SAP NetWeaver Process Integration 7.1
Monitoring and Alerting Highlights

SAP NetWeaver Product Management SOA Middleware
August 2008

Agenda

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

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

Local

PI tools in SAP Solution Manager
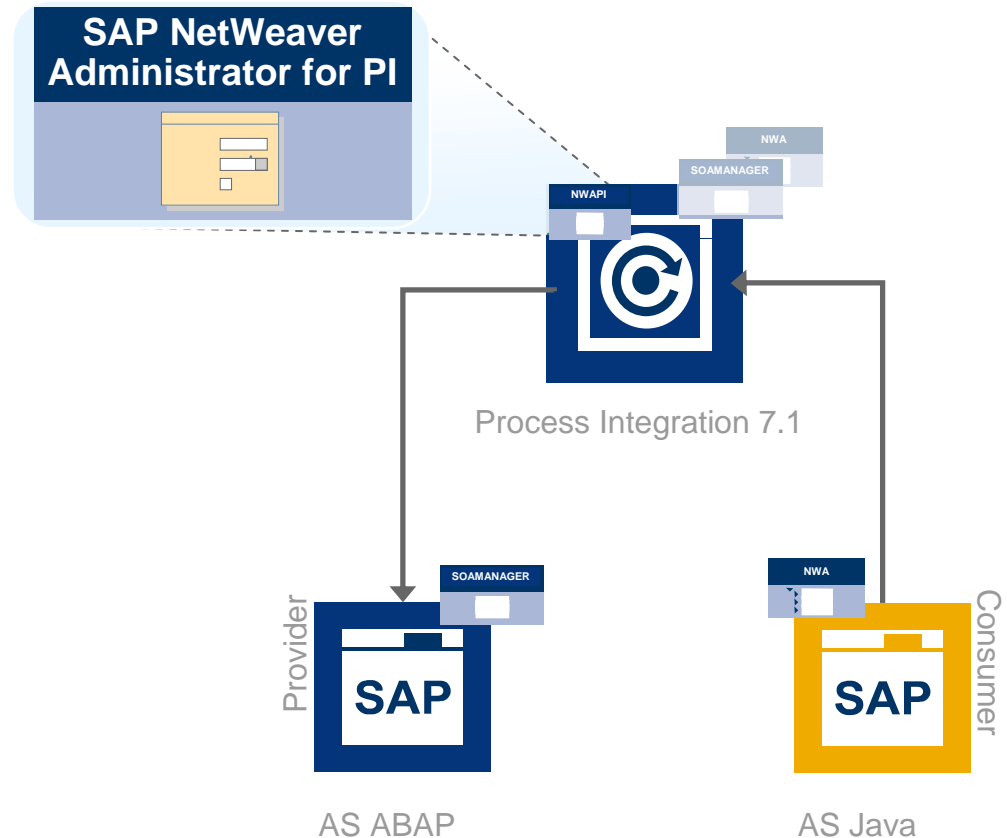
* Refers to SAP Solution Manager v 7.0

