

# SAP NetWeaver Process Integration 7.1

## Monitoring and Alerting Highlights

SAP NetWeaver Product Management SOA Middleware  
August 2008

- 1. Overview: Centralized Administration**
2. SAP NetWeaver PI Monitoring via SAP NetWeaver Administrator for PI
3. SAP NetWeaver PI Alerting: Closer Look

# Lowering the TCO: Centralized Administration and Drill-Down Tools

Central

Local

## SAP Solution Manager\*

- Central, IT role-based administration and monitoring across the whole SAP landscape using work centers

## Central Administrative Tools: : Process Integration

- SAP NetWeaver Administrator for PI
  - PI-wide monitoring; configuration.
- Integration Engine Admin (SXMB\_ADM)

## Local expert tools:

- SAP NetWeaver Administrator (local)
  - Java server administration and SOA Management
- SOAMANAGER
  - SOA Management in ABAP



PI tools in SAP Solution Manager

\* Refers to SAP Solution Manager v 7.0

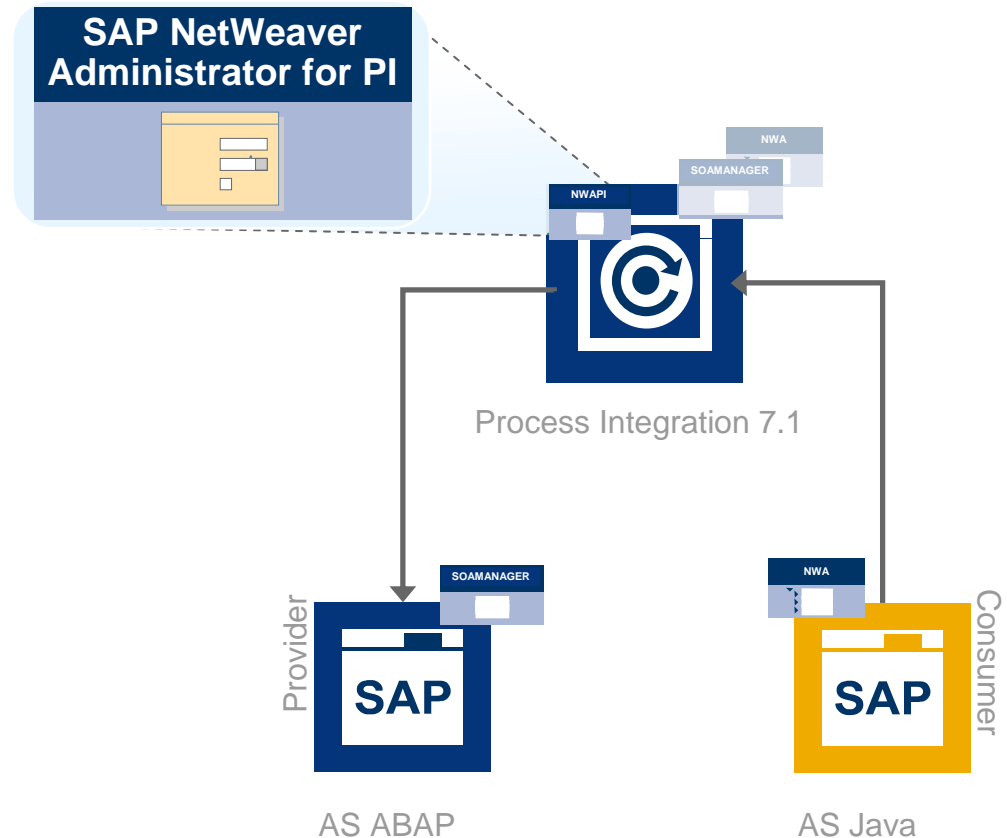
# Process Integration 7.1: NetWeaver Administrator for PI



## SAP NetWeaver Administrator for PI

Scope: Central (`host:port/nwapi`)

- Monitor Process Integration infrastructure and message traffic centrally across PI domains:
  - Migration and enhancement of monitoring capabilities from the Runtime Work Bench\*
- Centrally configure Web service and clients (ABAP and Java)
  - Individual Web services and Web service clients
- Centrally view Web service and clients logs and traces (ABAP and Java)



