



WebSphere Software

WebSphere Application Server beta 7.0

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WebSphere Technical PreSales

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Agenda

- Release roadmap & service strategy
- WAS 7.0 Packaging and Install
- WAS 7.0 Content
 - Standards
 - Administration
 - Security
 - Messaging
 - Other features

WebSphere Application Server Roadmap

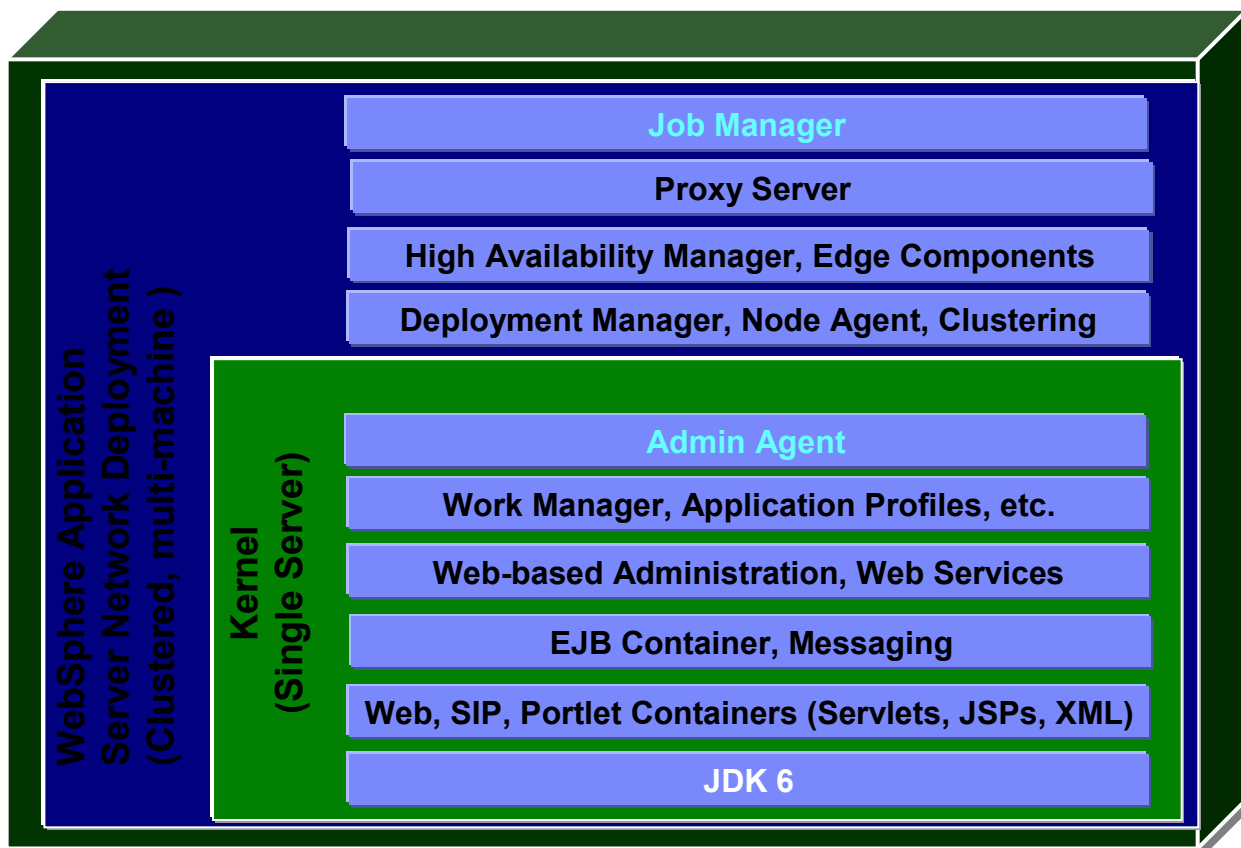
| Products | Cur Ver. | 2007 | | | | 2008 | | | | 2009 | | | |
|-------------------------|----------|------|--------------|------------|---------|---------|---------|--------|----|------|----|----|----|
| | | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 |
| WAS CE | | | | WAS CE 2.0 | | | | | | | | | |
| WAS Express/Base/ND/zOS | WAS 6.1 | | | | | | | WAS V7 | | | | | |
| WAS Feature Packs | | | Web Services | | EJB3 | | | | | | | | |
| | | | | SOA Beta | Web 2.0 | | | | | | | | |
| WebSphere XD | | | 6.1 | | | 6.1.0.1 | 6.1.1.1 | | | | | | |

Service strategy

- WAS V6.0, V6.1 and V7.0 service life extended to 5 + 3 years
- Migration, mixed-cell and interop (policy min n-2 releases)
 - V6.1 and V7.0 support n-3 releases
- Deprecation/removal policy
 - Min n-2 releases where possible
 - Sometimes shorter eg J2SE removals after 1 release of deprecation
 - Sometimes longer, eg JACL support
- Backward compatibility policy
 - Avoid default behavior changes in service
 - Limit default behavior changes on release boundaries
 - Specification requirements
 - Increased pre-release testing with SWG family products to ease uptake of fix packs and new releases

Packaging

- Product install will continue to have the same look and feel as WebSphere Version 6



Plus.....

