

LAYING YOUR FOUNDATION WITH SOA MIDDLEWARE

ELEVATING BUSINESS AUTOMATION THROUGH SOA

Every working day, 3 new customers select the SAP NetWeaver® Process Integration offering as their enterprise-class, service-oriented architecture (SOA) middleware due to its superior combination of technology and business-oriented content offerings.

Organizations have been investing in solutions to integrate business processes across the enterprise and into the value chain for some time now with mixed results. Often, large expenditures on point solutions to meet a company's prioritized need for enterprise application integration, business partner integration, or business process management have failed to provide a satisfactory ROI. While point solutions may solve a single problem well, they do not deliver business visibility, modular business services, reuse, or business adaptability.

While most organizations have started to adopt service-oriented architecture (SOA) to solve their prioritized integration issues and serve as the architectural foundation for future application services, this is not enough. Many organizations have not realized the promise of SOA because they were mired in the technical implementation that was decoupled from business content and best practices. And these stalled SOA efforts result in increased project duration and cost. For successful adoption, you need an enterprise-class SOA middleware offering that provides:

- An integrated Web services repository and registry to manage a service portfolio across the enterprise
- A standards-based, high-performance enterprise services bus for service-based integration across a heterogeneous environment
- Flexibility to integrate applications while helping to ensure compliance and auditability

- Integration with business partners
- Support for best-practice processes that help you optimize your operations

More than 3,000 organizations use the SAP NetWeaver® Process Integration (SAP NetWeaver PI) offering as their enterprise-class, SOA middleware to perform application-to-application and business-to-business (B2B) integration and accelerate composite application development. Of the current customers:

- 88.9% are using it for heterogeneous application integration
- 74.6% have 24x7 requirements
- 70% have high-availability implementations¹

SAP NetWeaver PI is proven in the field to meet business demands of the largest enterprises and is the preferred SOA middleware for companies of all sizes. As shown below, it is a complete and standards-based integration solution.

Enabling SOA Management Through ES Repository

With the growth and proliferation of Web services, you need a single integrated service repository within your SOA platform to model and manage this service portfolio at scale. With Enterprise Services Repository (ES Repository), it is easier to manage and govern the complete life cycle of your Web services development and deployment.

1. Hermann Steinrötter and Christoph Liebig, XI/PI-DSAG/ASUG/SDN Survey, February 2008.



Lower TCO for Integration and Composition Projects

By leveraging more than 2,900 productized enterprise services and prepackaged integration scenarios as reusable integrated process steps, you can reduce the implementation time for integration and composition projects.

Design-Time and Run-Time Governance

ES Repository centrally manages information about the release status and restrictions of Web services and thus provides effective design-time governance for them. It also comes with a built-in standards-based registry, compliant with the Universal Description, Discovery, and Integration protocol and supports fine-grained access control for comprehensive service management and governance.

Comprehensive Metadata Dictionary and Global Data Types

The metadata dictionary stores all of the metadata – ranging from process models to object definition, data map-

ping, service interfaces, and global data types. The global data types support standards such as ISO 15000-5 and can be used as reusable semantic building blocks for services interfaces and message types.

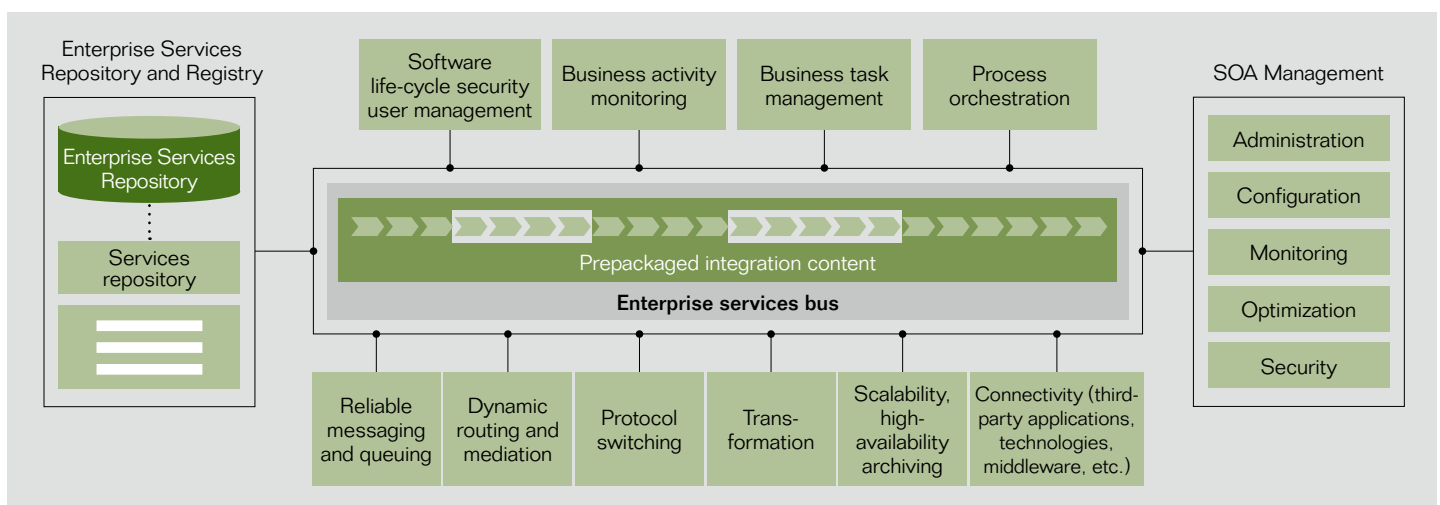
High-Performance, Standards-Based Enterprise Services Bus

