



# SAP NetWeaver Developer Studio and Java Development Infrastructure

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## **SAP NetWeaver Developer Studio**

- **Mission Statement**
- **Eclipse**
- **Java Dictionary, J2EE Tool Set, Web Dynpro Tools**

## **Java Development Infrastructure**

- **Component Model**
- **Design Time Repository**
- **Component Build Server**

## Mission Statement

- Provide an integrated and robust development infrastructure for Java projects at customer and partner sites as well as for SAP's own development
- Provide a highly productive Java development environment that
  - ◆ Covers the complete life cycle of Java projects
  - ◆ Reduces costs in professional Java projects
  - ◆ Speeds up the Java development process
  - ◆ Increases the overall quality of Java based products



## SAP delivers an integrated development environment for all aspects of J2EE development

### User Interface

- Developing flexible web user interfaces with Web Dynpro Tools

### E-business logic

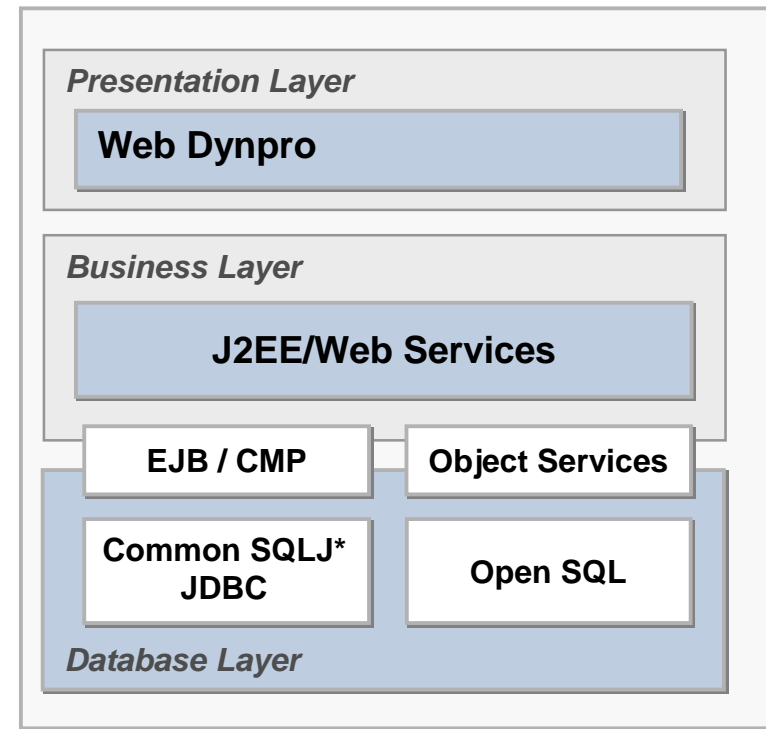
- Development and deployment of enterprise Java beans (EJB)
- Definition and publication of web services

### Java persistence

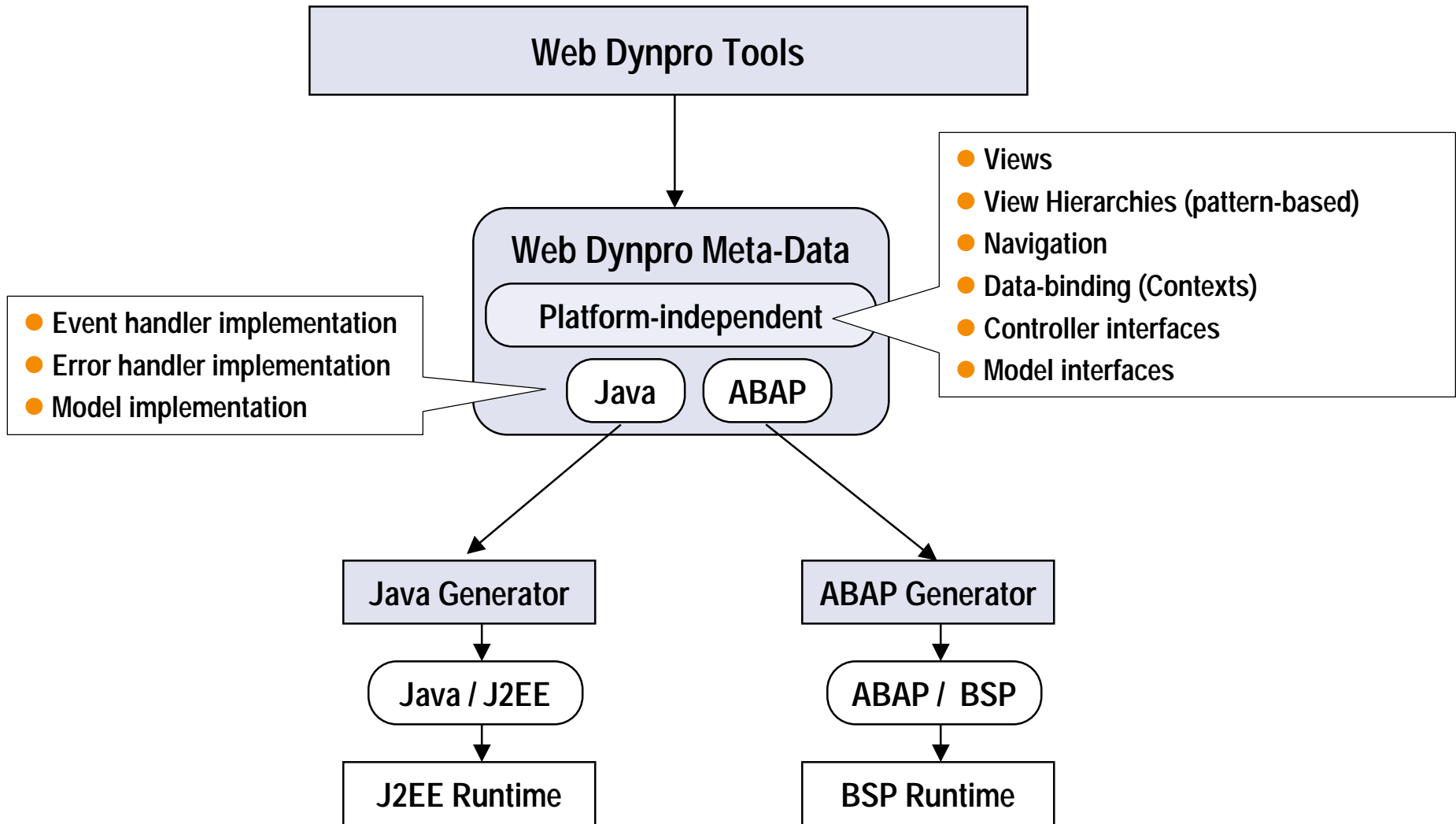
- Container managed persistence (CMP)
- Embedded SQL in Java (SQLJ)
- Java data objects (JDO)