Secure Proxy Server

Application Client

Thin client libraries

IHS/plugin

Install tools

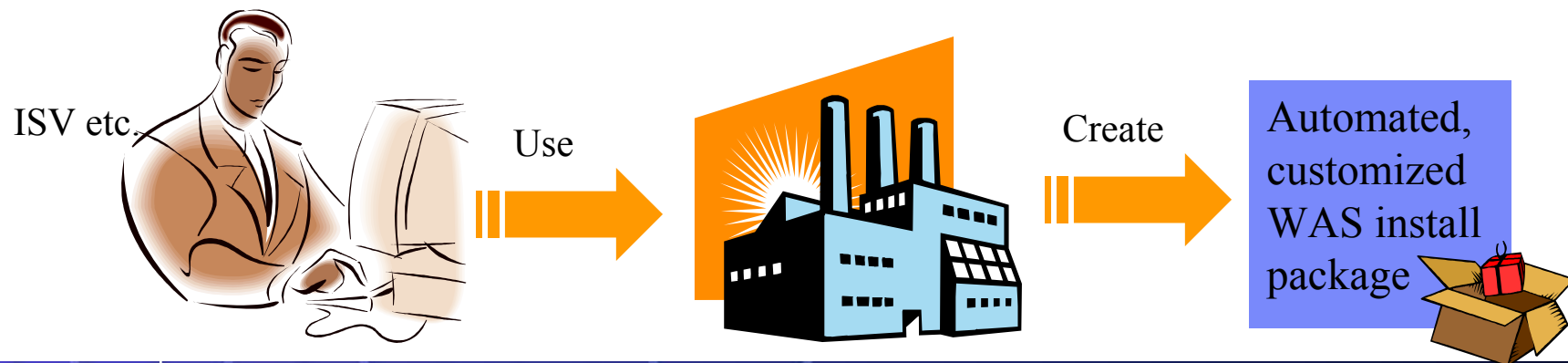
App development tools

IBM Support Assistant

ITCAM subset

What Install Factory Does

- Install Factory is a tool for creating automated, customized **WAS** install packages
- Greatly simplifies the process; provides simple GUI and CLI for creating the Custom Install Package (CIP)
- Eliminates variations – all Custom Install Packages are created the same way
 - Much easier for IBM to support
- Added in V7
 - Span media
 - Reduced install image size
 - Secure DMZ Proxy Server handling
 - Supports V7 admin capabilities





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Standards



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Standards

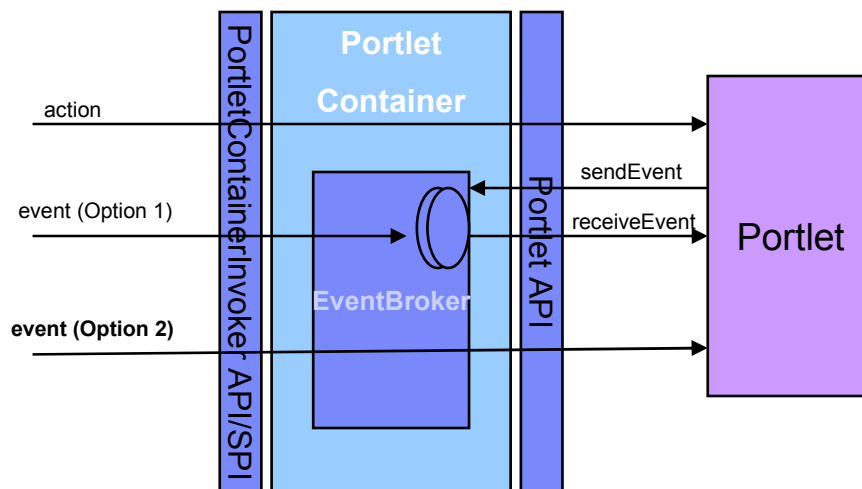
- Java standards
 - Java SE 6.0
 - Java EE 5.0
 - Portlet JSR 286

- Web Services profiles for support for
 - WS-I Reliable Secure Profile and Basic Profile 1.2/2.0,

- SIP related standards update, more RFC support.

The next level of the Portlet Programming model

JSR 286 – Portlet Specification 2.0



- Portlets will now be able to send and receive events in order to perform changes to the portlet state triggered by events
- Portlets will now be able to share session attributes with servlets and jsp's located within the same web application
- Portlets will now be able to share render parameters with other portlets
- Portlets will now be able to serve resources in the context of the portal

Spring / EJB3

- Significant collaboration between IBM and Interface21 in 2007 tested Spring with WAS on all Base WAS platforms and under load.
 - Framework integration points added to WAS and exploited by Spring 2.5
 - Early availability of these delivered in 6.1.0.9 and 6.0.2.19.
 - WAS certified as a deployment platform for the Spring framework
 - <http://www.springsource.com/web/guest/2007/ibmwebsphere062007>
 - WAS/Spring integration testing focused on core Spring capabilities.
 - Mix these with Java EE technologies as appropriate – for example for distributed applications.
 - Spring distribution is not shipped with WAS, nor does WAS provide support for the Spring framework itself

- EJB3 is the JavaEE-standard, remote and local POJO programming model for business logic implemented in Java

- Spring may be used as a local-only, non-JavaEE POJO programming model if customers choose



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DataPower



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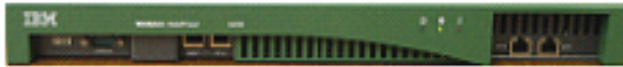
DataPower SOA Appliances

- A DataPower SOA appliance is an easy to use device that simplifies SOA implementations while also accelerating and securing the message traffic of the SOA.
- Features:
 - Simplified deployment and ongoing management reduce the need for in-house SOA skills and accelerates time to SOA benefits.
 - Hardened specialized hardware for security and reliability.
 - Specialized software and hardware acceleration for encryption and XML processing
 - Many functions are integrated into a single device: Service level management, routing, policy and transformation.

