

WebSphere product family overview



Unit objectives

After completing this unit, you should be able to:

- Describe the WebSphere family of products
- Describe the relationships between various products in the WebSphere family
- Describe the WebSphere Application Server V8.5.5 offerings
- Describe the standards that are supported in this release

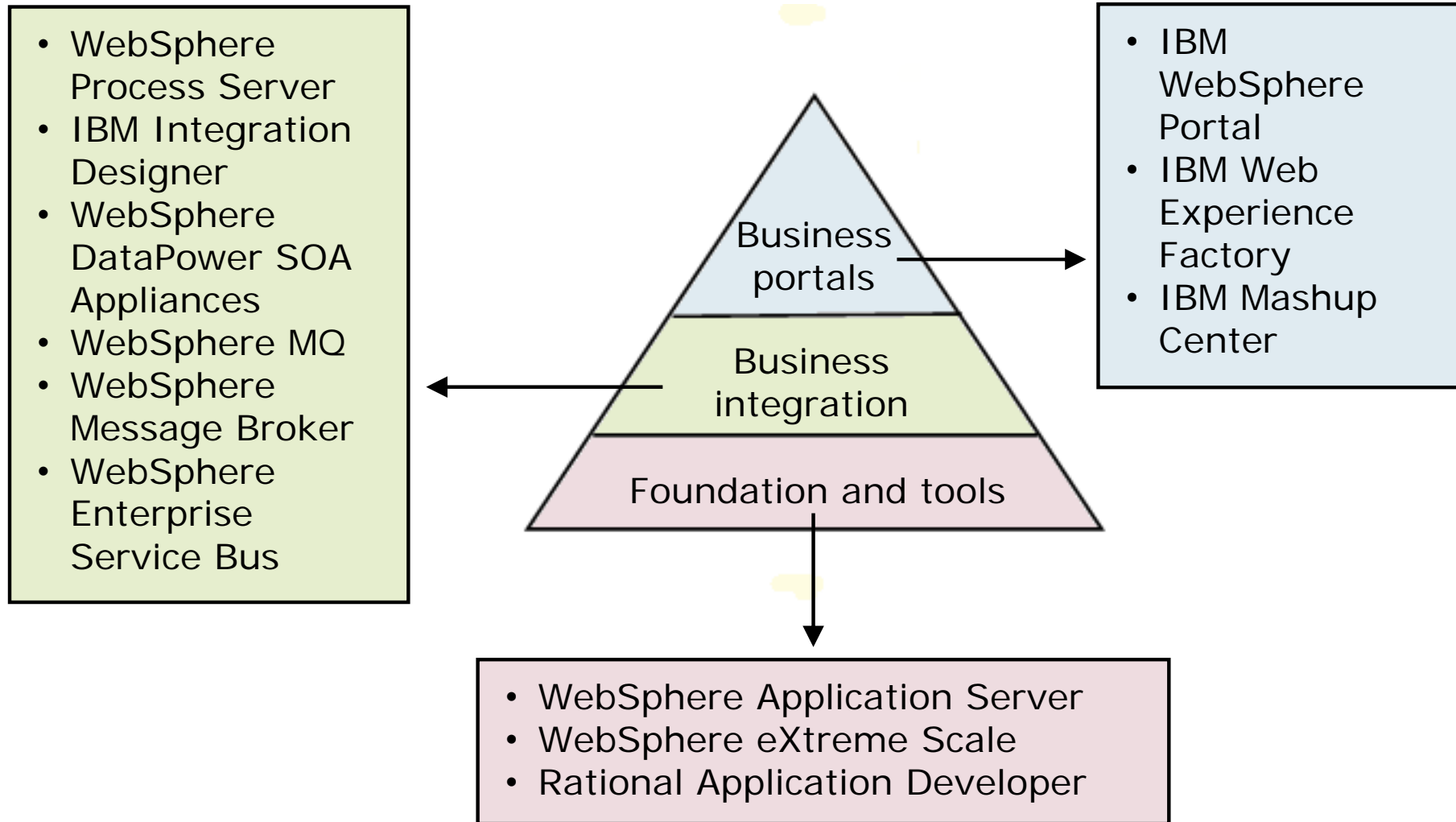
Topics

- Platform and packaging
- Related WebSphere products

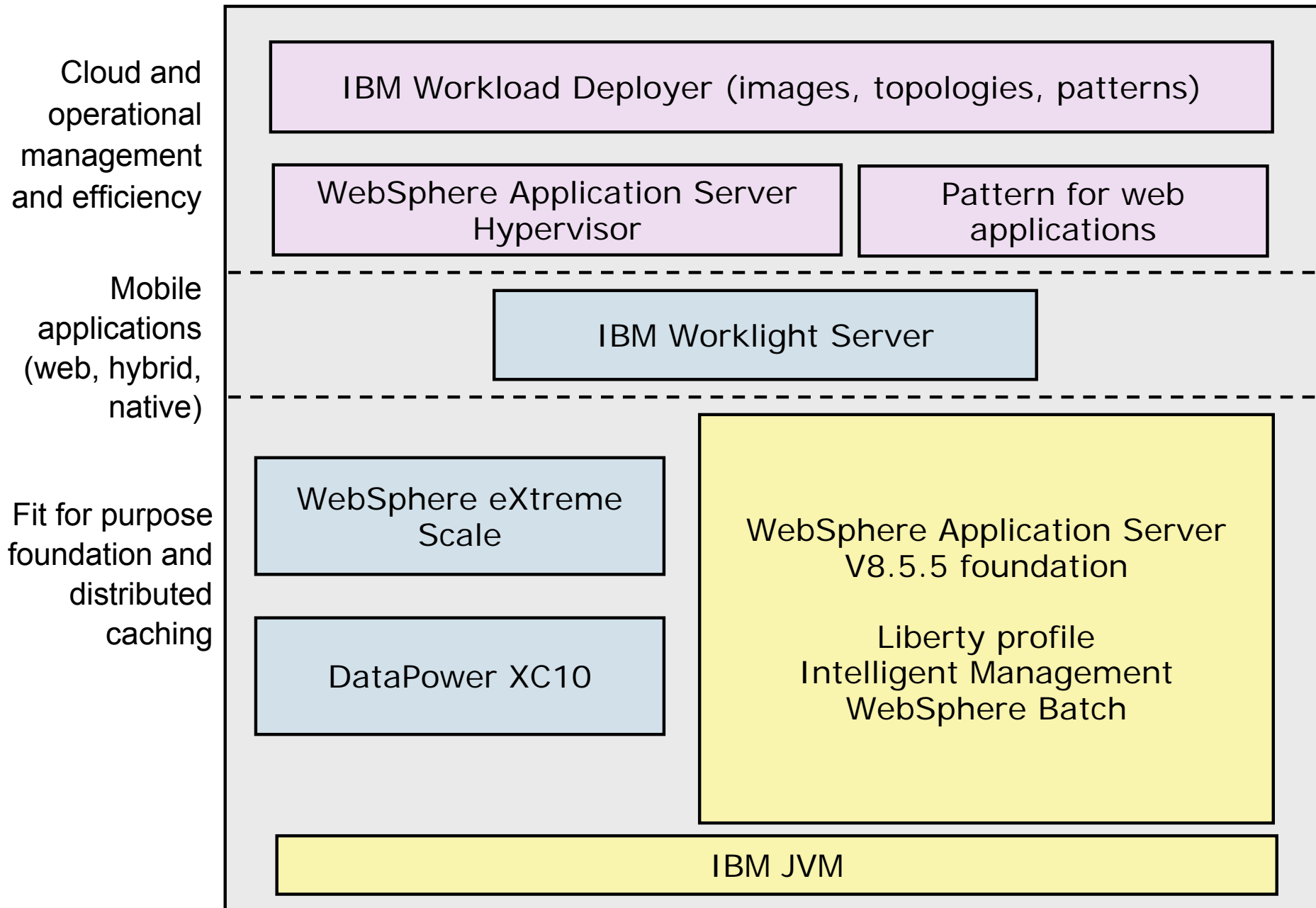
Platform and packaging



WebSphere software platform



WebSphere application infrastructure: The big picture



WebSphere Application Server family

WebSphere Application Server for Developers

Provides the environment for efficient development of innovative applications that eventually run on WebSphere in production

Available as a no-charge edition for the developer desktop

+WXS

+LP

WebSphere Application Server Hypervisor Edition

Optimized to instantly run in VMware and other server virtualization environments

+WXS

+LP

WebSphere Application Server Network Deployment

Delivers near-continuous availability, with advanced performance and management capabilities

+WXS

+LP

WebSphere Application Server for z/OS

Takes full advantage of the z/OS Sysplex to deliver a highly secure, reliable, and resource efficient experience

+WXS

+LP

WebSphere Application Server

Provides a secure, high performance, transaction engine for moderately sized configurations with web tier clustering and failover across up to five application server profiles

