter

Channel Overview

View: [STANDARDVIEW] | Navigate To | Create Notification | Export

Refresh on: 18.02.2010, 18:10:29 CET

Visible Rows: 10 | Filter Settings

Channel Name	Channel Independent Logs	Adapter Engine	Adapter Type	Direction	Component	Party	Namespace
Mail_S87	PI Cache Monitor	Central Adapter En...	Mail	Sender	Connectivity_Mail		http://sap.com/xi/XL...
File_S12	PI Message Monitor	Central Adapter En...	File	Sender	Connectivity_File		http://sap.com/xi/XL...
rcvc_1a061	PI Message Status Monitor	Central Adapter En...	RNIF	Receiver	PIPOC2_R0102_Re...	RNIF20_PARTNER_T...	http://sap.com/xi/XL...
S_FTPS_02		Central Adapter En...	File	Sender	XIVERI_7_3_FTPS_...		http://sap.com/xi/XL...
ReceiverChannel		Central Adapter En...	Mail	Receiver	IC_Service_B	IC_Party	http://sap.com/xi/XL...
File_S11		Central Adapter En...	File	Sender	Connectivity_File	XIVERI_SOAP_Par...	http://sap.com/xi/XL...
Mail_S7		Central Adapter En...	Mail	Sender	Connectivity_File	XIVERI_Mail_Party_File	http://sap.com/xi/XL...
WSRM_receive_R...		Central Adapter En...	RFC	Sender	BXL_105		http://sap.com/xi/XL...
SenderChannel		Central Adapter En...	Mail	Sender	IC_Service_C	*	http://sap.com/xi/XL...
FirstReceiverChannel		Central Adapter En...	RFC	Receiver	FirstService	XIVERI_Party_FT_Tar...	http://sap.com/xi/XL...

Channel Details

Activation State=STARTED
Channel State=ERROR

ShortLog=Server 00 78_7883293 : started
Server 00 78_7829748 : started
Server 01 78_7883293 : started

Channel Details and Short-Log per server node

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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



Message Filter

Filter Name: <Select Filter> Set as Default

Time Range: Current Year | Period 01.01.2010,01:00:00 CET - 01.01.2011,01:00:00 CET

PI Component:

Advanced Filter

Sender Party: Receiver Party:

Sender Component: Receiver Component:

Sender Interface: Receiver Interface:

Sender Namespace: Receiver Namespace:

Error Localization View

Component	Message Count
All	93.007
Central Adapter Engine: B4Y	64.035
Central Integration Engine: B4Y_001	28.854
Proxy: B4Y_105	118

Error Status View

Error Status / Details	Message Count
System error - manually restart allowed / Mapping: General Error	1.551
Not delivered / Missing or Invalid Receiver Agreement	2.290
Not delivered / Mapping: General Error	2.905
Not delivered / Interface Determination Error	4.636
System error - manually restart allowed / XML Validation: Gen...	12.478
System error - manually restart allowed / Mapping or Invalid Re...	14.557

Drill-down options

Drill-Down on all components

Expand By: Top 10 Sender Components | Total: 93.007

Sender Component	Message Count
XIVIRL_7_3_FTPS_SENDER	16.480
File_Sender	10.688
test_sender	10.202
B4Y_System1_XMLValidation	7.409
XIVIRL_7_2_UDS_SENDER	6.171

Drill-Down on status Not delivered / Receiver Delivery: Cannot Determine Receiver Channel

Expand By: Sender Component | Total: 52.439

Sender Component	Message Count
XIVIRL_7_3_FTPS_SENDER	16.480
File_Sender	10.614
XIVIRL_7_2_UDS_SENDER	5.756
XIVIRL_7_3_ErrorCode_FileAdapter02	3.835
XIVIRL_7_2_UDS_SENDER_AAE	2.735

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



Component Overview

Expand All | Navigate To | Create | Export

Component: Integration Server

Component Type: Technical System

Availability:

Self Test/Configuration:

Visible Rows: 10

Component Details:

- B4Y-ABAP
 - Central Integration Engine: B4Y_001
 - Business Process Engine: B4Y_001
- B4Y-JAVA
- Decentral Adapter Engine
- Business Systems

Create Message [Support Notification]

Assigned Business Partner: 31 | Description: Befor.Waldemar /

System Information

System: * B4Y | Client: * 001 | Base Component: * 00000000000000578 | B4Y_0020270862_001

Description:

Attachments:

Priority: * 3: Medium

Component: SV-SM3-MON-PI

Short Text: * Component: Central Integration Engine: b

Description: * Component Details:

Domain Name: :domain.78.lidcb4y
 Component: Central Integration Engine: B4Y_001
 Component Type: Central Integration Engine
 Availability: Green
 Self test: Red
 Availability Last Status: 31.05.2010,17:50:44 CET
 Self-test Last Status: 31.05.2010,17:25:53 CET

Reported By: 31 | Befor.Waldemar /

Processor:

Category: No Category Selected

Subject: No Subject Selected

All known context information is filled in automatically

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SAP NetWeaver PI Monitoring in SAP Solution Manager – Notification Management



Create Notification

To: waldemar.befct@sap.com

Subject: Component: Central Integration Engine: B4Y_001

Hi, please check why jobs by IE are cancelling. I created ticket 8000012736 on that.

Thanks!

Component Details :

Domain Name : domain.78.lidcb4y
 Component : Central Integration Engine: B4Y_001
 Component Type : Central Integration Engine
 Availability : Green
 Self test : Red

All known context information is filled in automatically

SAP NetWeaver PI Monitoring in SAP Solution Manager – Alert Inbox



Alert type table with activities

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

Alert group table with activities

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

Several personalization capabilities for content and look-and-feel

Alert Name	Cate...	Monitored Object	Type	Current	Priority	Worst	When Worst	Total	Chan...	Status	PC Status
PI Component Availability JAVA ...		Central Adapter Engine: ...			Very high		19.02.2010 16:58:42	2	1		
PI Component SelfTest JAVA Alert		Central Adapter Engine: ...			Very high		22.02.2010 10:53:44	1689	1		

Rating	No.	Status	Processor	Comments	Incident ID	Incident S...	Start Date Time	End Date Time	Incident ...	Notific...
	1688	Open					18.02.2010 16...	22.02.2010 10...		

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)



Respond



Inbox & Ticketing

Unified alert inbox is missing

We need to integrate with ticketing system

There is no adequate inbox for business users

We want Web2.0 user-collaboration for alert-inbox.

Notify



Alert

We cannot add docu and other context to alert.

We cannot aggregate alerts, or streamline, one-by-one. Inbox is flooded.

Filter



Forwarding Rule

Core events are too unspecific, leading to too many alerts.

Cannot specify the filter rules which signal alert based on condition

Simple rule creation without rule overlapping

Offer default alerting

Detect



Incident

"Incidents go undetected"

Incident detection/evaluation eats up performance.

"Core event lack payload and error context"

Message Alerting – Configuration Mockup (1)



Incident Data Collection

Rules Overview

Create Delete Save Copy

Name	Rule Active	Last Processed By	Last Change	Time	Techn. Consumer	Error Label
any kind of error	X	ORB	20.03.2009	09:36	PI3	all
BookingOrderRequest		028930	04.02.2009	15:09	SOLMAN, TIVOLI	Mapping, Routing

Page 1 of 1

Rule Details

Properties Filter Techn. Consumer

Name: BookingOrderRequest

Severity: High

Rule Active

Message Alerting – Configuration Mockup (2)



Incident Data Collection

Rules Overview

Create Delete Save Copy

Name	Rule Active	Last Processed By	Last Change	Time	Techn. Consumer	Error Label
any kind of error	X	ORB	20.03.2009	09:36	PI3	all
BookingOrderRequest		028930	04.02.2009	15:09	SOLMAN, TIVOLI	Mapping, Routing

Page 1 of 1

Rule Details

Properties Filter Techn. Consumer

Reset Check Import DIR object

Create alert rules using Integration Directory objects

Filter on Message Header

jFlow	SalesOrderExchange_Scenario	Receiver Party	*
Sender Party	*	Receiver Component	*
Sender Component	*	Receiver Interface	BookingOrderRequest_Out
Sender Interface	BookingOrderRequest_IN	Receiver Namespace	*
Sender Namespace	*		

Filter on Component

Integration Server:	Decentral Adapter Engines:	Business Systems:
<input checked="" type="checkbox"/> Central Integration Engine B4Y	<input type="checkbox"/> Adapter Engine A4Y	<input checked="" type="checkbox"/> ABAP Proxy B4Y_105
<input type="checkbox"/> Central Adapter Engine B4Y	<input type="checkbox"/> Adapter Engine ABZ	<input type="checkbox"/> ABAP Proxy B4Y_106
		<input type="checkbox"/> JAVA Proxy

