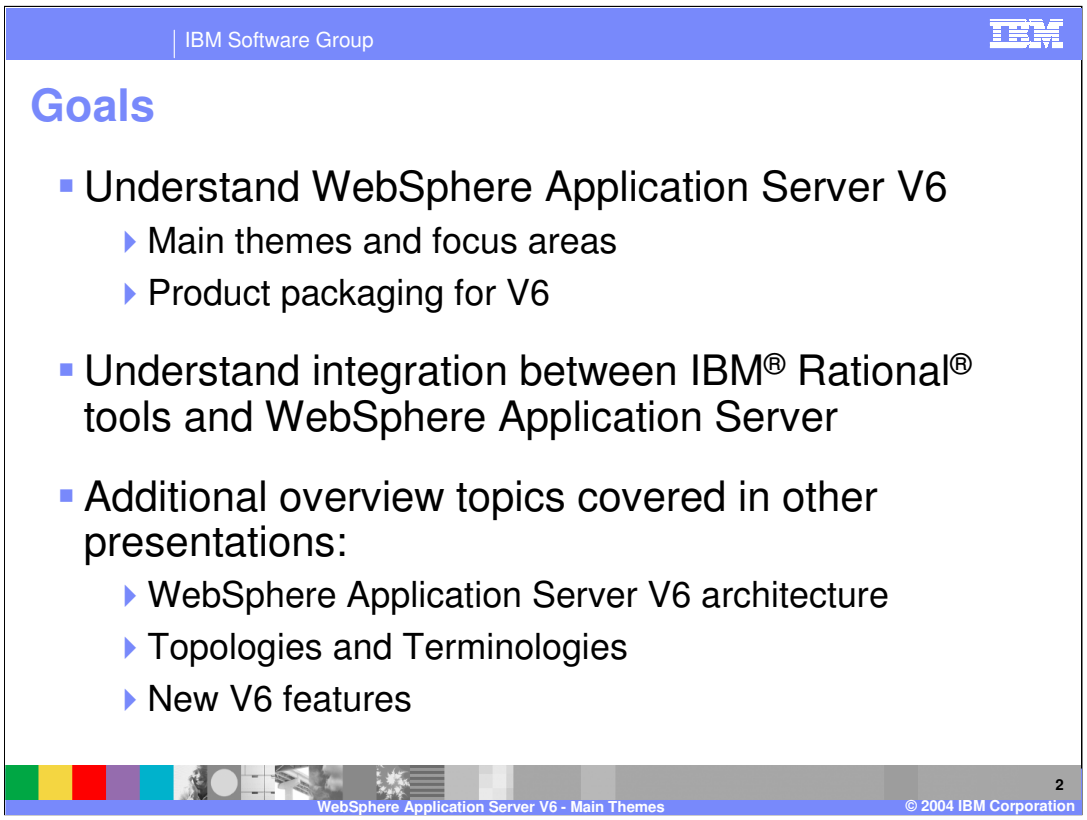
This presentation will focus on the main themes, product packaging, and development tools for IBM WebSphere Application Server V6.



The goal of this presentation is to provide information on WebSphere Application Server V6 main themes and product packaging. You will also be presented with information on tools from IBM Rational and how they work with the Application Server.

Agenda

- Main themes and focus areas
- Product packaging and features
- Feature comparison of WebSphere Application Server V5 and V6
- Development tools
- Development to deployment life cycle process

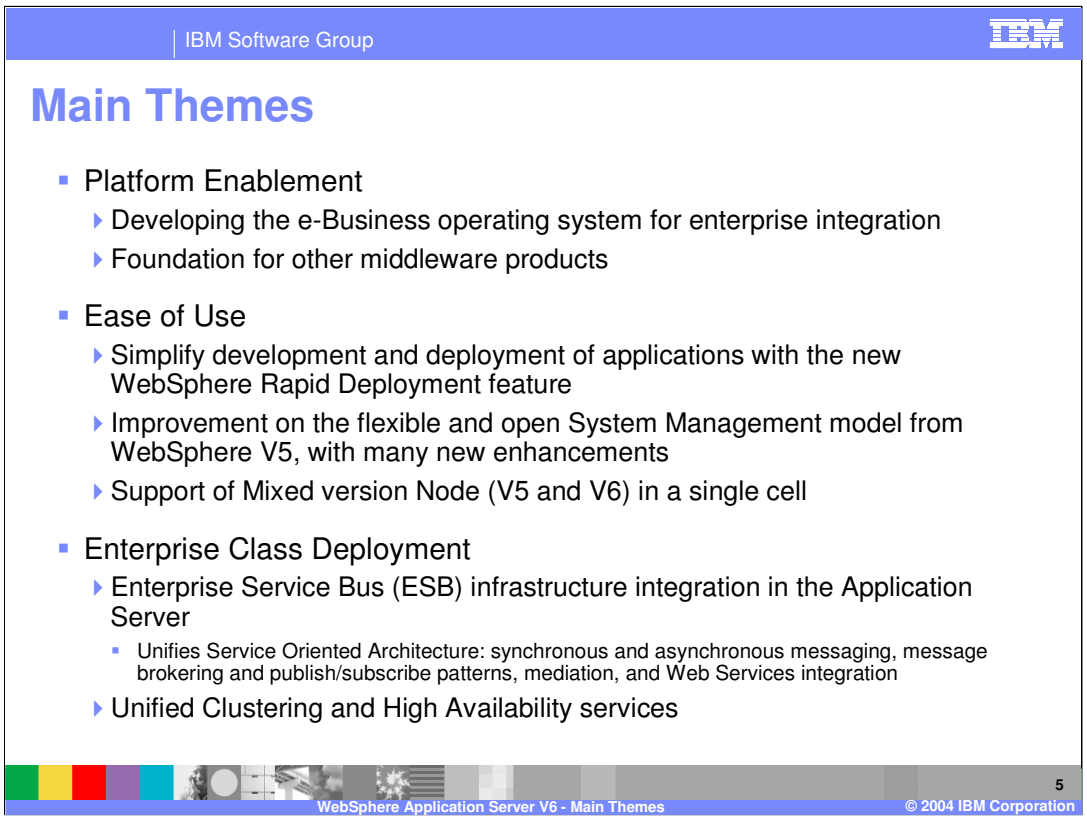
The agenda for this presentation includes main themes, product packaging, feature comparisons, development tools, and the development to deployment process.

Section

WebSphere Application Server V6

Main Themes

This section covers the main themes of WebSphere Application Server V6.