IBM SOA Appliance Product Line

Specialized network devices simplify, help secure & accelerate SOA

XML Accelerator XA35



- Accelerates XML processing and transformation
- Increases throughput and reduces latency
- Lowers development costs

XML Security Gateway XS40



- Help secure SOA with XML threat protection and access control
- Combines Web services security, routing and management functions
- Drop-in, centralized policy enforcement
- Easily integrates with exiting infrastructure and processes

Integration Appliance XI50



- Transforms messages (Binary to XML, Binary to Binary, XML to Binary)
- Bridges multiple protocols (e.g. MQ, HTTP, JMS)
- Routes messages based on content and policy
- Integrates message-level security and policy functions

V7 features

DataPower appliances may now be managed via the normal WebSphere management tools (e.g., admin console, wsadmin) – no need to leave WebSphere tooling to manage DataPower appliances

- Managed set: Allows the user to define a set of DataPower appliances that will have their firmware, sharable appliance settings (example, NTP settings) and managed domains the same across the managed set
- There is much more of a common look and feel between management of WebSphere resources and management of DataPower appliances
- For the administrative console, a new sub-entry named “DataPower” will be found under “Servers”
- Expanding this sub-entry will allow the user to access/modify the configuration info for the DataPower appliances

File Edit View History Bookmarks Tools Help

https://samoyed.raleigh.ibm.com:9043/ibm/console/login.do?action=secure

Latest Headlines OneLook Dictionary S... NCSmartLink.org - Re... WRAL.com - Traffic BluePages B500 Reserve CS: DataPower Integ... WSTI DP new WSTI DP

Google Search Bookmarks PageRank Check Translate AutoLink AutoFill Send to Settings

Integrated Solutions Console Online Scheduler DataPower XI50 DataPower XS40

Integrated Solutions Console Welcome admin Help Logout

Cell=samoyedCell01, Profile=Dmgr01

View: All tasks

- Welcome
- Guided Activities
- Servers
 - Add a server
 - Server Types
 - Clusters
 - DataPower
 - Appliances
 - Firmware
 - Managed sets
 - Management Options
 - Tasks
 - WebSphere MQ servers
- Core Groups
- Applications
- Services
- Resources
- Security
- Environment
- System administration
- Users and Groups
- Monitoring and Tuning
- Troubleshooting
- Service integration
- UDDI

Appliances

Use this page to add, change, or remove a DataPower appliance. Appliances can be used to access, change, or manage data stored in a repository.

Preferences

New Delete Launch

| Select | Name | Host name | Managed set | Master | Operation Status | Synchronization Status |
|---|------|--------------------------|-------------|--------|------------------|------------------------|
| You can administer the following resources: | | | | | | |
| <input type="checkbox"/> | dp1 | dp1.nivt.raleigh.ibm.com | unmanaged | | ? | ? |
| <input type="checkbox"/> | dp4 | dp4.nivt.raleigh.ibm.com | ms1 | ☑ | ➔ | ↔ |
| Total 2 | | | | | | |

Field help
For field help info select a field label marker when the cursor is displayed

Page help
[More information this page](#)

Command Assist
[View administrative scripting command action](#)

https://samoyed.raleigh.ibm.com:9043/ibm/console/navigatorCmd.do?forwardName=DataPower.device.content.main&WSC=true

samoyed.raleigh.ibm.com:9043 0.875s McAfee SiteAdvisor



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Web Services



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Web Services Distributed Management (WSDM)

- WSDM is an OASIS approved standard that details how resources can be managed through a Web services interface
- Hosting environments, such as WebSphere Application Server V7, expose resources using this standardized interface
 - Allows for management and control by managers using platform independent Web services
- WSDM does not replace any existing WebSphere Application Server administration interfaces
 - Such as MBeans, wsadmin, or Java APIs
- Examples:
 - WebSphere Cluster <http://<hostname>:<port>/websphere-management/services/webspherecluster>
 - DataSource <http://<hostname>:<port>/websphere-management/services/datasource>

Web Services – new features

■ **WS-Security**

- WebSphere Application Server V7 adds WSSecurity Kerberos Token Profile support for both JAX-RPC and JAX-WS applications
- Support for LTPAv2 tokens

■ **SOAP over JMS**

- WebSphere Application Server V7 introduces support for a new proposed industry standard SOAP over JMS protocol Based on the Worldwide Web Consortium (W3C) SOAP over JMS specification
 - Provides a standard set of interoperability guidelines
- Previous IBM specific implementation of SOAP over JMS protocol has been deprecated

Web Services Specification Upgrades

- WS-I
 - Basic Profile 1.2, 2.0, Reliable Secure Profile 1.0
- OASIS
 - WS-ReliableExchange (WS-ReliableMessaging), WS-SecureExchange (WS-Trust/WS-SecureConversation, WS-SecurityPolicy), WS-Transaction (WS-AtomicTransaction, WS-BusinessActivity), Kerberos Token Profile, WS-DistributedManagement (WSDM)
- W3C
 - SOAP 1.2, MTOM, XOP, WS-Security 1.1, WS-Addressing Metadata, WS-Policy
- Others
 - WS-MetadataExchange

Administrative Console changes

- Changes to the listed policy sets and support to import and export policy sets from the console
- Support for cell wide bindings
 - In addition to the application specific bindings
- The ability to disable the endpoint listeners associated with a service
 - If an application containing services is stopped the associated listeners are also stopped
 - Application must be running to start the listeners
 - Listeners can be stopped/started at both the service and endpoint level
 - Administrative console only supports operations at the service level
 - Stopping at the service level, stops all endpoints for that service
- Improved consistency in names for services based resources

Administration improvements ease Web services management

The screenshot displays the IBM WebSphere Integrated Solutions Console interface. On the left, a navigation tree shows 'Web Services' expanded to 'JAX-WS Web Services'. The main content area shows a list of services with 'AccountService' selected. A detailed configuration window for 'AccountService' is open on the right, showing various settings like 'Service name' and 'Policy Sets and Bindings'.

