

WebSphere software



# WebSphere v5.0

Tools and Runtime - Overview

IBM Software Group

# Objectives

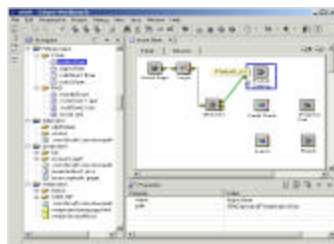
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- Describe the benefits of WebSphere Studio Workbench
- Compare WebSphere Studio Family of Products
- Focus on WebSphere Server products and packaging and WebSphere Studio tool for the appropriate server
- Summarize Development and Deployment Scenario

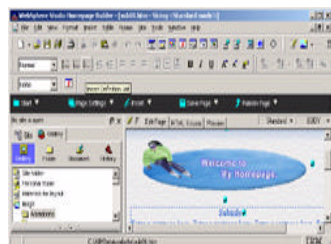
# Development Roles

Each Development Role Requires Specialized Tooling

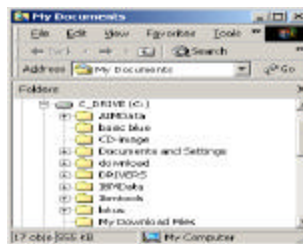
Application  
Modeling Tools



Web Site  
Construction Tools



Java Development  
Tools



4GL Development  
Tools



COBOL Development  
Tools



**SOLUTION**

An integrated platform for  
e-business development

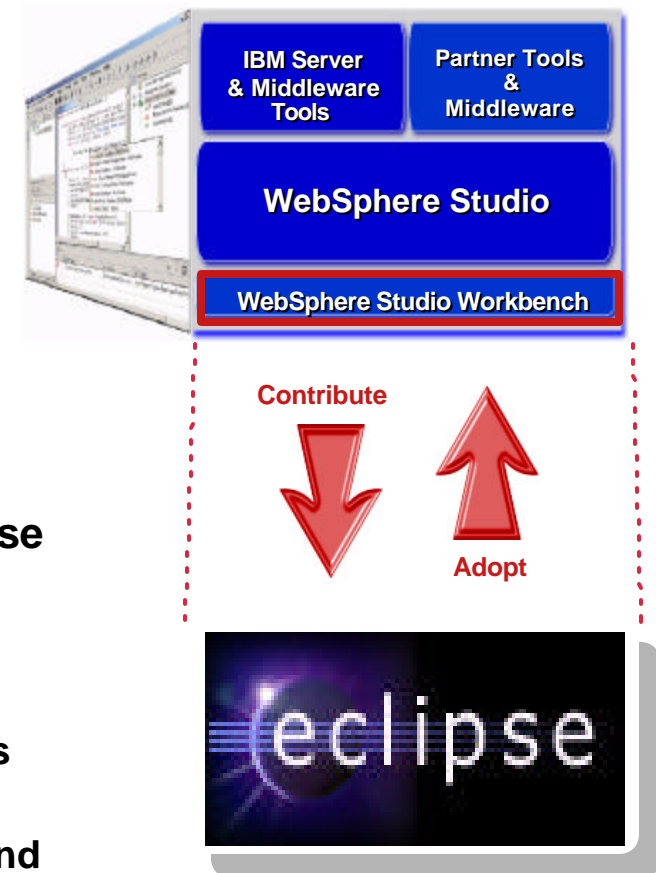


WebSphere Studio Family of Products

# WebSphere Studio Workbench

## An Open, Extensible WebSphere Tool Platform

- ★ **Workbench is IBM's commercially supported implementation of Eclipse**
  - ✓ Not a product but a Foundation for the *new* WebSphere Studio family of tools
  - ✓ First AD integration platform to fully embrace open technologies, adopting the open approach that has been so successful for Apache, J2EE and Linux
  
- ★ **\$40M software/R&D contributed as initial Eclipse technology**
  - ✓ Licensed via Common Public License
  - ✓ Enables partners and customers to develop, customize and integrate tools and repositories via open standards
  - ✓ Based on Java, with initial support for Linux and Windows
  - ✓ IBM will continue participation in Eclipse development, and adopt enhancements

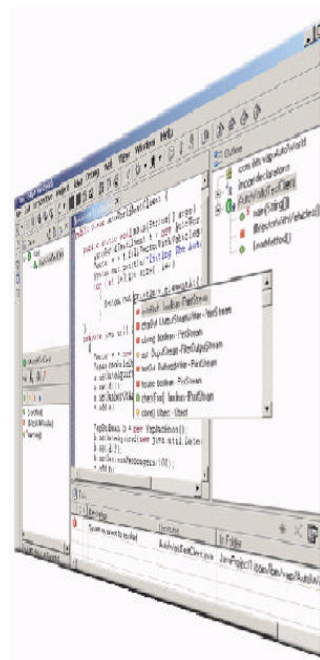


[www.Eclipse.org](http://www.Eclipse.org)

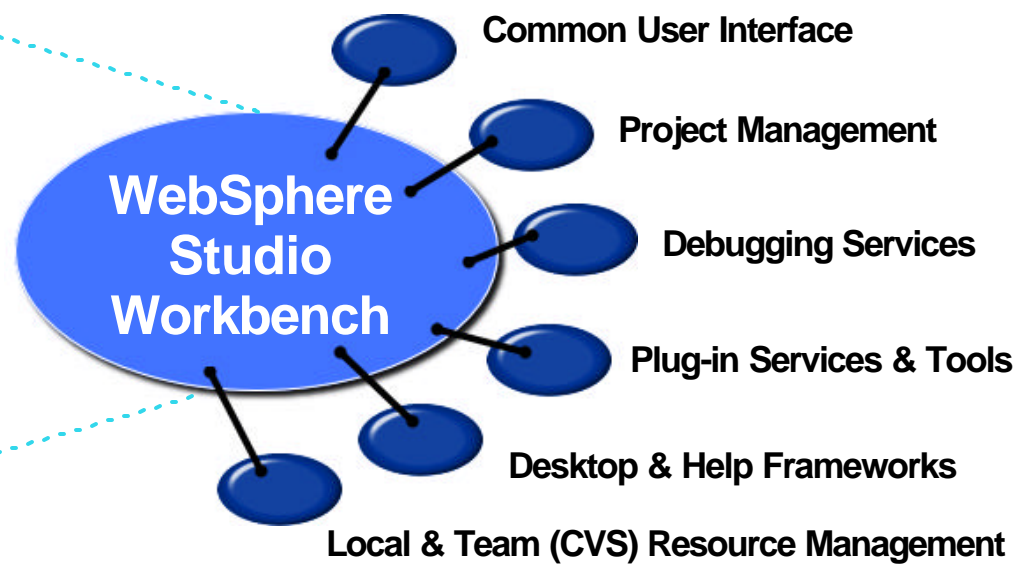
# ..WebSphere Studio Workbench.....