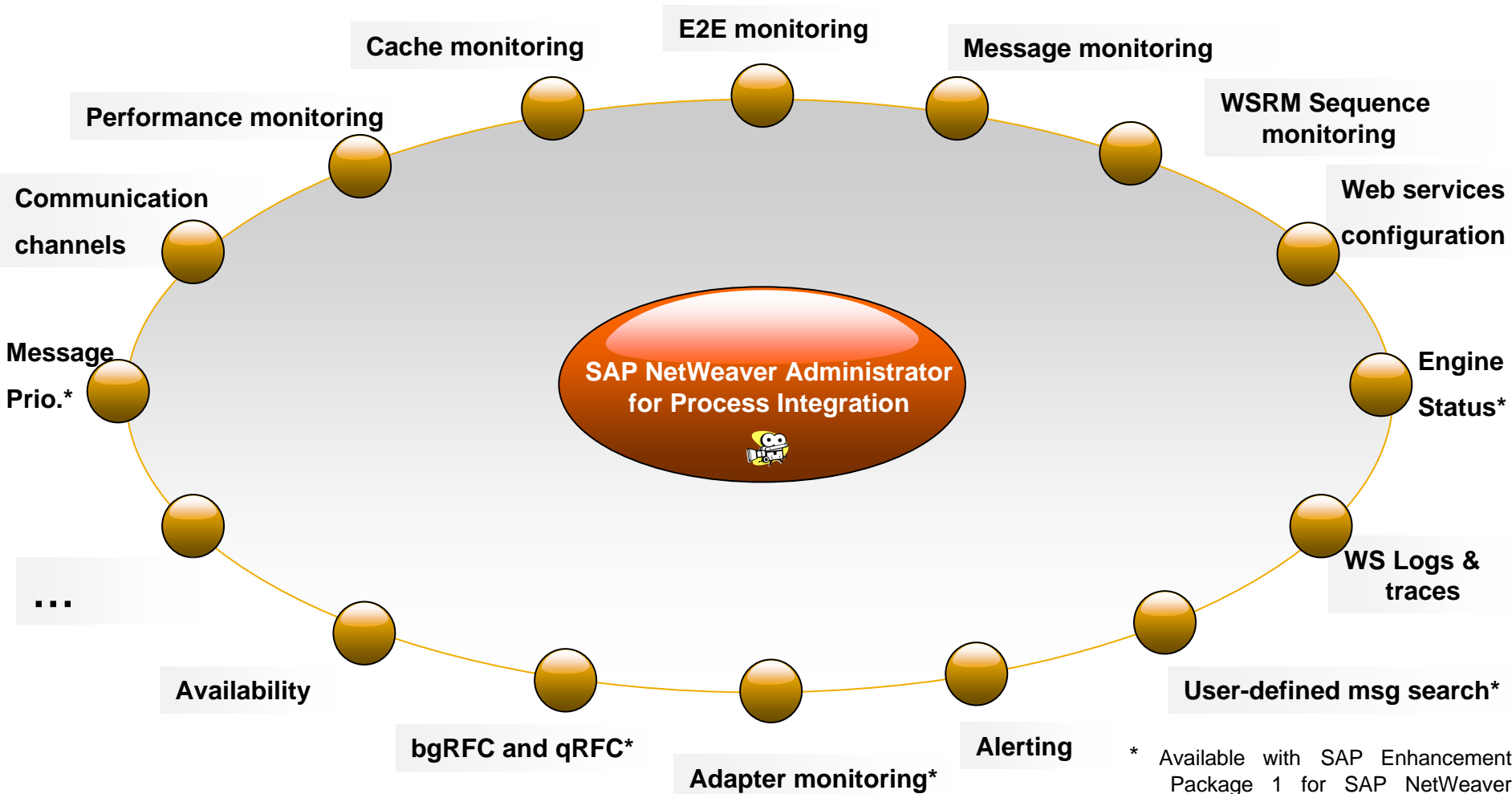
\* The Runtime Work Bench recommended for monitoring in production environment

1. Overview: Centralized Administration
2. **SAP NetWeaver PI Monitoring via the SAP NetWeaver Administrator for PI**
3. SAP NetWeaver PI Alerting: Closer Look

# SAP NetWeaver Administrator: PI Monitoring Capabilities



- Central monitoring for multiple PI domains
- Central Web service and consumer configuration