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

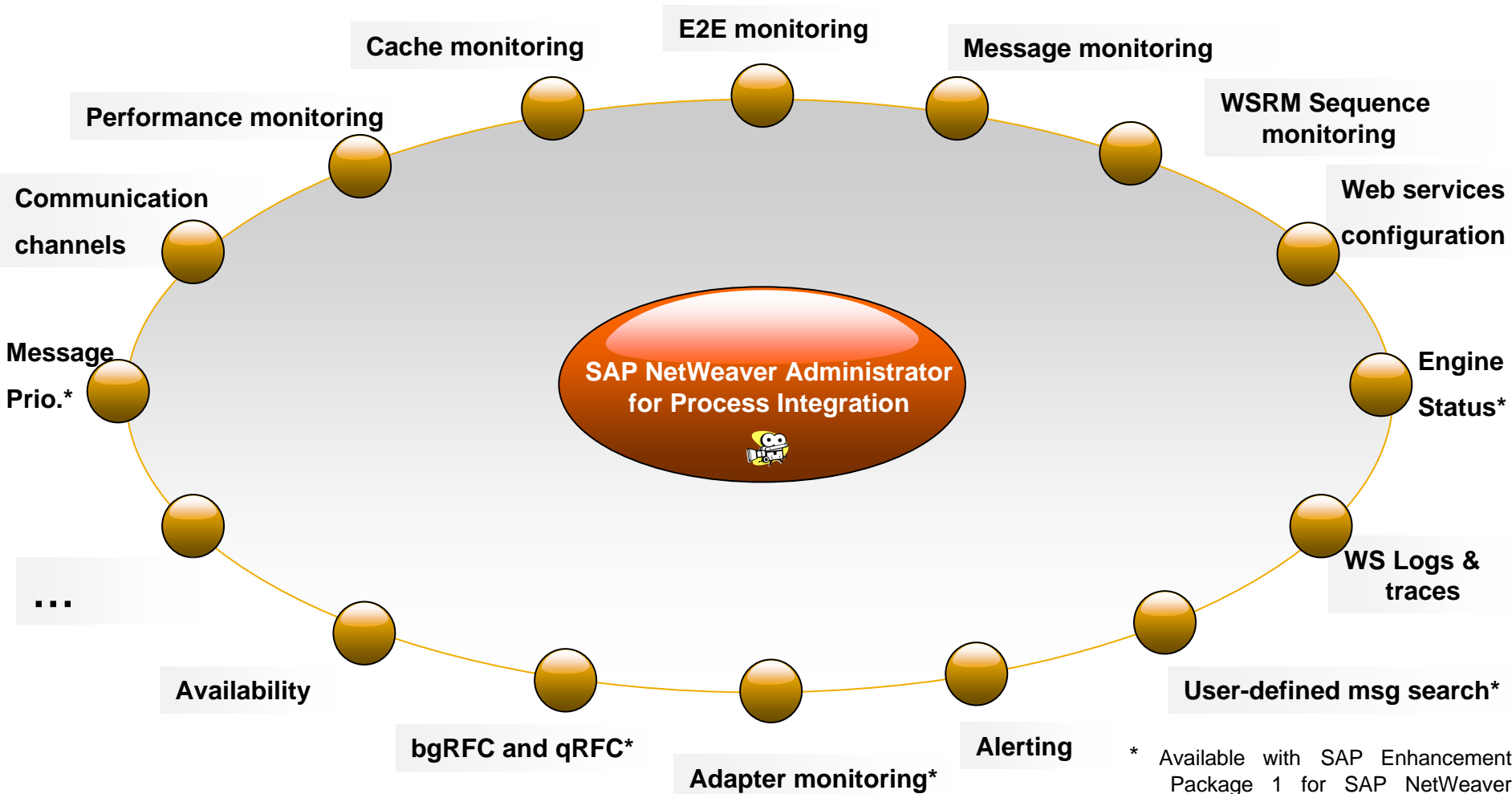- Centrally view Web service and clients logs and traces (ABAP and Java)

SAP NetWeaver Administrator for PI

NWA

SOAMANAGER

NWAPI

Process Integration 7.1

Provider

SOAMANAGER

SAP

AS ABAP

Consumer

NWA

SAP

AS Java

* The Runtime Work Bench recommended for monitoring in production environment

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SAP NetWeaver Administrator:
PI Monitoring Capabilities

- Central monitoring for multiple PI domains

- Central Web service and consumer configuration

Cache monitoring

E2E monitoring

Message monitoring

Performance monitoring

WSRM Sequence monitoring

Communication channels

Web services configuration

Message Prio.*

SAP NetWeaver Administrator for Process Integration

Engine Status*

...

WS Logs & traces

Availability

User-defined msg search*

bgRFC and qRFC*

Adapter monitoring*

Alerting

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

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

- Track the status of messages

- Find errors and identify what caused them

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.docs.oasis-
open.org/wss/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><S
AP:MessageId>00132169-BEE3-02DA-B8F2-0785929109B0</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.docs.oasis-open.org/wss/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.docs.oasis-
       open.org/wss/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:/1SAI/TAS00000000000000000000073:710:2007/06/10">

