

Architecture and Operational Aspects

SAP AG

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Content

- **Major Objectives for SAP XI 3.0**
- **Architecture**
- **Operational Aspects**
 - **Platforms**
 - **Deployment**
 - **Security**
 - **Monitoring**
 - **High Availability**
 - **Migration**
- **Summary**
- **Important Links**

Content

→ **Major Objectives for SAP XI 3.0**

→ **Architecture**

→ **Operational Aspects**

→ **Platforms**

→ **Deployment**

→ **Security**

→ **Monitoring**

→ **High Availability**

→ **Migration**

→ **Summary**

→ **Important Links**

Major Objectives for SAP XI 3.0

Enhance Web Services Functionality

Enhance operational aspects

- Platform support
 - Monitoring
 - Performance
 - High availability
- > Lower TCO of XI

Extend design time capabilities

Provide core B2B functionality

Offer Industry Standard Support

Provide Business Process Management (BPM)

Will be covered
by other
presentations

Content

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→ **Architecture**

→ **Operational Aspects**

→ **Platforms**

→ **Deployment**

→ **Security**

→ **Monitoring**

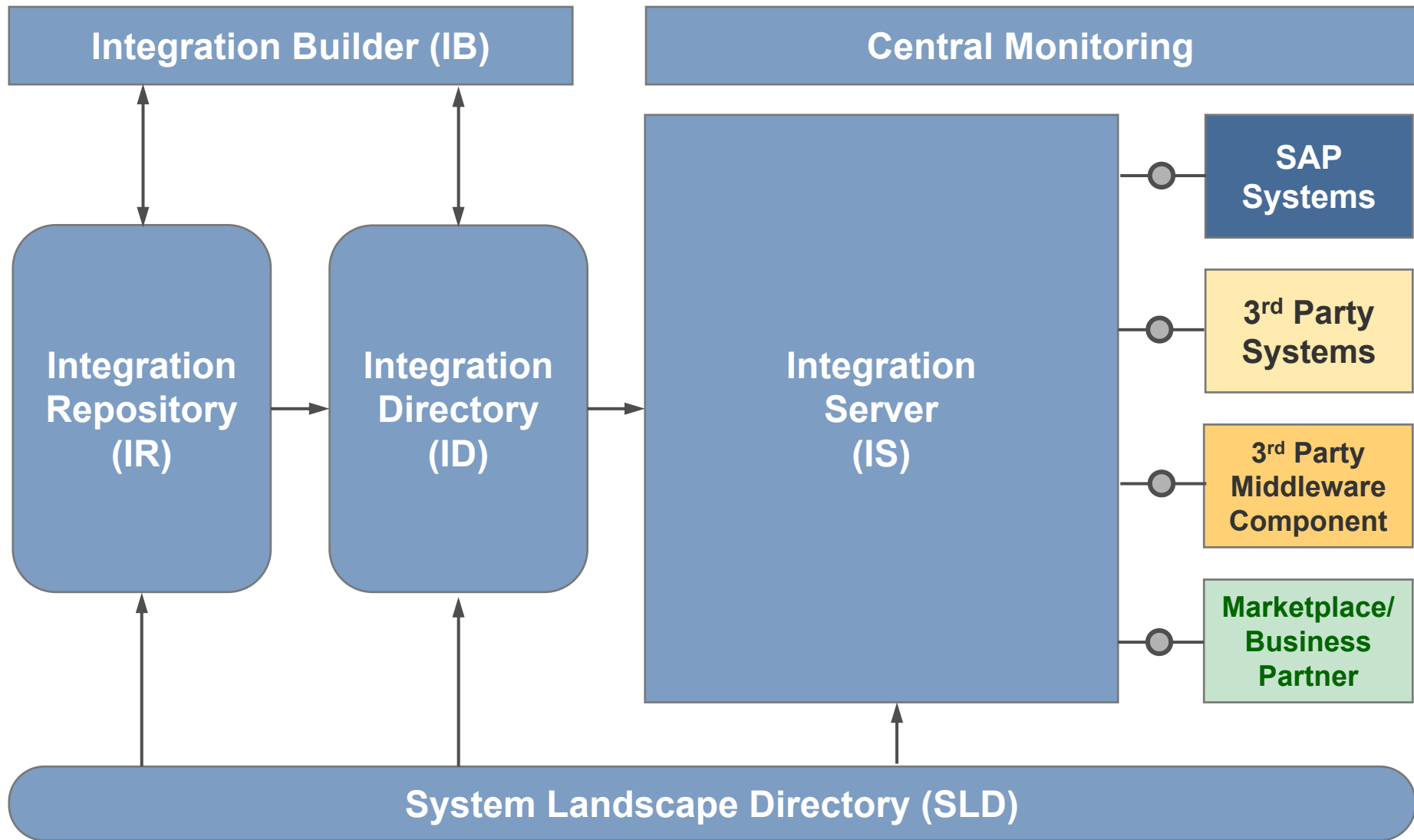
→ **High Availability**

→ **Migration**

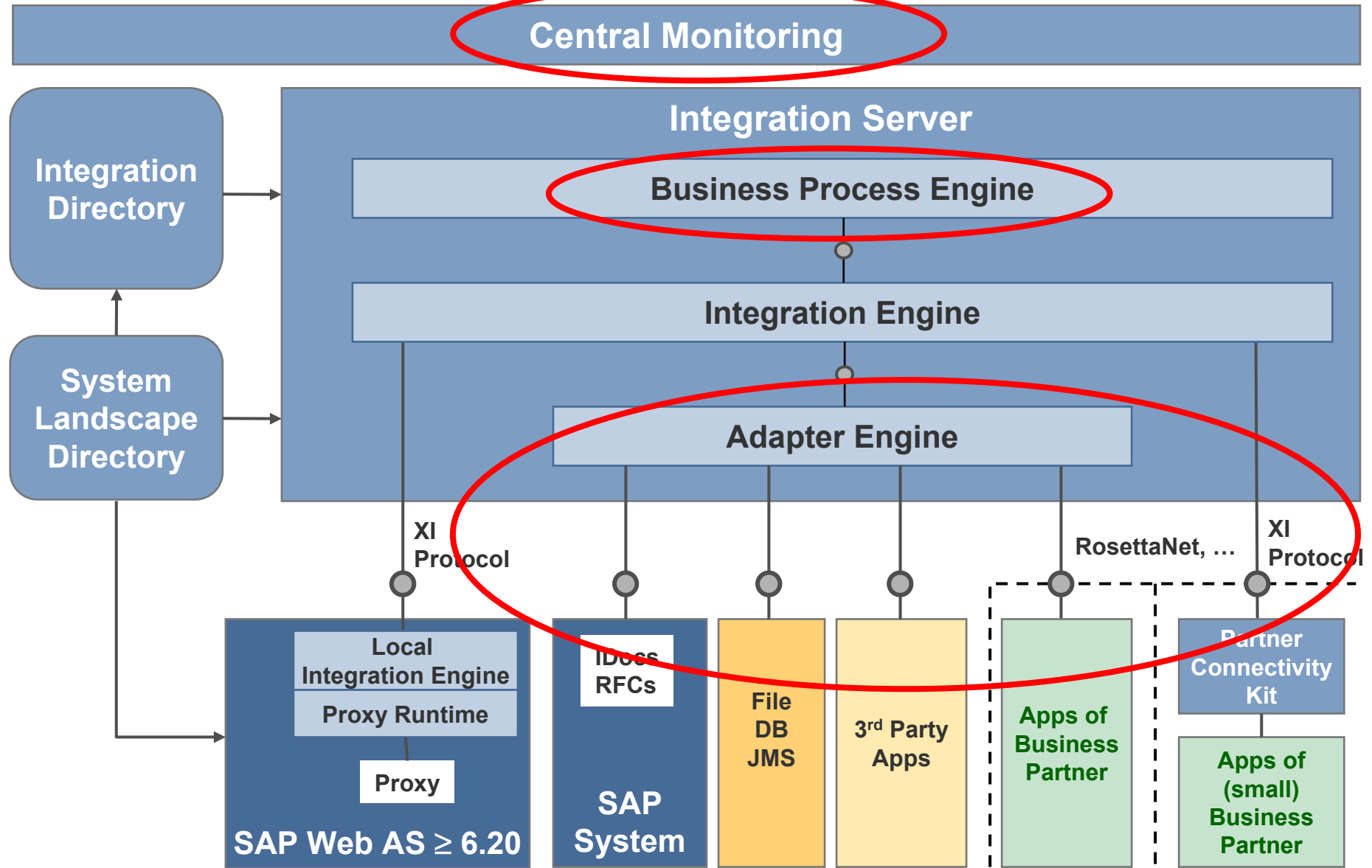
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→ **Important Links**