An integrated, personalized,  
extensible development platform  
organized via developer

"Perspectives"



Products built  
with  
Workbench  
inherit these  
capabilities  
plus 'plug-ins'  
built by  
others

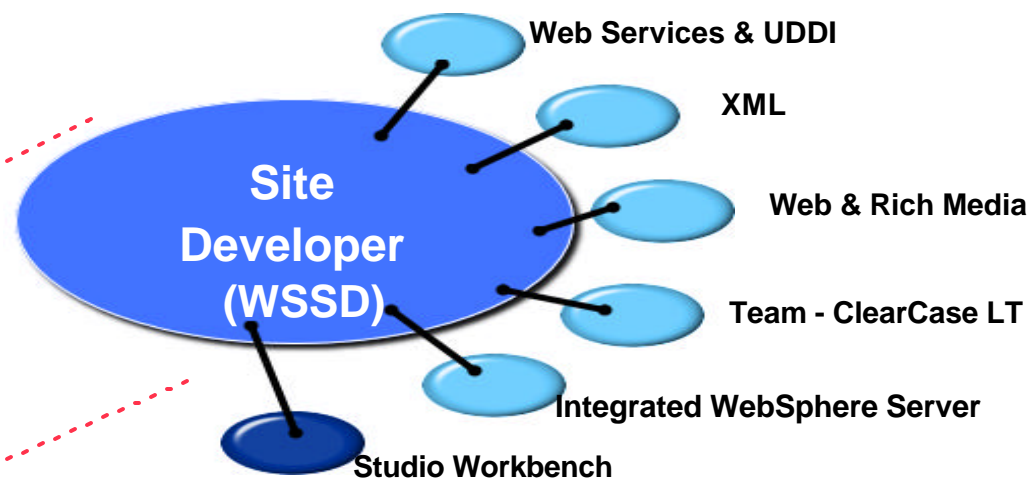
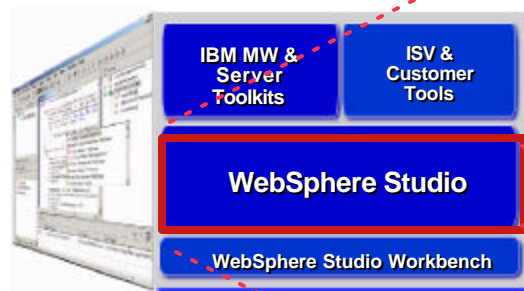


## Section .....

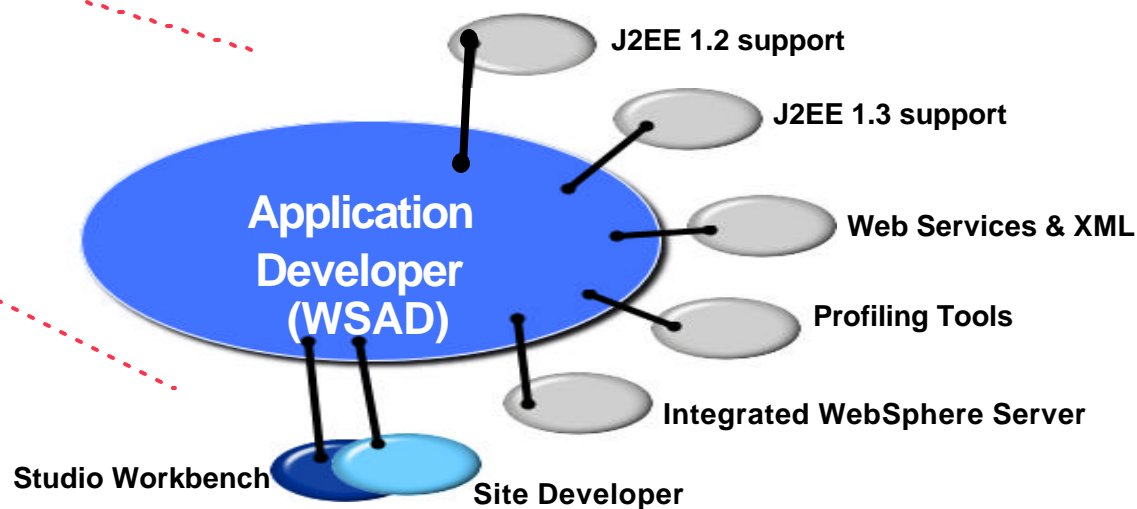
# *WebSphere Studio Family of Products*

## WebSphere Studio Family of Products - WSSD and WSAD

- ★ For professional developers of dynamic Web applications & sites

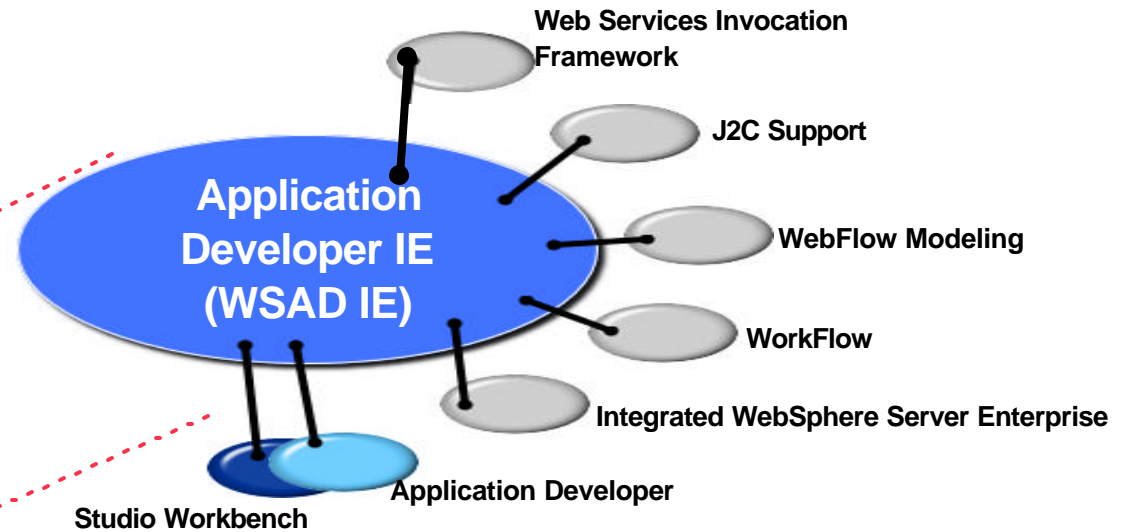
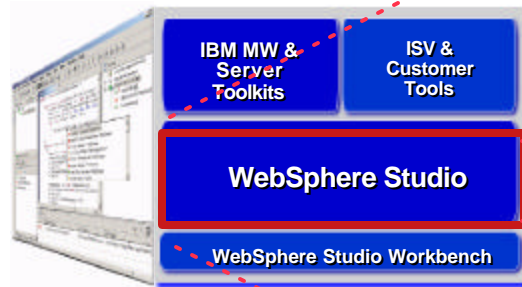


- ★ For professional developers of J2EE Applications

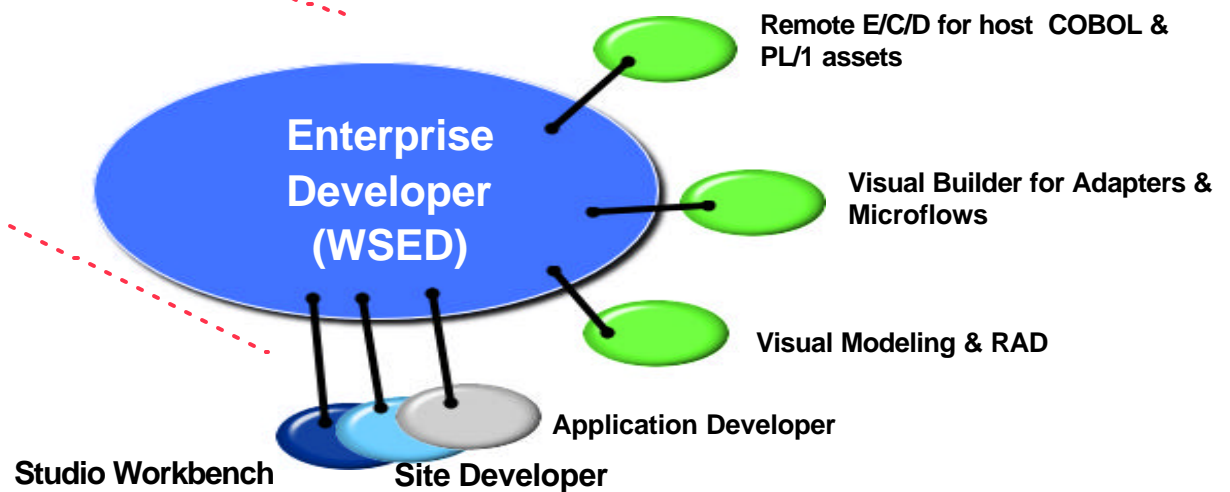


## WebSphere Studio Family of Products - WSAD IE and WSED

- ★ For professional developers of J2EE Applications and Enterprise Extensions



- ★ For developers & integrators of advanced tooling like RAD, Visual Modeling



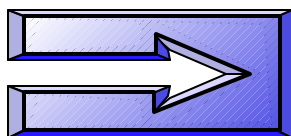


# WebSphere Studio Family of Products Comparison

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One tool with multiple configurations to suit development roles

