What is NetWeaver?

Set of cooperative technologies that provide internal connectivity (integration) between SAP modules and external connectivity with other systems.

- Eases integration between systems.
- Provides framework for development.
- Open and standards-based.
Evolution of ERP through 3 eras

SAP ERP Product Evolution
Evolving the Operating Platform

From SAP NetWeaver Composition Environment, Oliver Mayer

SAP Enterprise System Architecture
NetWeaver vs. Legacy Structure—end user experience

Service Oriented Architecture

NetWeaver uses a Service Oriented Architecture (SOA) as its core framework.
8 Major NetWeaver Components

1. SAP Web Application Server (WAS)

Application platform for runtime functionality and development.

- All NetWeaver components are built on SAP WAS.
- Components written in J2EE or ABAP.
- Debuted with R/3 enterprise—core of the system.
- ESA design strategy.
SAP Web Application Server (WAS)

5 tiers to architecture:
- **Presentation layer** -- user interface
- **Business Layer** -- receives requests and formulates responses consistent with business logic.
- **Integration Layer** -- manages the integration among various systems.
- **Connectivity Layer** -- handles the actual transportation of inbound and outbound traffic (HTTP, HTTPS, SSL, SMTP, SOAP, etc.)
- **Persistence Layer** -- connectivity to OS and Database infrastructure.

SAP Web Application Server Architecture

[Diagram showing layers of SAP Web Application Server]

Graphic from: SAP Web Application Server: Architecture and Programming Model by Matt Kangas, SAP Labs
Programming Language Support

Persistence
5 key SOA/ESA standards-based elements

- XML (Extensible Markup Language)
- SOAP (formerly Simple Object Access Protocol)
- UDDI (Universal Description, Discovery, and Integration Services)
- WSDL (Web Services Description Language)
- BPEL/BPEL4WS (Business Process Execution Language/for Web Services)

Services in Action
2. SAP Exchange Infrastructure (XI)

Provides infrastructure for XML-based message/data exchanges among SAP components and non-SAP components.
In latest/upcoming NetWeaver release, renamed Process Integration (PI).
Provides connectivity with systems external to a company's in-house landscape.
Exchange Infrastructure Components

Integration Builder (IB)  Central Monitoring  Runtime Workbench
Integration Repository (IR)  Integration Directory (ID)

System Landscape Directory (SLD)

Graphic from: Introduction to SAP Exchange Infrastructure by Wolfgang Fassnacht and Ginger Gatling

Exchange Infrastructure Design

Integration Builder  Integration Repository
Scenario Editor  Integration Scenarios  BPEL
Process Editor  Integration Processes  XSLT
Mapping Editor  Mappings  Java
Condition Editor  Context Objects  XPath
Data Type Editor  Message Interfaces  WSDL
System Landscape Directory  Message Types
Software Component
Version
Software Component
ABAP/Java Profiles
SAP
XSD

Graphic from: Introduction to SAP Exchange Infrastructure by Wolfgang Fassnacht and Ginger Gatling
Integration Server/Adapter Architecture

Graph from: Introduction to SAP Exchange Infrastructure by Wolfgang Fassnacht and Ginger Gatting

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