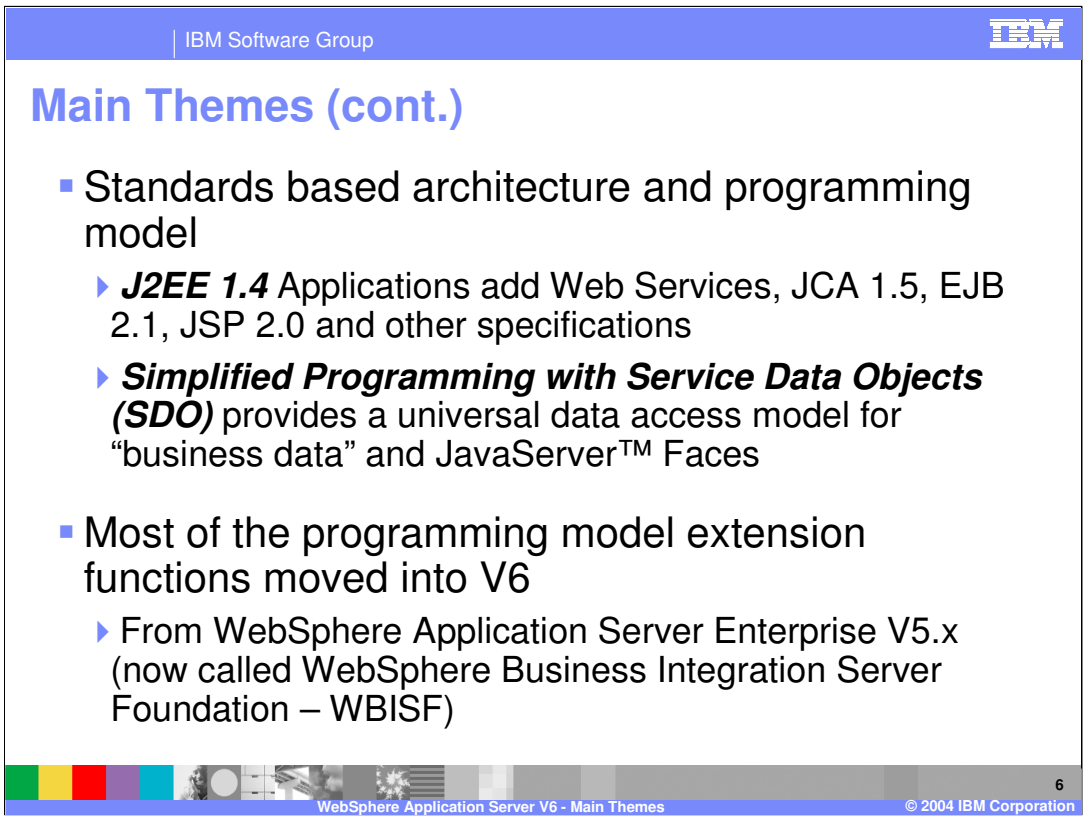


WebSphere Application Server is the platform which many IBM middleware products build upon as their foundation for enterprise integration. Application Server V6 provides a consistent platform with regards to Java™ 2 Enterprise Edition (J2EE) 1.4 and other industry standards, web services and database support, as well as operating system support.

New features such as WebSphere Rapid Deployment, support of mixed V5 and V6 nodes in a single V6 cell, and an enhanced System Management model all enhance the ease of use of the Application Server in areas such as development, deployment, migration, and overall total user experience.

Enterprise class deployment requires the exceptional qualities of service provided by WebSphere Application Server V6. This includes qualities of service in the areas of scalability, availability, and reliability. The service oriented architecture infrastructure in the Application Server is based on the new, service integration technology. The service integration technology provides the integrated messaging function which supports the enterprise service bus for asynchronous and synchronous messaging, mediation, and web services integration support.

Clustering and High availability of services such as messaging and transactions, as well as other services, are supported within the Application Server.

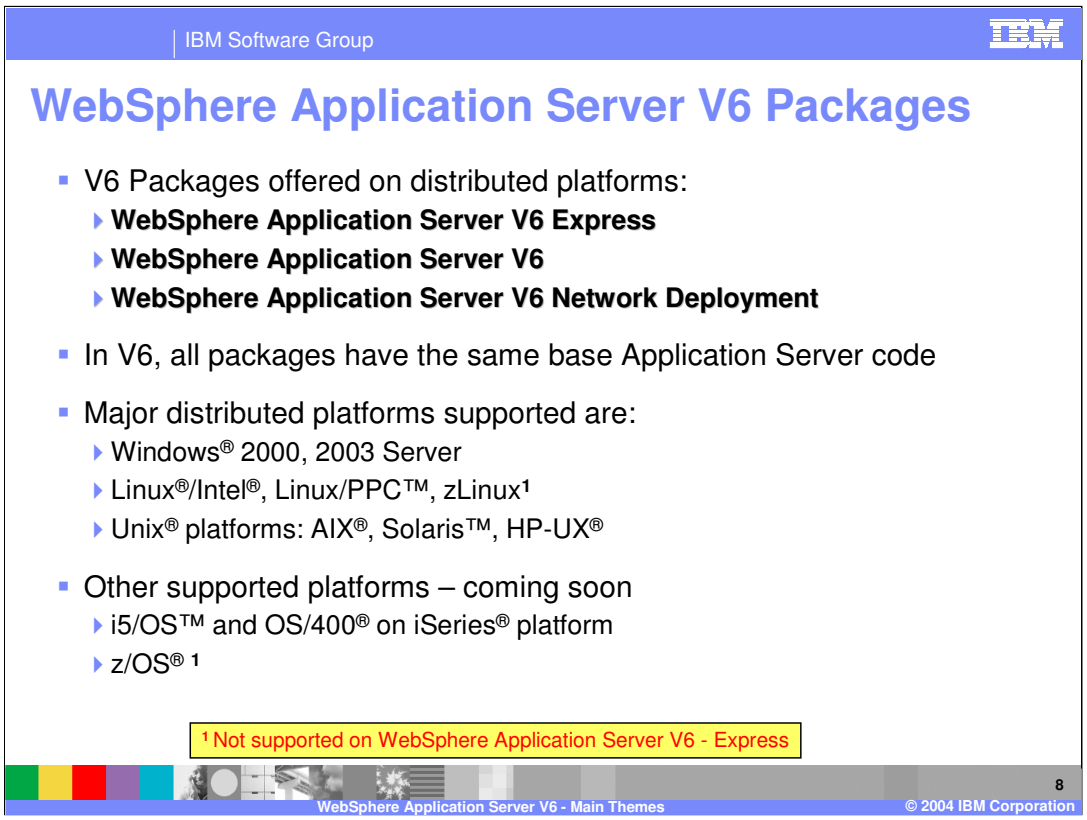


From a standards-based architecture and programming model point of view, Application Server V6 complies with and supports the J2EE 1.4 programming model as well as other programming model extensions.