# SAP NetWeaver Administrator: PI Message Monitoring (1/2)



- Track the status of messages
- Find errors and identify what caused them

## PI Message Monitoring: Monitor Messages

History [Back](#) [Forward](#) Personalize [Log Off](#)

**Message Status Overview** Database Archive

Find: Message Status Time Range: Fri Jun 29 00:00:00 2007 CEST 2007

Status Group Values				Attributes							
Scheduled	Success	Error	Cancelled	Sender ...	Sender ...	Sender I...	Sender ...	Receive...	Receive...	Reciver I...	Receiver Interf...
0	0	5	0	XIVERI...	xmb_E...	xmb_E...		XIVERI...			
21	0	0	0	BXT_200	test_as...	test_as...		AS_BPE			
0	0	1	0	BXT_200	test_out...	test_out...		BXT_400			
0	0	1	0	XIVERI...	xmb_E...	xmb_E...					
0	0	100	0	PartyA	ServiceA	ping	ping		ServiceB		

**Message Filter** Refresh Monitor in PAF Open Message

### Message List

Resend Cancel

Status	Start Time	End Time	Sender Partner	Sender Service	Sender Interface	Sender Interface Namespace
Recorded for Outbound Processing	2007-07-02T4:22:04.000	2007-07-02T4:22:07.000		XIVERI_RUN_SENDER_BULK	xmb_EO_1_Prx_Out	http://xi.com/xiveri/runtime/testcas
Recorded for Outbound Processing	2007-07-02T4:22:04.000	2007-07-02T4:22:07.000		XIVERI_RUN_SENDER_BULK	xmb_EO_1_Prx_Out	http://xi.com/xiveri/runtime/testcas
Recorded for Outbound Processing	2007-07-02T4:40:44.000	2007-07-02T4:40:47.000		XIVERI_RUN_SENDER_BULK	xmb_EO_1_Prx_Out	http://xi.com/xiveri/runtime/testcas
Recorded for Outbound Processing	2007-07-02T4:40:45.000	2007-07-02T4:40:47.000		XIVERI_RUN_SENDER_BULK	xmb_EO_1_Prx_Out	http://xi.com/xiveri/runtime/testcas
Recorded for Outbound Processing	2007-07-02T4:40:45.000	2007-07-02T4:40:47.000		XIVERI_RUN_SENDER_BULK	xmb_EO_1_Prx_Out	http://xi.com/xiveri/runtime/testcas

### Message Details

Message Details Message Content

Attribute	Value
<b>Message Key</b>	00132169BEE302DAB8F20785929109B0
<b>Message Format</b>	XI-Message
<b>Message Type</b>	A
<b>Job ID</b>	

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# SAP NetWeaver Administrator: PI Message Monitoring - Message Details (1/2)



## Message Details

Message Details

Message Content

[View SOAP Document](#)

[View Payload Content](#)

```
content-type: multipart/related; boundary=SAP_00132169BEE302EAB9DAF4525035958B_END; type="text/xml"; start="<soap-00132169BEE302EAB9DAF4524FE4558A@sap.com>"
content-length: 3251

--SAP_00132169BEE302EAB9DAF4525035958B_END
content-type: text/xml
content-length: 2628
content-id: <soap-00132169BEE302EAB9DAF4524FE4558A@sap.com>

<SOAP:Envelope xmlns:SOAP="http://schemas.xmlsoap.org/soap/envelope/">
<SOAP:Header>
<SAP:Main xmlns:SAP="http://sap.com/xi/XI/Message/30" xmlns:SOAP="http://schemas.xmlsoap.org/soap/envelope/" xmlns:wsu="http://www.w3.org/2000/01/oasis-2004/01/oasis-200401-wss-wssecurity-utility-1.0.xsd" versionMajor="003" versionMinor="000" SOAP:mustUnderstand="1" wsu:Id="wsuid-main-92ABE13F5C59AB7FE10000000A1551F7"><SAP:MessageClass>ApplicationMessage</SAP:MessageClass><SAP:ProcessingMode>asynchronous</SAP:ProcessingMode><SAP:MessageId>00132169-BEE3-02DA-B6F2-0785929109B0</SAP:MessageId><SAP:TimeSent>2007-07-
```