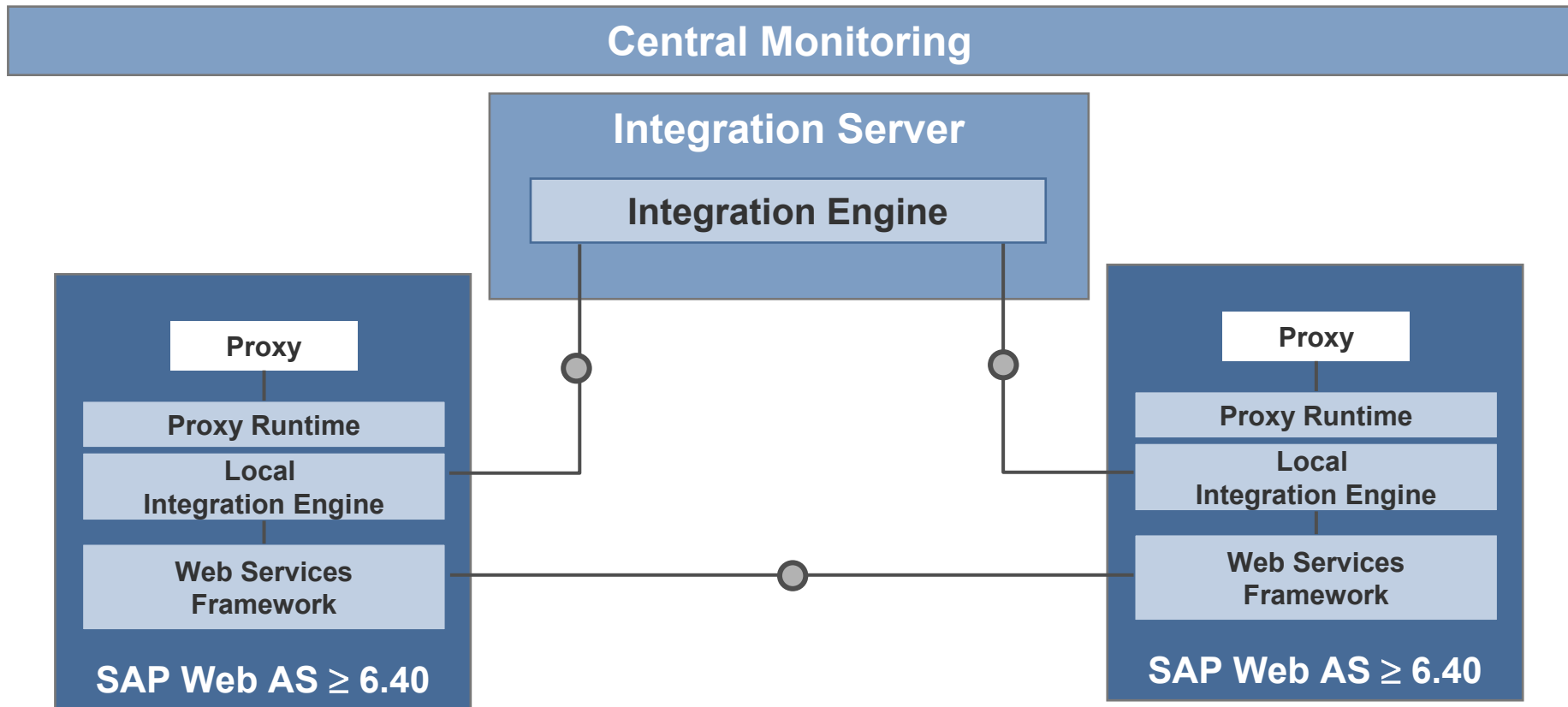
Architecture - Overview



Architecture – Major Enhancements with XI 3.0



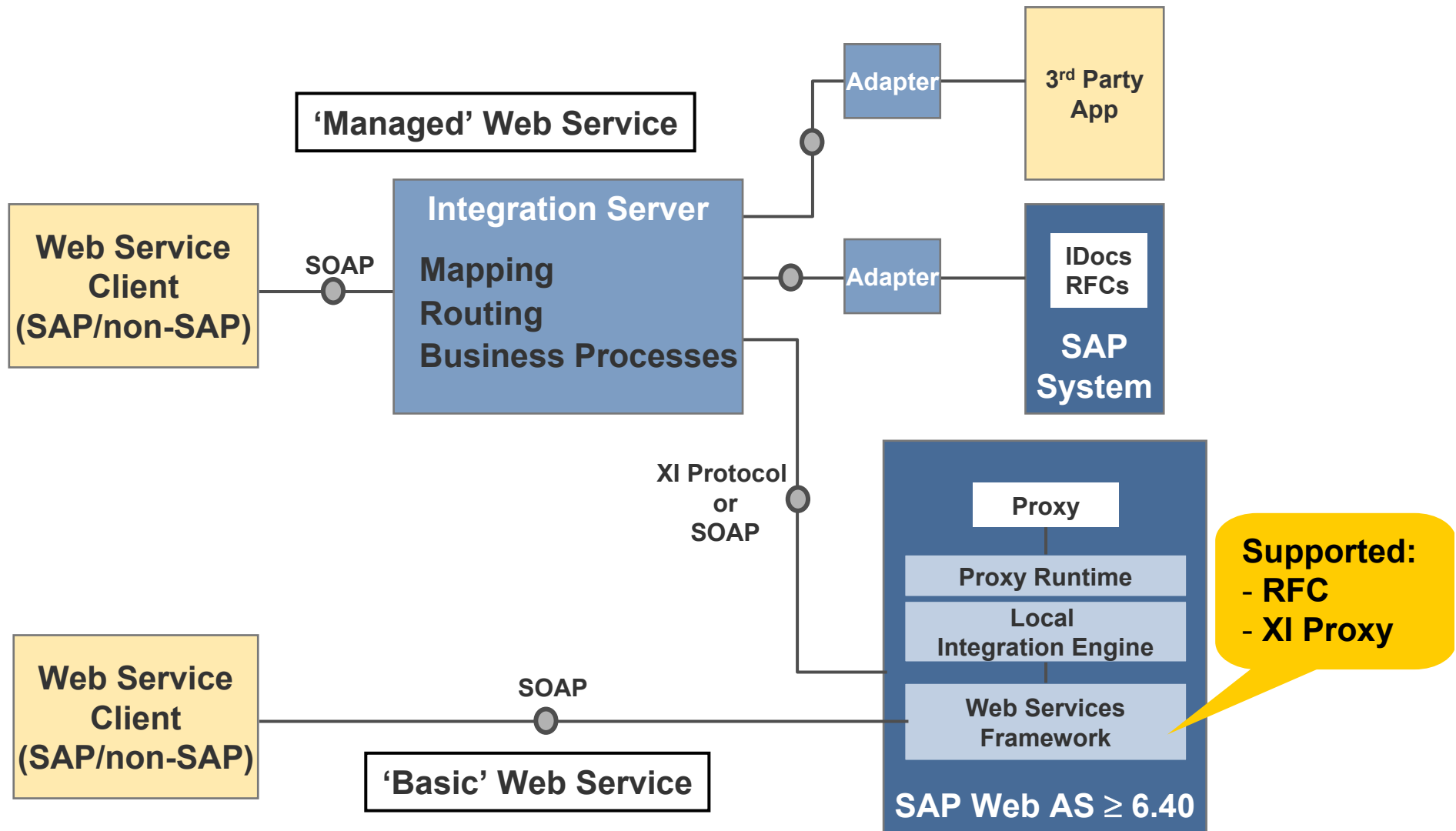
Web Services – Point-to-Point Optimization