Service Data Objects (SDO) provides a universal data access model for accessing business data. JavaServer Faces (JSF) provides a user interface framework that is used to build J2EE web applications. With the combination of SDO and JSF, the Application Server and IBM Rational Application Developer provide a strong programming model and development environment which makes it easy create web pages that are more dynamic in nature, interacting with backend databases or enterprise information systems.

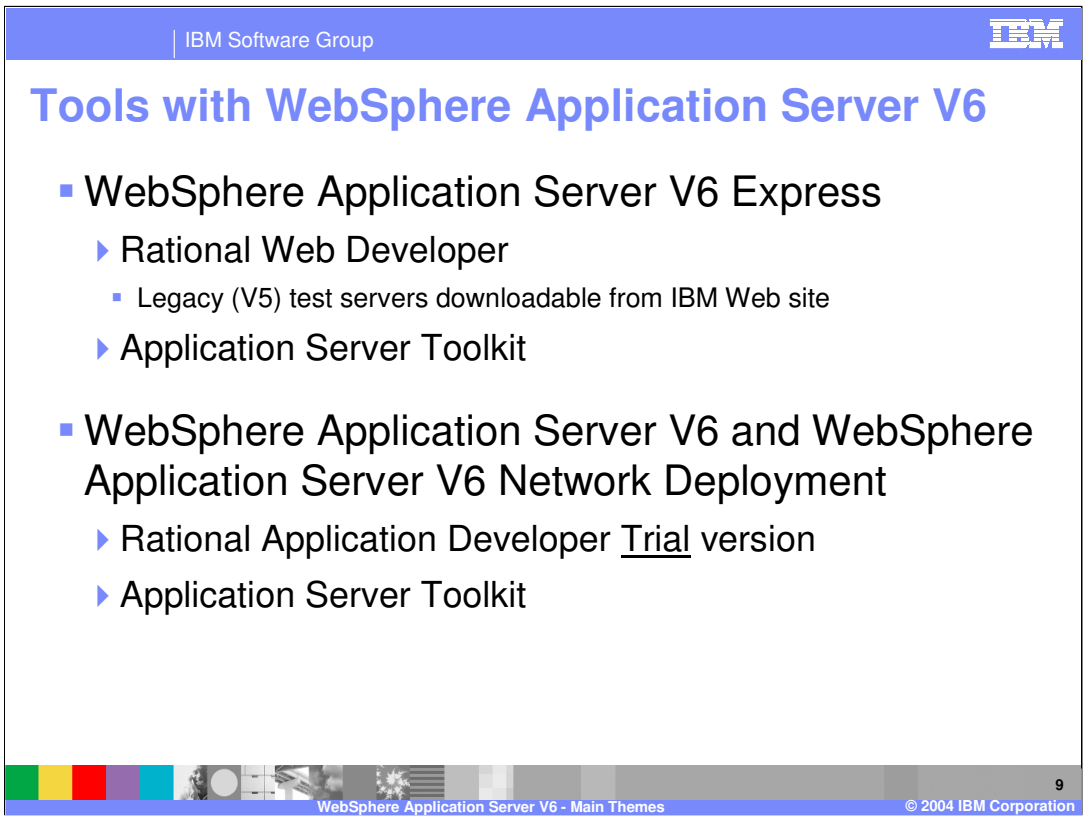
Many of the robust, function-rich, programming model extensions that were previously available only in WebSphere Application Server Foundation, are now part of the core Application Server.

This section will discuss the product packaging of WebSphere Application Server V6.



There are three product packages available in V6; WebSphere Application Server Express, WebSphere Application Server, and WebSphere Application Server Network Deployment. Each package has the same core application server functionality. For example, the Application Server Express product fully supports the J2EE programming model and programming model extensions, just as the Application Server and Application Server Network Deployment packages. Specific differences will be presented over the next several pages.

Refer to the IBM Support Web page, http://www-306.ibm.com/software/webservers/appserv/doc/latest/prereq.html, for an extensive list of supported platforms, databases, Web servers, and LDAP servers.



Here you see the packaging of tools available with the different Application Server packages. WebSphere Application Server Express includes the IBM Rational Web Developer and the Application Server Toolkit. The Rational Web Developer is an integrated web development tool, meant for use by developers; while the Application Server Toolkit is more of an assembly, deployment tool, meant for use by system administrators.

WebSphere Application Server and WebSphere Application Server Network Deployment include a trial version of IBM Rational Application Developer, which provides a full, integrated J2EE development environment; as well as the Application Server Toolkit.

WebSphere Application Server V6: Packaging

Content	WebSphere Application Server V6 Express	WebSphere Application Server V6	WebSphere Application Server V6 Network Deployment
Core Application Server	Stand-alone Application Server	Stand-alone Application Server	Deployment Manager, Stand-alone Application Server, Custom Profile
IBM HTTP Server V6 Web Server plug-ins	Yes	Yes	Yes
Application Client (not on zLinux)	Yes	Yes	Yes
Data Direct JDBC drivers [1]	Yes	Yes	Yes
Development and/or Deployment Tools [2]	Rational Web Developer, AST	Rational Application Developer Trial, AST,	Rational Application Developer Trial, AST
Other Bundled Software	DB2 Express [1] (Dev. Use only) IBM Business Solutions	DB2 Express [1] (Dev. Use only)	DB2, Edge Components, IBM Tivoli Directory Server (LDAP), IBM Tivoli Access Manager