### Creating central data types and database objects (Java dictionary)

### Design time support for HTML, XML and XSLT (Validation, Code completion)



# Web Dynpro – Model-driven Architecture



# Web Dynpro – Advantages

## Web Development for mission critical applications

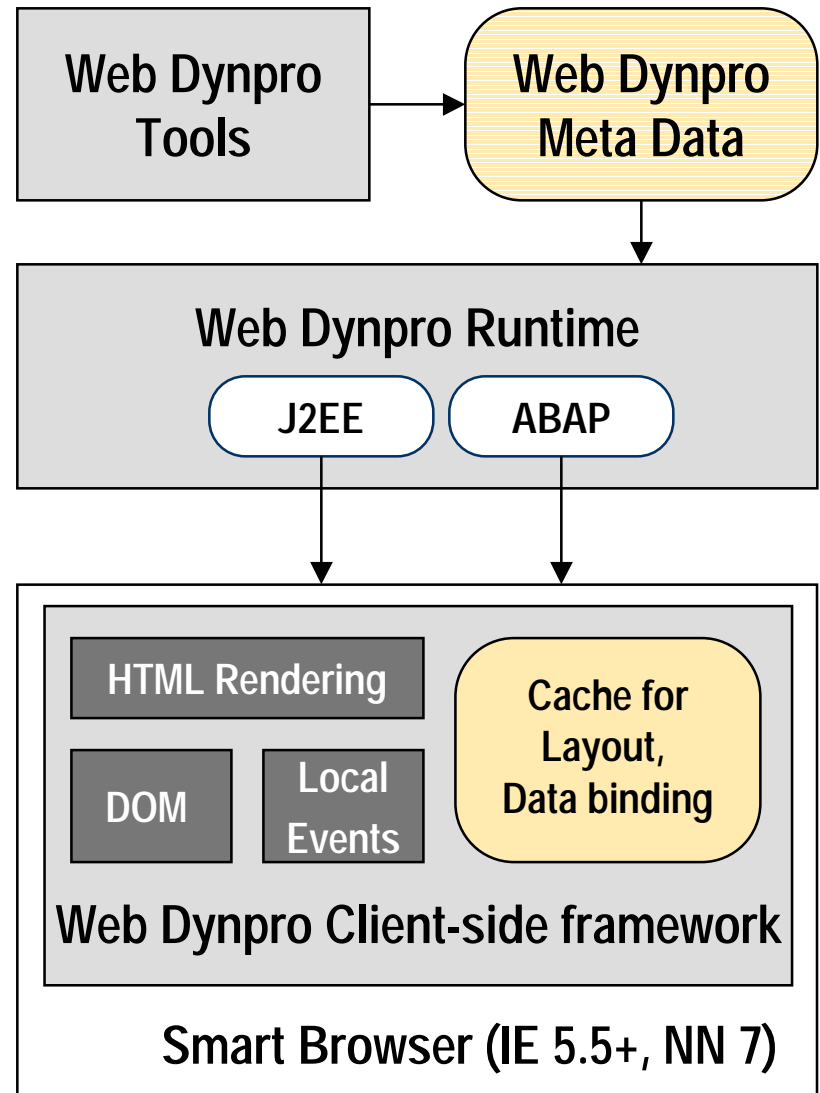
- Minimal coding, maximal design
- Separation presentation and business logic
- Backend Integration
- Pattern based

## Platform Independence

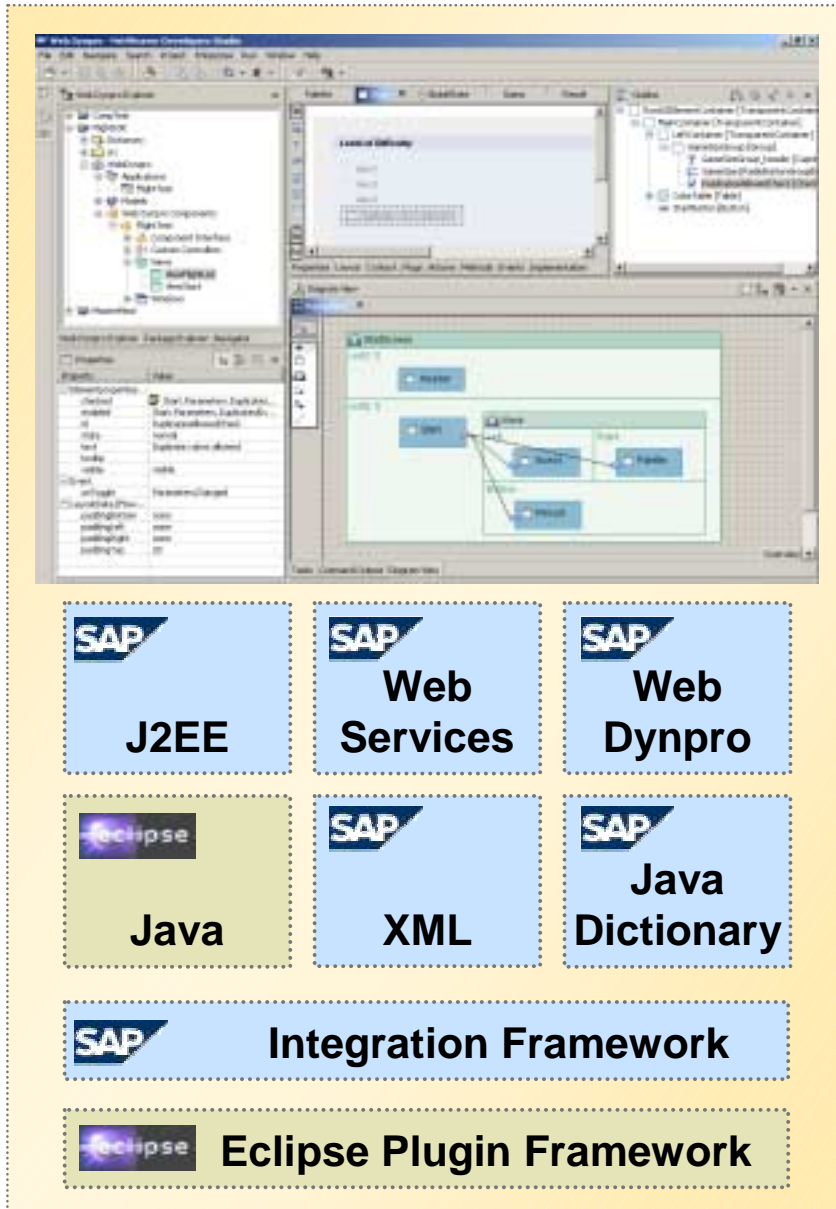
- Runs on all platforms

## Modern web based UI

- Browser based, „zero footprint“
- Incremental rendering
- Client Side Framework
- Intelligent Caching
- Personalization
- Accessible