Prerequisites:

- Synchronous ABAP Proxies
- Same Interface for outbound and inbound proxies
- No routing
- No mapping

Value-added Web Services through XI



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→ **Monitoring**

→ **High Availability**

→ **Migration**

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SAP XI 3.0 is based on SAP Web AS 6.40

Note: ABAP-part of XI 3.0 is integral part of SAP Web AS 6.40

SAP XI 3.0 will therefore support all Unicode platforms of SAP Web AS 6.40

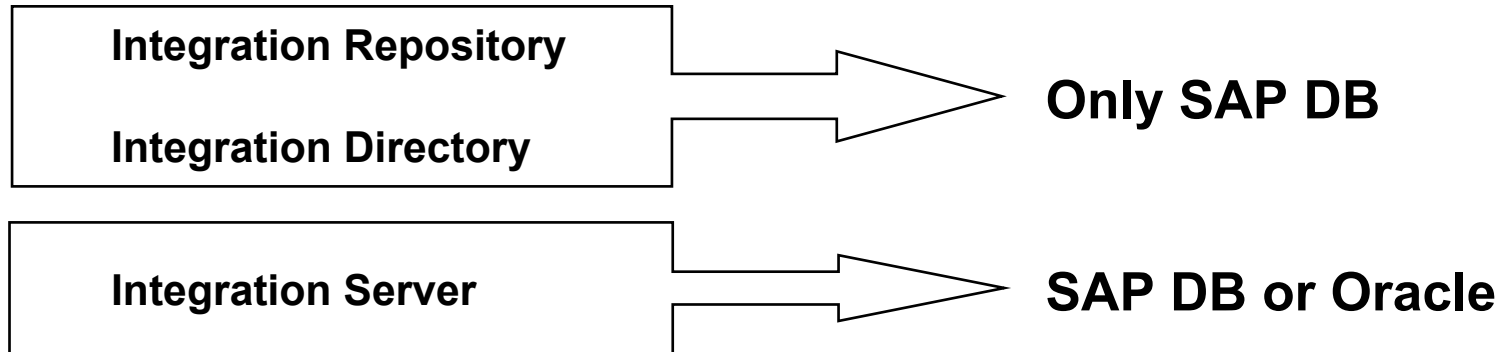
(i.e. platform restrictions for XI 2.0 to SAP DB/Oracle do not apply anymore)

-> first availability with start of Ramp-Up for NetWeaver 04

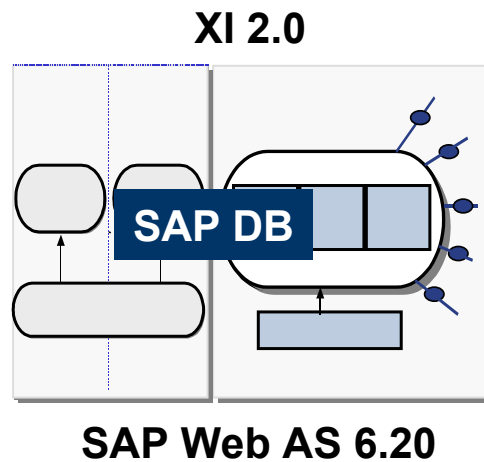
For details on the planned DB/OS combinations for SAP Web AS 6.40 use alias /platforms in SAPNet.