SOAP Document

Payload Content

```
- <SOAP:Envelope xmlns:SOAP="http://schemas.xmlsoap.org/soap/envelope/">
- <SOAP:Header>
+ <SAP:Main xmlns:SAP="http://sap.com/xi/XI/Message/30"
  xmlns:SOAP="http://schemas.xmlsoap.org/soap/envelope/"
  xmlns:wsu="http://www.w3.org/2000/01/oasis-2004/01/oasis-200401-wss-
  wssecurity-utility-1.0.xsd" versionMajor="003" versionMinor="000" SOAP:mustUnderstand="1"
  wsu:Id="wsuid-main-92ABE13F5C59AB7FE10000000A1551F7">
+ <SAP:ReliableMessaging xmlns:SAP="http://sap.com/xi/XI/Message/30"
  xmlns:SOAP="http://schemas.xmlsoap.org/soap/envelope/" SOAP:mustUnderstand="1">
+ <SAP:Diagnostic xmlns:SAP="http://sap.com/xi/XI/Message/30"
  xmlns:SOAP="http://schemas.xmlsoap.org/soap/envelope/" SOAP:mustUnderstand="1">
+ <SAP:HopList xmlns:SAP="http://sap.com/xi/XI/Message/30"
  xmlns:SOAP="http://schemas.xmlsoap.org/soap/envelope/" SOAP:mustUnderstand="1">
</SOAP:Header>
- <SOAP:Body>
- <SAP:Manifest xmlns:SAP="http://sap.com/xi/XI/Message/30"
  xmlns:xlink="http://www.w3.org/1999/xlink" xmlns:wsu="http://www.w3.org/2000/01/oasis-2004/01/oasis-200401-wss-wssecurity-utility-1.0.xsd" wsu:Id="wsuid-manifest-5CABE13F5C59AB7FE10000000A1551F7">
- <SAP:Payload xlink:href="cid:payload-00132169BEE302DAB8F20785A211C9B1@sap.com">
  <SAP:Name>MainDocument</SAP:Name>
  <SAP:Description />
  <SAP:Type>Application</SAP:Type>
</SAP:Payload>
</SAP:Manifest>
</SOAP:Body>
</SOAP:Envelope>
```

```
<?xml version="1.0" encoding="utf-8" ?>
- <n0:xmbTest1 xmlns:n0="http://sap.com/xi/XI/TestCase"
  xmlns:prx="urn:sap.com:proxy:BXT:/1SA1/TAS00000000000000000000000073:710:2007/06/10">
- <xmbStruct>
  <testFunction>Test2</testFunction>
  <increment>0</increment>
</xmbStruct>
</n0:xmbTest1>
```



## User-Defined Message Search\*

### Benefits:

#### ■ Facilitate Business – IT Alignment

- Search for messages by business-relevant data in the message payload, for example `salesOrderNumber`, `customerID`.

#### ■ Lower TCO

- Available out of the box with SAP NetWeaver Process Integration
- Light-weight search based on XPATH (XML Path Language) expressions

### Implementation Highlights:

- Accessible from Message monitoring in SAP NetWeaver Administrator for PI.
- Search for messages processed on the Integration Server and the central Advanced Adapter Engine

\* Available with SAP Enhancement Package 1 for SAP NetWeaver Process Integration 7.1

# SAP NetWeaver Administrator: PI End-to-End Monitoring (1/2)



- Monitor message processing steps across components
- Monitor message path
- E2E monitoring is based on the Process Monitoring Infrastructure (PMI)

End to End  
Monitor filter

## End-to-End-Monitoring

Anzeigen Filter speichern Filter öffnen Filter löschen

### Sender

Partner:  Wertehilfe Komponente:  Wertehilfe  
Interface:  Wertehilfe Interface-Namensraum:  Wertehilfe

### Empfänger

Partner:  Wertehilfe Komponente:  Wertehilfe  
Interface:  Wertehilfe Interface-Namensraum:  Wertehilfe

Monitor Result  
lists

XI Domain domain.05.Is004 22.03.2007 04:23:28

Last refresh 06.07.2007 13:29:17 [Settings](#)

Process Overview  Instance View

Display involved components only  Graphical View

Time Interval

Errors Occurred

Errors	10	Average
Open	1.794	Maximum
Successfully Completed	0	Minimum
Overall	1.804	

# SAP NetWeaver Administrator: PI End-to-End Monitoring (2/2)



**SAP NetWeaver™**  
SAP Exchange Infrastructure

Message Display Tool (Detail Display)

Message Data | Message Content | End-to-End Monitoring

XI Domäne domain.00.iwdf9631 22.03.2005 23:41:32

Last refresh 29.04.2005 12:47:33 Further Settings...