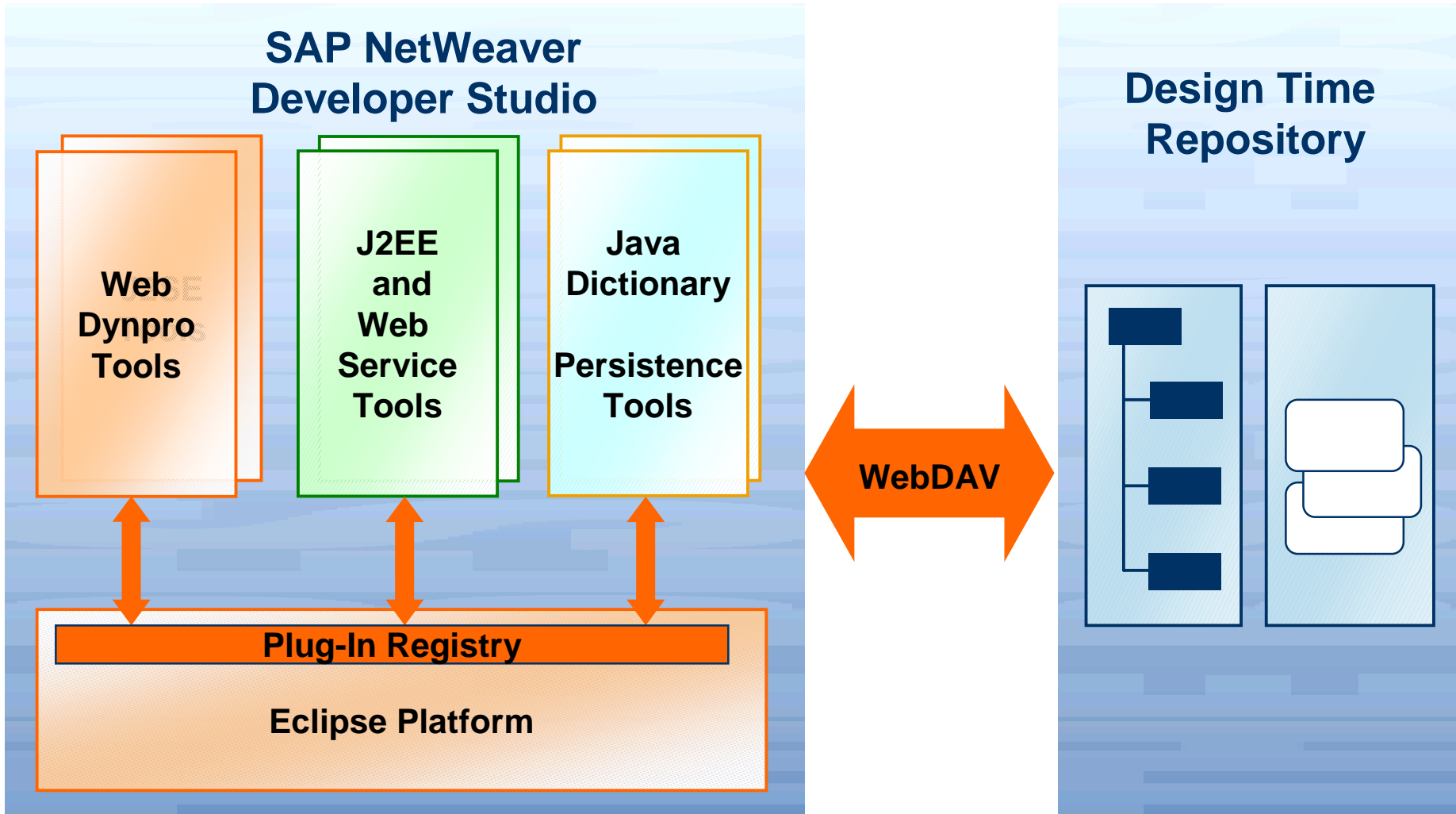


# SAP NetWeaver Developer Studio

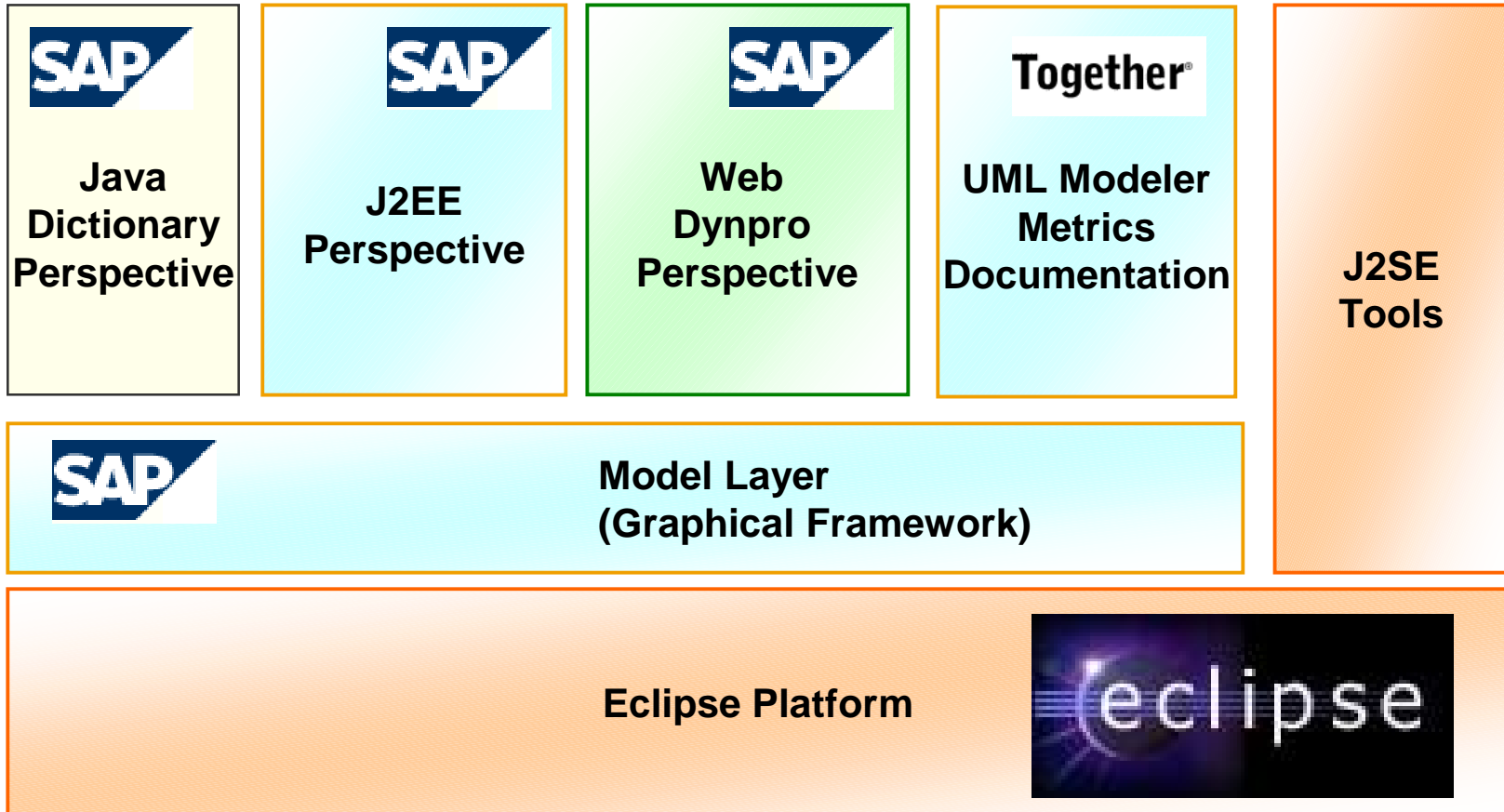


- Extensible and open IDE based on open source framework Eclipse
- Easy-to-use tools to design, develop, deploy and continuously change mission critical business applications in Java / J2EE
- Focus on graphical tools
- Web Services Tools for connectivity based on open standards
- Web Dynpro Tools for model-driven user interface design
- Java Dictionary for centralized data type and data structure management

# Eclipse: Platform for SAP NetWeaver Developer Studio



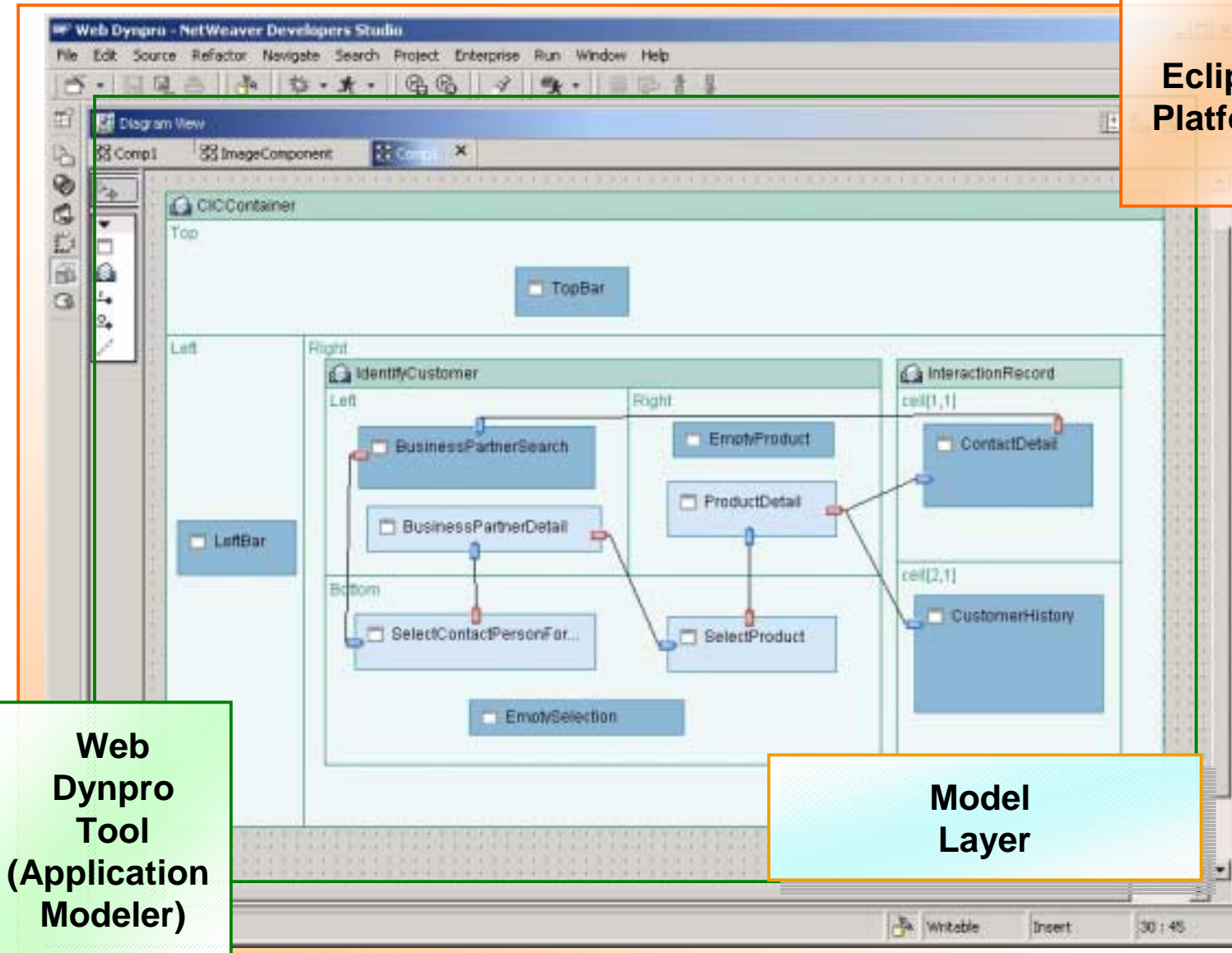
# SAP NetWeaver Developer Studio: software layers





# Web Dynpro Tools: Navigation Modeler

Eclipse Platform



Web Dynpro Tool (Application Modeler)

Model Layer

# SAP NetWeaver Developer Studio: Together Edition

The screenshot displays the SAP NetWeaver Developer Studio interface with the following components:

- UML Explorer:** Shows a project structure with packages like 'patterns.gof' and 'patterns.gof.adapter'.
- Diagram View:** Displays a UML class diagram for 'AbstractFactory (Ab...' with an association to 'Interface ProductA' labeled 'abstractProduct?'. An 'Overview' window shows a hierarchical view of the project.
- Sequence Diagram:** Shows an interaction between 'Object1' and 'Object2'. Messages include '1.1.1: getIcon(): java.awt.Icon' and '1.1.1.2: Message with Delivery Time'. A 'Return link' is also visible.
- Properties:** Shows properties for the selected diagram, such as 'Package Diagram' and 'name: abstract\_factory'.
- Error Log:** Lists various error messages, including 'Problems occurred while...' and 'Internal error'.