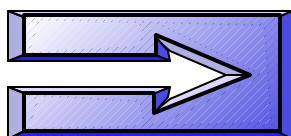
VisualAge  
Enterprise Suite



**Enterprise**

**WebSphere Studio  
Enterprise Developer**

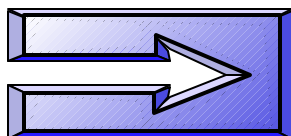
VisualAge  
for Java



**J2EE  
Extensions**

**WebSphere Studio  
App. Dev. Integration Edition**

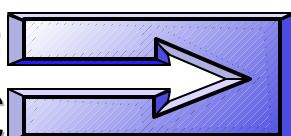
VisualAge  
for Java



**J2EE  
EJB**

**WebSphere Studio  
Application Developer**

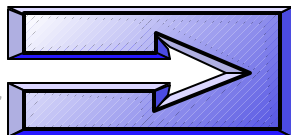
WebSphere  
Studio Classic



**Site  
UI**

**WebSphere Studio  
Site Developer**

Homepage  
Builder



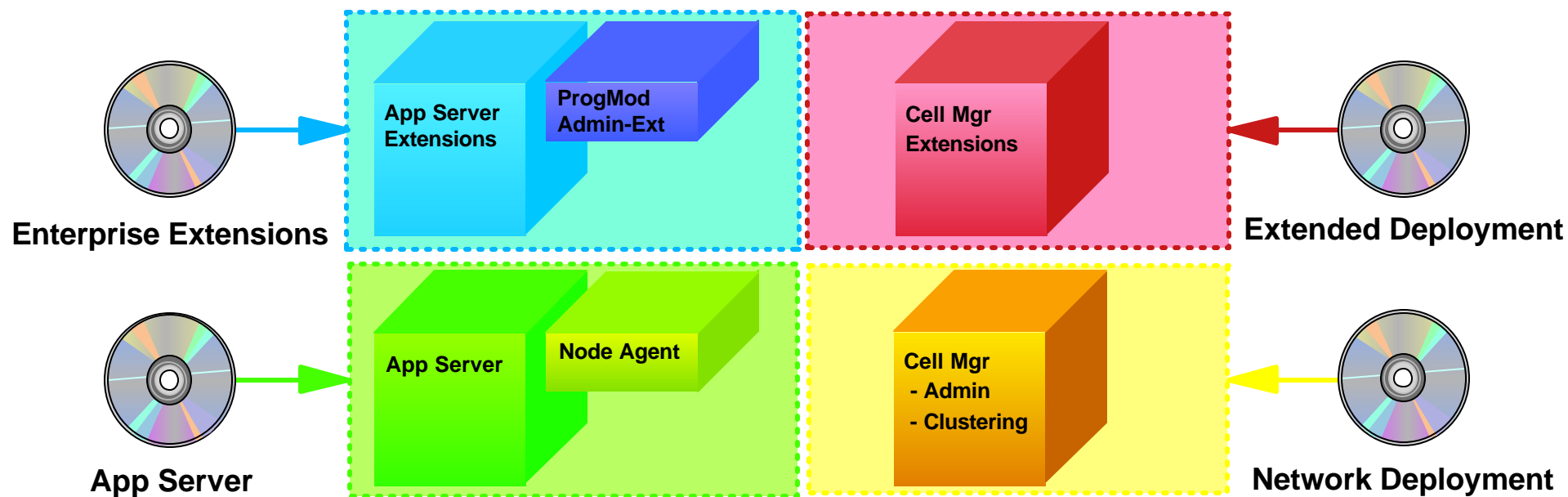
**Department**

**WebSphere Studio  
Homepage Builder**

## Section .....

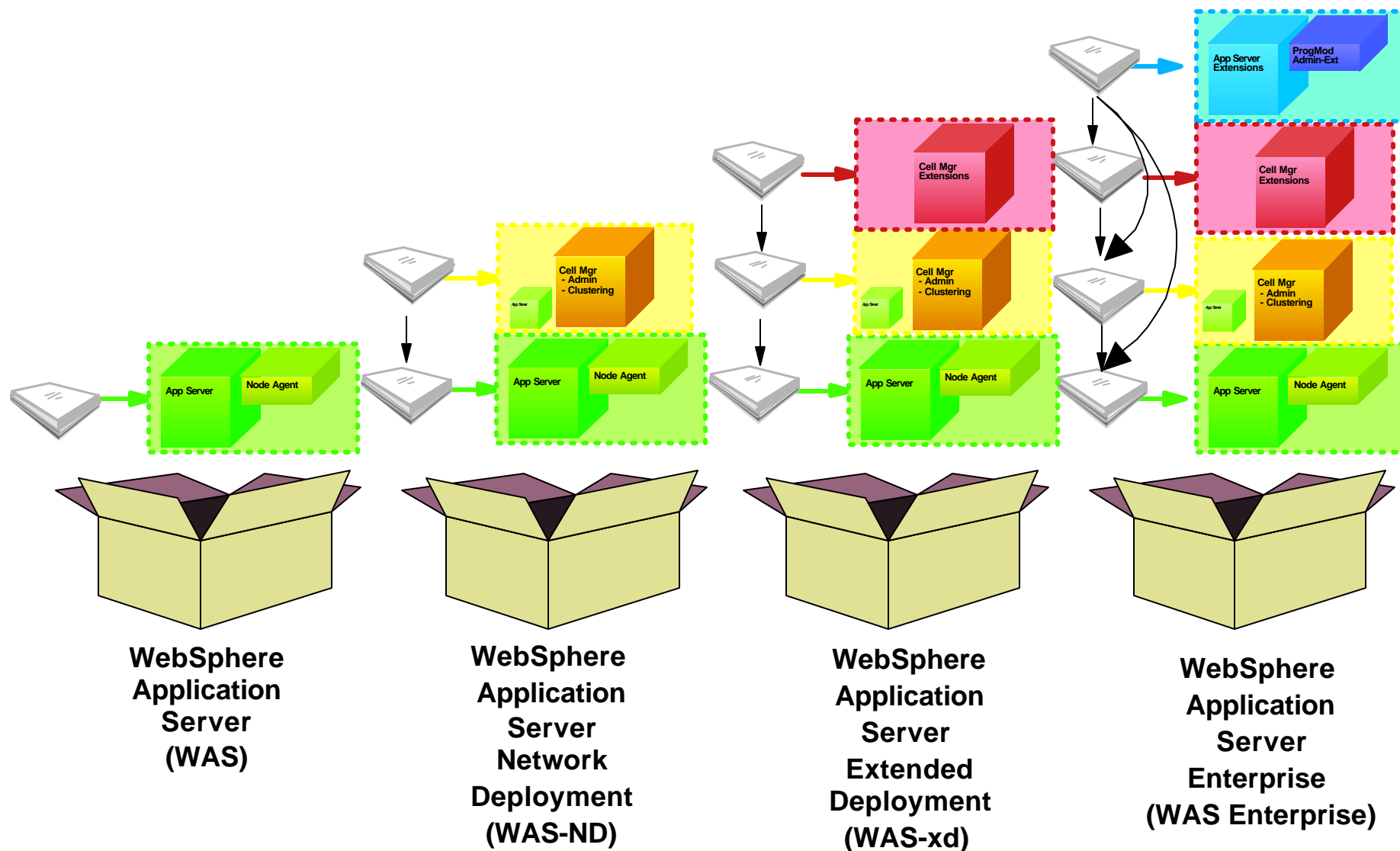
# *WebSphere Application Server Product Packaging*