Deployment – XI 2.0

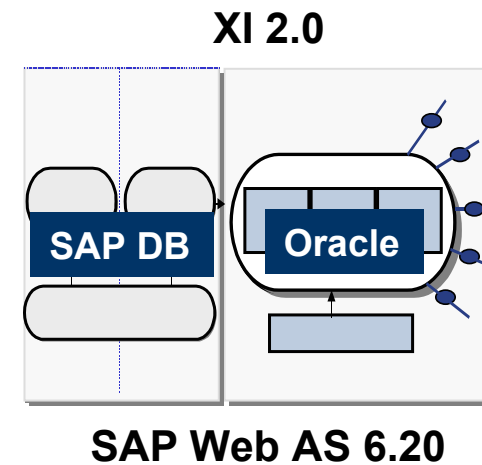
Platform restrictions



All-in-One installation

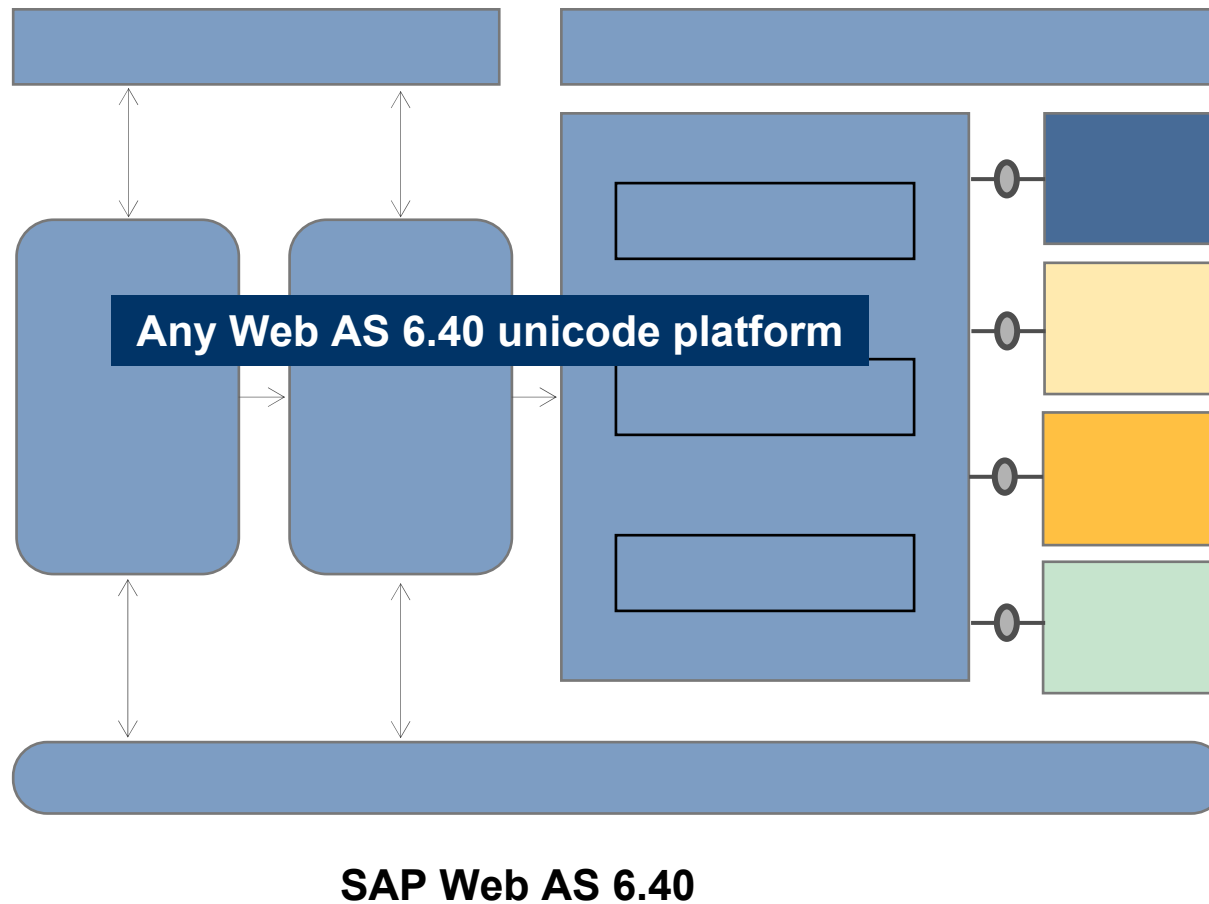


Distributed installation sometimes necessary



Deployment – XI 3.0

→ All-in-one installation as standard scenario



2 Aspects of High Availability Solutions:

- **Hardware related high availability**
 - Customer view of HA
 - Solutions provided by hardware partners

- **Software related high availability**
 - Application view of HA
 - Provided by SAP through cluster technique for ABAP and Java-parts

Improvements with XI 3.0:

More data stored in database instead of file system

-> easier switch in case of component break down

High Availability – Hardware solution

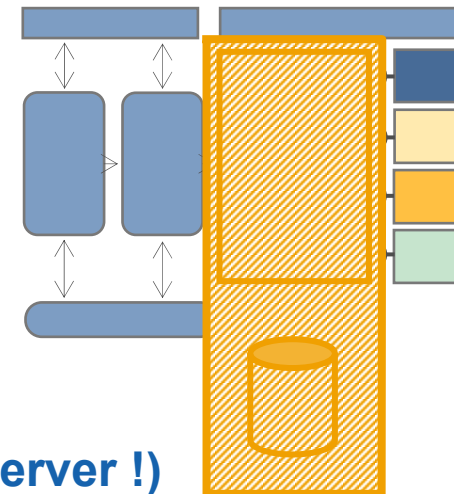
■ Motivation

- ◆ Minimizing possible (unplanned) down-times
- ◆ Detect and secure single points of failure (SPOF)

■ Critical Areas for XI

Relevant
for HA

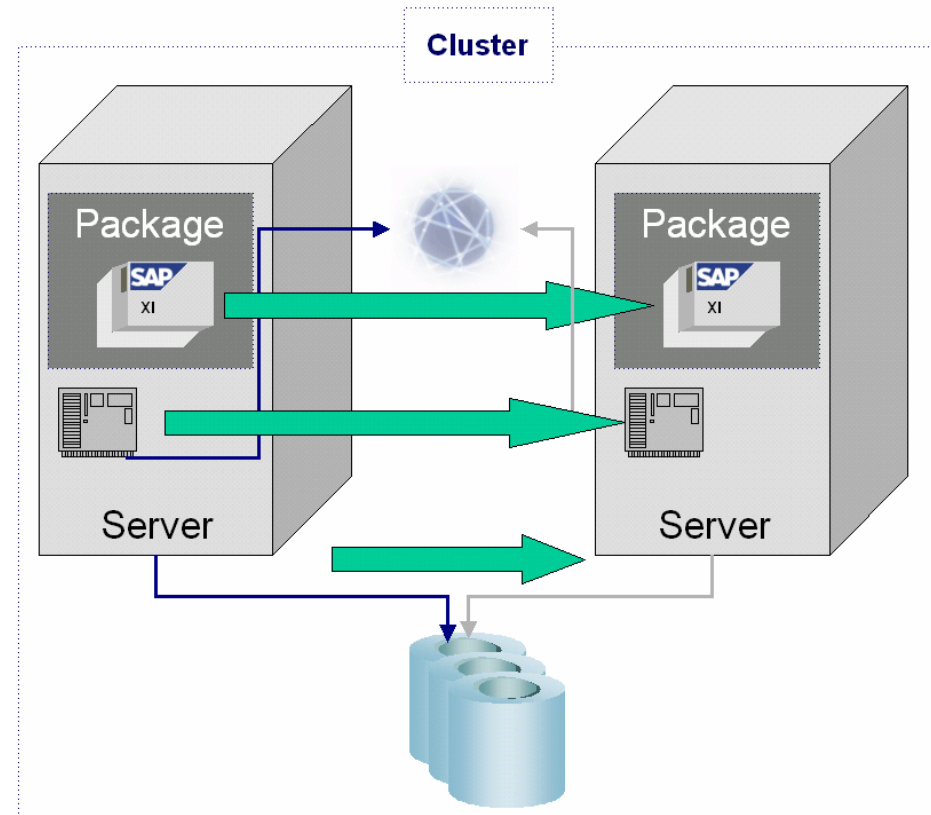
- ◆ Integration Server
 - ABAP runtime (incl. WebAS SPOFs)
 - J2EE engine (incl. Mapping server)
 - Web AS database
- ◆ Adapter Engine
- ◆ Integration Builder
(not a SPOF due to ‚caching‘ on Integration Server !)



High Availability – Hardware solution

■ Solution

- ◆ **Packaging of SPOF of XI**
- ◆ **SAP Web AS 6.40 as Basis**
 - database-based
 - scalable
 - transactional
 - failure resilient (built-in restart/retry mechanisms)
- ◆ **Reuse of well-known HA-concepts and functionality**
- ◆ **Usage of Switch-over clusters**
 - Switch-over Software provided by SAP hardware partners



Focus Areas

- **Application Security**
 - ◆ To be provided by each application
- **Secure Collaboration**
 - ◆ Identity federation
- **User Management**
 - ◆ Secure user access
- **Infrastructure Security**
 - ◆ Secure Network communication (SNC)
- **Software Lifecycle Security**
 - ◆ Change management

Security - Levels

Levels of Security			
Connection Level Security			
Message Level Security (for B2B)			
Signature			
Data Integrity			
Non-Repudiation of origin			
Non-Repudiation of receipt			
Encryption			