The standards-based enterprise services bus provides integration backbone functionality that allows for the independent evolution of various applications, processes, and its underlying technology without breaking any points of integration and service orchestration. SAP NetWeaver PI offers comprehensive enterprise services-bus functionality based on Web services and messaging standards:

- Business process execution language for Web services standards-based process integration
- Message routing and transformation via technologies such as XML path and Java

- Web services reliable messaging support with multiple levels of quality of service
- Security assertion markup language (SAML)-based exchange of user profile information

The enterprise services bus performance is specifically tuned for a high-volume, reliable exchange of information across distributed business applications. The functionality optimizes process performance based on real-world process scenarios required for enterprise resource planning, supports high-volume transactions, enables distributed integration versus broker-based integration, and provides local processing including mapping and routing. Performance features such as message packaging, parallel queue processing, and transaction handling at the transport and process levels further accelerate the performance of distributed end points for high-throughput message processing.



Integrated, Compliant Business Processes Across Applications

Incorporating new applications into business processes is becoming an increasingly important requirement and a mandate as companies continue to adapt to maintain their competitive differentiation. In an increasingly regulated world, integrated business processes need to be auditable and secure to meet compliance requirements.

The implementation of principal propagation in SAP NetWeaver PI provides the best of both worlds: agility to add new applications and business processes, and trusted communication to monitor and meet compliance. SAML standards-based principal propagation allows SAP NetWeaver PI to forward authenticated user credentials (such as user name, password, or X.509 certificate) from a sender to the receiver. Thus the receiver application is virtually part of the sender application, and the permissions and audit functions of the receiver application can be applied to the original user from the sender application.

While other SOA middleware offerings might support SAML, authentication is implemented as an integration process step (often hand-coded) and not automatically configured. The approach is inherently less flexible and adds to performance and implementation overhead.

Enabling B2B Processes

Incorporating partners into business processes is becoming an increasingly important requirement for leading organizations. Large manufacturers already

rely on electronic means to convey orders, manage shipments and inventory, receive invoices, and report quality of parts to their suppliers. Because these transactions involve the transfer of legally binding documents representing a high monetary value, organizations must address more stringent requirements for partner communication processes than for purely internal communications.

SAP NetWeaver PI supports secured, direct interactions over the Internet with business partners. It also provides industry-specific packaged adapters for standards-based B2B communication that requires data and process security, reliability, and validity. By using these adapters, you can implement your electronic data interchange (EDI)-based B2B requirement or migrate your EDI system to the latest industry-standard, partner-exchange mechanisms. The adapters include RosettaNet Implementation Framework, UCCnet, Transora, EDI over Internet, and many others.

Prepackaged Integration Scenarios and Enterprise Services

While tool-based SOA middleware technology focuses on services and a governance model, SAP NetWeaver PI goes beyond a pure technology focus with prepackaged integration scenarios to rapidly deliver on the business value.

SAP NetWeaver PI is delivered with prepackaged integration scenarios for a growing number of SAP® and partner solutions. These scenarios support many horizontal business processes such as order to cash as well as vertical industry

solutions for manufacturing, banking, insurance, retail, higher education, and public sector to name a few. An integration scenario describes which components interact with each other within a specific business area. It includes process component models, interface definitions, business objects, global data types, and service operations. The scenarios are very well documented, offer a significant jump start on your integration projects, and help you integrate processes based on best practices.

Business Benefits

SAP NetWeaver PI helps you evolve your heterogeneous IT landscape into a standards-based, agile, service-oriented business so you can realize these key benefits:

- Business agility to build and modify your business processes to adapt to changing market conditions
- Reduced interface creation and maintenance costs through standards-based service interface and infrastructure
- Lower overall platform ownership cost due to consolidation of process management, application, and business partner integration capabilities in a service-oriented environment
- Rapid ROI and reduced time and project costs through prepackaged integration scenarios and enterprise services

Find Out More

For additional information, call your SAP representative or visit us online at www.sap.com/usa/platform/netweaver/processintegration.epx.

Summary

Thousands of organizations are using the SAP NetWeaver® Process Integration offering as their enterprise-class, service-oriented architecture (SOA) middleware to perform application-to-application and business-to-business (B2B) integration and accelerate composite application development.

Business Challenges

- Optimize process operation and accelerate innovation without getting mired in a technical implementation that is decoupled from business best practices
- Reduce the cost and duration of integration efforts

Key Features

- **Central, enterprise services repository** – Quickly compose comprehensive business processes, selectively redesign existing processes, and facilitate design and execution across organizational boundaries
- **Standards-based, high-performance enterprise services bus** – Reliably exchange information across distributed business applications
- **Principal propagation** – Flexibly add new business applications and processes and help ensure compliance and auditability
- **Packaged adapters for B2B integration** – Implement your B2B requirement, migrate your traditional electronic data interchange system to the latest industry-standard, partner-exchange mechanisms, or leverage secure http for direct interaction over the Internet
- **Prepackaged integration scenarios for a growing number of SAP® and partner solutions** – Integrate your SAP and certified partner solutions with your existing business systems

Business Benefits

- **Business agility** to build and modify your business processes to adapt to changing market conditions
- **Reduced interface creation and maintenance costs** through standards-based service interface and infrastructure
- **Lower overall platform ownership cost** due to consolidation of process management, application, and business partner integration capabilities in a service-oriented environment
- **Rapid ROI and reduced time and project costs** through prepackaged integration scenarios

For More Information

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