**View**

Process Overview   Show Involved Components Only

**Errors Occurred**

**Statistical Data**

Errors	30.477	Average	16 Sec.
Open	77.085	Maximum	2 Hours 11 Min. 19 Sec.
Successfully Completed	2.218	Minimum	0,058 Sec.
Overall	109.780		

**Process Instances: is.00.iwdf9631 / Open**

31 instances are (still) available

Number	Status	Start Time	Duration	Completed	Sender Interface Name
1	Open	28.04.2005 14:47:26.431	22:31:49		ABABusinessPartnerOut
2	Open	28.04.2005 14:29:40.614	22:49:35		CRMXF_ORDER_SAVE...
3	Open	28.04.2005 14:10:48.866	23:08:26		CRMXF_ORDER_SAVE...
4	Open	28.04.2005 12:31:28.870	24:47:46		PurchaseOrderConfirmat
5	Open	28.04.2005 11:38:49.710	25:40:26		PurchaseOrderConfirmat
6	Open	28.04.2005 10:50:03.283	26:29:12		PurchaseOrderConfirmat
7	Open	28.04.2005 09:38:11.919	27:41:03		CRMXF_ORDER_SAVE...
8	Open	28.04.2005 09:35:03.955	27:44:11		CRMXF_ORDER_SAVE...
9	Open	28.04.2005 06:49:50.326	30:29:25		CRMXF_ORDER_SAVE...

Process view

Instance view

Successfully Completed 2.218 minimum

Overall 109.780

**Process Instances: is.00.iwdf9631 / Open**

31 instances are (still) available

Number	Status	Start Time	Duration	Complete
1	Open	28.04.2005 14:47:26.431	22:38:47	
2	Open	28.04.2005 14:29:40.614	22:56:33	
3	Open	28.04.2005 14:10:48.866	23:15:25	
4	Open	28.04.2005 12:31:28.870	24:54:45	
5	Open	28.04.2005 11:38:49.710	25:47:24	
6	Open	28.04.2005 10:50:03.283	26:36:11	
7	Open	28.04.2005 09:38:11.919	27:48:02	
8	Open	28.04.2005 09:35:03.955	27:51:10	
9	Open	28.04.2005 06:49:50.326	30:36:24	

45 %

**Components involved**

# SAP NetWeaver Administrator: PI- Performance Monitoring



- Obtain performance statistics of message processing
- Perform sizing of Process Integration

**PI: Monitor Performance** History ▾ Back Forward Personalize ▾ Log Off

**Monitor Performance**

**Related Tasks**

**Message Monitoring**

**Selection Criteria**

Direction:  Processing Mode:

Time Interval:  Aggregated Interval:

Date/Time From:

Date/Time To:

[Advanced >>](#)

**Result List (Aggregate)**

Individual Data  Show Intermediate Time Stamps Header Grouping  Granularity

Time Interval	Number	Size (Bytes)	Processing Time (Seconds)	Rate (Msg/Hr)
Jul 6, 2007 9:00:00 AM ~ 10:00 AM	22	2,969.43	206.02	22
Jul 6, 2007 2:00:00 AM ~ 3:00 AM	11	123	3.58	11
Jul 6, 2007 1:00:00 AM ~ 2:00 AM	69	881.15	81.78	69
Jul 6, 2007 12:00:00 AM ~ 1:00 AM	60	123	3.23	60