[1] Windows platform only

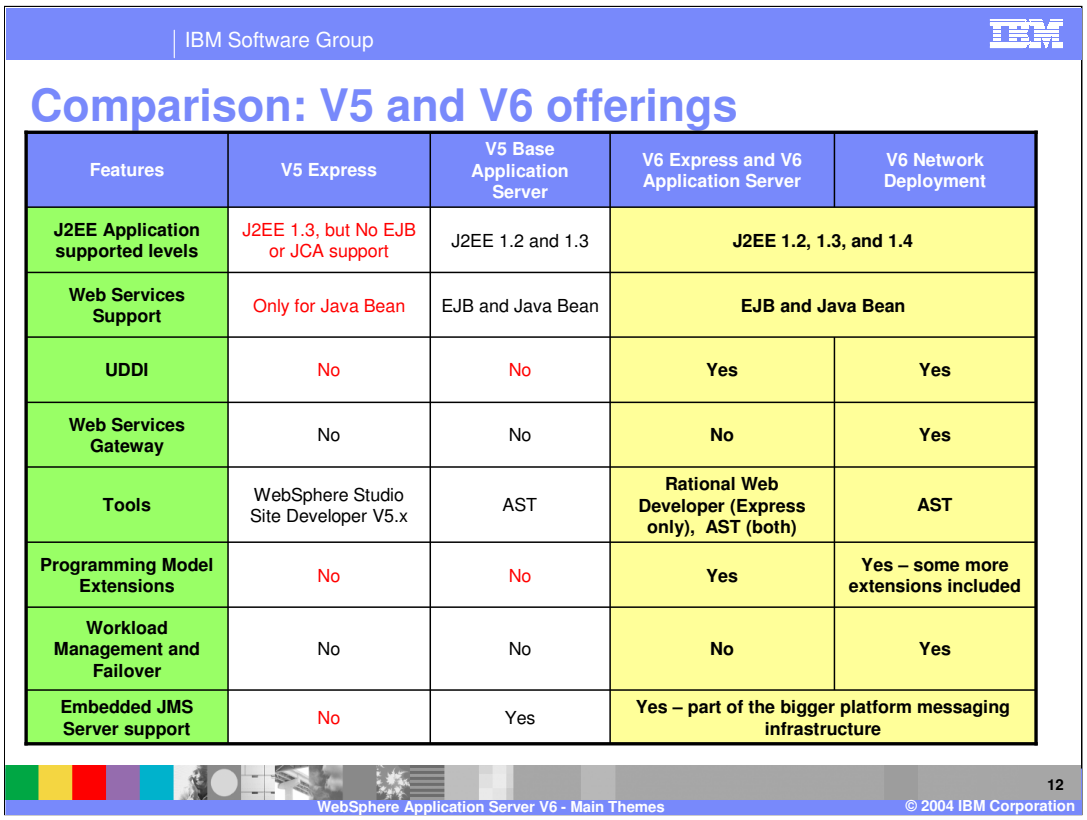
This table presents a high-level comparison of the different packages. The V6 Application Server Express and Application Server packages both install stand-alone servers; however, there is a difference in the licensing terms of these packages. There is also a difference in the licensing terms of the tools included. Application Server Express includes Rational Web Developer, while Application Server and Network Deployment both include “trial” versions of Rational Application Developer. The Application Server Network Deployment package allows for the creation of a distributed environment, taking advantage of work-load management, clustering, and high availability capabilities. It includes a Deployment Manager which provides a single point of administration for the multiple application servers.

Each package includes other software which is licensed to be used in conjunction with the WebSphere Application Server environment. Consult the licensing agreement with each package for specific terms and details.

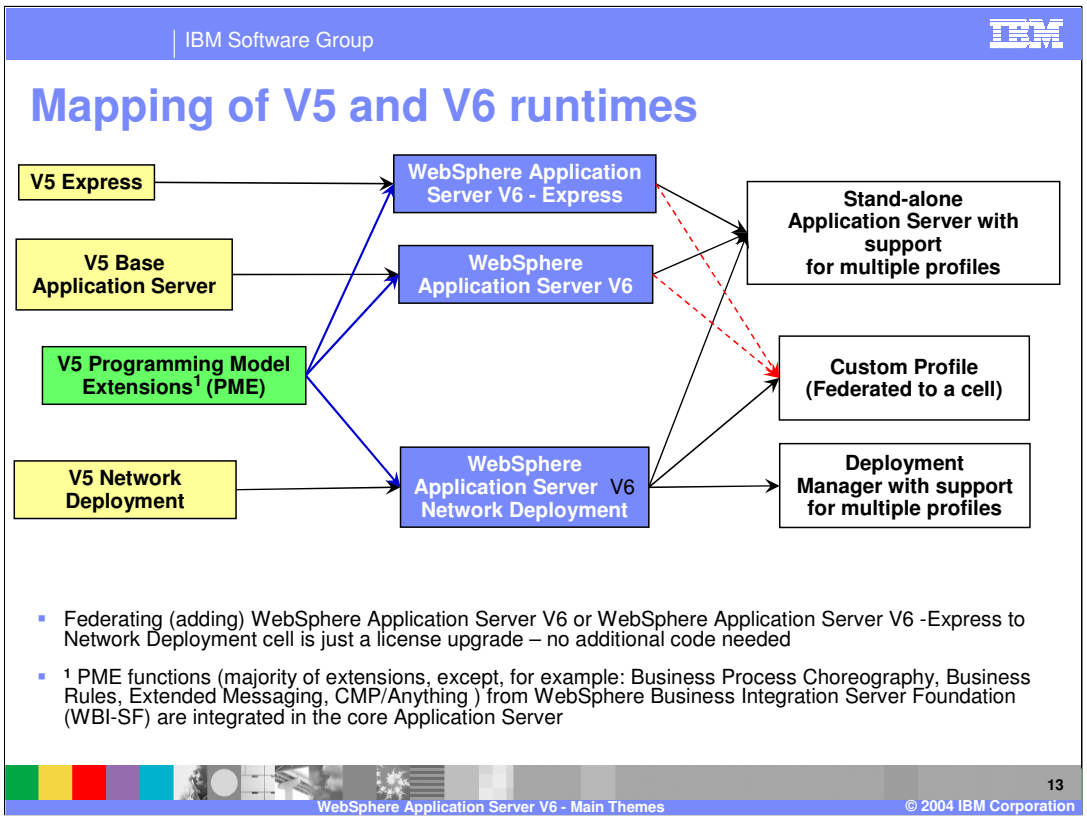
Differences between Express and Base offerings

Features	WebSphere Application Server V6 Express	WebSphere Application Server V6
Licensing Terms	Limited to maximum of 2 CPUs	Unlimited CPUs
Development Tools	Rational Web Developer, AST	Rational Application Developer Trial, AST
Cosmetic changes	Launch pad, License terms, Install menus, product ID, etc. refer to WebSphere Application Server V6 - Express	Launch pad, License terms, Install menus, product ID, etc. refer to WebSphere Application Server V6
Migration	V5 Express -> V6	V5.x -> V6
Federating to Network Deployment	No software upgrade required; however, a license upgrade is required	No software upgrade required; however, a license upgrade is required
Edition Upgrade Path	Can be upgraded to WebSphere Application Server V6	N/A
Platform support	All specified platforms, except zLinux and z/OS	All specified platforms

This table provides additional details regarding the differences between the Application Server Express and the Application Server offerings. As you can see, the offerings are similar with the main difference being in the licensing terms for number of CPUs allowed. Application Server Express is limited to a maximum of 2 CPUs, while Application Server is unlimited in the number of CPUs.



This table compares the differences between Application Server V5 and Application Server V6 offerings. Some of the differences to highlight include Express V6 now fully supports the J2EE programming model, including EJB and JCA support; and the UDDI, programming model extensions, and integrated messaging features are available in all V6 offerings.