Security – Availability with XI

Availability	XI 1.0 / XI 2.0	XI 3.0 XI protocol	XI 3.0 RNIF
Levels of Security			
Connection Level Security (HTTPS)	✓	✓	✓
Message Level Security (for B2B)			
Signature		✓	✓
Data Integrity		✓	✓
Non-Repudiation of origin		✓	✓
Non-Repudiation of receipt			✓
Encryption			✓
Technology		WS-Security (XML-Signature)	S/MIME

Security – Outlook

Availability	XI 1.0 / XI 2.0	XI 3.0 XI protocol	XI 3.0 RNIF
Levels of Security			
Connection Level Security	✓	✓	✓
Message Level Security (for B2B)			
Signature		✓	✓
Data Integrity		✓	✓
Non-Repudiation of origin		✓	✓
Non-Repudiation of receipt			✓
Encryption			✓

**Focus of future security
enhancements for XI**

Central Monitoring - Runtime Workbench (RWB)

Runtime Workbench enhancements:

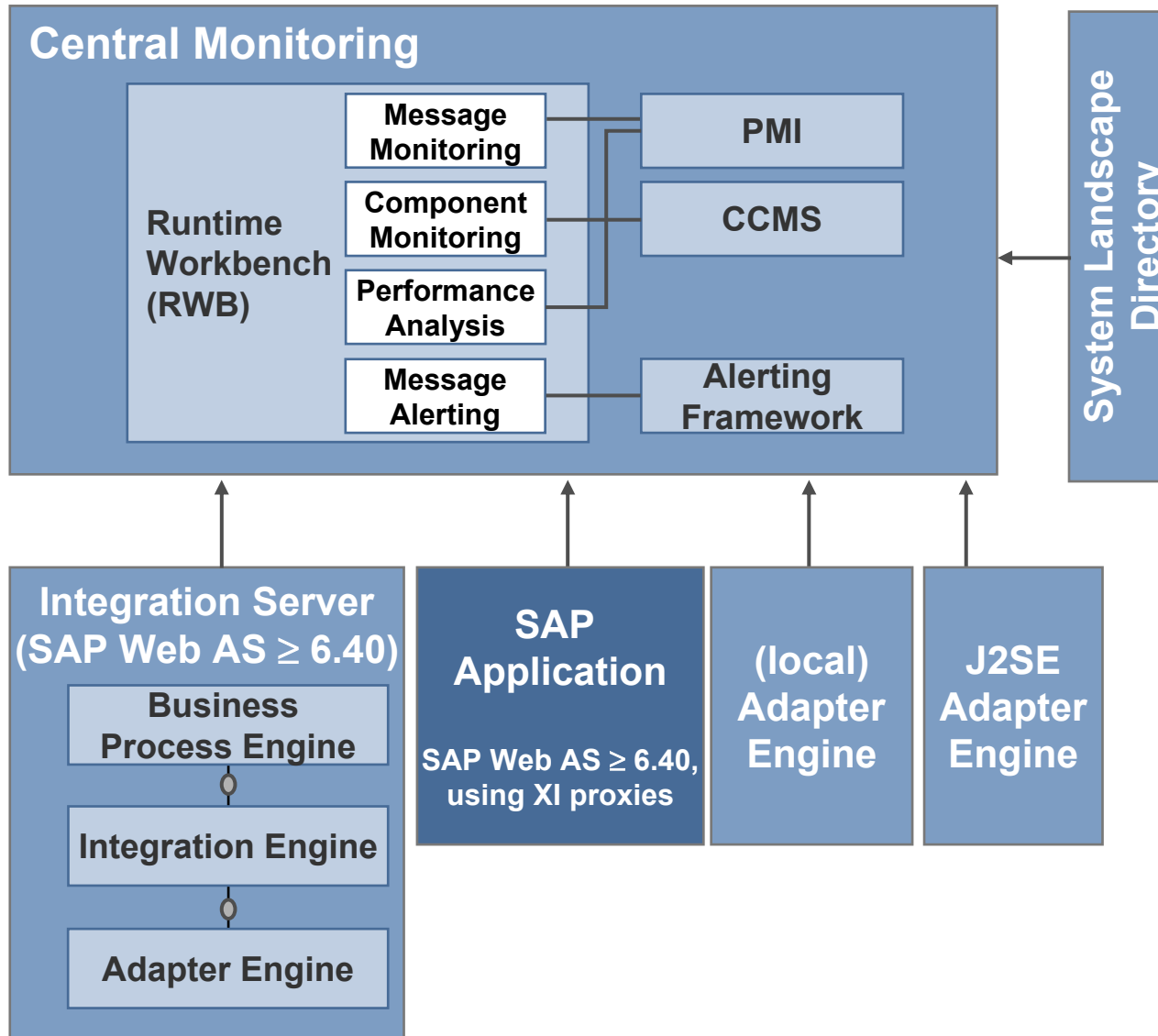
- Component Monitoring
- Message Monitoring
 - End-to-End Monitoring
- Performance Monitoring
- Alert Framework