# WebSphere Application Server v5.0 Packaging Modules

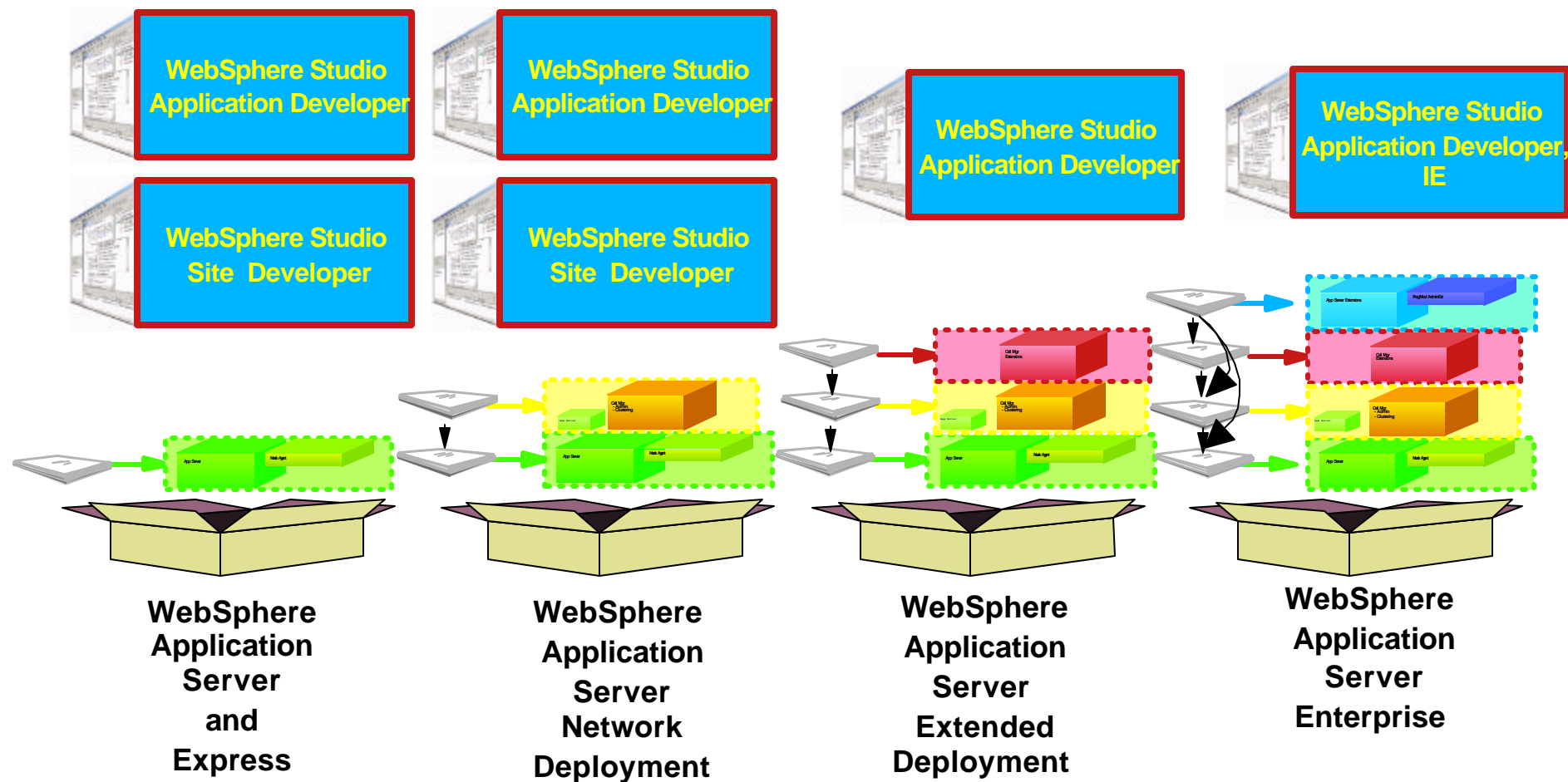


These modules combined in different packages provide the base of WebSphere Application Server packages

# WebSphere Application Server v5.0 Packaging



# Right Tool for the Job



Additionally, **WebSphere Studio Enterprise Developer** is geared towards additional functionality such as EGL Tooling, Struts based Visual Web Application Design and Assembly Tool, COBOL and PL/1 development tooling, etc.

# WebSphere 5.0: Standards Checklist

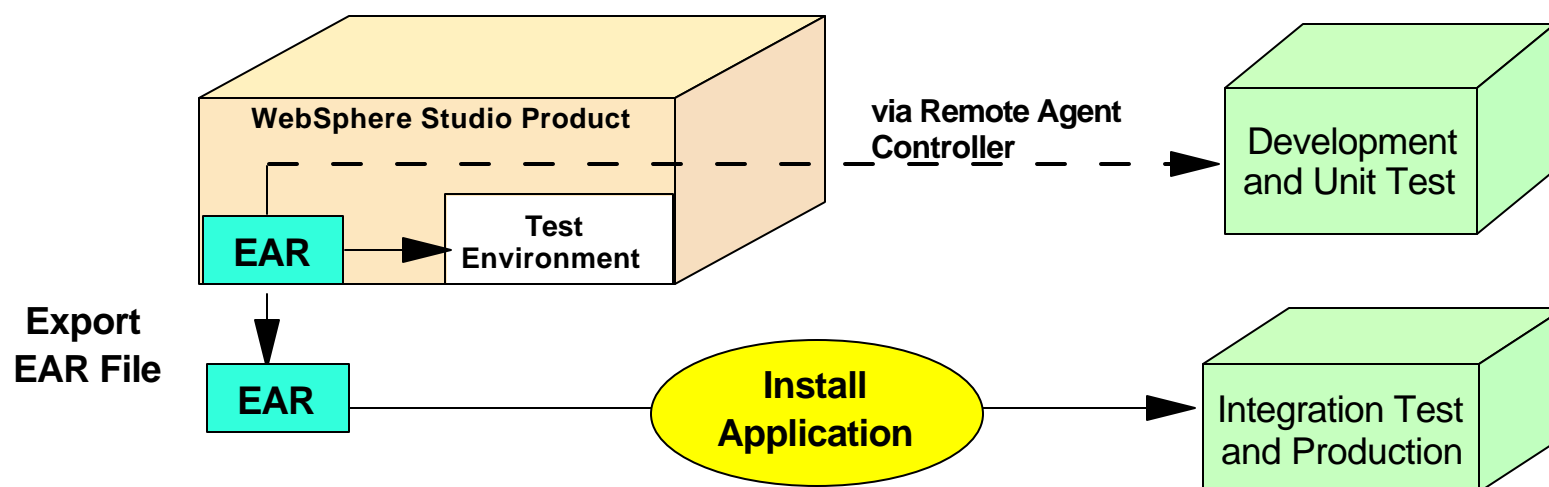
Standards	Level	WebSphere 5.0
J2EE	1.3	✓ Fully certified and part of Sun's J2EE list
EJB	2.0	✓ EJB 2.0 and EJB 1.1 support
JDK	1.3	✓ JDK 1.3
Servlet	2.3	✓ Servlet 2.3
JSP	1.2	✓ JSP 1.2
JTS/JTA	1.0	✓ w/distributed transactions
JMS	1.0.2	✓ With Native Provider, and MQ plug-in
JDBC	2.0+	✓ 2PC across heterogeneous databases
JNDI	1.2	✓ JNDI 1.2 for EJB lookup and CosNaming
RMI/IIOP	1.0	✓ Fully supported
JavaMail/JAF	1.2	✓ Plus Domino support
SSL Security JCE	2.0 1.3	✓ JSSE and JCE
XML JAXP	1.0	✓ XML in EJBs
J-IDL/CORBA		✓ IIOP 1.2
J2C	1.0	✓ Bean and container managed
LDAP		✓ SecureWay, iPlanet, ActiveDirectory
SQL-J		✓ Pluggable as a relational resource adapter
HTTP	1.1	✓ Yes, plus across multiple Web servers
SOAP SOAP-SEC	2.2.2 1.0	✓ Soap support for WebServices. Also available will be a tech preview of >
COM/ASP Support		✓ w/Java wrapping & proxy
JMX	1.0	✓ JMX pending
XML4J	4.0	✓ XML support
XSL	2.3	✓ XSL parser