JAX-WS Web Services

Manage Web services. All JAX-WS services are listed here. In this feature pack, JAX-RPC services are not supported.

Start Application Stop Application

| Select | Name | Type | Application |
|-------------------------------------|-----------------|--------|---------------------|
| <input checked="" type="checkbox"/> | AccountService | JAX-WS | AccountApplication |
| <input type="checkbox"/> | Quoteservice | JAX-WS | QuoteApplication |
| <input type="checkbox"/> | Ruleservice | JAX-WS | RulesApplication |
| <input type="checkbox"/> | WeatherService | JAX-WS | WeatherApplication |
| <input type="checkbox"/> | BandService | JAX-WS | BandApplication |
| <input type="checkbox"/> | NewhireService | JAX-WS | NewhireApplication |
| <input type="checkbox"/> | ScheduleService | JAX-WS | ScheduleApplication |

Total 7

AccountService

Use this page to manage policy sets and bindings and access additional information for this web service.

Service name: AccountService

Policy Sets and Bindings

| State | Service / Endpoint / Operation | Attached Policy Set | Binding |
|--------------------------|--------------------------------|-----------------------|--------------------|
| <input type="checkbox"/> | AccountService | Sub-level attachments | Not applicable |
| <input type="checkbox"/> | AccountPort01 | Sub-level attachments | Not applicable |
| <input type="checkbox"/> | RetrieveLastSale | SAML default | AccountWebServices |
| <input type="checkbox"/> | SellItemAttachmentType | SOAP default | Default |
| <input type="checkbox"/> | AccountPort02 | NSIS 1.0 default | Default |
| <input type="checkbox"/> | AccountPort03 | SAML default | Sub-level bindings |
| <input type="checkbox"/> | RetrieveQuarterlySales | SAML default | AccountWebServices |
| <input type="checkbox"/> | UpdateFinancials | SAML default | Default |



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Systems Management Enhancements



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Flexible Management

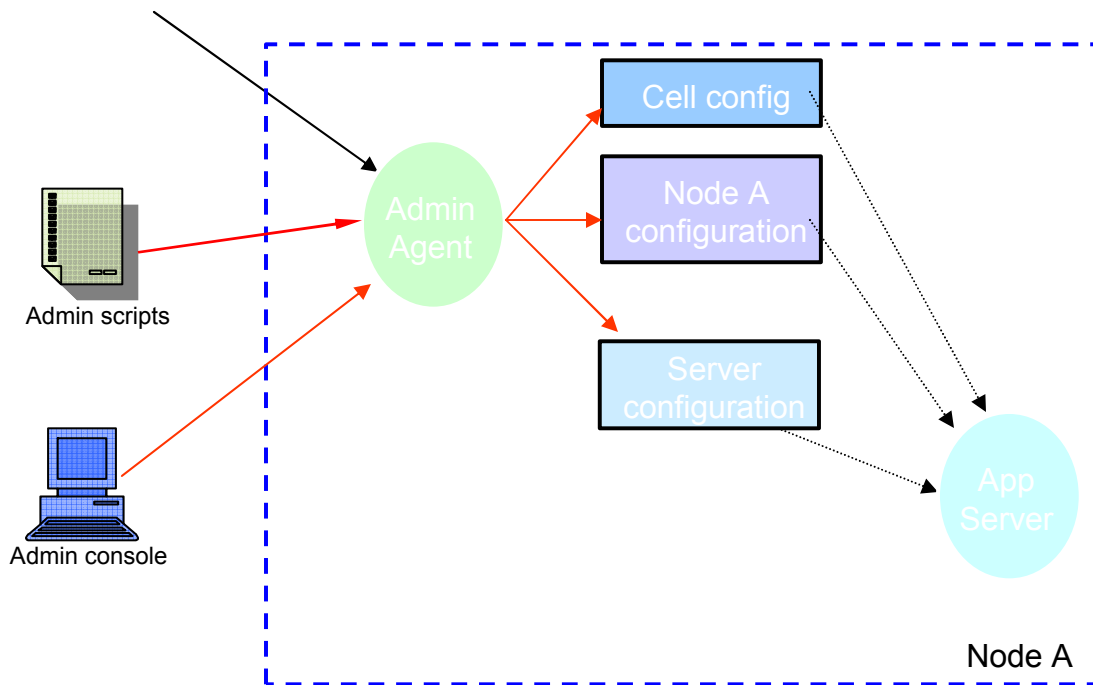
- Reduce Overhead of Administration – Admin Agent
 - Reduce App Server footprint related to admin functions
 - Consolidate IBM Management Agents
 - Local agent that runs the administrative logic for all servers on a node
 - Runs a local administrative console
 - Admin Agent allows registration of profiles – not registration of servers

- Drastically increase Scale for Administration – Job Manager
 - Remote Administration option
 - Flexible Management is “loosely coupled” management
 - Asynchronous, non-blocking admin jobs queued for agent execution on the nodes
 - Nodes are autonomous
 - Submits management jobs to administrative agents on each node
 - Can manage multiple base servers, or multiple Network Deployment cells

New Flexible Management Option

WebSphere Application Server
7.0 Base Product Architecture

Admin agent included in Base product



Admin logic hosted in separate JVM from application server

Admin agent can manage multiple local nodes

Admin agent registered as a system service.