Allow multiple value combinations with AND/OR

Filter on Status Details

Status Details: all

Status Details: Selection

- Mapping Error
- Messaging Error
 - IS General Error
 - Duplicate Message
 - Parsing PI Message

Message Alerting – Configuration Mockup (3)



Incident Data Collection

Rules Overview

Create Delete Save Copy

Name	Rule Active	Last Processed By	Last Change	Time	Techn. Consumer	Error Label
any kind of error	X	ORB	20.03.2009	09:36	PI3	all
BookingOrderRequest		028930	04.02.2009	15:09	SOLMAN, TIVOLI	Mapping, Routing

Page 1 of 1

Rule Details

Properties Filter Techn. Consumer

Add Delete

Technical Name	Description
SOLMAN	Central Monitoring via Solution Manager
	3rd party ticketing system

Message Alerting – Alert Inbox Mockup



Aggregated View /
Collective Alerts

Alert Inbox

Auto Refresh Every 5 Minutes Refresh

Alerts for: Central Adapter Engine: B4Y Only (3) Alerts for: Integration Directory: U3Y Only (2) Alerts for: PI Messages in Domain "B4Y" (4)

Show Quick Criteria Maintenance Change Query Define New Query Personalize

View: * [Standard View] Confirm Show Action Log Postponement Navigate to Problem Context Show Details Filter Settings

Monitored Object	PI Component	Alert Rule	Status Details	Severity	Events	Start Date Time	End Date Time	Rating	Status	Incident ID
PI Domain B4Y	Decentral AE V4D	Sales Orders (desc)	Missing or Invalid Receiver Agreement	Very High	44	01.05.2010, 10:15:59	05.06.2010, 12:15:59	4	✖	12434237
PI Domain B4Y	Central AE B4Y	Sales Orders (desc)	JMS Adapter: Channel Not Initialized	Very High	20	02.05.2010, 04:45:59	05.06.2010, 12:15:59	4	✖	
PI Domain B4Y	Central IE B4Y	Master Data (desc)	XML Validation: General	High	100	01.05.2010, 10:15:59	05.06.2010, 12:15:59	4	✖	
PI Domain B4Y	Central AE B4Y	All Mapping Errors	(Mapping: General Error	Medium	30	22.01.2010, 10:15:59	05.06.2010, 12:15:59	4	✖	

Alert Details

Last Refresh 04.08.2010 13:50:04 CET Refresh

Timeframe All From: at: 00:00:00 To: at: 23:59:59

Export Confirm Assign Show Details Create Incident Create Notification Create Analysis Report Filter Settings

Send. Party	Send. Comp.	Send. IF	Send. Names.	Rec. Party	Rec. Comp.	Rec. IF	Rec. Names.	Trend Graph	SUM	Min	Max	Last	First	Worst	Last
SP1	SC1	SIH	SN1	-	-	-	-		120	1	12	2	✖	✖	⬇
SP1	SC1	SIH	SN3	-	-	-	-		68	1	30	3	✖	✖	⬇
SP1	SC1	SIH	SN1	RP7	RC8	RI9	RH10		15	1	3	1	⬆	⬆	⬆
SP1	SC1	SIH	SN1	RP3	RC4	RI5	RH5		564	23	84	23	✖	✖	✖
SP1	SC1	SIH	SN1	RP2	RC8	RI9	RH10		35	1	1	1	⬆	⬆	⬆
SP8	SC1	SIH	SN4	RP3	RC4	RI5	RH5		28	2	5	3	✖	✖	✖

Message Alerting – New Local PI Message Monitor View Mockup



Message Monitoring: Monitor Messages Restore Default View | Back Forward | History | Home | Help | Log Off

Favorites | Related Links | Go To | Support Details Search for: Go

Message Status Overview | Database | Archive

Advanced

Show Messages By: Status System Error Maximum Number of Result: 100 Basic

Time Period: Custom Start Date/Time: 12.10.2010 02:00 End Date/Time: 13.10.2010 02:00

Message Header Data User-Defined Search Criteria Technical Attributes Identifiers