## Section .....

# *Development and Deployment Process*

# Development and Deployment

	Test Environment Included	Development and Unit Testing	Integration Testing and Production
WebSphere Studio Site Developer - WSSD	WAS	WAS Express WAS WAS-ND WAS-XD	WAS Express WAS WAS-ND WAS-XD
WebSphere Studio Application Developer - WSAD	WAS	WAS WAS-ND WAS-XD	WAS WAS-ND WAS-XD
WebSphere Studio Application Developer Integration Edition - WSAD IE	WAS Enterprise	WAS Enterprise	WAS Enterprise
WebSphere Studio Enterprise Developer - WSED	WAS	WAS Enterprise zOS	WAS Enterprise zOS





## Summary

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WebSphere Studio Tools and WebSphere Application Server 5.0 provide an end-to-end development environment

**Tools+Runtime=Successful  
e-business applications**

Section .....

*Questions ?*

# Section

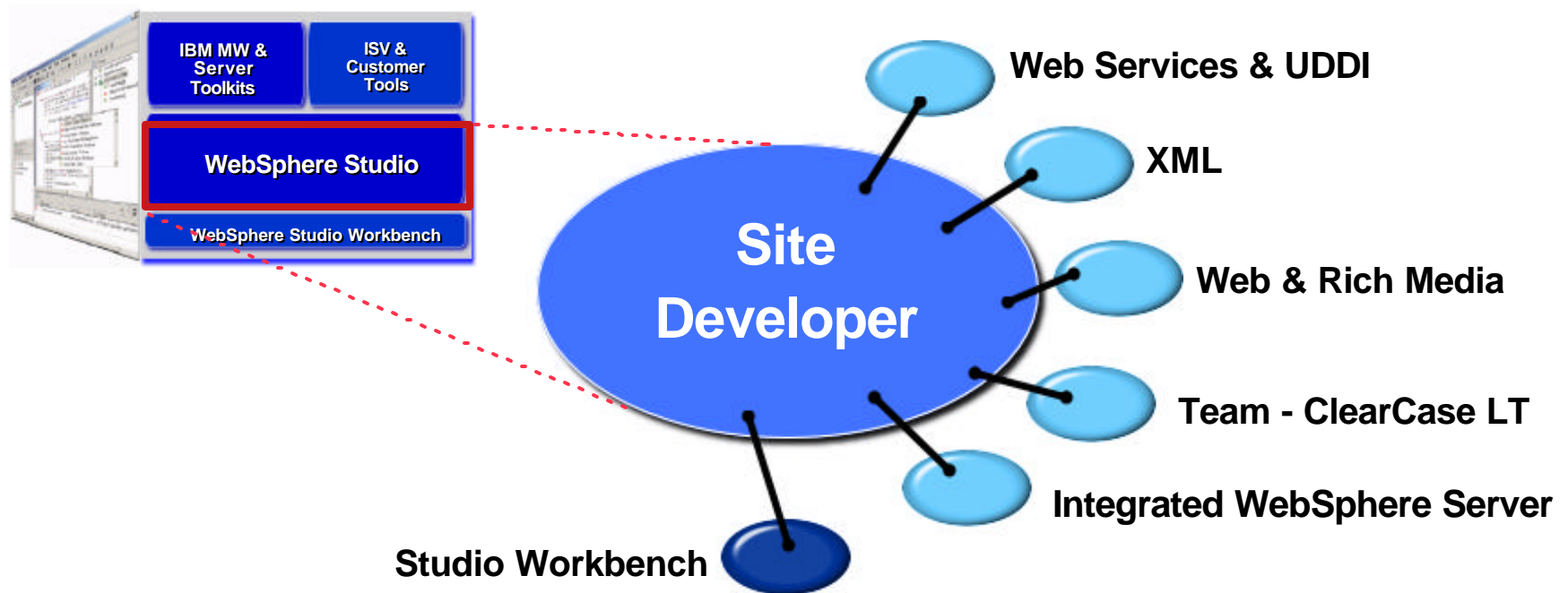


# *Appendix*

## WebSphere Studio **Site Developer** (WSSD)

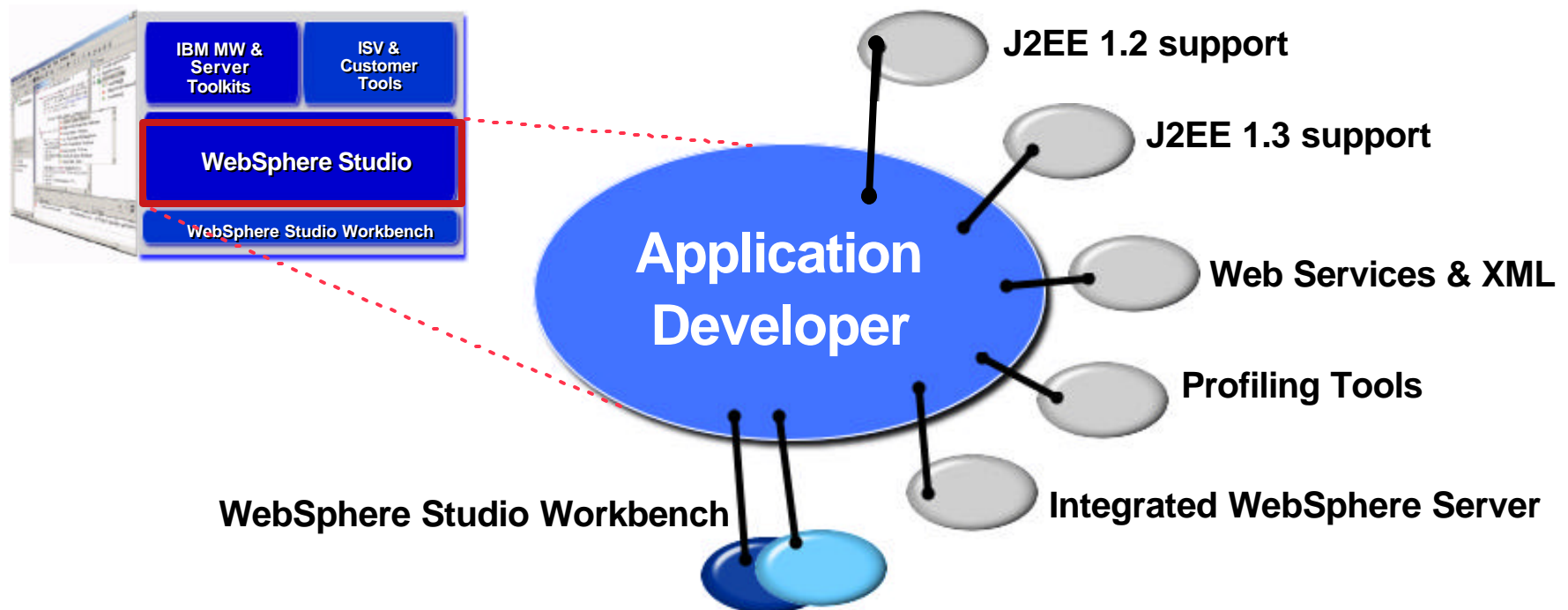
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- ★ For professional developers of dynamic Web applications & sites
- ★ Delivers integrated support for open Web standards, including Java, JSP, XML, Rich Media & Web services tools
- ★ Includes Rational ClearCase LT as a team development option