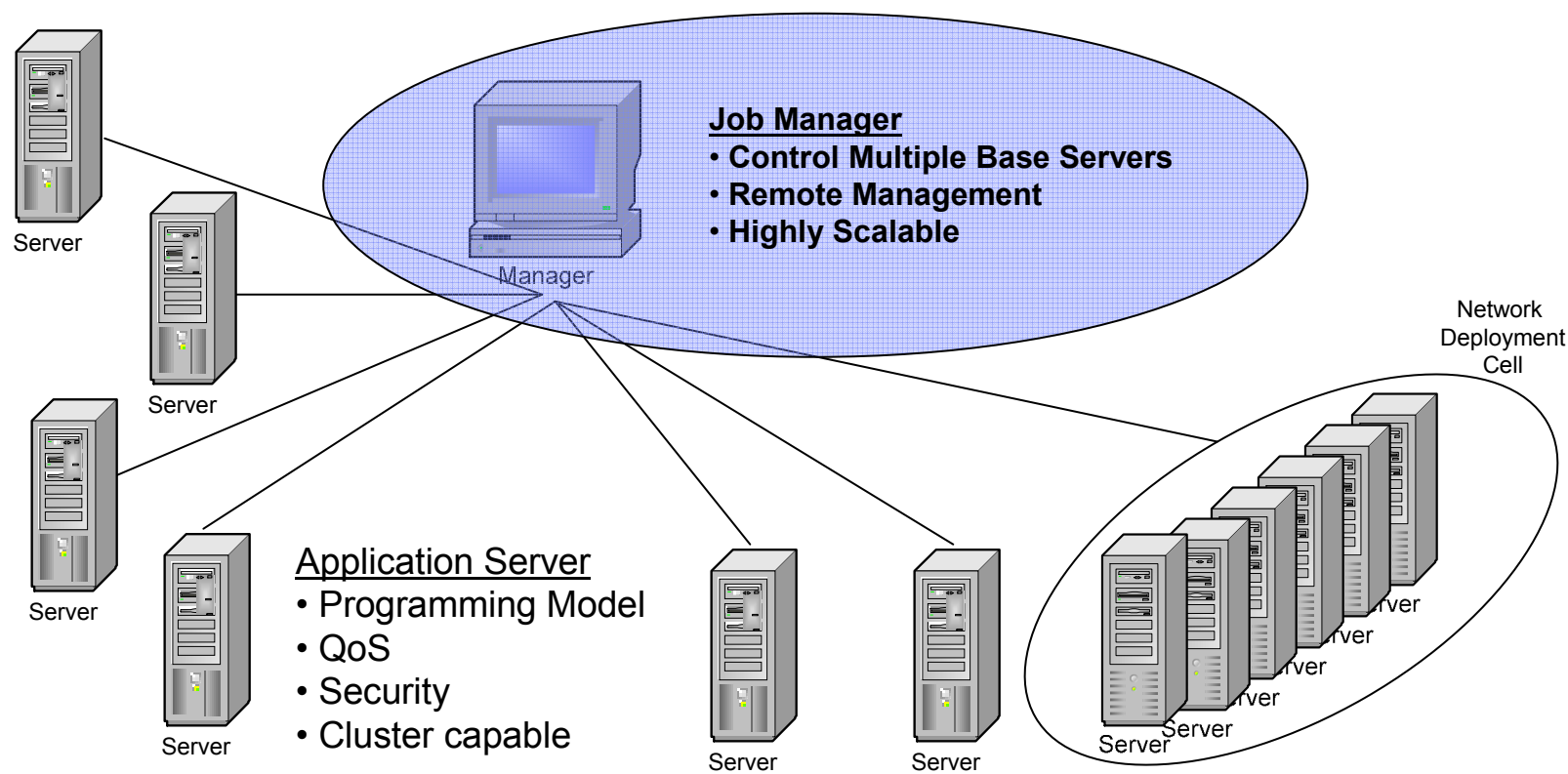
Separate console server to offload pure Application Server.

Local control of node does not change after registration.

Federation is much quicker and less involved.

Better management of web servers and other non-Application Server elements.