Message List

Mess. GUID	Message Changed	Send. Party	Send. Comp.	Send. #	Send. Names.	Rec. Party	Rec. Comp.	Rec. #	Rec. Names.	Status	Status Details	Error Code	Payload 1	Payload 2	Payload 3	Payload 4
1234	02.05.2010	SP1	SC1	SI1	SN1	-	-	-	-	Not deliv	JMS Adapter: Channel Not Initia	1334	OrderNr: 12	CustNo: 334	Value: 9.99	CreateDate: 01.01.10
1236	02.05.2010	SP1	SC1	SI1	SN1	-	-	-	-	Not deliv	JMS Adapter: Channel Not Initia	430	OrderNr: 16	CustNo: 334	Value: 10	CreateDate: 01.01.10
1238	02.05.2010	SP1	SC1	SI1	SN1	RP7	RC8	R19	RN10	Not deliv	JMS Adapter: Channel Not Initia	566	OrderNr: 16	CustNo: 334	Value: 99	CreateDate: 01.01.10
1239	02.05.2010	SP1	SC1	SI1	SN1	RP3	RC4	R15	RN5	Not deliv	JMS Adapter: Channel Not Initia	898	OrderNr: 12	CustNo: 94	Value: 58	CreateDate: 01.01.10

Message Details

Message Details | Message Content | Message Log | Further Links

Attribute Value

Message ID es7e7ad5-5a73-4642-34e4-d4e6917717f8

Direction OUTBOUND

Message Headers content-type=multipartrelated; boundary=SAP_9e0f8704-d5fe-11d1-8366-00020ee2731_END; type=text/xml; start="sap-9e0f8704-d5fe-11d1-8366-00020ee2731@sap.com" http:POST content-length=2961

Message Type Send

Connection Name File_http://sap.com/xiXX/System

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Find most important attributes at one glance

Message Alerting – Trend Graph Representation Mockup



Metric Monitoring - Microsoft Internet Explorer

http://dcis7.wdf.sap.corp:8088/sap/bc/webdynpro/sap/wdc_a2erep_metric_monitor_ext/TV_GUID-II

Trend Graph on Message Alerting of PI Domain B4Y, Decentral AE V4D, Rule "Sales Orders"

Graphic

Graphic with Threshold values Graphic without Threshold values

Mean Value

Table

Done Local intranet | Protected Mode: Off 100%

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Graph View

Tabular View

Reduce the cost of operating your PI landscape

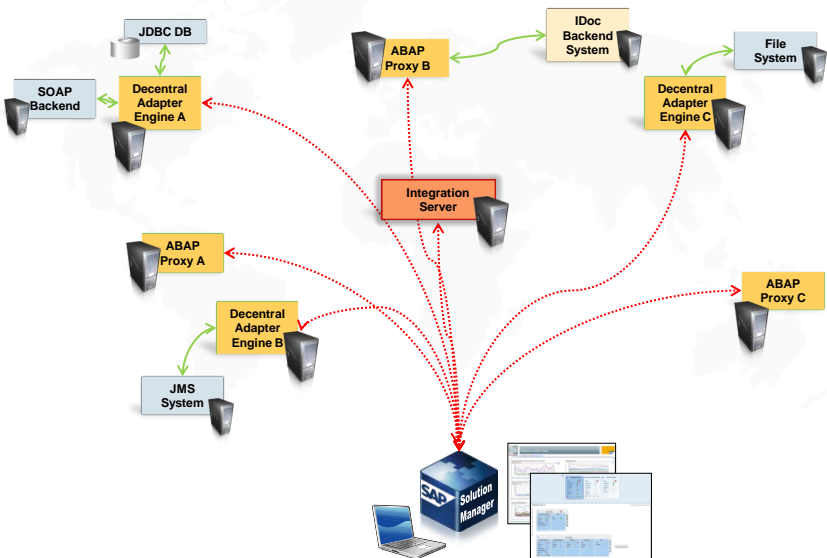


SAP

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

Central User Defined Message Search – Architecture (High Level)

SAP



Central User Defined Message Search – Search upon predefined attributes (Mockup)



Selecting all interfaces would return all indexed fields

Show additional column with PI components

Add User-Defined Search Criteria

Interfaces

Name	Namespace
PersData_UDS_In	http://xi.com/xi/ver1/uds/flightforie
OrderCreate	http://xi.com.sap.uds.test
PersData_UDS_Out	http://xi.com/xi/ver1/uds/flightforie
SOA_AT_FlightSeatAvailabilityQuery_In	http://soa_at.com
XIPatternInterface1B	http://sap.com/xi/SystemPatterns