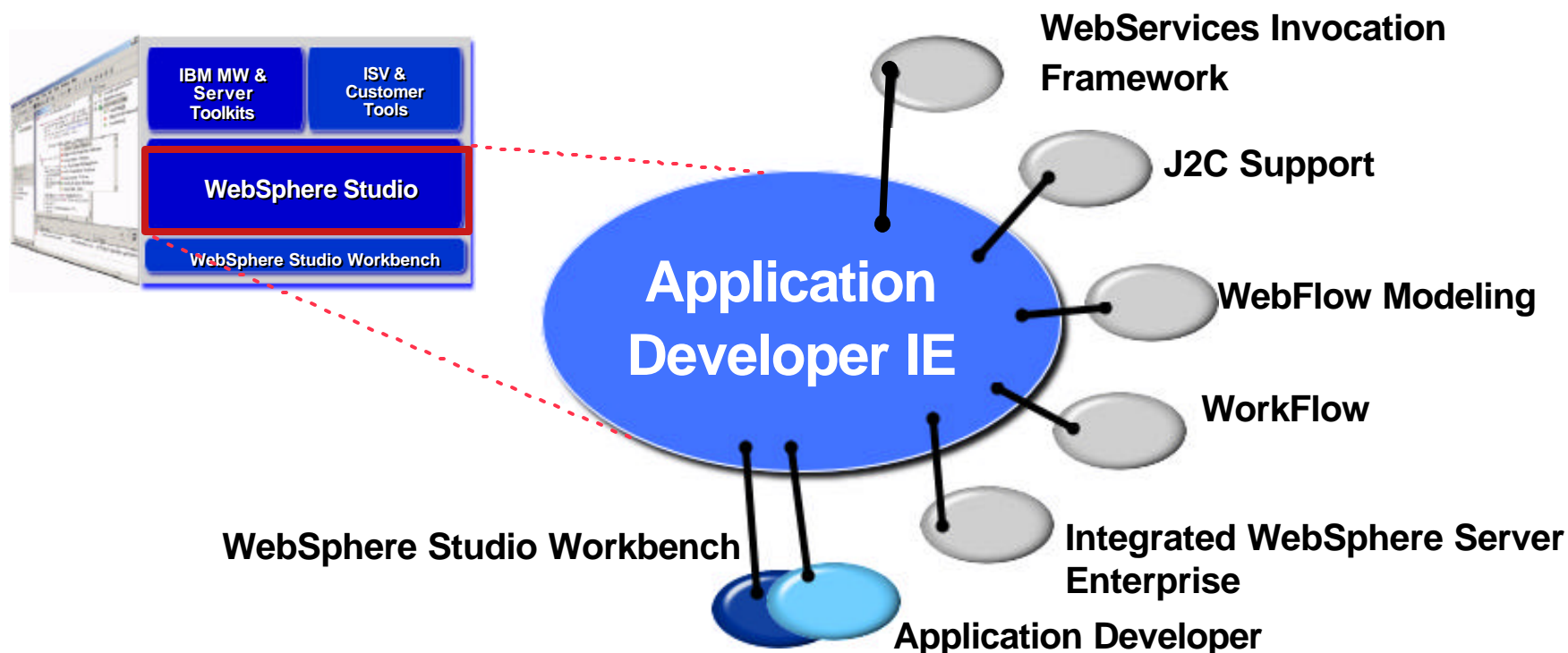
## WebSphere Studio **Application Developer** (WSAD) .....

- ★ For **professional developers of Java & J2EE applications**, requiring integrated Web, JSP, XML, EJB & Web services support
- ★ Advanced tools for code generation, performance tuning & quality
- ★ Includes a highly integrated WebSphere Application Server test environment and deployment automation tools



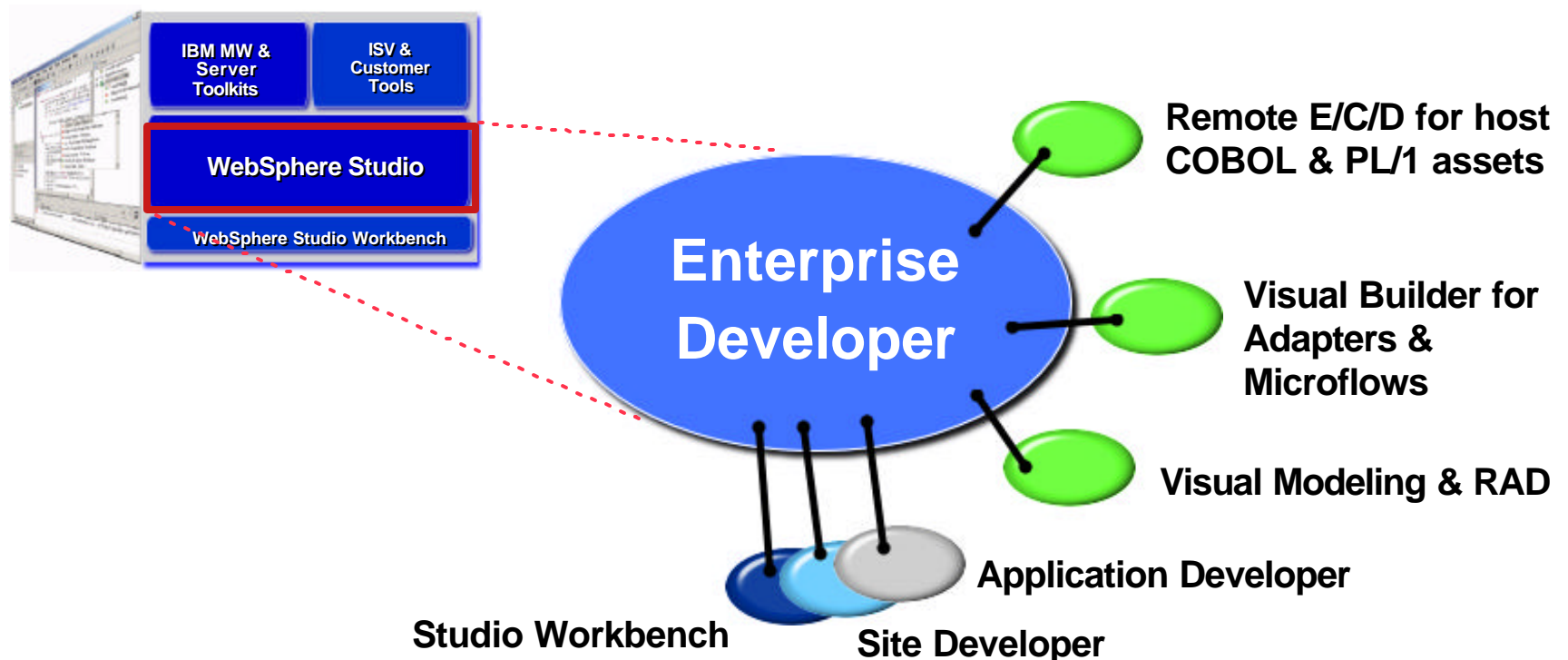
## WebSphere Studio **Application Developer Integration Edition** (WSAD,IE)