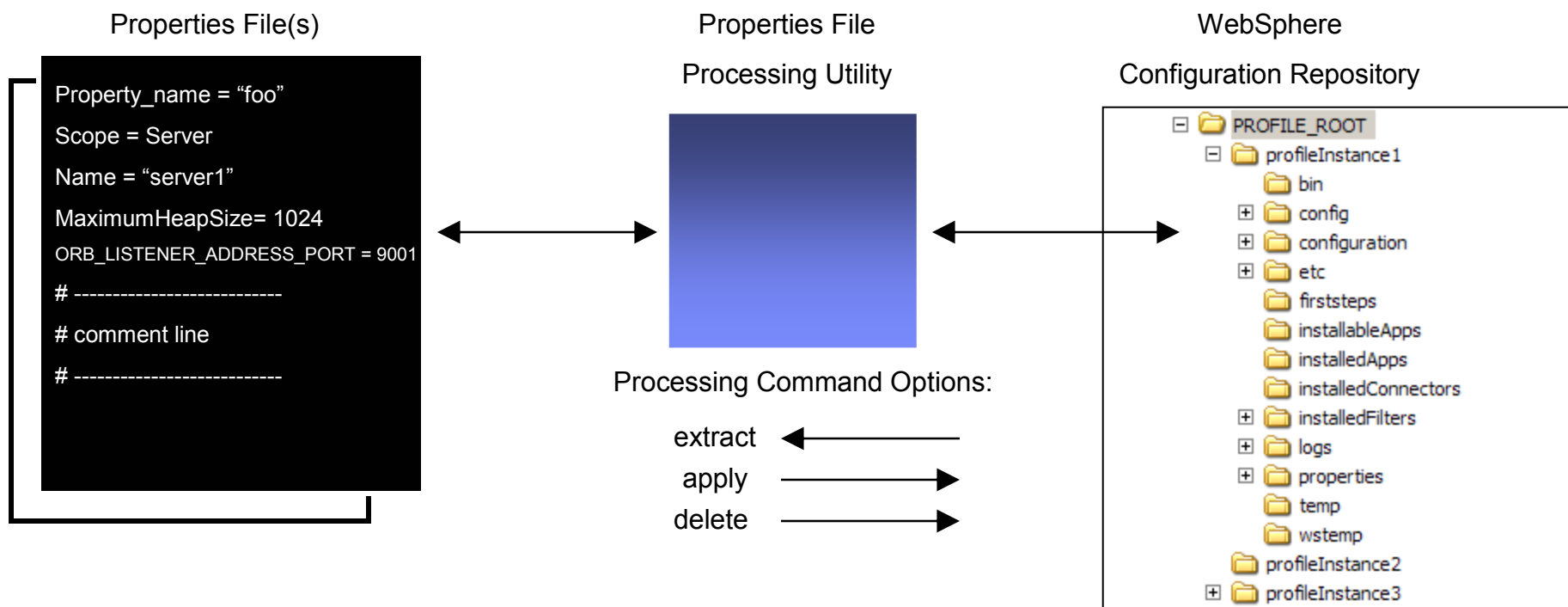
WebSphere Flexible Job Manager



Enhancements to wsadmin scripting

- wsadmin jython script library
 - Sample scripts to perform common administrative actions on 6.1 and 7.0 systems
 - Systems
 - Servers
 - Security
 - Resources
 - Applications
 - Utilities
 - Use samples directly, edit/combine into your own custom scripts, use for learning
 - located in \$WAS_HOME/scriptLibraries directory
 - V6.1 and V7 subdirs; V7 scripts are specific to V7
 - Automatically loaded at wsadmin initialization
- Improved help, wildcard support, new admin tasks