+WXS

+LP

WebSphere Application Server Liberty Core

A lightweight and low-cost Liberty-profile-based offering, providing capabilities to rapidly build and deliver web apps that do not require the full Java EE stack

WebSphere Application Server Express

A lower-cost, ready-to-go solution to build dynamic websites and applications

+LP

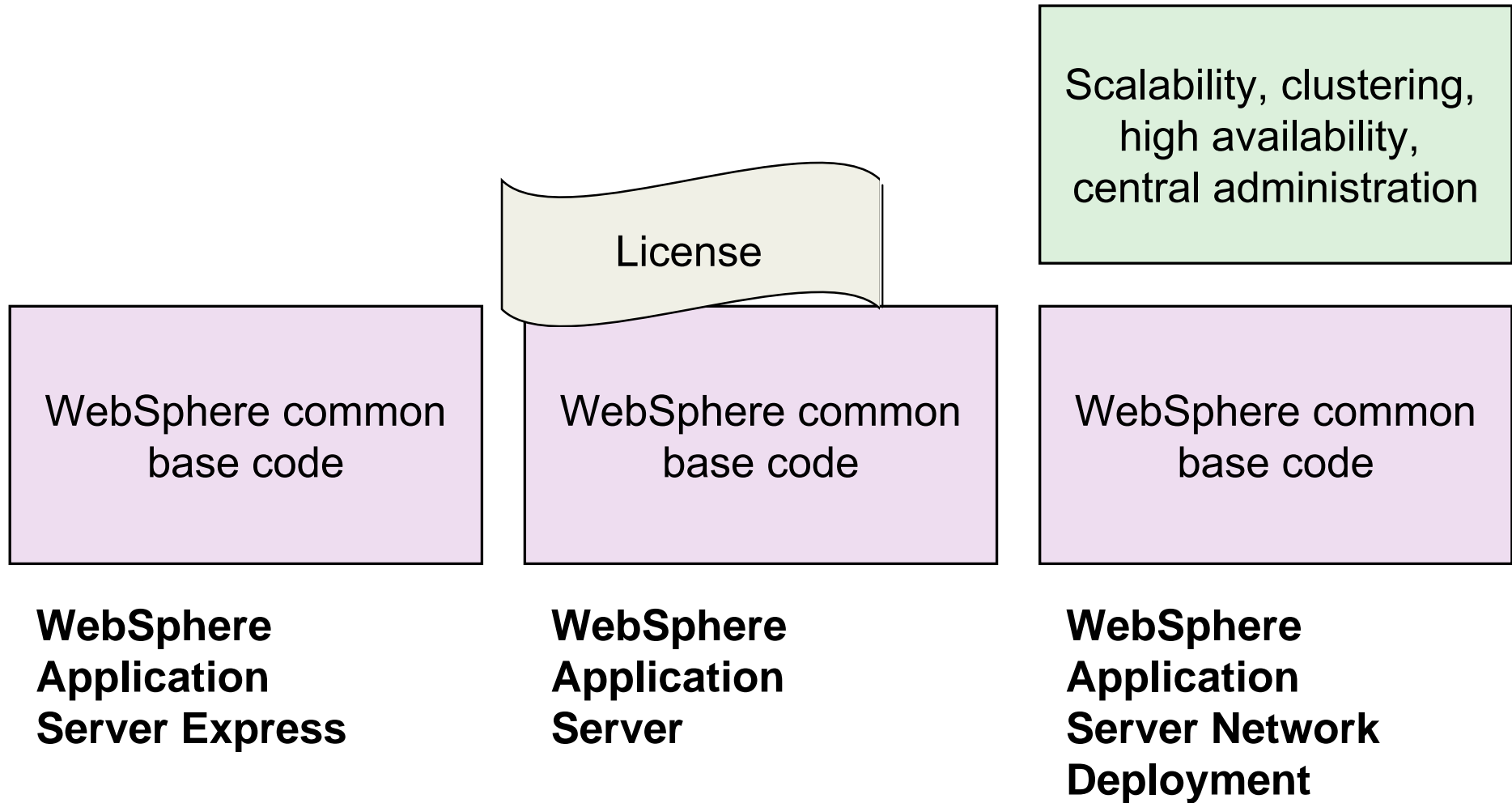
+WXS

– entitlement to WebSphere eXtreme Scale

+LP

– includes Liberty Profile

WebSphere Application Server V8.5.5 packaging



Product packaging comparison (1 of 2)