**Aggregate Perf Monitor Data**

**Ability to drill-down into individual messages**

**Individual Message Performance**

**Result List - Individual Data** Message Monitoring

Message ID	Size (Bytes)	Start Time	End Time	Processing Time (Seconds)	Processing Mode
<a href="#">00132169BEE302DAB9D970DBFC8ACB0B</a>	191	Jul 6, 2007 9:00:46 AM	Jul 6, 2007 9:00:48 AM	2.01	Asynchronous
<a href="#">00132169BEE302DAB9D970E953BA4B1F</a>	191	Jul 6, 2007 9:00:48 AM	Jul 6, 2007 9:00:51 AM	3.76	Asynchronous
<a href="#">0017A4F70CCD02DAB9D97154B02BC4BB</a>	191	Jul 6, 2007 9:00:49 AM	Jul 6, 2007 9:00:52 AM	3.4	Asynchronous
<a href="#">00132169BEE302DAB9D970E66DA5CB17</a>	191	Jul 6, 2007 9:01:37 AM	Jul 6, 2007 9:01:52 AM	14.83	Asynchronous
<a href="#">0017A4F70CCD02DAB9D97603910AC403</a>	465	Jul 6, 2007 9:01:54 AM	Jul 6, 2007 9:01:55 AM	1.09	Asynchronous

# SAP NetWeaver Administrator: Web Service Logging and Tracing



- View Web service logs and traces from a central location for the whole PI landscape
- Perform problem isolation for Web service communication

**Web Services Logging & Tracing: Web Services Log ...** History Back Forward Personalize Log Off

Search Configuration

Web Services Log Viewer

Related Tasks

- Web Services Configuration
- Sequence Monitoring
- Message Monitoring

NetWeaver Systems

Filter Group

Refresh

- RU8 on ru8tdc00

Search Again

Logging & Tracing Records

Status	Time Stamp	WS Role	Interface	Prescheduling	Communication Pattern
	11/1/07 3:51:32 PM CET	Provider	MBEANACCESSINBOUND	X	Method:invokeRequest
	11/1/07 3:57:32 PM CET	Provider	MBEANACCESSINBOUND	X	Method:invokeRequest
	11/1/07 4:03:32 PM CET	Provider	MBEANACCESSINBOUND	X	Method:invokeRequest
	11/1/07 4:09:32 PM CET	Provider	MBEANACCESSINBOUND	X	Method:invokeRequest
	11/1/07 4:09:53 PM CET	Consumer	CO_WSSAPCCMS	X	Method:MsGetLocalMsInfo
	11/1/07 4:15:35 PM CET	Provider	MBEANACCESSINBOUND	X	Method:invokeRequest
	11/1/07 4:21:32 PM CET	Provider	MBEANACCESSINBOUND	X	Method:invokeRequest
	11/1/07 4:27:32 PM CET	Provider	MBEANACCESSINBOUND	X	Method:invokeRequest
	11/1/07 4:33:32 PM CET	Provider	MBEANACCESSINBOUND	X	Method:invokeRequest
	11/1/07 4:39:32 PM CET	Provider	MBEANACCESSINBOUND	X	Method:invokeRequest