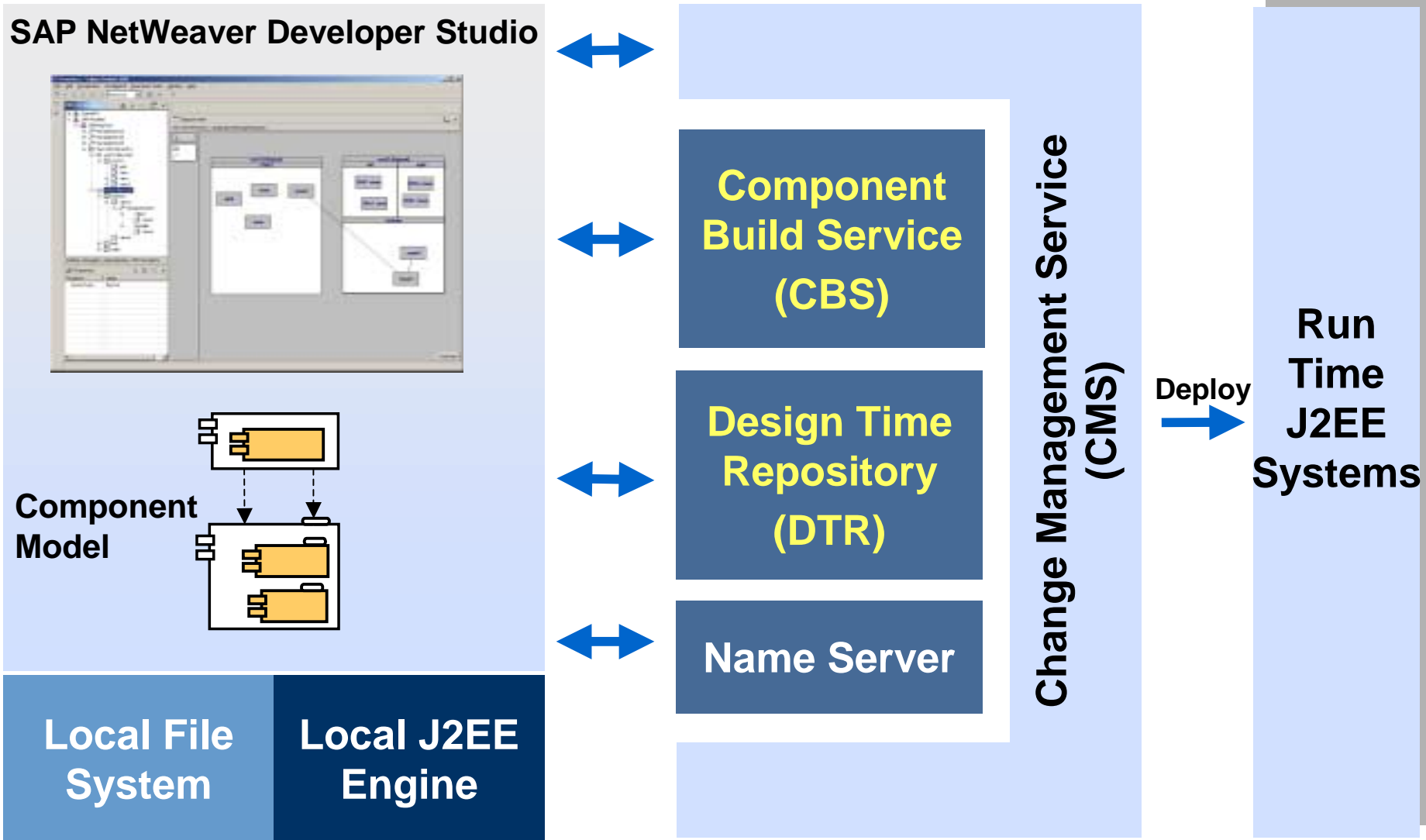
**Most J2EE environments in the market offer a rather limited development infrastructure**

**A significant amount of manual work is necessary to setup a consistent Java development environment on a developer's machine for each project**



**Idea: Combine a local and file based designtime architecture with the advantages of an integrated server-based environment such as ABAP**

# Overview: Java Development Infrastructure



## Component Model for Java Development

- Software architecture through software and development components
- Component hierarchy
- Management of component dependencies

## Design Time Repository

- Files and folder based repository
- Distributed source code control
- Flexible development landscapes