	WebSphere Application Server Express	WebSphere Application Server (base)	WebSphere Application Server Network Deployment
Core Application Server	Stand-alone node; two processors	Stand-alone node; unlimited processors	Multiple distributed nodes, with centralized administration
IBM HTTP Server web server plug-ins	√	√	√
Application client, update installer, installation factory, migration tools, IBM Support Assistant	√	√	√
Data Direct JDBC drivers	√	√	√
Liberty profile	√	√	√
Intelligent Management Pack			√

Product packaging comparison (2 of 2)

	WebSphere Application Server Express	WebSphere Application Server (base)	WebSphere Application Server Network Deployment
Batch processing	√	√	√
Development and deployment tools	Rational Application Developer <i>Trial</i>	Rational Application Developer <i>Trial</i>	Rational Application Developer <i>Trial</i>
Database included in the package	DB2 Express (developmental use only)	DB2 Express (developmental use only)	DB2
Edge components			√
IBM Tivoli Directory Server (LDAP server)			√
Tivoli Access Manager Server			√

Specifications that are supported in V8.5.5

Specification or API		
Java EE 6, 5, and J2EE 1.4, 1.3	Java SE 7	Servlet 3.0, 2.5, 2.4, 2.3
JSP 2.2, 2.1, 2.0	Portlet 2.0	SIP 1.1, 1.0
EJB 3.1, 3.0, 2.1, 2.0, 1.1	JDBC 4.1	JPA 2.0, 1.0
JAXB 2.2	JAX-RS 1.1	JAX-RPC 1.1
JAXP 1.2	JAXR 1.0	JAX-WS 2.2di
SAAJ 1.2, 1.3	JSF 2.0, 1.2	SOAP 1.1, 1.2
StAX 1.0	UDDI 3.0	XML schema 1.0
JCA 1.6	WS-AT 1.0, 1.1	WS-BA 1.0, 1.1
WS-COOR 1.0, 1.1	WSDL 1.1	JSR 109 1.2
SDO 1.0	JMS 1.1	JavaMail 1.4
Java 2 Security	JAAS 2.0	JACC 1.1
JCE 1.0	CertPath 1.1	WS-Security 1.0, 1.1
JAF 1.1	WS-I Attachments 1.0	WSIF
JNDI on Java SE 7	JTA 1.1	And more

WebSphere family products

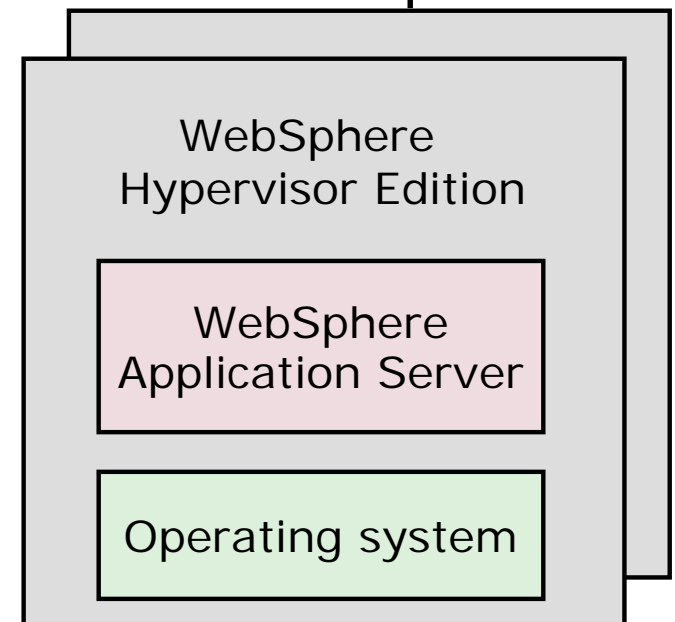


WebSphere Application Server for Developers

- Efficient development and innovative features of WebSphere Application Server V8.5.5 available at no charge
- Reduce testing effort and develop with confidence by using a runtime environment that is identical to the production runtime environment your applications eventually run on
- Available at:
<http://www.ibm.com/developerworks/downloads/ws/wasdevelopers/index.html>

WebSphere Application Server Hypervisor Edition

- WebSphere Applications Server shipped ready to run on a hypervisor that is based on OVF standard (such as VMware ESX, PowerVM, z/VM)
 - No installation is required (run and choose a profile)
 - Single virtual image capable of supporting single servers or clusters
 - New images are released on quarterly update intervals
- Maintenance, support, and fixes through IBM for both WebSphere Application Server and operating system.
- Products support various combinations of:
 - VMware ESX, z/VM, and PowerVM hypervisors
 - Red Hat Enterprise Linux, SUSE Linux, AIX