SAP Runtime Workbench

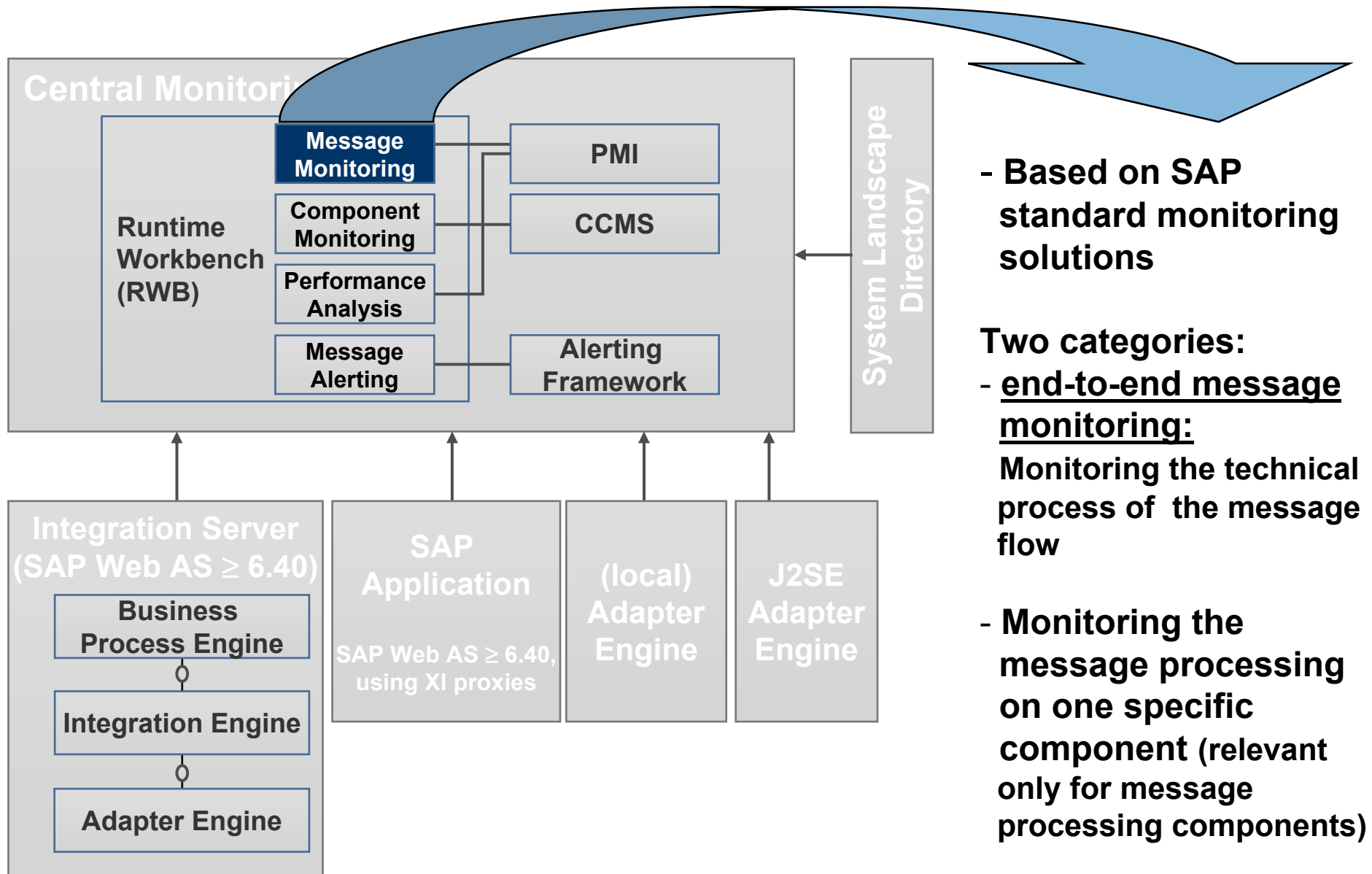
- Runtime Workbench



Central Monitoring - Overview



Monitoring – Message Monitoring



- Based on SAP standard monitoring solutions

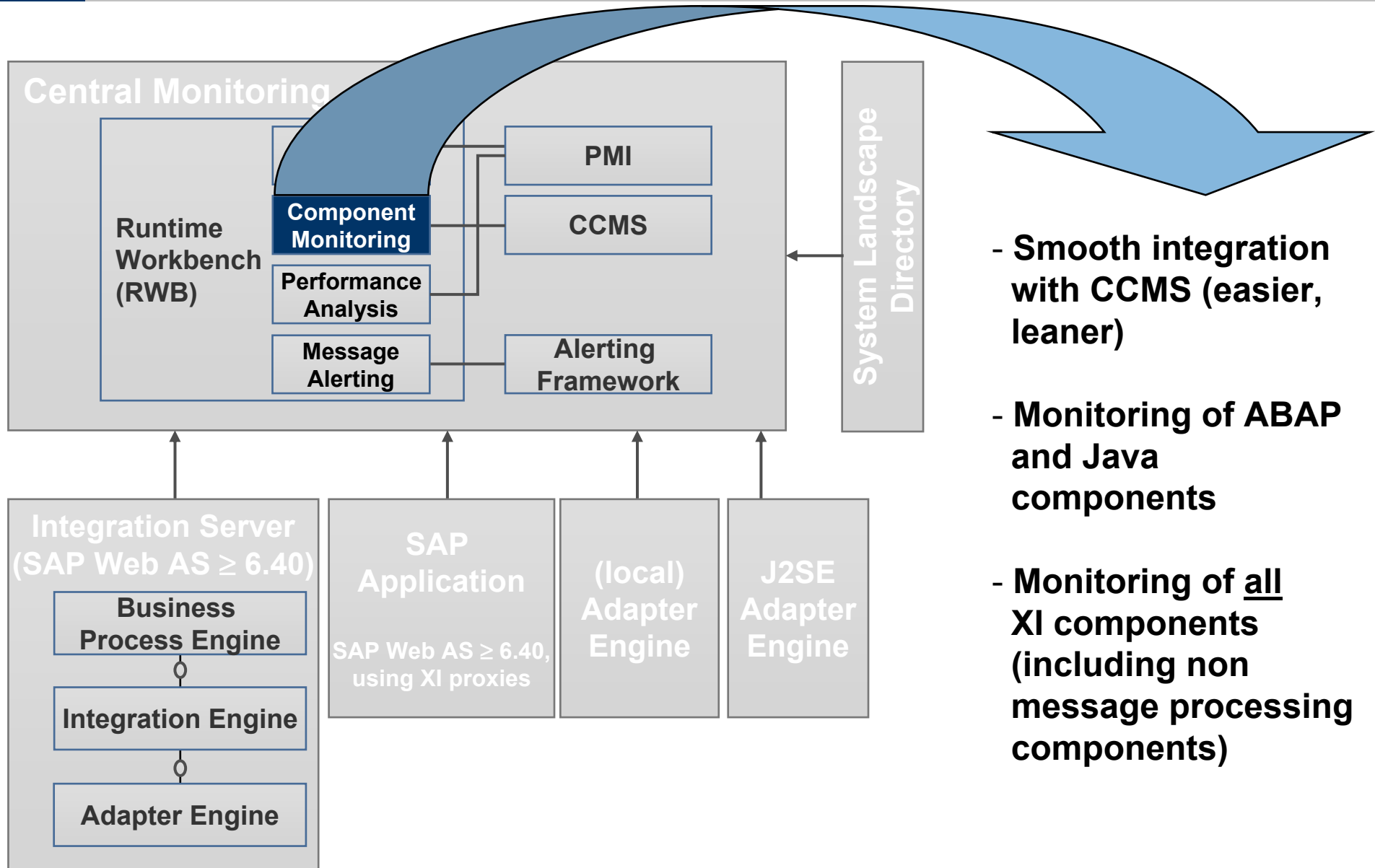
Two categories:

- end-to-end message monitoring:

Monitoring the technical process of the message flow

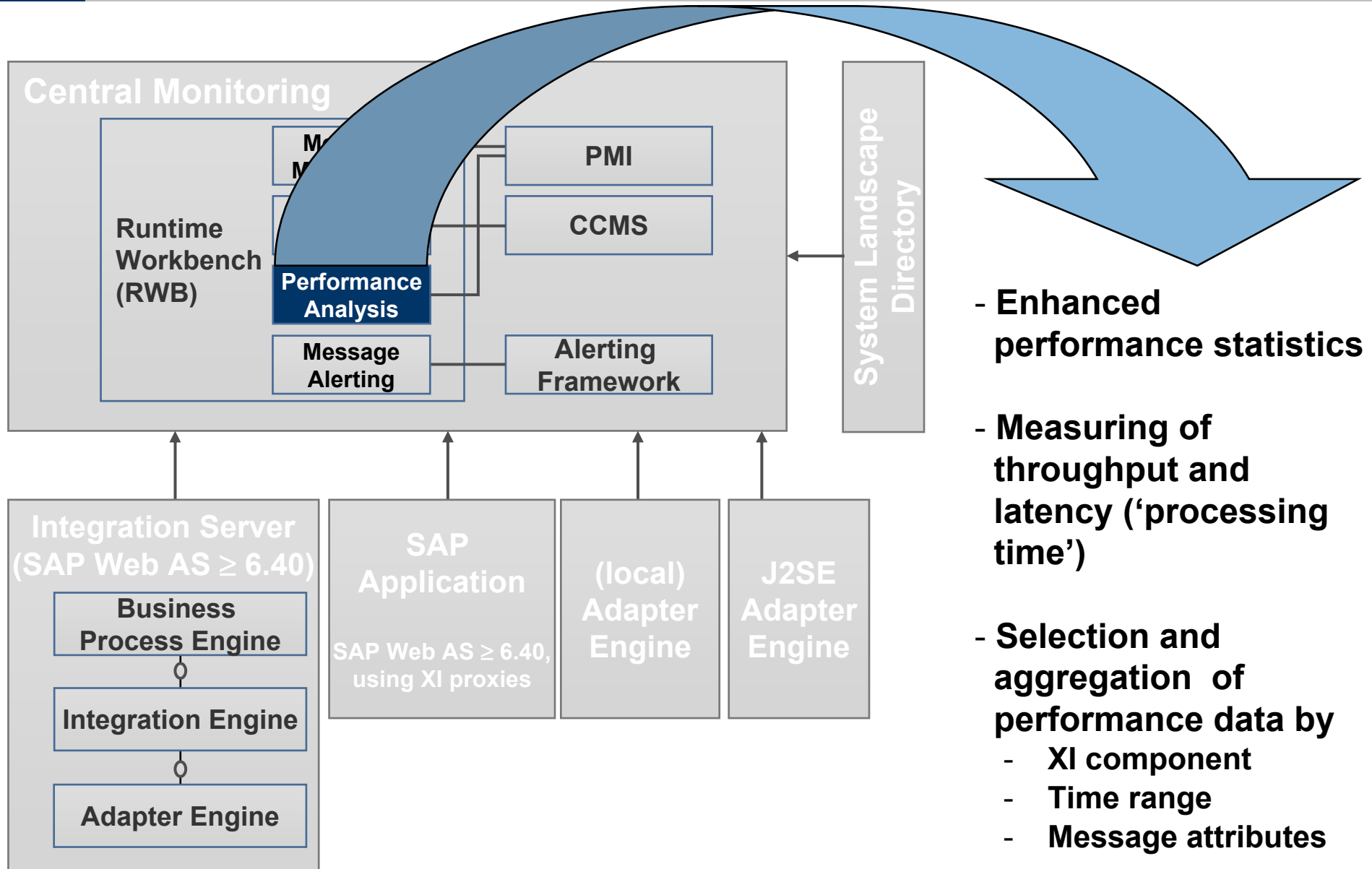
- Monitoring the message processing on one specific component (relevant only for message processing components)

Monitoring – Component Monitoring

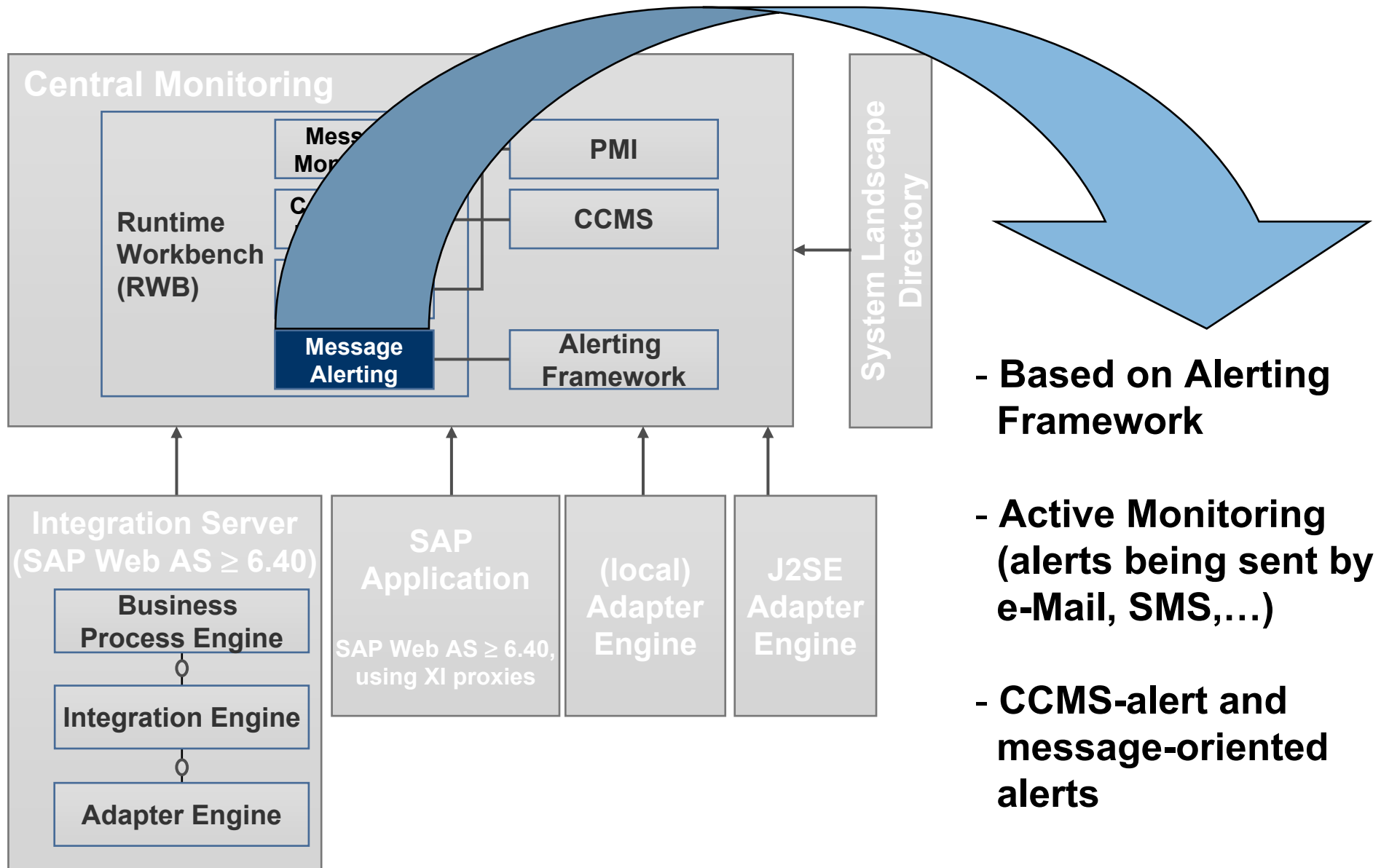


- Smooth integration with CCMS (easier, leaner)
- Monitoring of ABAP and Java components
- Monitoring of all XI components (including non message processing components)