Additional Columns

Choose Filter Criteria

Status: \*

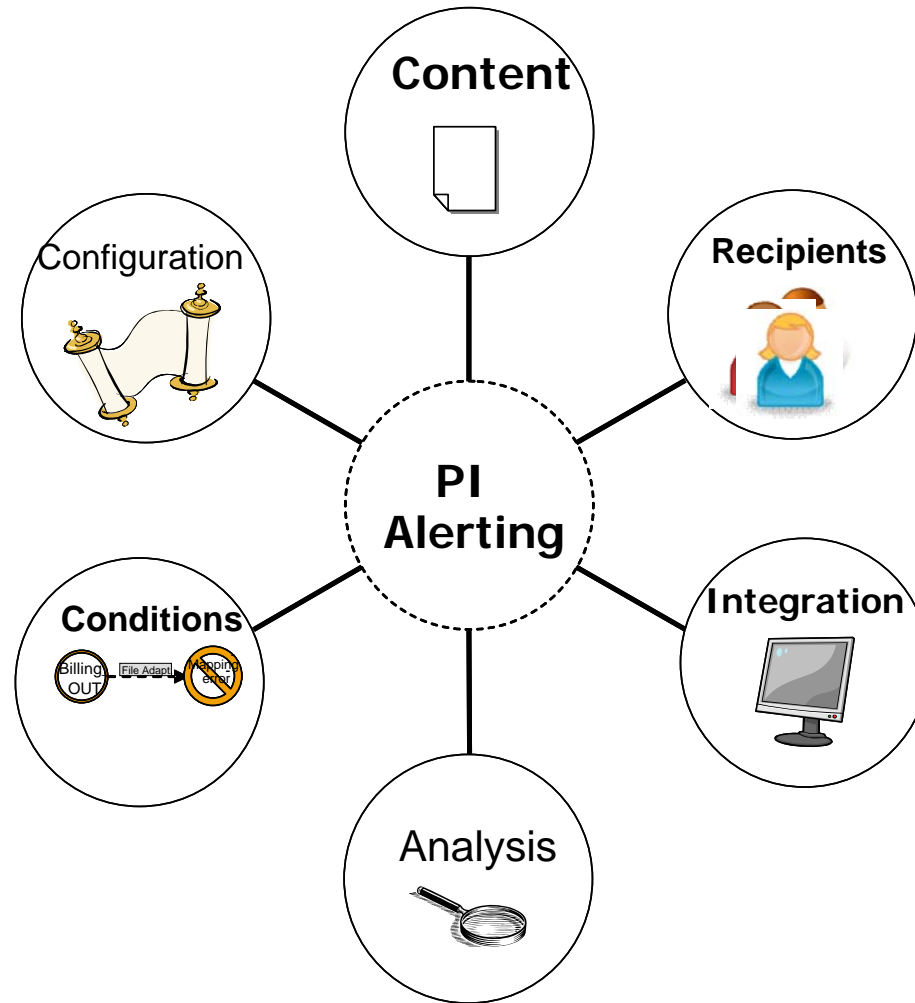
Show logging data

Logging Level: \*

Show tracing data

Tracing Level: \*

1. Overview: Centralized Administration
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## Message-based alerting benefits