  – <xmbStruct>

    <testFunction>Test2</testFunction>

    <increment>0</increment>

  </xmbStruct>

</n0:xmbTest1>
```

© SAP

Search-Based Monitoring:
User-Defined Message Search

SAP

User-Defined Message Search*

Benefits:

- **Facilitate Business – IT Alignment**
    - **Search for messages by business-relevant data in the message payload, for example `SalesOrder Number, CustomerID.`**
- **Lower TCO**
    - **Available out of the box with SAP NetWeaver Process Integration**
    - **Light-weight search based on XPATH (X**ML **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

Monitor Result lists

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 |

XI Domain domain.05.ls004 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 | Last Day ▼ |

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)

Process view

Instance view

Components involved

SAP NetWeaver Administrator:
PI- Performance Monitoring

- Obtain performance statistics of message processing

- Perform sizing of Process Integration

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
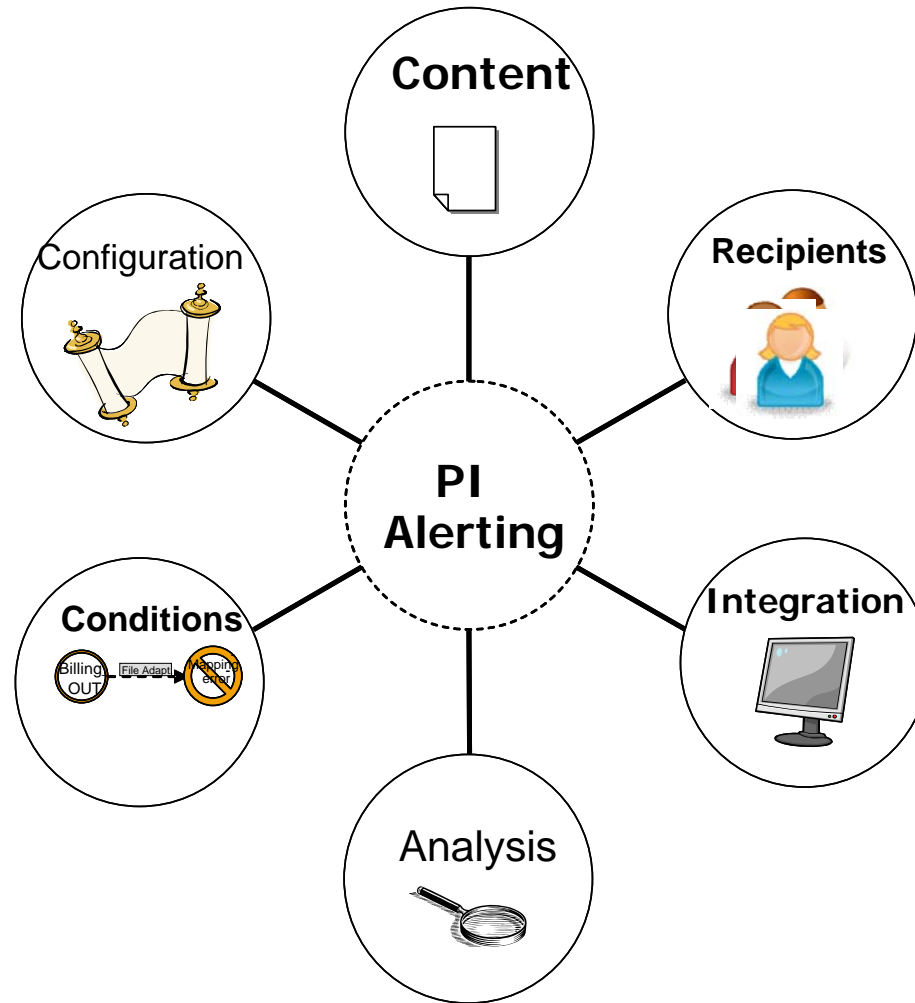
Status: [*] ▼
☑ Show logging data
Logging Level: [*] ▼
☑ Show tracing data
Tracing Level: [*] ▼

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3. **SAP NetWeaver PI Alerting: Closer Look**

Message-Based Alerting: Key Ingredients

Content

Configuration

Recipients

PI Alerting

Conditions

Integration

Analysis

PI Alerting at a Glance

Message-based alerting benefits

- Alerts for interface-specific message processing