User-Defined Search Criteria for PersData_UDS_In

Name	Description
Birthdate	GA_Extractor for Birthdate
Firstname	GA_Extractor for Firstname
Lastname	GA_Extractor for Lastname
PersonalID	GA_Extractor for PersonalID

Message List

Interface	Namespace	Attribute	Value
PersData_UDS_In	http://xi.com/xi/ver1/	FirstName	Henry
PersData_UDS_In	http://xi.com/xi/ver1/	LastName	Smith
PersData_UDS_In	http://xi.com/xi/ver1/	LastName	Miller
OrderCreate	http://xi.com/xi/ver1/	OrderNumber	16579

**Enable multiple fields for the same interface
Enable multiple values for field
Wildcard search to be possible**

Central User Defined Message Search – Output (Option) Mockup



Message Monitoring: Monitor Messages

More than 100 messages found; only the most recent are displayed

Message List

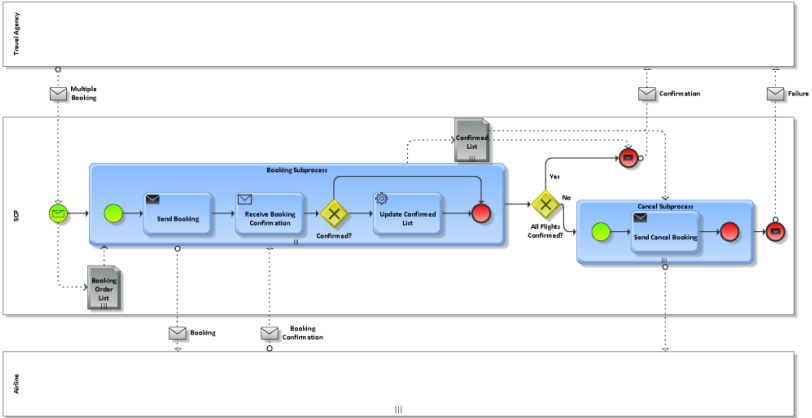
PI Component	Messages Found
Central Adapter Engine B4Y	3
Decentral Adapter Engine A4Y	500
ABAP Proxy LU6	4

Option:

- Show list of PI components and the number of messages per component
- Clicking an entry would bring you to the local message monitors