Mobile application development

WebSphere Application Server

WebSphere + Web 2.0 and Mobile Toolkit

Worklight

Enterprise web applications

- Java EE programming
- Build, deploy, and manage Enterprise applications and services
- Server-side and client-side development

Mobile web app development that is based on standard web technologies:

- Run applications in mobile browser
- Based on HTML5, CSS3, and JavaScript
- Native look and feel
- Advanced mobile user interface components
- Feature Pack for V6.1, V7, and V8

Application delivery in various forms:

- Hybrid application
- Native
- Install through app store
- Access to native services

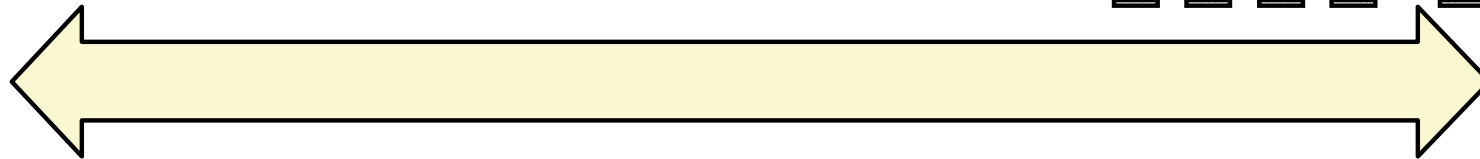
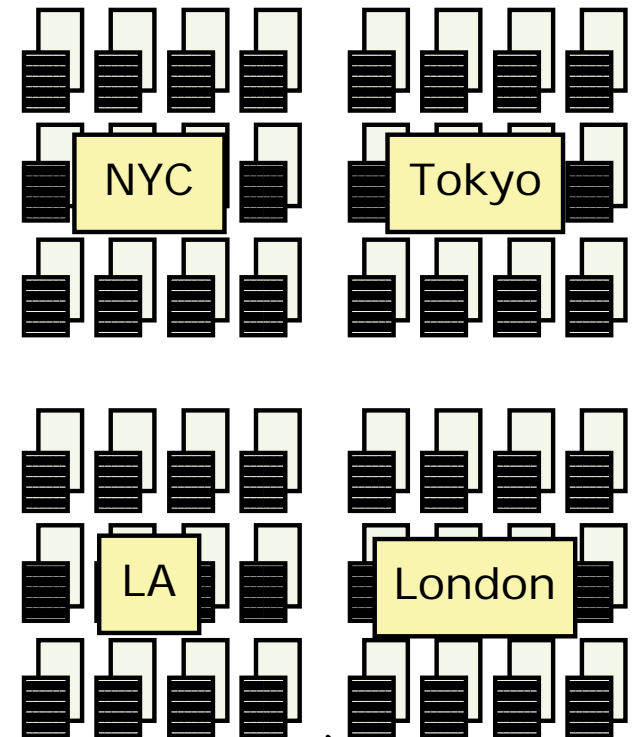
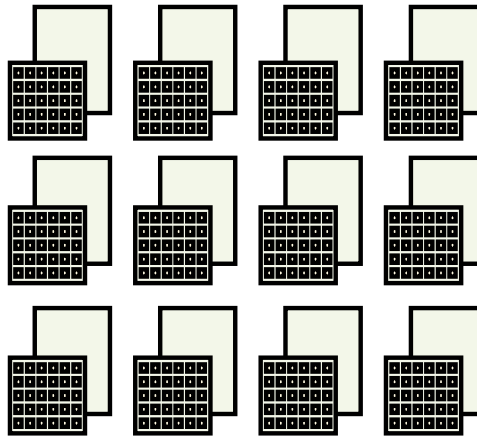
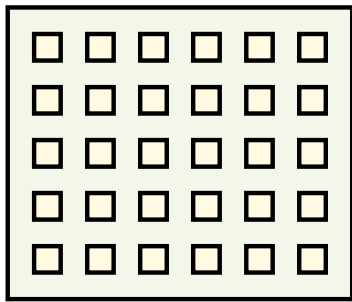
**Desktop web
applications**

Mobile web applications

Mobile applications

WebSphere eXtreme Scale

A flexible framework for realizing high performance, scalable and data-intensive applications