Monitoring – Performance Analysis



Monitoring - Alerting

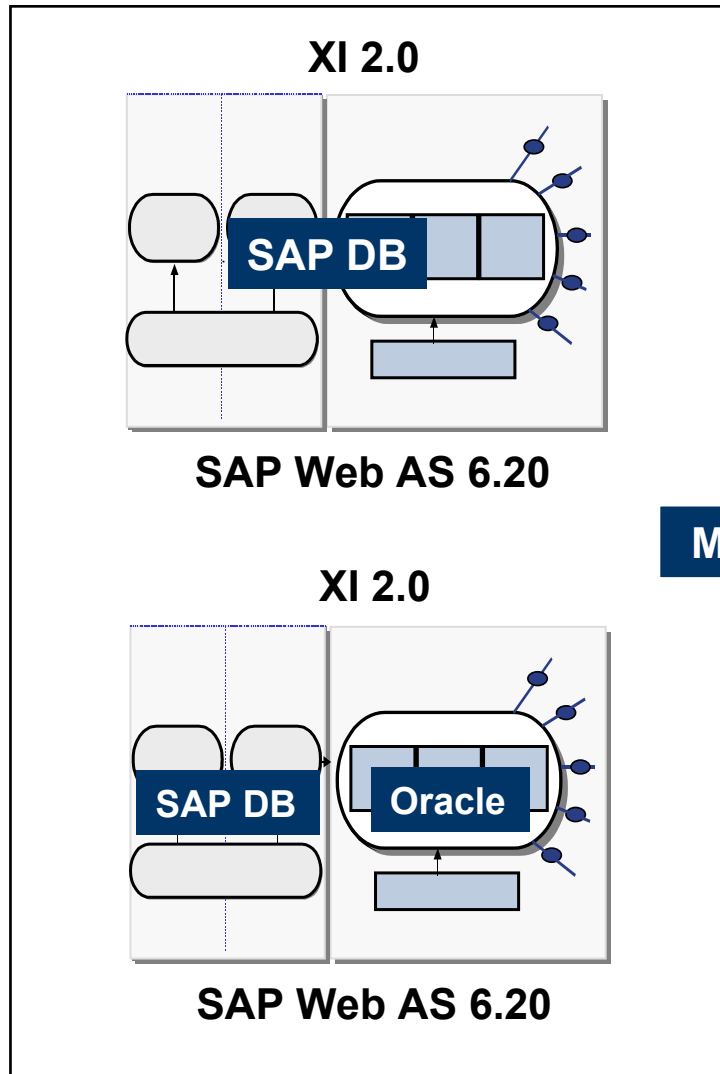


Advantages

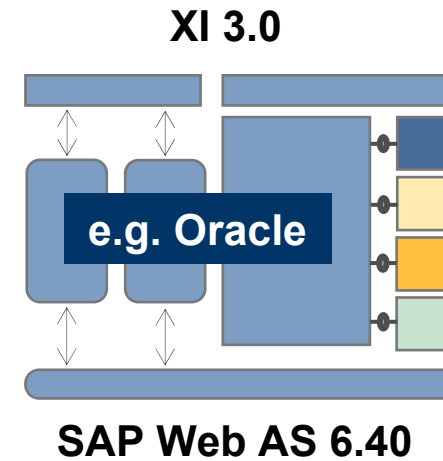
- One monitoring tool to access all monitoring information
- Covering component and message monitoring
- Browser based

Migrate XI 2.0 to XI 3.0

XI 2.0 customers



XI 3.0 customers

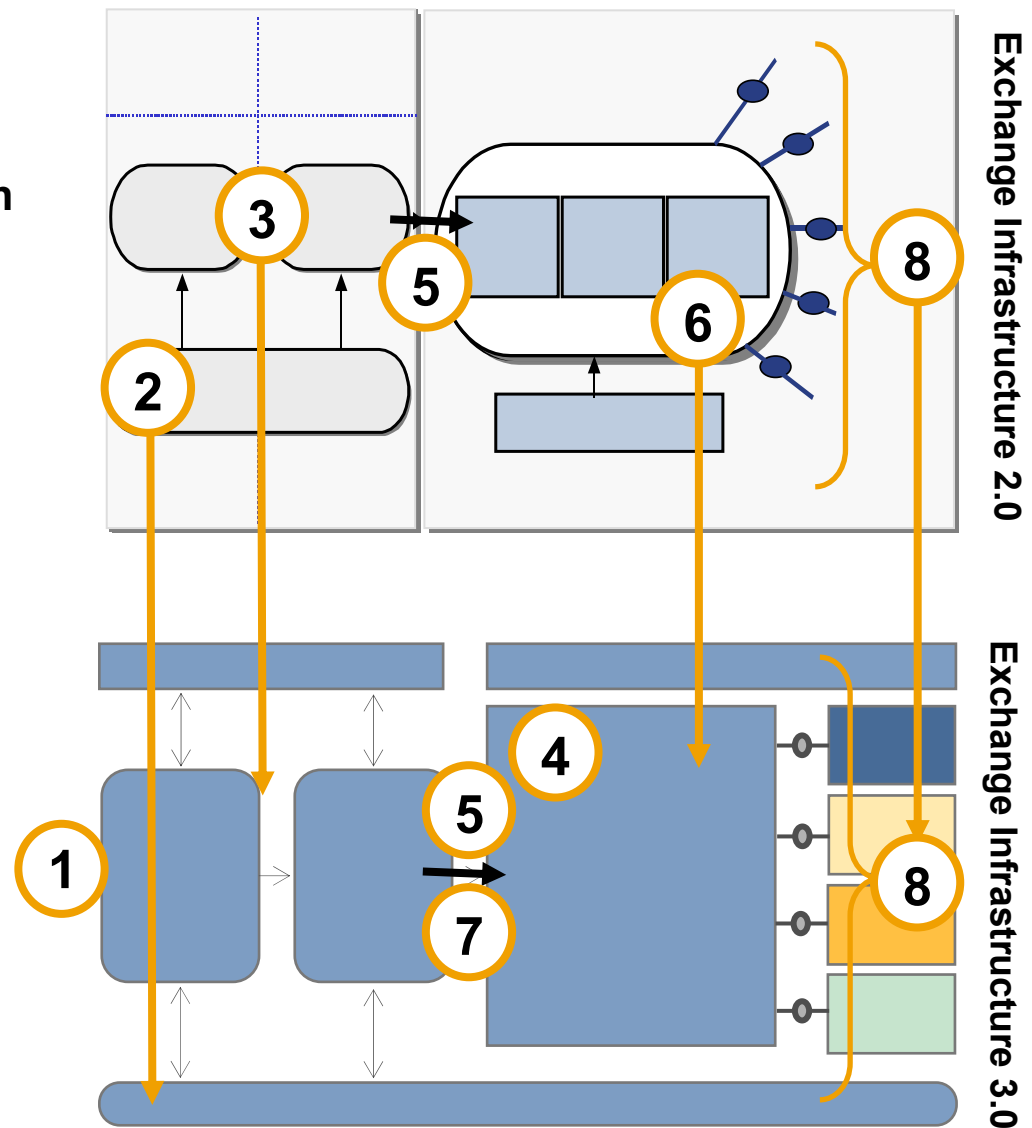


Migration

How to migrate from XI 2.0 to 3.0:

Basic Migration Steps:

1. Install/customize of IS/IB (XI 3.0) on a standby host machine (All-In-One)
2. Migration of SLD data from 2.0 to 3.0
3. Migration of XI IB data from 2.0 to 3.0
4. Cache Refreshes
5. XI downtime start (disabled input stream into IS 2.0 / IS 3.0)
6. Migration of essential runtime data
7. XI downtime end (enabled input stream into IS 3.0)
8. Address switching of sending adapters and sending application systems from IS 2.0 to IS 3.0



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Summary

■ Architecture

- ◆ Stable for XI 2.0 and XI 3.0
- ◆ Point-to-Point Optimization
- ◆ Value-Added Web-Services

■ Operational Aspects

- ◆ Support of all Web AS Unicode platforms
- ◆ All-in-One deployment
- ◆ Higher security for B2B
- ◆ Central Monitoring
- ◆ High availability as in R/3

➤ Lower TCO for XI

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→ **Security**

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Important links

→ **SAPNet / Service Marketplace**

- NetWeaver information: www.sap.com -> Solutions
-> SAP NetWeaver
- XI general information: alias /xi
- XI Roadmap: alias /xi -> XI in Detail -> XI 3.0
- DevNews: alias /developmentnews -> NetWeaver
- Platforms: alias /platforms
- High Availability R/3: alias /HA
- Security: alias /security



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