- ★ For **J2EE applications**, requiring J2C, J2EE programming model extensions, like Workflow, CMM, etc.
- ★ Includes a highly integrated WebSphere Application Server with Enterprise Extension test environment and deployment automation tools



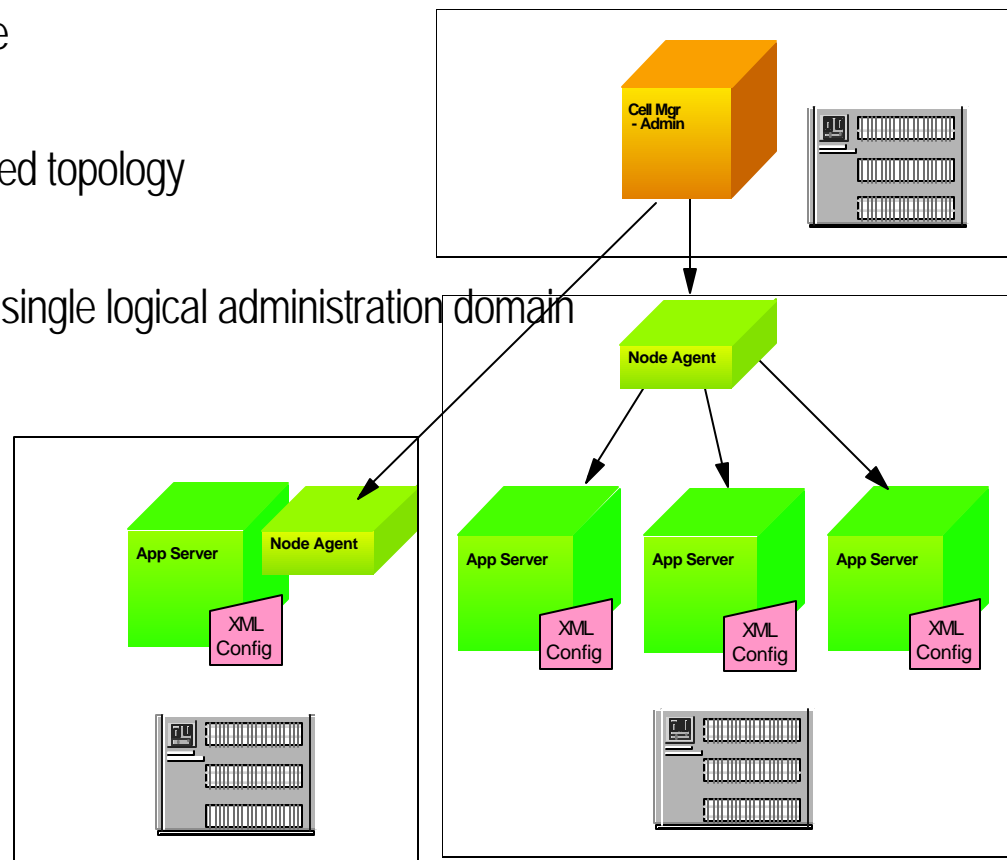
## WebSphere Studio **Enterprise Developer** (WSED) .....

- ★ For developers & integrators of advanced tooling like:
- ★ RAD tools for visual application modeling, composition & adaptability (e.g., business rules)
- ★ Advanced EAI tools for generating adapters & dynamic microflows including integration of remote host assets



# WebSphere Application Server v5.0 Terminology .....

- Managed Process or Servers
  - ▶ Each server (like Application Server) running in its own JVM
- Node Agent
  - ▶ Resides on a single node (physical machine)
  - ▶ Manages the servers running on the node
- Cell Manager
  - ▶ Manages the multiple nodes in a distributed topology
- Cell
  - ▶ Distributed system of multiple nodes in a single logical administration domain

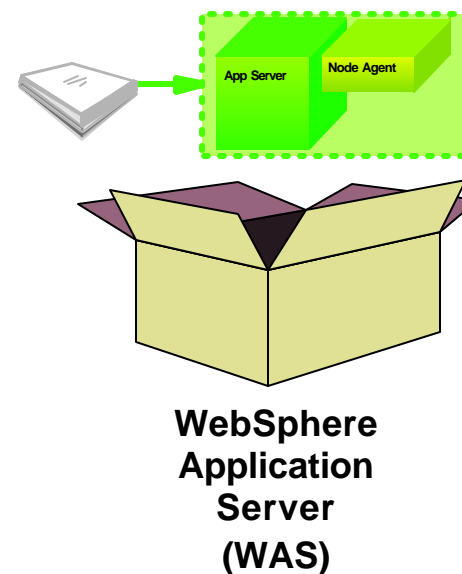




# WebSphere Application Server V5.0 Features

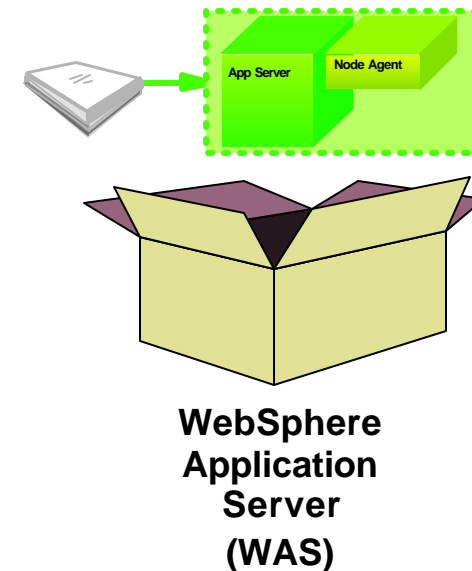
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- JDK 1.3.1
- IHS
  - ▶ IHS 1.3.22
  - ▶ IHS 2.0 Tech Preview
- Application Server
  - ▶ Open Standards and Connectivity
  - ▶ J2EE 1.3 (incl. EJB 2.0, JMS, J2C, JAXP, Servlet 2.3, JSP 1.2, MDB etc.)
  - ▶ Databases
    - Add Oracle 9i
    - Cloudscape for samples
  - ▶ System Management
    - Based on Java Management Extension (JMX) framework
    - Browser-based XML Administration
    - Distributed Sys Mgt enablement
    - Role based Administration
- Application Server
  - ▶ Migration enhancements
  - ▶ Bean Scripting Framework (BSF) Command line interface
  - ▶ Converged Install for all packages
  - ▶ Enhanced Web Services
  - ▶ Interoperability and Messaging
    - 3.5/4.x interoperability
  - ▶ Vendor ORB interoperability



# WebSphere Application Server V5.0 Features (continued)

- Security
  - ▶ Crypto card support Eracom CSA 8000
  - ▶ Role based Administration
  - ▶ JAAS and Java2 security
- Problem Determination and RAS
  - ▶ FFDC First failure data capture
  - ▶ End-to-End Transaction Trace
- Configuration verification scripts
- Usability & Packaging enhancements
- Documentation improvements
- Messaging improvements
- Simplify app restart process
- Technology based samples
- AAT Enhancements
- Performance Enhancements



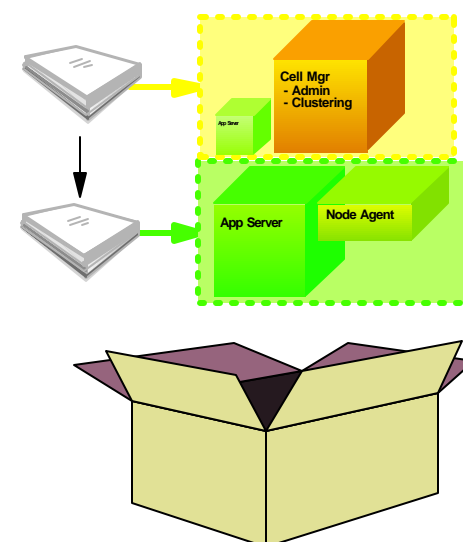
# WebSphere Application Server Network Deployment .....