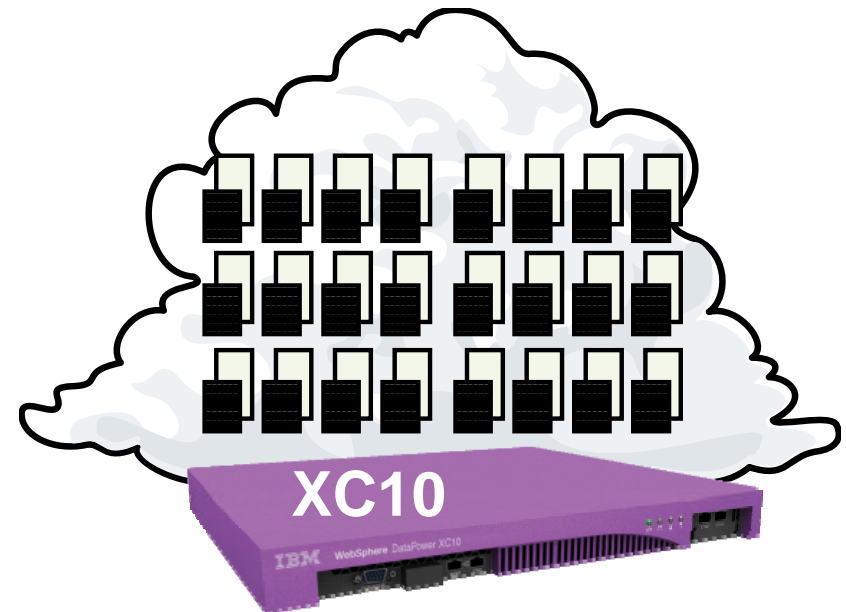
- Can be used as a powerful cache
 - Scales from simple, in-process topologies to powerful, distributed topologies
- Can be used as a form of in-memory database
 - Manages application states
 - Scales to thousands of servers
 - Sometimes referred to as Distributed Application State Management
- Can be used as a platform for building powerful data grid applications

WebSphere eXtreme Scale entitled capabilities

- WebSphere Application Server
 - Entitlement to session caching
 - Entitlement to DynaCache
 - Only in support of WebSphere Application Server.
- WebSphere Application Server Network Deployment
 - Full entitlement to WebSphere eXtreme Scale.
- WebSphere Application Server for Developers includes
 - Full entitlement to WebSphere eXtreme Scale on the developer workstation.
- WebSphere Application Server for z/OS includes
 - Full entitlement to WebSphere eXtreme Scale for z/OS
 - Client APIs for connecting to distributed WebSphere eXtreme Scale servers

WebSphere DataPower XC10 Appliance

- A purpose-built, easy-to-use appliance that is designed for simplified deployment at the caching tier of the enterprise application infrastructure
 - Designed for rapid, drop-in use with WebSphere Application Server, and other WebSphere family products
 - Physical hardware device capable of running one or more grids
 - Set of XC10 appliances can be grouped together for scalability
- Used for simple data-oriented scenarios
 - HTTP session replication
 - Elastic dynamic cache
 - Web side cache