Here you see the mapping of V5 to V6 runtime products. The programming model extensions which have moved to WebSphere Application Server from the WebSphere Business Integration Server Foundation product, are available in all V6 packages. To add Application Server V6 or Application Server Express V6 servers to an existing Application Server Network Deployment V6 cell, requires a license upgrade.

Trial and Developer Packages

- Free trial versions[1] of the following packages available for download:
  - WebSphere Application Server V6 – Express
  - WebSphere Application Server V6
- Developer packages available for
  - WebSphere Application Server V6 – Express
  - WebSphere Application Server V6

[1] Trial versions download license is valid for limited time

There are trial and developer packages of WebSphere Application Server V6 available, as listed on this page. Note that the trial version has a limited license time validation.

This section will discuss the development tools for WebSphere Application Server V6.

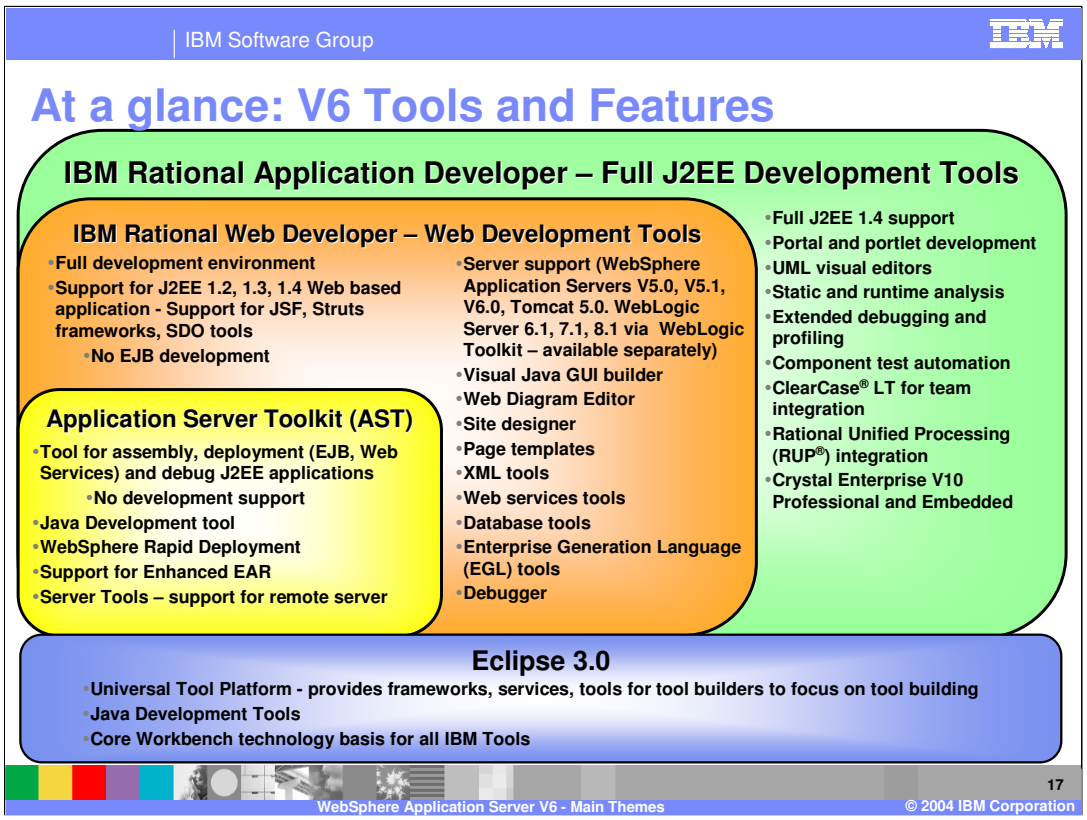
Development Tools

Tools	Supported J2EE Application	Target V6 Application Server	Comments
IBM Rational Application Developer [1] (follow-on to WebSphere Studio Application Developer)	Full J2EE 1.4, 1.3 and 1.2 applications	All V6 packages	Trial version included in WebSphere Application Server V6 and WebSphere Application Server V6 Network Deployment
IBM Rational Web Developer [1] (follow-on to WebSphere Studio Site Developer)	J2EE 1.4, 1.3 and 1.2 applications Exception: No EJB and J2C development environment. Has deployment tools for EJB and J2C	All V6 packages	Bundled with WebSphere Application Server V6 – Express Subset of IBM Rational Application Developer
Application Server Toolkit (AST)	This is not a full IDE Tools for Assembly, deployment and debug	All V6 packages	Bundled with all WebSphere Application Server packages Will be downloadable from IBM WebSphere site

[1] Contains a copy of WebSphere Application Server V6 for a test environment

Tools available on Windows and Linux/Intel platforms

This table compares the three development and assembly tools for Application Server. IBM Rational Application Developer is a full, integrated development environment including support for J2EE 1.4, 1.3, and 1.2 applications. A trial version is included with Application Server and Application Server Network Deployment products. IBM Rational Web Developer is also an integrated development environment; however, there is no EJB nor J2C development support. This product is included with the Application Server Express product. Application Server Toolkit is not an integrated development environment, rather it is a tool for assembly, deployment, and debug, as well as Java development. This product is included with all Application Server packages and will also be downloadable from the web.