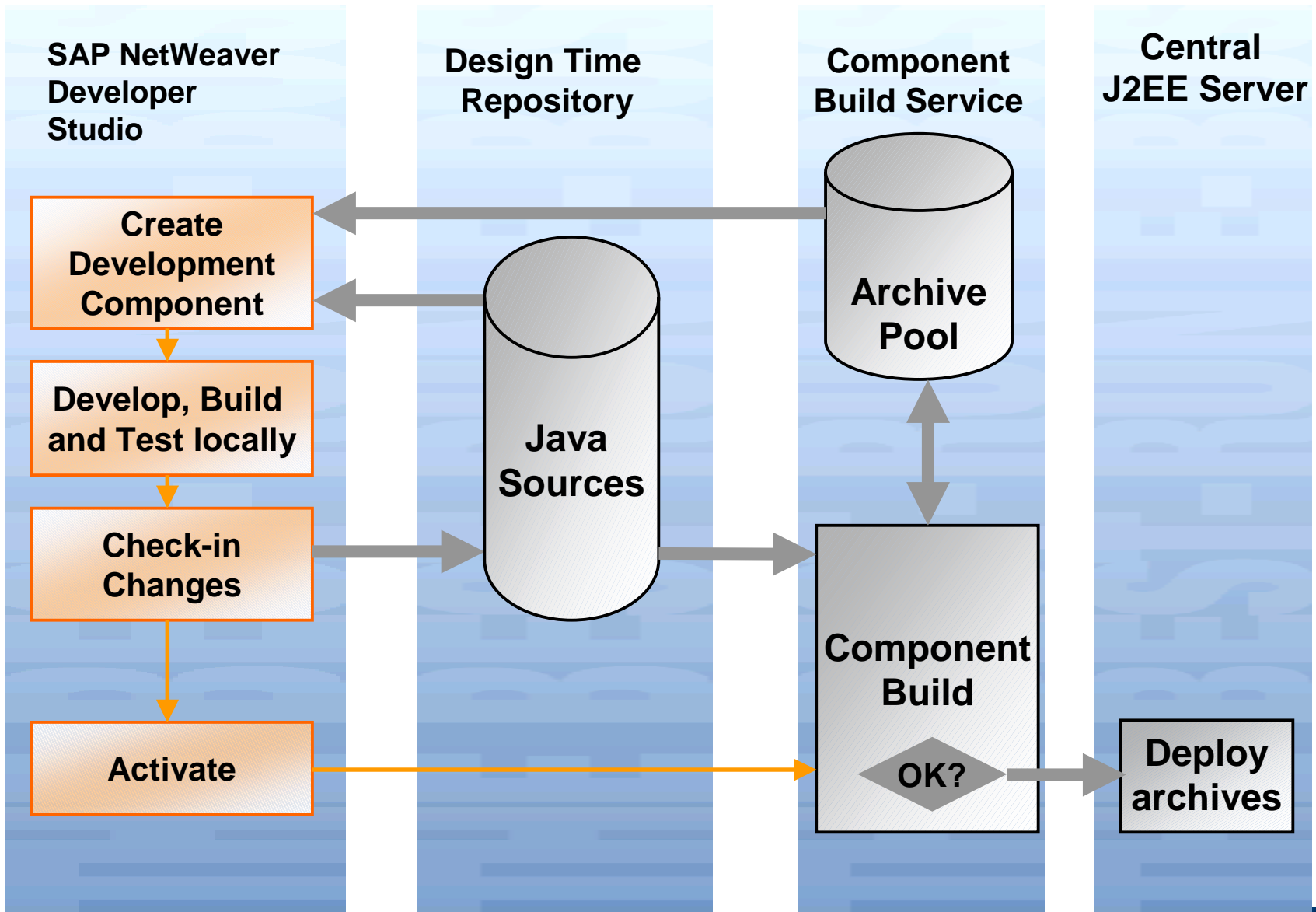
## Component Build Service

- Automatic & immediate build of changed and dependent components
- Provide consistent environment, automated update of local environment

## Change Management Service

- Automatic deployment to the J2EE runtime environment
- Propagation of changes between different repositories
- Maintenance of (both SAP and customer) Java solutions

# SAP Java Development Process



## Development Objects

- Stored as versioned files in the source repository (DTR)

## Development Components (DCs)

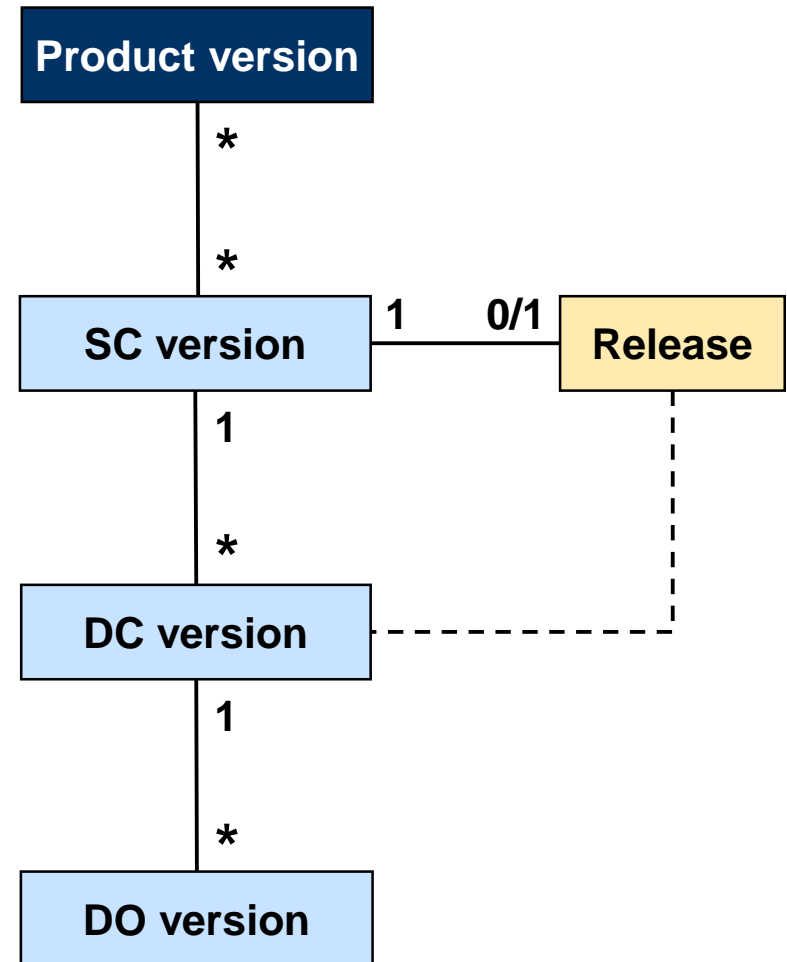
- Development and build units
- Group development objects without overlapping

## Software Components (SCs)

- Delivery and installation units (like e.g. HR in ABAP)
- Group development components without overlapping
- Own the release definition

## Products

- Overlapping selections of software components



# Development Components

## Development Component (DC):

- Container for development objects and built units
- DCs are grouped to make software components