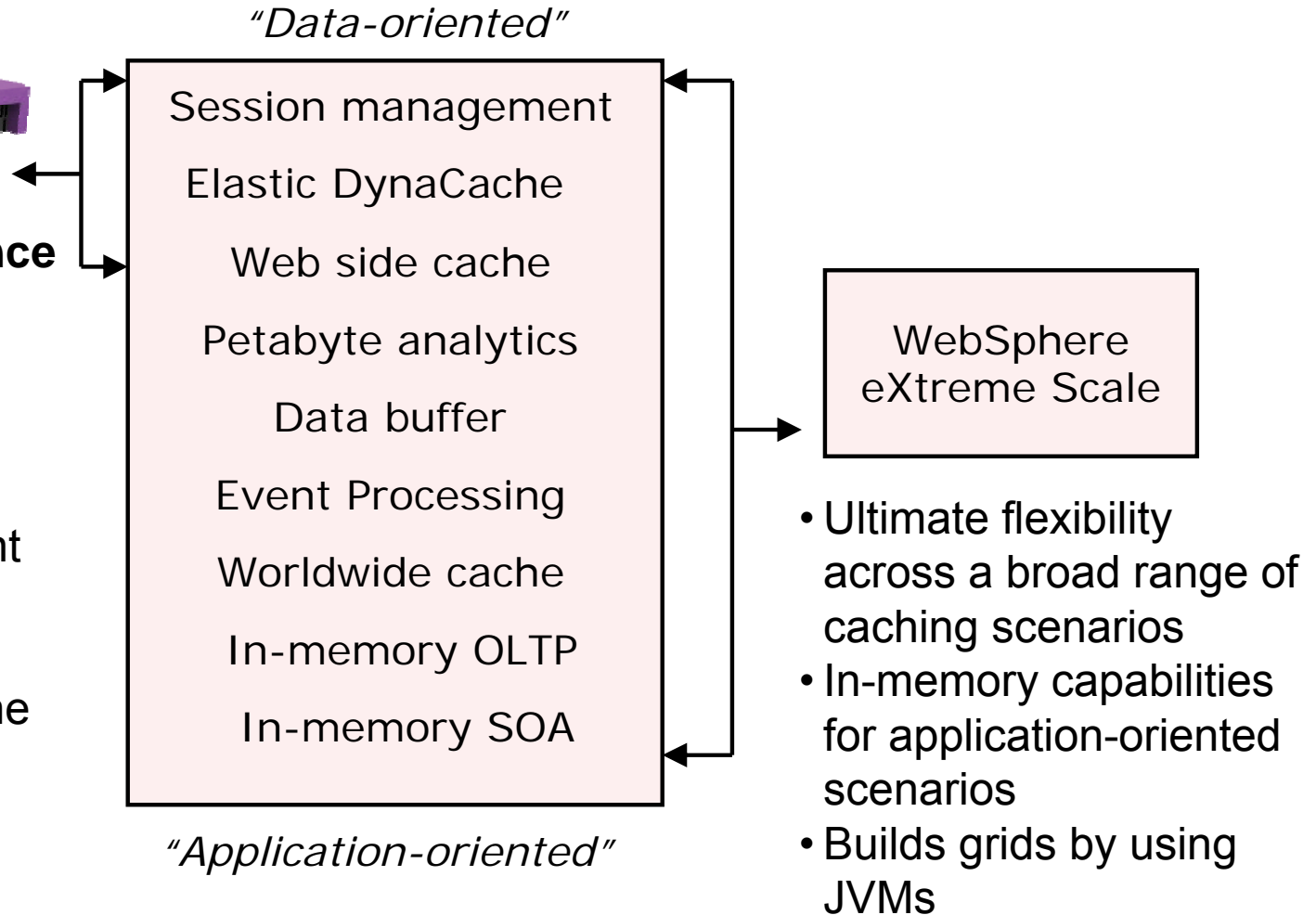


WebSphere eXtreme Scale and DataPower XC10 Appliance



DataPower XC10 Appliance

- Drop-in cache solution that is optimized and hardened for data-oriented scenarios
- High density, low footprint improves data center efficiency
- Stores cached data on the appliance



- Ultimate flexibility across a broad range of caching scenarios
- In-memory capabilities for application-oriented scenarios
- Builds grids by using JVMs

Elastic caching for linear scalability

High availability data replication

Simplified management, monitoring, and administration

IBM Workload Deployer

- Secure, self-service cloud management hardware appliance
 - Fully programmable and can integrate into an existing management infrastructure
- Enables consistent and repeatable deployment of application environments that are based on patterns
 - Dispenses hardened WebSphere patterns into a pool or cloud of virtualized hardware that is running a supported hypervisor
- Includes all functions from WebSphere CloudBurst Appliance, plus new capabilities
 - Integrates with existing infrastructure through programmable REST APIs
 - More robust platform (more storage and compute power)