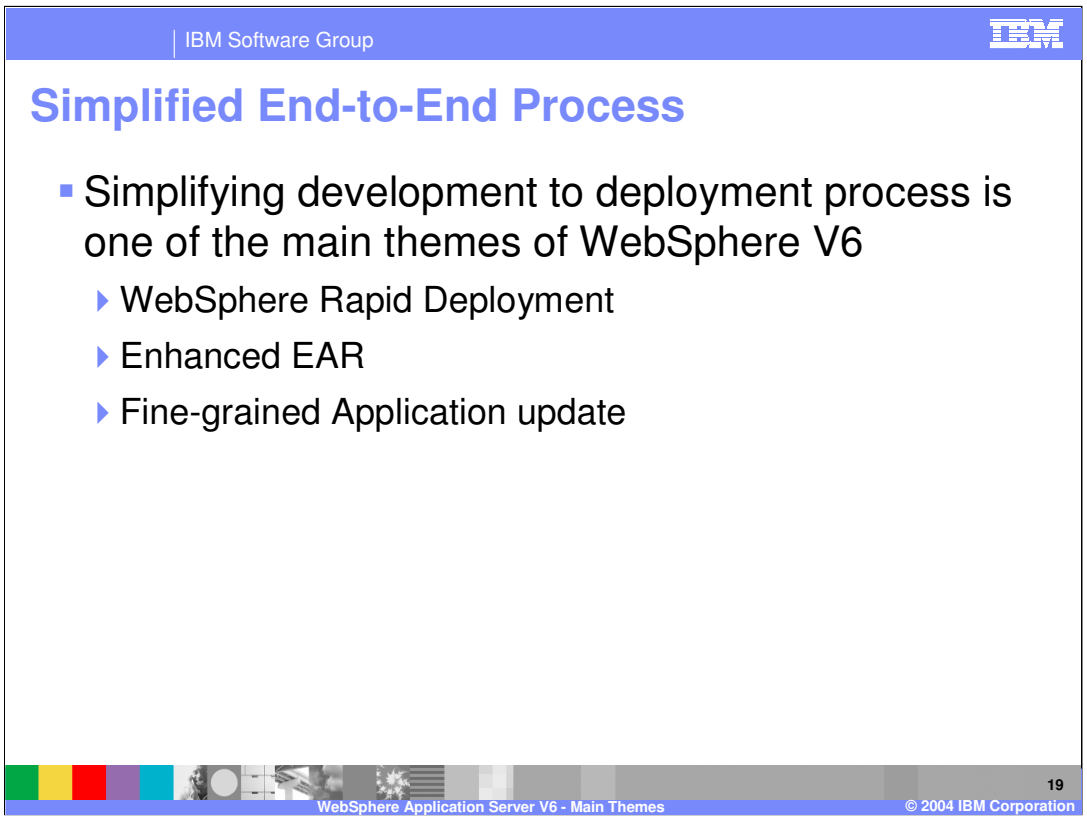
Each of the V6 tools is based on Eclipse 3.0 and progressively builds on functionality included – from Application Server Toolkit, to Rational Web Developer, to Rational Application Developer.

Application Server Toolkit provides tools for assembling, deploying, and debugging applications, as well as Java development. Rational Web Developer includes the Application Server Toolkit functionality plus additional web development support. Rational Application Developer includes Web Developer functionality plus additional J2EE development support as well as other functions.

Section

Development to Deployment process

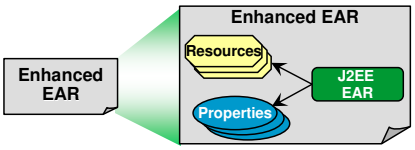
This section will discuss the development to deployment process.



Application Server V6 provides a simplified end-to-end process with regards to development, debug, and deployment. In the following pages, you will learn more about WebSphere Rapid Deployment, Enhanced EAR support, and fine-grained application update features which allow for this simplification.

Enhanced EAR

- EAR file that contains most of the application information needed to install in the Application Server
  - J2EE EAR, Deployment information, some application resources (JDBC), and properties (like class loader)



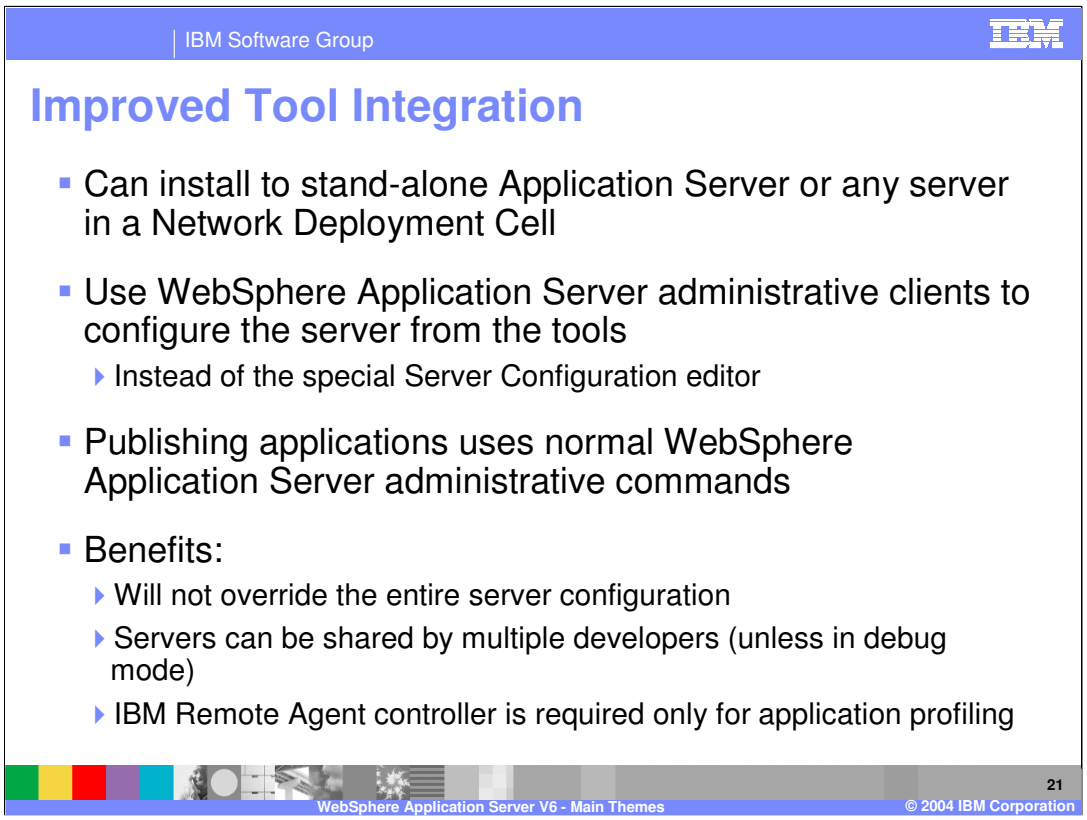
- Enhanced EAR support integrated with the Rational tool, AST and WebSphere Application Server V6
- Benefits: Improved productivity
  - Application resources and properties definition included with the application
  - Application install process creates the necessary resources within the server or cluster
  - Moving applications from one server to another also moves the resources

Enhanced EAR support allows the developer to include the definition of JDBC resources required by applications into the enterprise application (EAR) file itself. The tools allow for this definition of the resource, along with properties for class loading schemes or variables, to be included in the EAR and exported along with the EAR.

At this time, some resources continue with the requirement to be defined in the Application Server, this includes resources such as JMS and JavaMail resources.