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

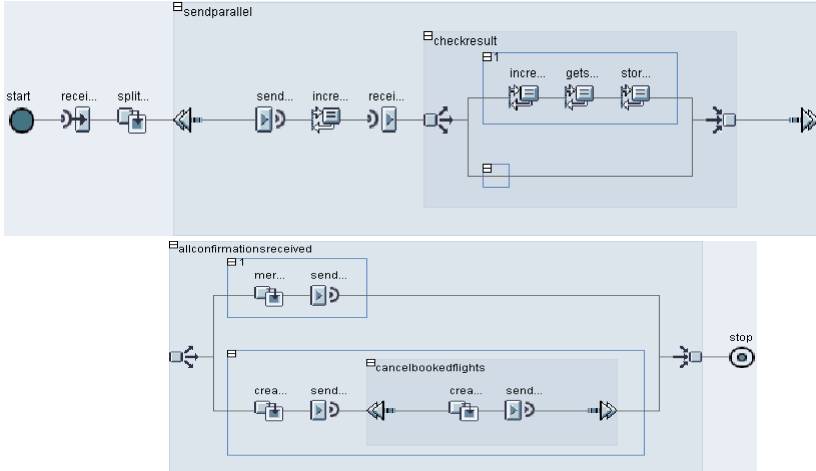


1. Introduction
2. Integration Pattern Examples

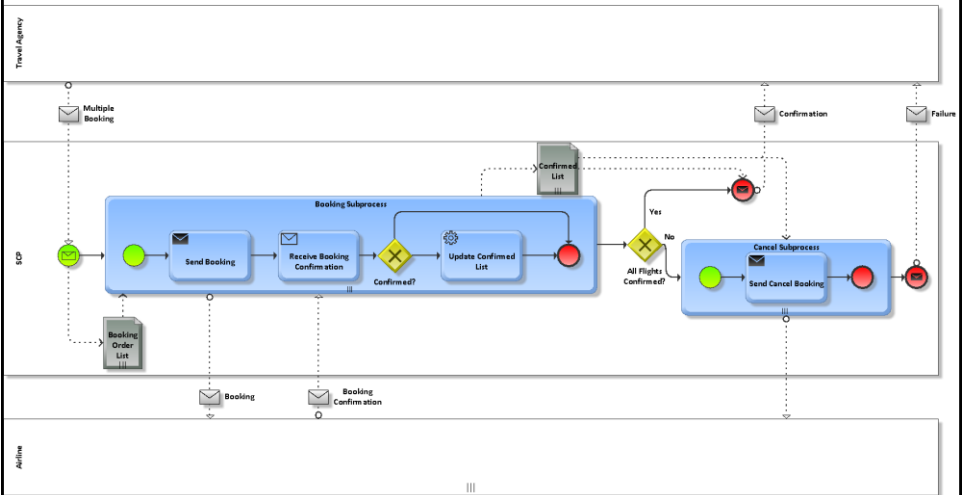
Definition of an Integration Process



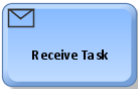
An Integration Process is composed of a specific flow of steps (including the sending and receiving of messages), during which the status of the process is persisted on the Integration Server



Example: Flight Booking Coordination Using BPMN



Comparing ccBPM with BPMN



Receive Task



Send Task



Receiver Determination



Transformations and Container Operations covered By Mappings



Switch



Control



Block



Loop



Fork



Wait

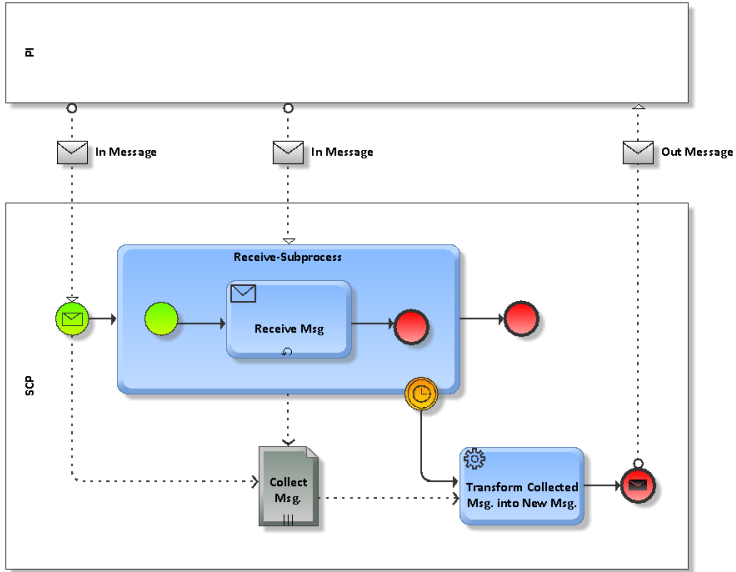


System Centric Process Support

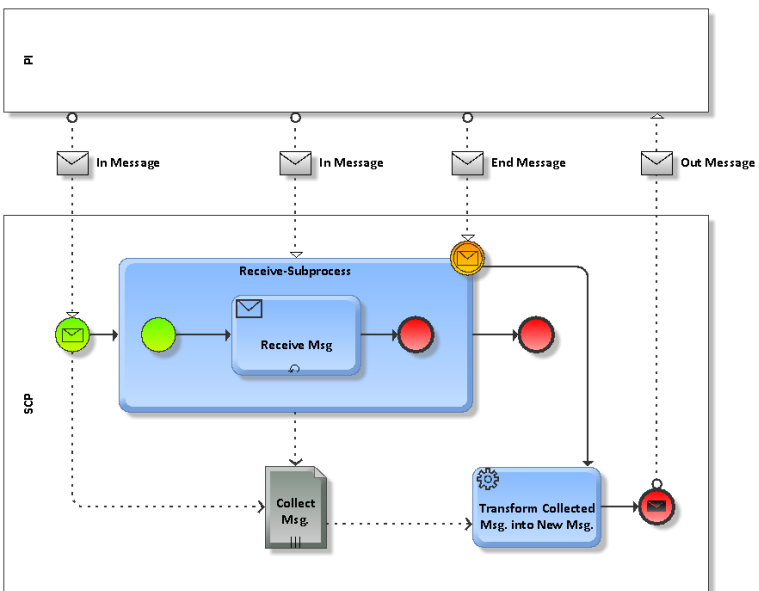


1. Introduction
2. Integration Pattern Examples

Enterprise Integration Pattern – Aggregator (1) (Stateful Pattern)



Enterprise Integration Pattern – Aggregator (2)