Properties File Based Configuration Utility

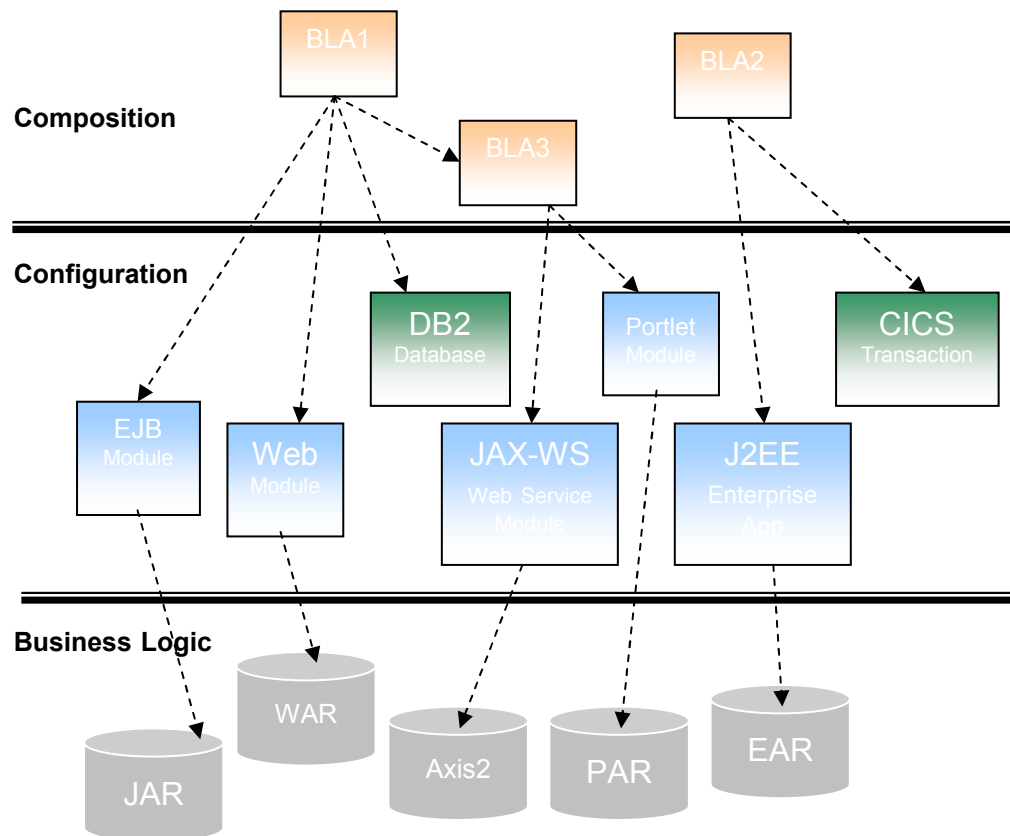


Business level applications

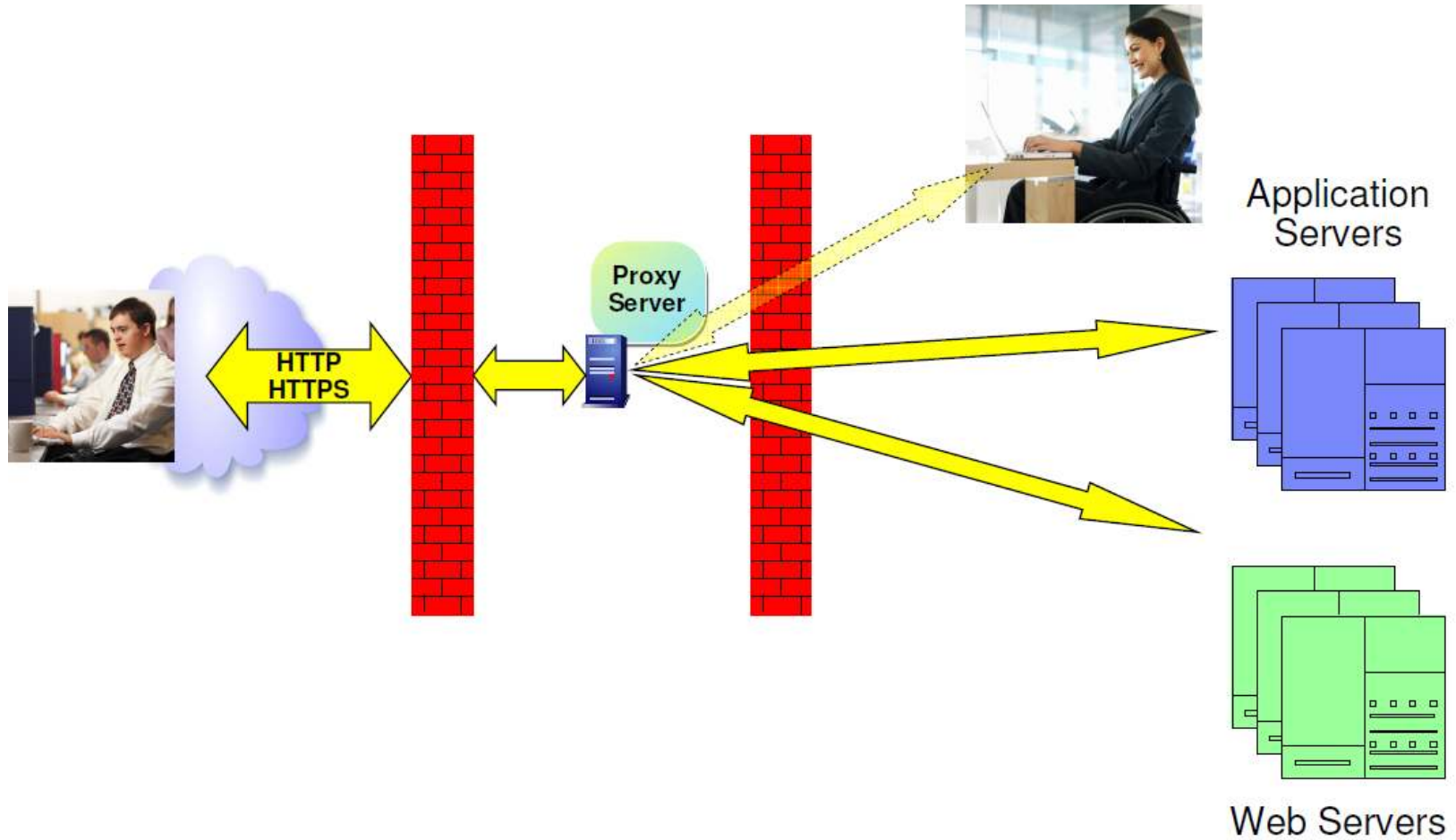
- Extends the scope of an “application” beyond an EAR file
 - Offers a logical view from the perspective of lines of business
 - May include multiple EARs, JARs, shared libraries, static content and other resources
- Offers management for application life cycle
 - Includes application upgrades and version control

WebSphere Business Level Applications

- Expanding the notion of “Application” beyond J2EE
- New formats for deployable packages
 - for example: SCA, Shared Lib, Proxy Filters, Static Content, SIP archives, BPEL, ...
- Extensible deployment logic framework
 - Registered Content Handlers for each type of deployable format
- Supports more than Application Server deployment target runtimes
 - for example: Proxy Server, Web Server, CE, etc.
- Full lifecycle management of applications
 - Install, distribute, activate, monitor, update, remove



Secure Proxy Server



DMZ: Security

- Security has 4 components
- Can select from 3 preset levels
- Can set individual components

| | High | Medium | Low |
|----------------|------------|------------|-------------|
| Administration | Local SOAP | Local SOAP | Remote SOAP |
| Routing | Static | Dynamic | Dynamic |

Workload Management

- Random load balancing algorithm added
- Static routing
 - For secure proxy servers
- Custom advisors
 - Customer generated called back by framework
 - Return false marks a server down
- Time of day routing
 - Applies to Generic Servers and Application Servers
 - Can be used to route around servers
 - During scheduled down-time
 - For time based capacity management