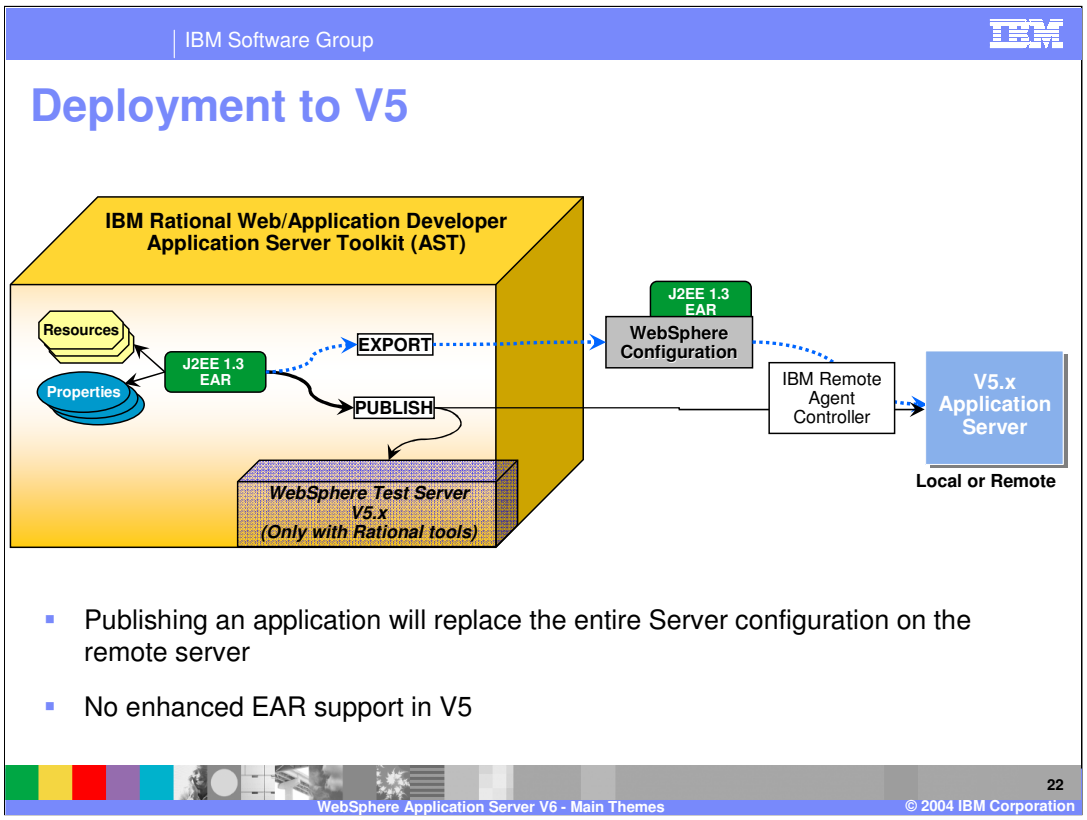
Enhanced EAR support does not change the core J2EE deployment descriptor file, rather it adds additional files of which only WebSphere Application Server can take advantage. This support does not affect the J2EE compatibility of the EAR.

Resources created are application-scoped resources, so if the application moves from one server to another, the resource definition also moves along with it.

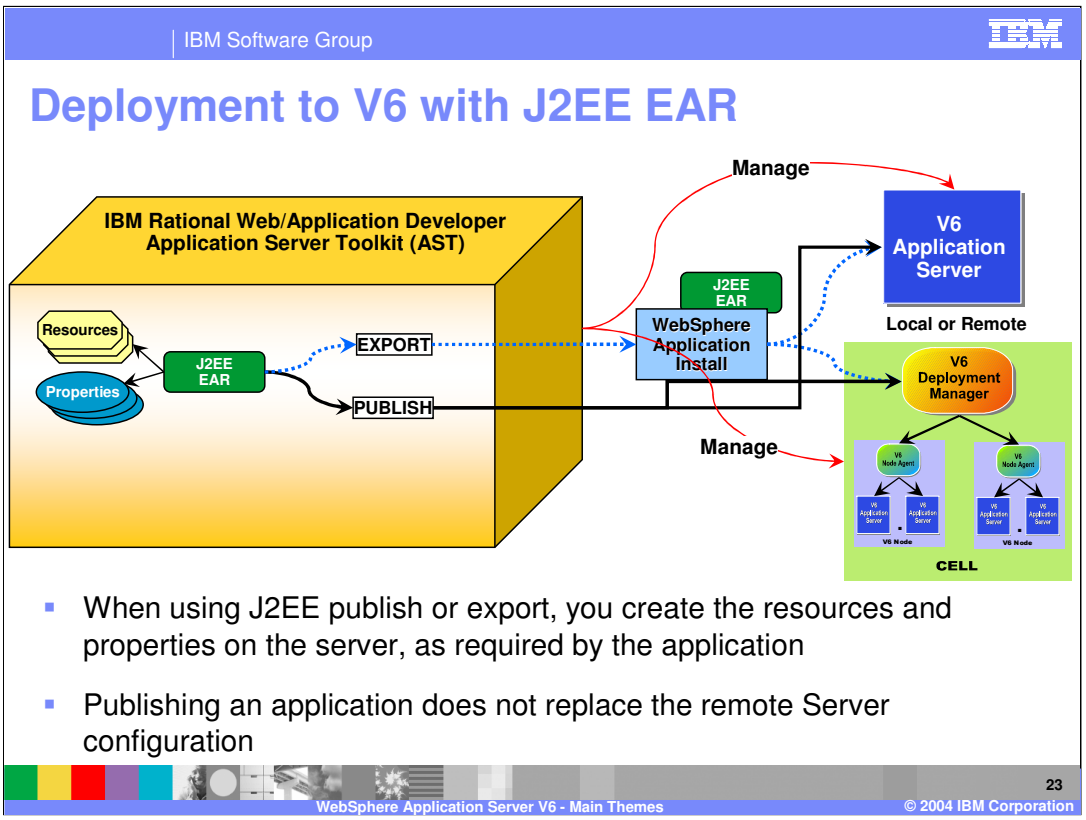


One of the major enhancements in the development to deployment process is in the area of improved tool integration. From the tool, you can install an application to a stand-alone Application Server, or to any server in a Network Deployment cell, to test your application. Previously, with V5, you used a server configuration editor to configure the server; however, with V6 you use the same administrative clients as you would in a runtime environment. Publishing applications also uses the normal, WebSphere Application Server administrative commands.