## ■ Scalability/Availability/Performance

- ▶ Distributed Administration:
  - Browser based XML administration for the entire topology
- ▶ Clustering/Failover
- ▶ Enhanced weighted LoadBalancing
- ▶ EON (Edge of Network) Services via Edge Components
  - Load balancing via Network Dispatcher (ND)
    - Switch Consultants for Cisco and Nortel switches
    - Site Selector for scaling ND
  - Caching Proxy
    - Reverse Proxy
    - ND-based Servlet workload management
      - ♦ Content Based Routing
    - Static Content, Variant caching
    - Dynamic content via Dynacache integration

## ■ Enhanced WebServices functions

- ▶ UDDI Registry - for private UDDI registry
- ▶ WebServices Gateway

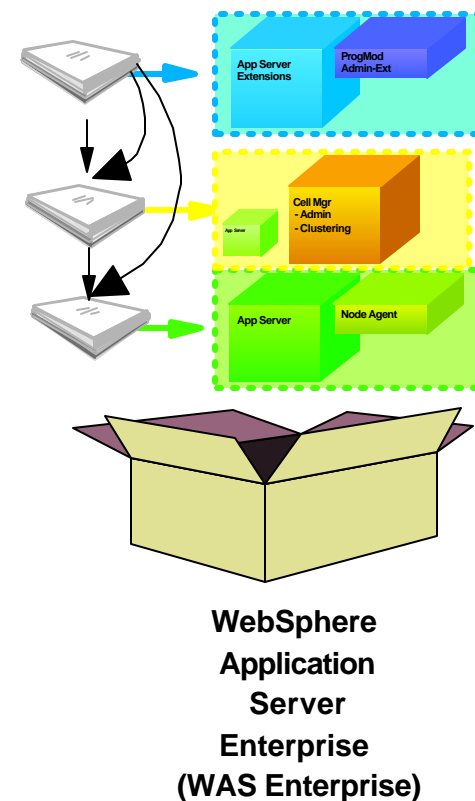


**WebSphere  
Application  
Server  
Network  
Deployment  
(WAS-ND)**

# WebSphere Application Server Enterprise

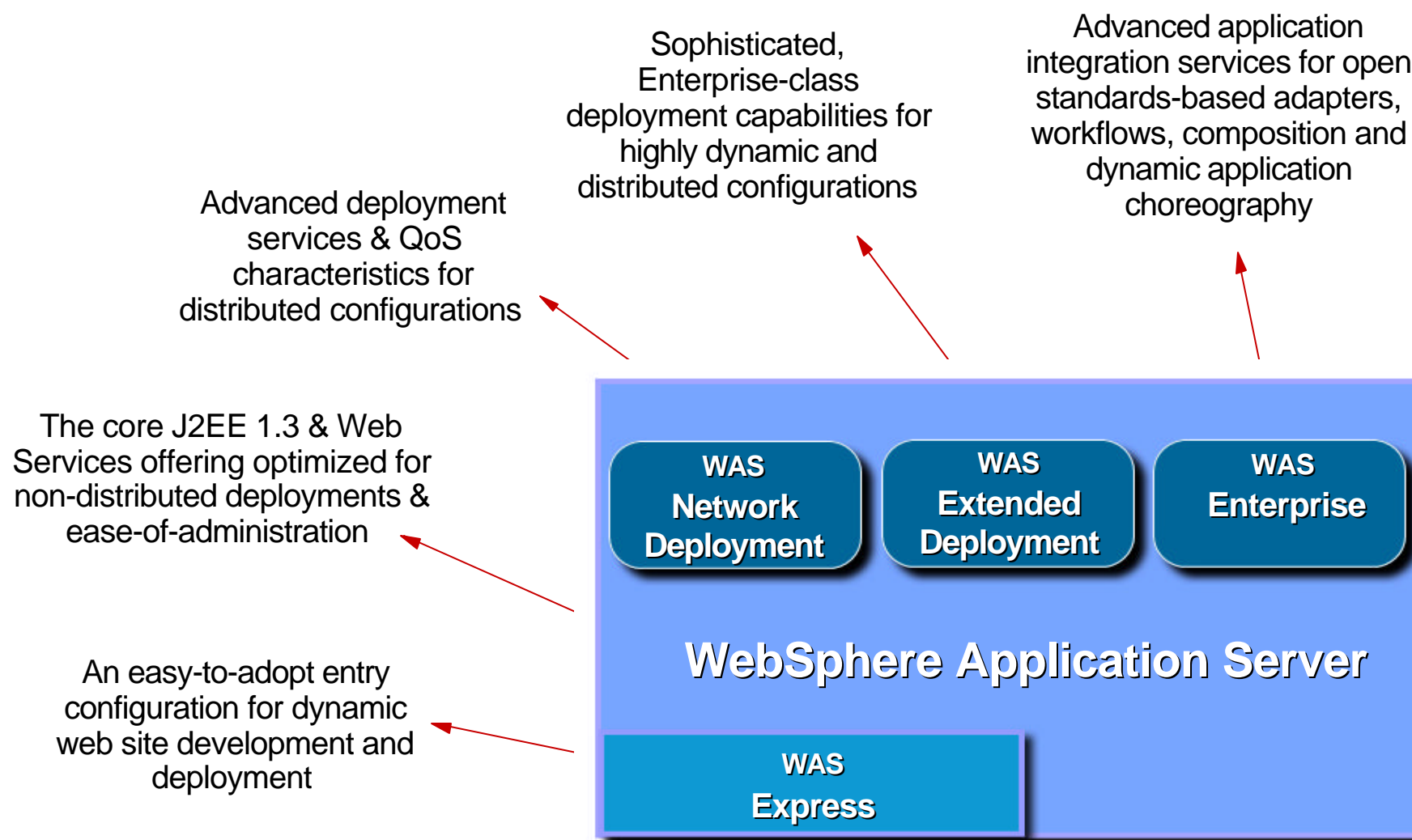
In addition to all the functions of WebSphere Application Server Extended Deployment, this package provides Enterprise Extensions - these are Programming Model extensions beyond J2EE 1.3

- J2EE Application Extensions:
  - ▶ Dynamic Access Intent via Application Profiling
  - ▶ Activity Session
  - ▶ Dynamic Query Capabilities
  - ▶ Extended Messaging Support
    - Container Managed Messaging
  - ▶ Business Process Beans
  - ▶ WebSphere Workflow
    - Microflow / Macroflow runtime
  - ▶ Asynchronous Beans
  - ▶ Scheduler
  - ▶ Startup Beans



# WebSphere Application Server

## Packaging, Positioning & Naming



# WebSphere 5.0: Distributed Systems OS Support

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Operating System	Level
✓ Win2000	Advanced Server SP 2 Server SP2
✓ NT	SP 6a
✓ AIX	4.3.3 5.1
Linux/Intel	RedHat 7.2 SuSE 7.2 SuSE SLES 7 MontaVista Prof. 2.1
Linux/390	TurboLinux Server 6.5 SuSE SLES 7
✓ Solaris	8 and up
OS400	5.1 5.2

✓ OS supported in Beta (Solaris will be a little later)

# WebSphere 5.0: Distributed Systems Database Support .....

Supported Databases	OS
Cloudscape 5.0.3 (for Samples) DB2 7.2 FP 6 DB2 for 390 6.1 Oracle Enterprise Edition 8i Rel. 3 and 9i	Win2000, NT AIX Linux/Intel Linux/390 Solaris
SQL Server Enterprise 7.0 SP 2	NT
SQL Server Enterprise 2000	Win2000
Sybase 12.0	NT AIX Solaris
Informix 7.31 and 9.3	Win2000, NT AIX Solaris
DB2 400	OS400