## Nested DCs

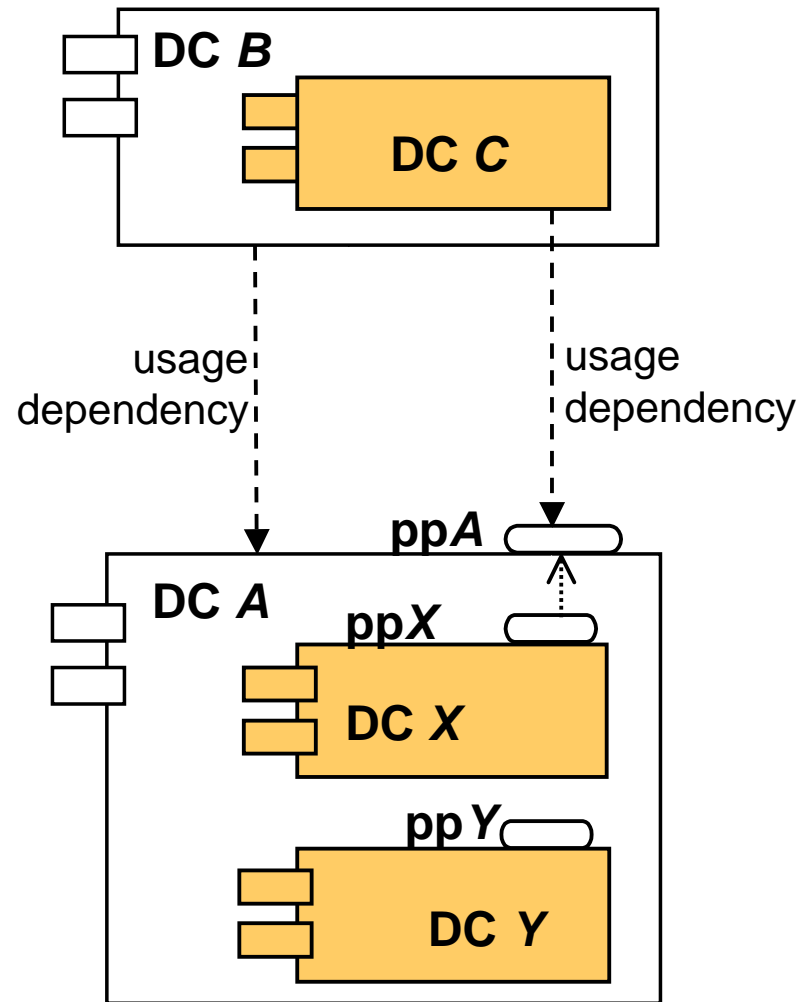
- DCs may be contained in another DC

## Public parts

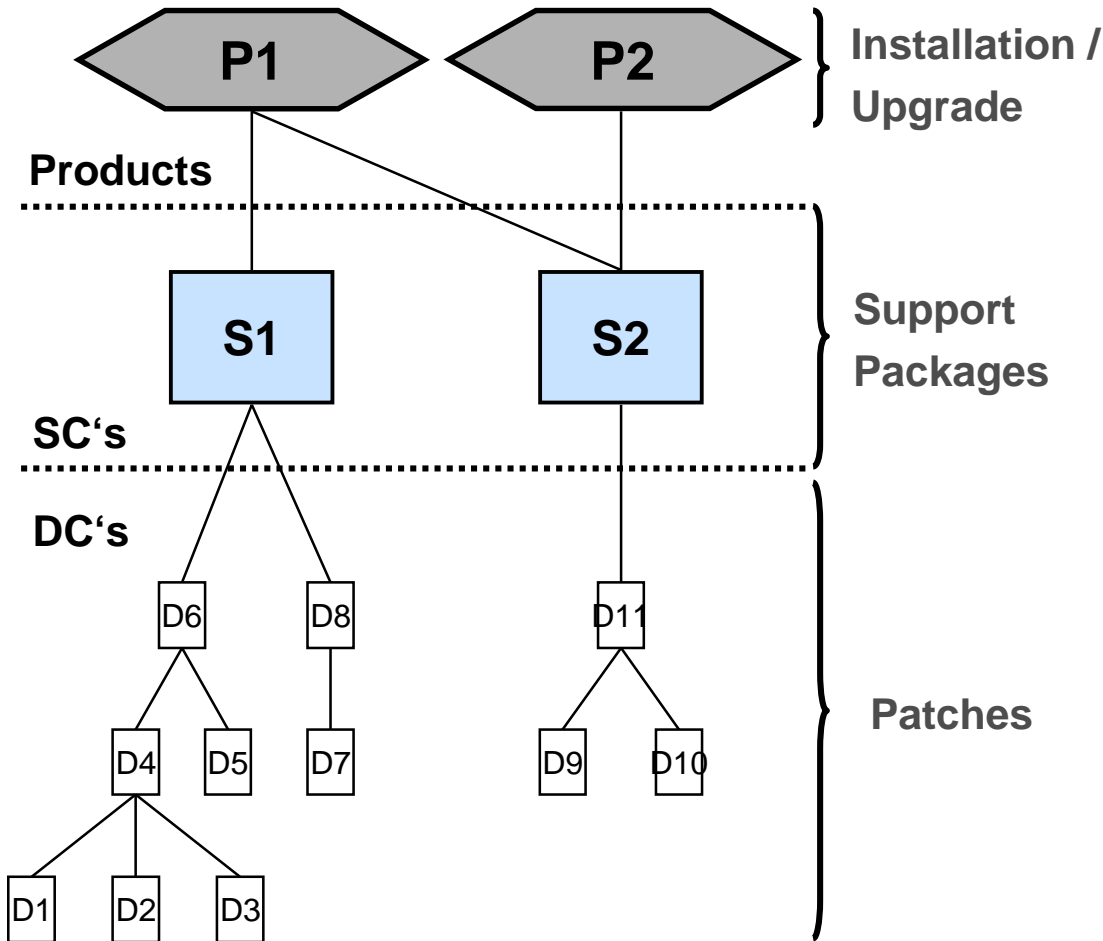
- Elements of a DC that may be used by other DCs (DC-interfacing)

## Usage dependencies

- Declare that a DC uses parts of other DCs during build or runtime



# Component Model in Delivery and Maintenance



## Release

- is a full delivery of SCs providing extra features and enhancements
- defines new Support Intervals
- Delivery of new functions and new user interfaces