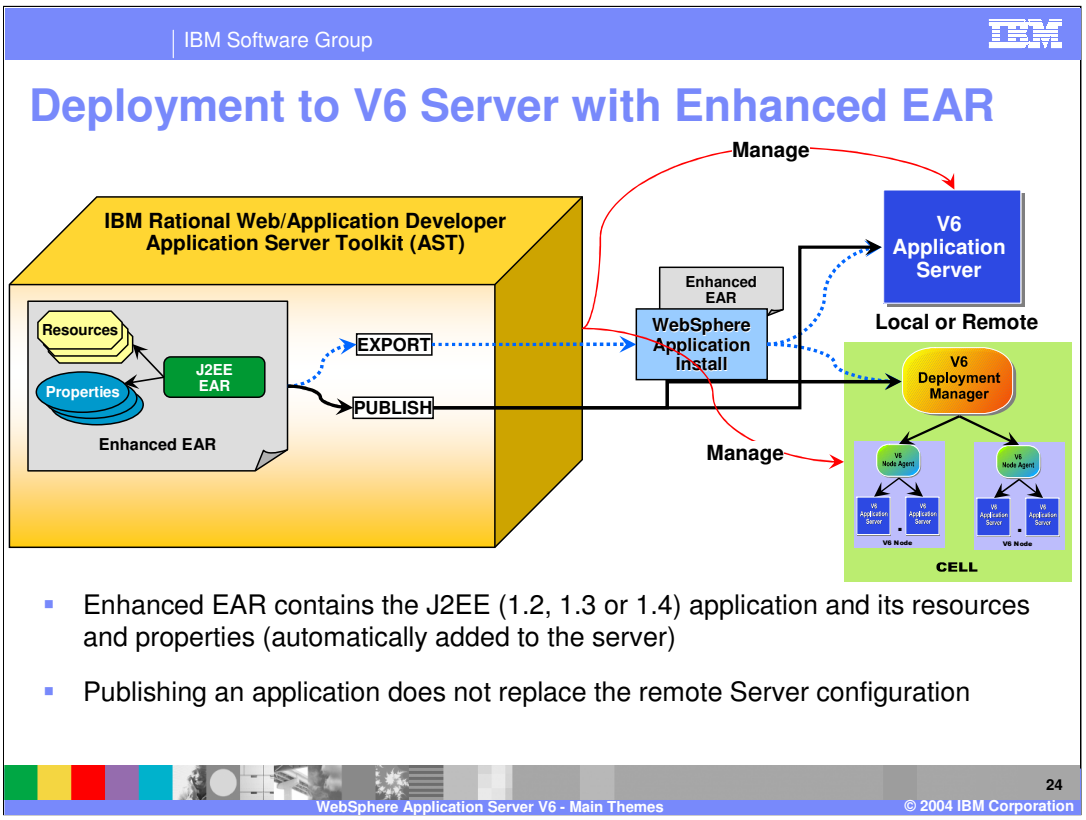
Benefits of these enhancements include no longer overriding the entire server configuration, Application Servers can be shared by multiple developers, and the IBM Remote Agent controller is required only in the case of application profiling.



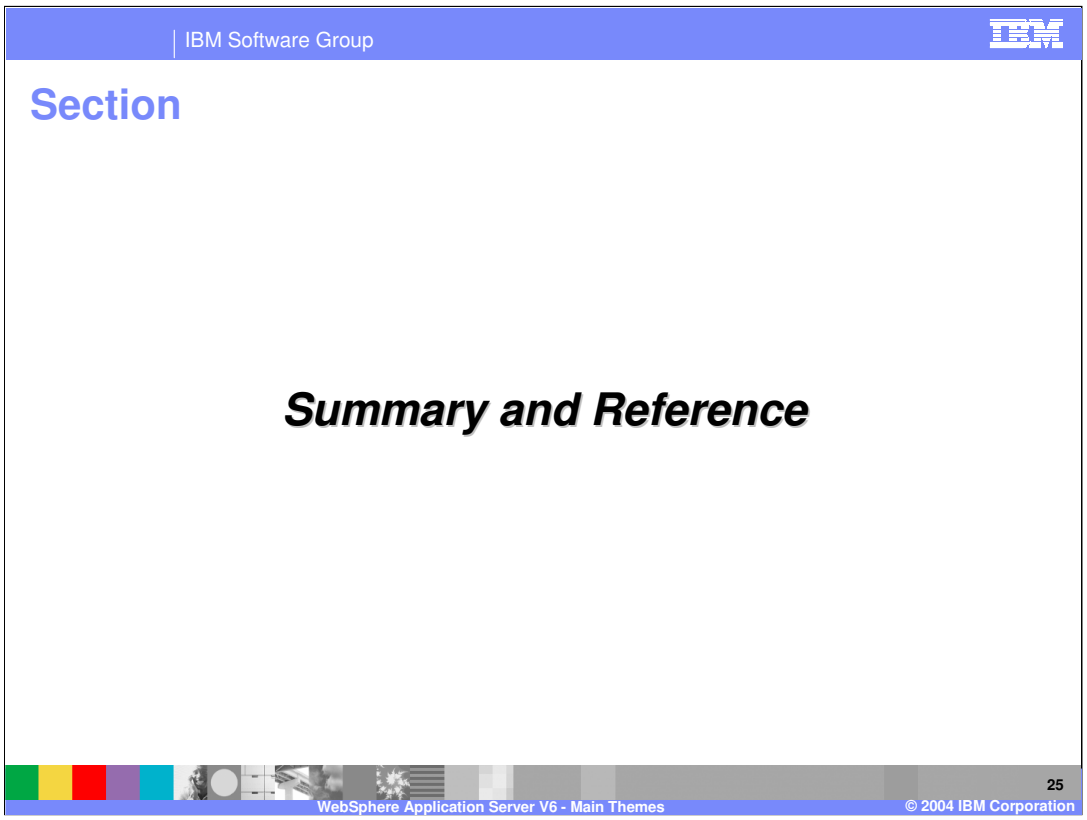
This diagram describes an example of deploying an application from the tool to the Application Server in V5. This includes steps such as exporting the application, using the IBM Remote Agent controller to publish to a stand-alone Application Server, and configuring the required resources on the stand-alone Application Server. Publishing the application causes the entire remote server configuration to be replaced.



This diagram describes an example of deploying an application from the tool to the Application Server in V6. Configuration and publishing of the application uses normal, WebSphere Application Server administrative commands. This process no longer replaces the entire remote Server configuration. You can target a V6 stand-alone Application Server or a server within a Network Deployment cell.



This page describes an example of deploying an application from the tool to the Application Server in V6, using the enhanced EAR support to include resources or properties as required by the application. This simplifies deployment to the remote test environment.



This section will summarize the main points of this presentation.

Summary

- WebSphere Application Server V6 comes in the following packages
  - WebSphere Application Server V6 Express
  - WebSphere Application Server V6
  - WebSphere Application Server V6 Network Deployment
- Main themes for this version
  - Platform enablement
  - Ease of use
  - Enterprise class deployment

In summary, this presentation described the Application Server packages, including Application Server Express, Application Server, and Application Server Network Deployment. It also described the main themes incorporated in Application Server V6 in the areas of platform enablement, ease of use, and enterprise class deployment.

Template Revision: 11/02/2004 5:50 PM

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