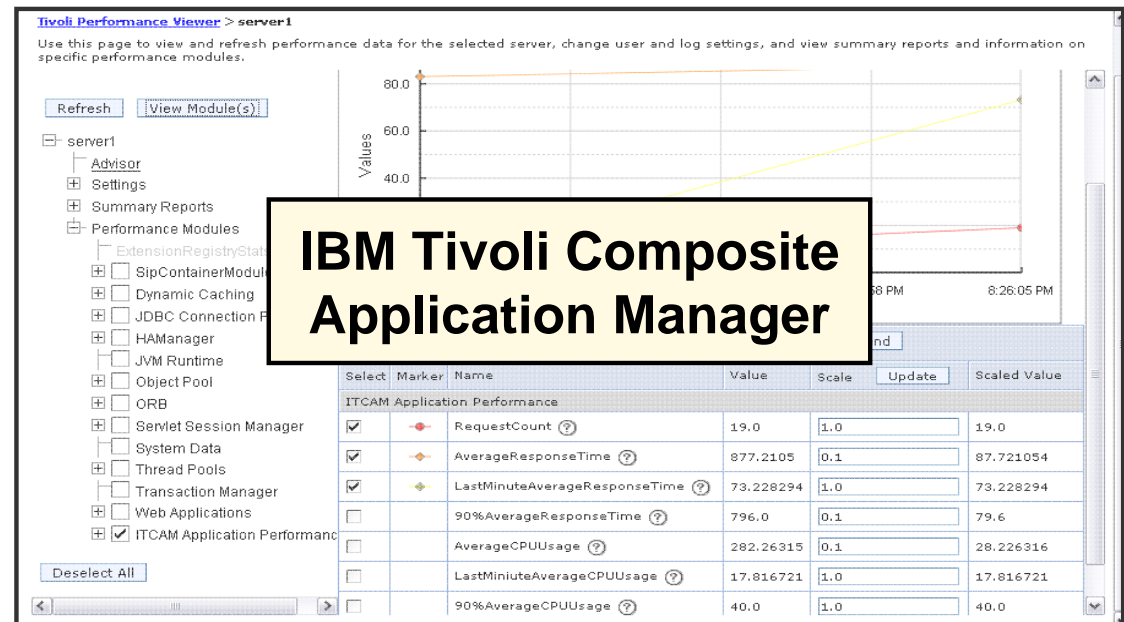
WebSphere CloudBurst
Appliance V2.0



IBM Workload
Deployer V3.1

IBM Tivoli Composite Application Manager for WebSphere Application Server

- Data Collector available in WebSphere Application Server V8.5.5 as an extension offering (optional download and installation)
- IBM Tivoli Composite Application Manager for WebSphere Application Server provides more request-based response time and processor metrics
- Customer application code is not instrumented
- Simple upgrade from IBM Tivoli Composite Application Manager for WebSphere Application Server to IBM Tivoli Composite Application Manager for Application Diagnostics
- After upgrade IBM Tivoli Composite Application Manager data still visible in Tivoli Performance Viewer



Rational Application Developer

Rational Application Developer

Team productivity

- Integration with Rational Team Connect
- Collaborative debug
- Collaborative code analysis

Problem determination

- Code visualization - class, sequence, and topic diagrams
- Static analysis (code review)
- Code coverage: optimize unit testing

Enterprise connectivity

- J2C (EIS) tools
- CICS and IMS adapters
- WebSphere Adapters for SAP, Siebel, JDE, Oracle, and PeopleSoft

Programming model support

- Create, edit, validate applications
- SCA, Java Batch, XML feature pack
- Standards: Java EE (Web, EJB, Web Services, JAX-RS...), SCA, OSGi, SIP, XML, Web (JSF, Dojo, JavaScript, Web 2.0)
- Debug applications on WebSphere Application Server
- Database tools
- Integration with ClearCase SCM Adapter, Rational RequisitePro, RUP

WebSphere integration

- WebSphere test servers: V7.0, V8.0, V8.5 and Liberty profile
- Create and debug Jython and wsadmin scripts
- Portal tools and server support
- Profile applications on WebSphere
- Find and deploy to WebSphere or Portal instances in the IBM SBDT cloud
- IBM Workload Deployer 3.1, 3.0

IBM Assembly and Deploy Tools for WebSphere Administration

- Rapidly assemble and deploy applications to WebSphere Application Server environments
- The tool replaces the previously available IBM Rational Application Developer Assembly and Deploy function in V7
 - Restricted to assembly and deployment usage only
- Key capabilities include:
 - Import and validate applications
 - Edit deployment descriptors and binding files
 - Edit EAR-level configuration (enhanced EAR)
 - Create and debug Jython and `wsadmin` scripts
 - Deploy EJB and web services
 - Deploy applications to local or remote WebSphere servers
 - Debug applications on WebSphere

Unit summary

Having completed this unit, you should be able to:

- Describe the WebSphere family of products
- Describe the relationships between various products in the WebSphere family
- Describe the WebSphere Application Server V8.5.5 offerings
- Describe the standards that are supported in this release

Checkpoint questions

1. What is the main difference between the Express and base WebSphere Application Server editions?
2. Which WebSphere Application Server edition do you need if you want to deploy a single application with low transaction volume?
3. True or False: WebSphere Application Server Hypervisor Edition is shipped in OVF format, which includes WebSphere Application Server and the operating system.
4. True or False: Support is included for mixed WebSphere Application Server releases in a cell.

Checkpoint answers

1. What is the main difference between the Express and base WebSphere Application Server editions?
 - The Express edition license covers only two processors. The license for the base edition covers unlimited processors.
2. Which WebSphere Application Server edition do you need if you want to deploy a single application with low transaction volume?
 - Any edition allows you to deploy a single application with low transaction volume.
3. True or False: WebSphere Application Server Hypervisor Edition is shipped in OVF format, which includes WebSphere Application Server and the operating system.
 - True
4. True or False: Support is included for mixed WebSphere Application Server releases in a cell.
 - True