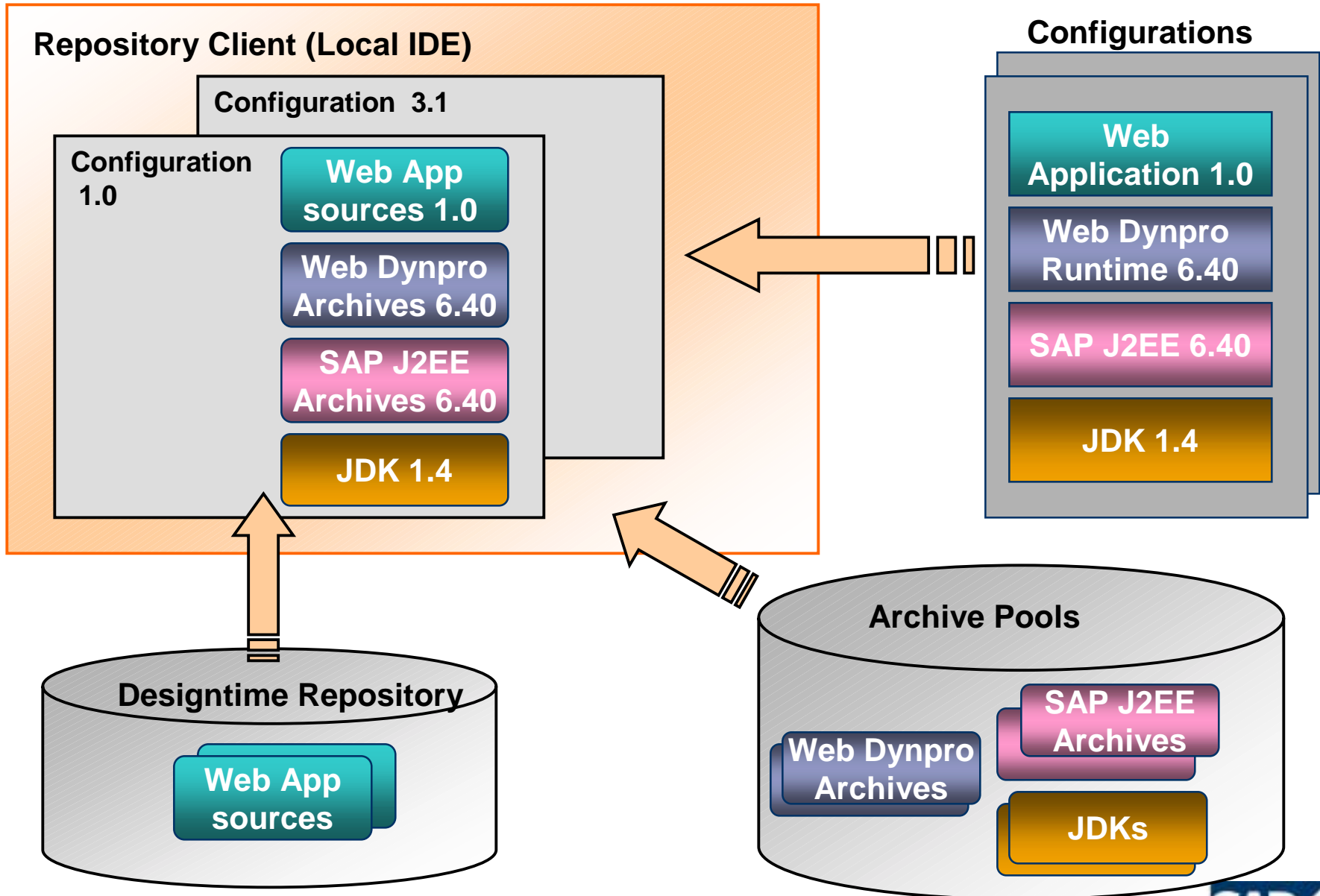
## Support Package

- is a full delivery of an SC bundling bug fixes
- should not require new trainings for the end users
- should be fully compatible with the original delivery of the SC
- does not extend the Support Interval

## Patch

- is a full delivery of a DC providing a new Bug Fix

# Local Integrated Development Environment



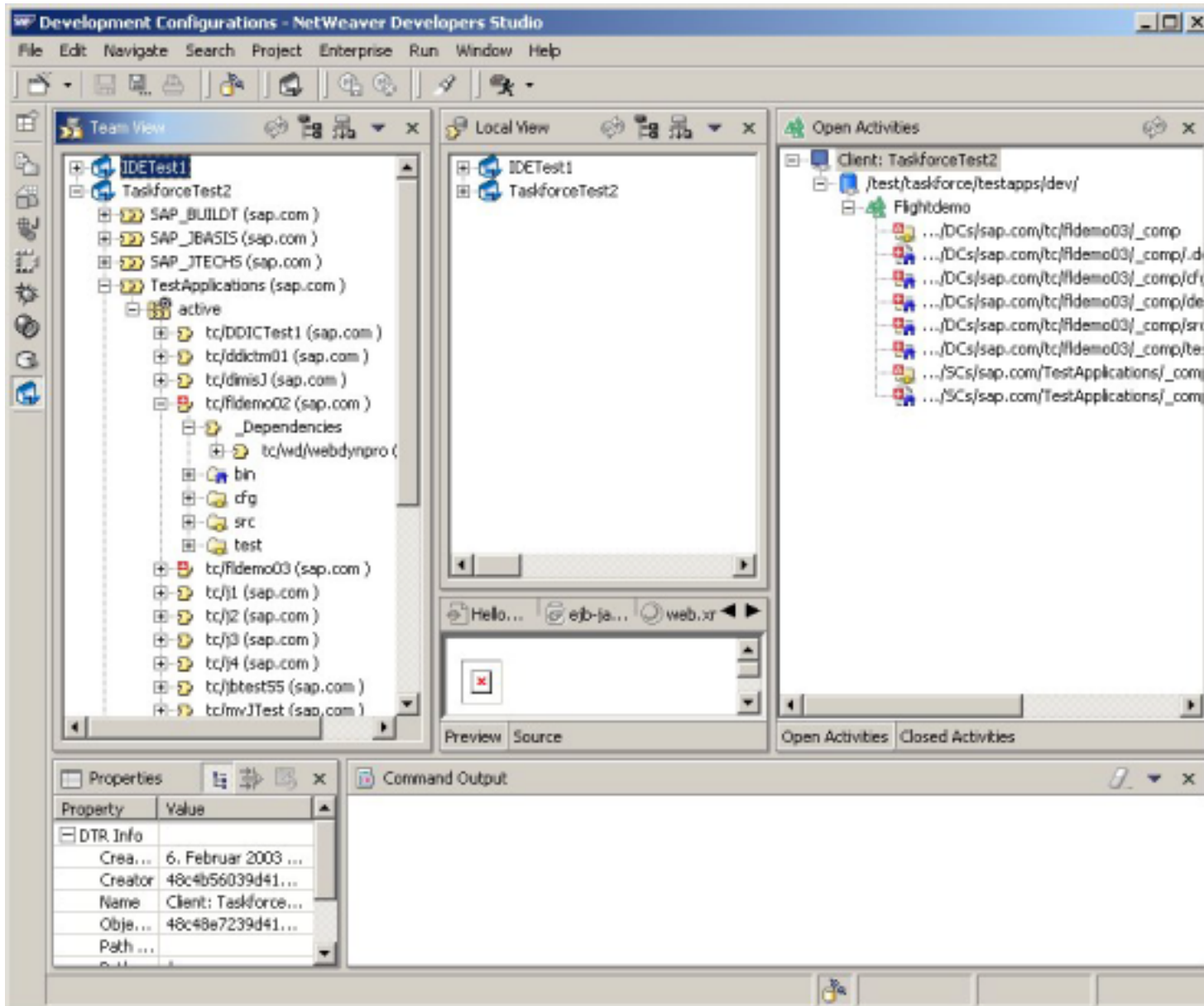
# Designtime Repository

The screenshot shows the DTR - NetWeaver Developers Studio interface. The main window is divided into several panes:

- Repository Browser:** Displays a tree view of the project structure. The selected node is `dcdef.wizard` under the path `Client: TaskforceTest2 > test > taskforce > testapps > dev > DCs > sap.com > tc > dcdef.wizard`.
- Preview:** Shows a web page titled "Display a List of Flights". It features two dropdown menus for "From" (set to "Frankfurt") and "To" (set to "New York"), and a "Show list" button.
- Properties:** A table showing the properties of the selected `dcdef.wizard` object.
- Command Output:** A text area for displaying command-line output.

Property	Value
Branch ...	0 / 0
Content...	
Last Mo...	13. Februar 2003 14:...
Last Mo...	
Name	dcdef.wizard
Object ID	
Path (lo...	C:\Documents and Se...
Path (re...	[/test/taskforce/test...

# Screenshot Development Configurations



## **SAP NetWeaver Developer Studio is based on Eclipse**

### **SAP NetWeaver Developer Studio offers tools**

- **Web Dynpro**
- **J2EE 1.3**
- **Java Dictionary**
- **Web Services**

### **Java Development Infrastructure offers:**

- **Repository Access (DTR)**
- **Component based Build (CBS)**
- **Change Management (CMS)**

# Q&A



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