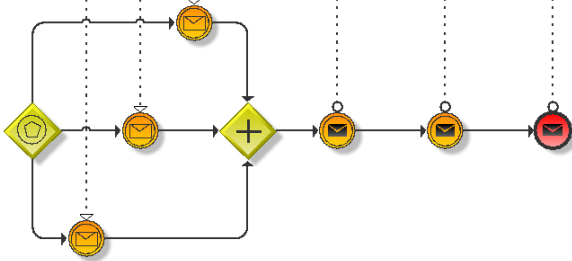
Enterprise Integration Pattern - Resequencer



RI



SCP



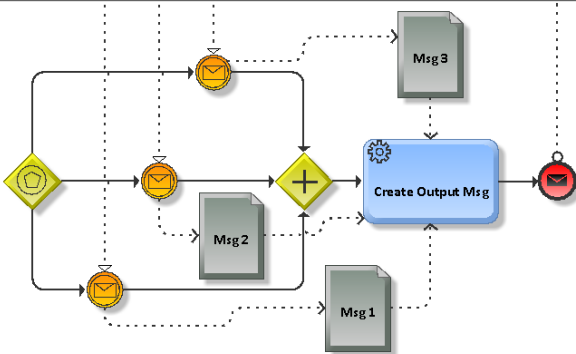
BPM Pattern Collect Multiple Interfaces



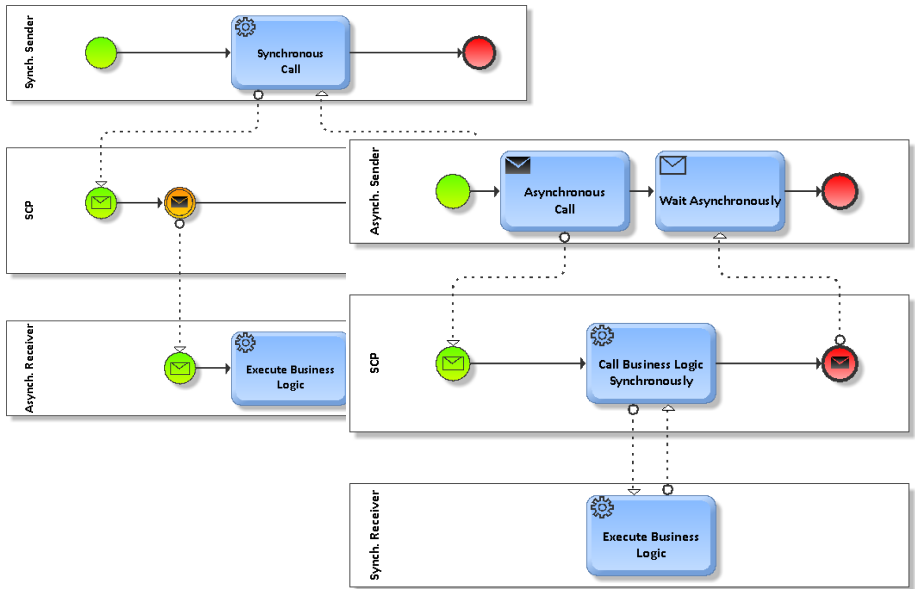
RI



SCP



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

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
3. Summary

Planned Innovations for SAP NetWeaver Process Integration: 1 – 3 year roadmap



	Key Needs	Key Innovation
Process Integration	<ul style="list-style-type: none">Reduce total cost of Development	<ul style="list-style-type: none">Simplified configurationEclipse based toolsSystem centric process support
	<ul style="list-style-type: none">Reduce total cost of operations	<ul style="list-style-type: none">Enhanced integration with SAP Solution ManagerCentral message based alerting, reporting, task management via SAP Solution ManagerFunctional completeness of Java stack
	<ul style="list-style-type: none">Further enhancements	<ul style="list-style-type: none">Scalability for high volume use casesEnhanced B2BOn-Demand integration

PLANNED INNOVATIONS

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Further Information



➔ SAP Public Web:

SAP Developer Network (SDN): www.sdn.sap.com/irj/sdn/nw-soa

➔ Related SAP Education and Certification Opportunities

<http://www.sap.com/education/> → Training Catalog →

SAP NetWeaver → PI & Business Integration

<http://www.sdn.sap.com> → Partnership and Certification →
Integration and Certification → Process Integration

➔ 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

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Please complete your session evaluation.

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

THANK YOU !



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