Alerts for interface-specific message processing

Alerts to scenario/ interface owners

Actionable, information-rich alert content

Configuration flexibility

Integration with CCMS

Recipients



Additional Channels



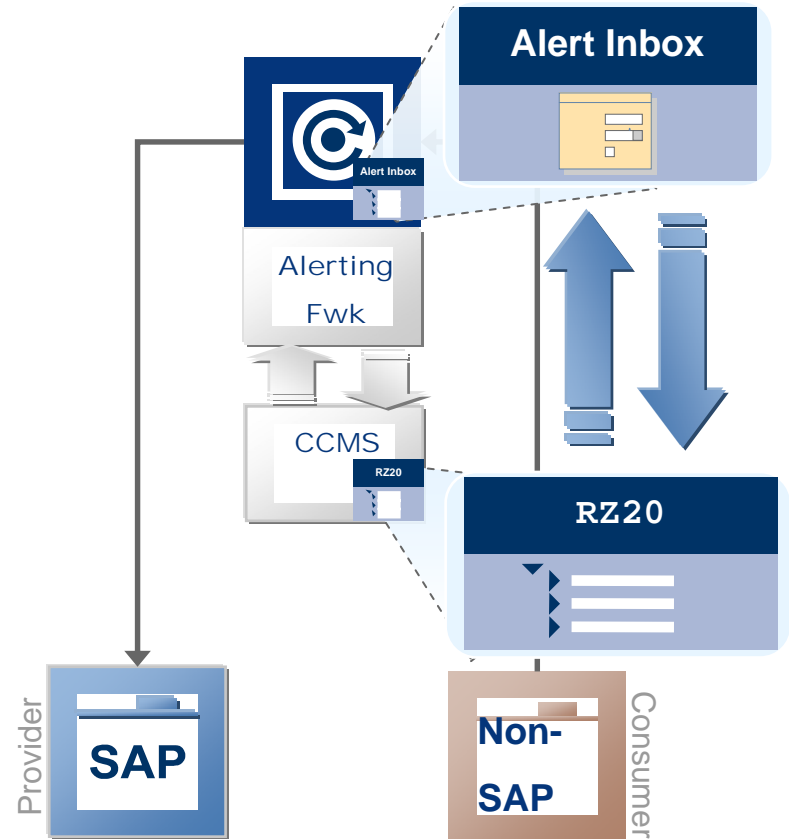
## CCMS-based alerting benefits

Alerts when system status is deviant

Performance-based alerting

Integration with PI Alert Inbox

Integration with non-SAP components





# Message-Based Monitoring: Alert Conditions



## Message failure between specific interfaces

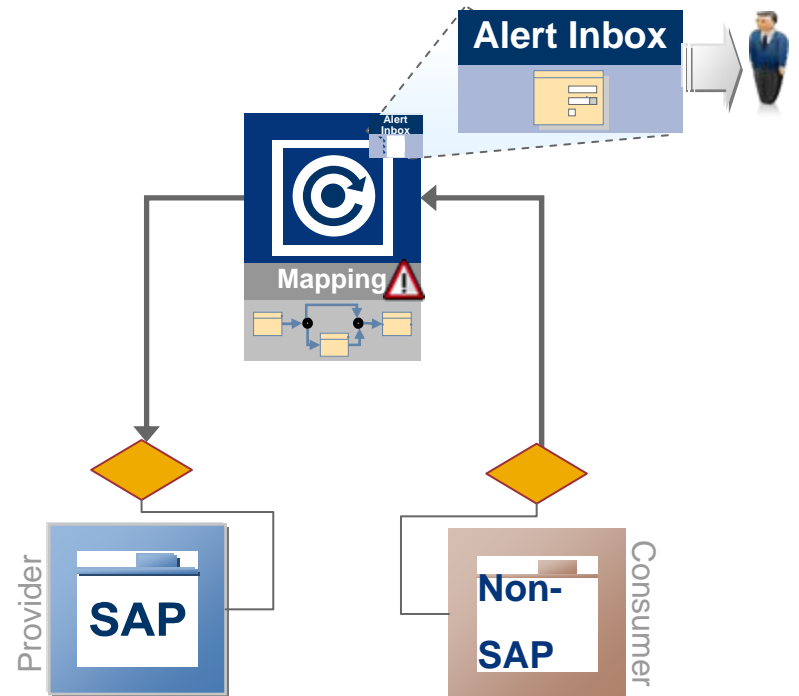
Raise an alert when a message from interface SalesOrder\_OUT to Billing\_IN goes to status error

## Message failure on service bus

Raise an alert when a message on the iDOC adapter goes to error

## Filter alerts by error codes and categories

Raise an alert when a mapping error occurs



## Combinations between conditions

- Raise an alert when a mapping error occurs on the iDOC adapter in the communication between SalesOrder\_OUT to Billing\_IN
- Send alert to John Doe (owner of scenario).

# Message-Based Monitoring: Alert Recipients and Content



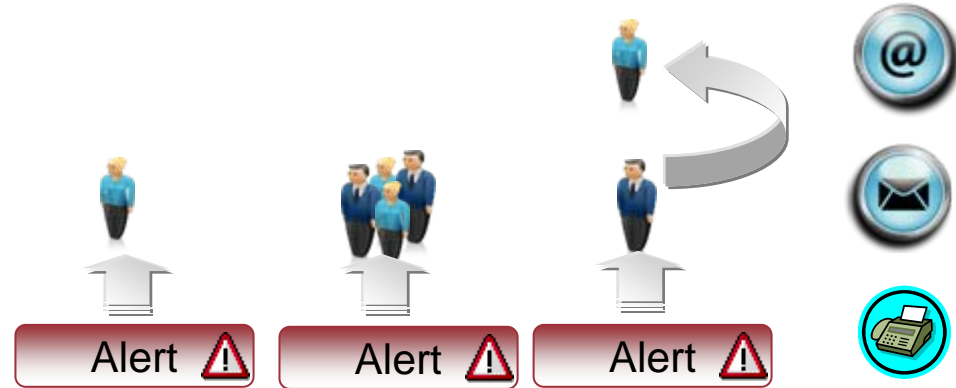
## Alert recipient options

Fixed Recipients

Groups

Escalation Paths

Alert forwarding



## Actionable alert content

Content variables populated at runtime

Pre-defined and custom variables

Initial problem isolation

```
SenderInterface: &SXMS_FROM_INTERFACE&  
ReceiverInterface: &SXMS_TO_INTERFACE&  
AdapterType: &SXMS_TO_ADAPTER_TYPE&  
AdapterErrTxt: &SXMS_TO_ADAPTER_ERRTXT&  
  
<... ..>
```

```
SenderInterface: Sales_Order_Out  
ReceiverInterface: Billing_In  
AdapterType: File Adapter  
AdapterErrTxt: <Error text>  
  
<... ..>
```



## ■ Flexible configuration by reusability