- Alerts to scenario/ interface owners
- Actionable, information-rich alert content
- Configuration flexibility
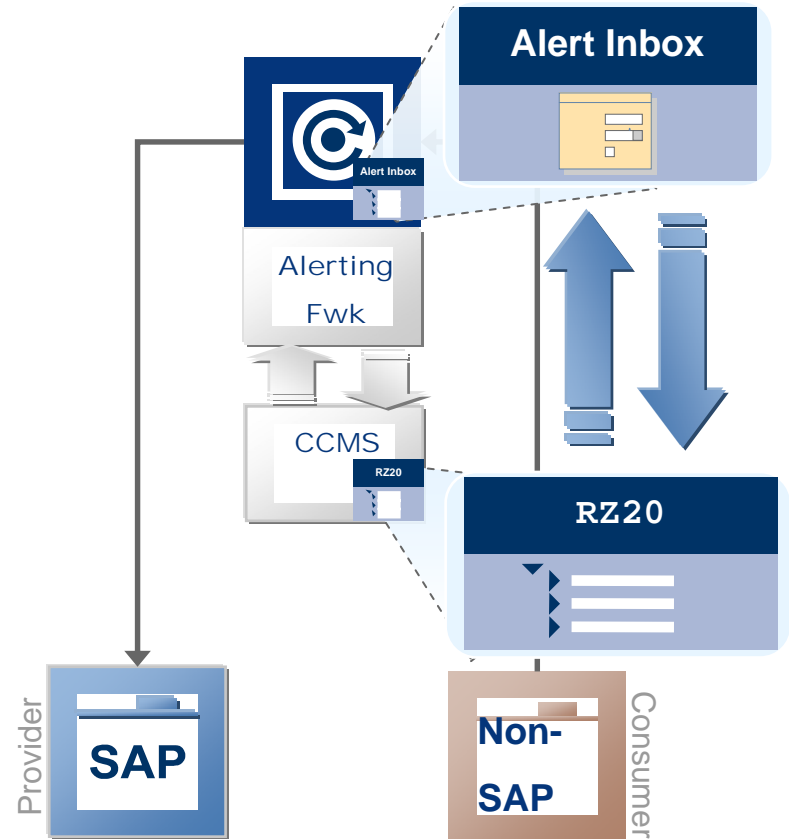- Integration with CCMS

CCMS-based alerting benefits

- Alerts when system status is deviant
- Performance-based alerting
- Integration with PI Alert Inbox
- Integration with non-SAP components

Recipients

Additional Channels

Alert Inbox

Alerting Fwk

CCMS

RZ20

RZ20

Alert Inbox

Provider

Consumer

SAP

Non-SAP

Message-Based Monitoring: Alert Conditions
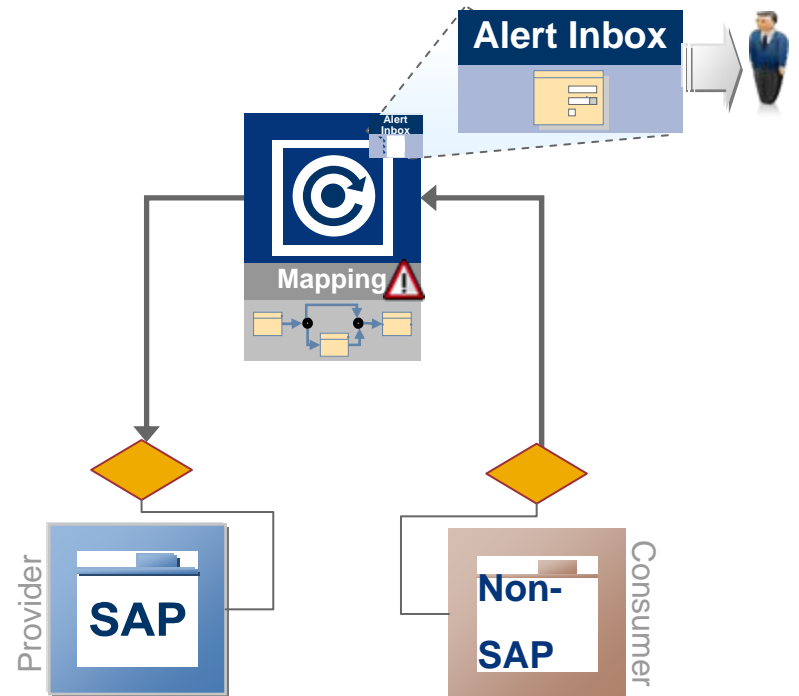
Message failure between specific interfaces

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

Alert Inbox

Mapping

Provider — **SAP**

Consumer — **Non-SAP**

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).

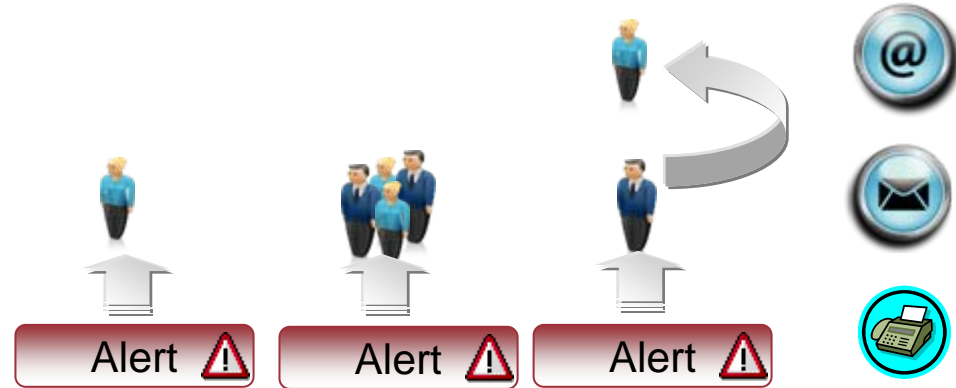# Message-Based Monitoring: Alert Recipients and Content

Alert recipient options

- Fixed Recipients
- Groups
- Escalation Paths
- Alert forwarding

Alert ⚠   Alert ⚠   Alert ⚠

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&
              <... ... ...>
```

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

Message-Based Monitoring: Alert Configuration

- Flexible configuration by reusability

Alert categories
- Classifications
- Alert content
- Alert priority
- Recipients
- Post-alert activities

Alert rule
- Alert conditions
- Rule status
- Alert category

Alert subscription
- Receive a sub-set of alerts

Alert Category

Alert Rule
Alert Category · · · · · ·

Alert Rule · · ·
Alert Rule · · ·
Alert Rule · · ·