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Security Enhancements



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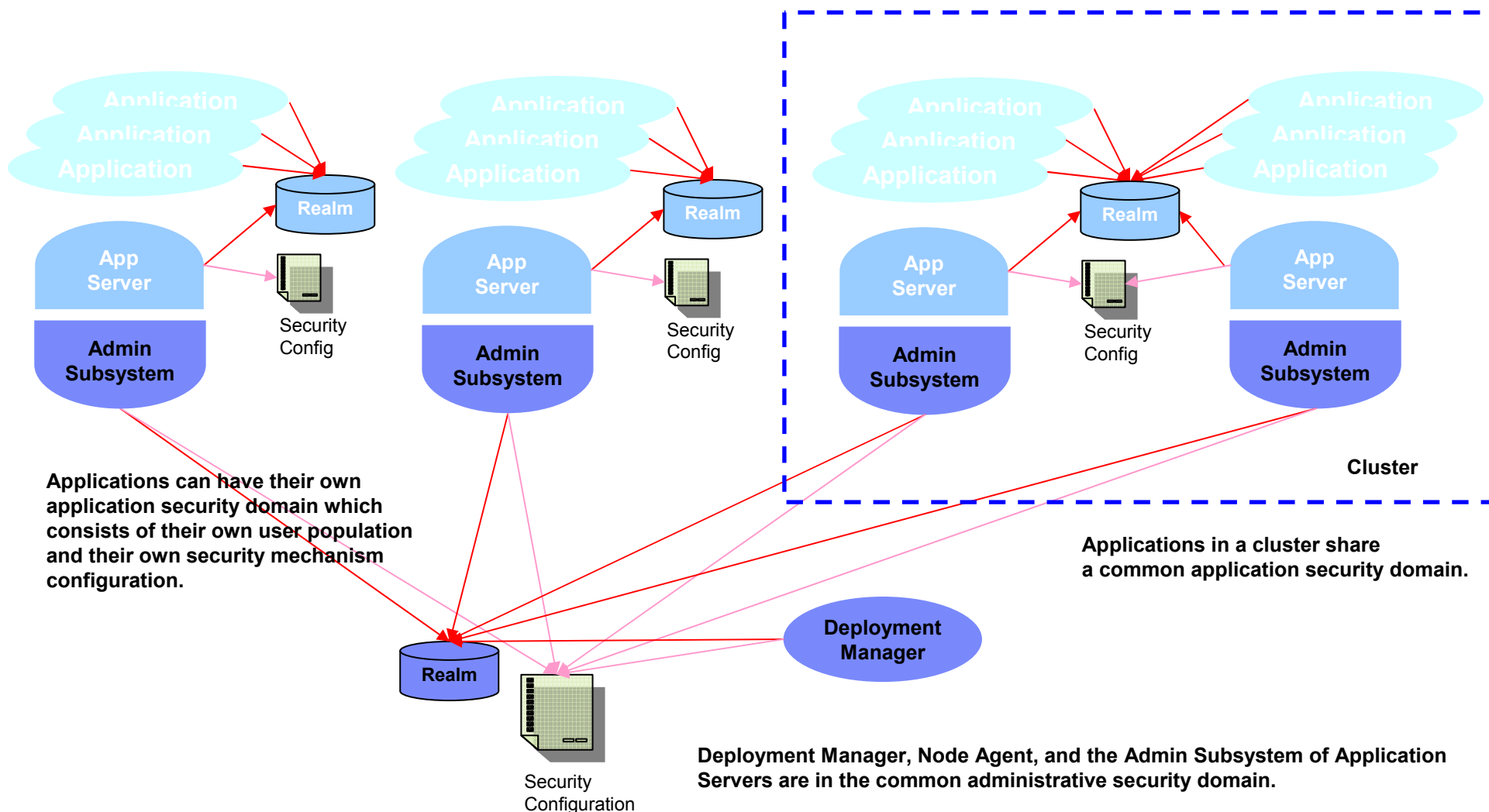
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Security enhancements

- Fine-grained administrative security
 - Support introduced in V6.1
 - Extended to the administrative console in V7.0
 - User roles can be given a resource scope
 - For example, 'John' is granted the 'Operator' role on 'Cluster 2'
- Multiple-domain support
 - Administrative security can use a different realm than applications
 - Application security realms can be separated by nodes, node groups, clusters, or servers
- Security auditing support
 - Audit records show who did what, and when
 - Enforce administrative accountability and satisfy legal or corporate requirements
 - New 'auditor' role allows viewing of audit records but does not grant administrative rights
 - Support for integration with services from other companies

Application And Multiple Security Domain Topology





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Messaging enhancements



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WAS 7.0 Messaging Improvements

- Messaging admin usability improvements
 - Improved configuration wizards and simplified panels
 - Message delivery failure handling improved
 - Improved resource usage visibility
- Pub-sub loop detection
- Performance
- New administrative console panels enable configuring role-based access control for bus resources
 - Could previously only be configured using wsadmin



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Other features



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Runtime Provisioning – smaller footprint servers

- Dynamic start of app server components based on application needs
- Application examined by WAS runtime at app install to generate 'activation plan'
- Server runtime starts only those components required by activation plans
- Requires targetting of application scenarios to provide useful separation of app server components – staged across WAS releases
- V7 includes framework and 'web/JDBC' application scenario

How to activate runtime provisioning

- In the administrative console
 - Application servers > serverName page > Start components as needed

The screenshot displays the IBM WebSphere administrative console interface. On the left is a navigation tree with categories like 'Servers', 'Applications', and 'Services'. The main content area is titled 'Application servers > server1' and contains a description of application servers. Below this, there are two tabs: 'Runtime' (selected) and 'Configuration'. The 'Runtime' tab shows several settings:

- General Properties:**
 - Name: server1
 - Node name: N612Node01
 - Run in development mode
 - Parallel start
 - Start components as needed (highlighted with a red oval)
 - Access to internal server classes: Allow
- Container Settings:**
 - Session management
 - SIP Container Settings
 - Web Container Settings
 - Portlet Container Settings
 - EJB Container Settings
 - Container Services
 - Business Process Services
- Applications:**
 - Classloader policy

Links

- <https://www14.software.ibm.com/iwm/web/cc/earlyprograms/webSphere/wasndv7/>
- https://www14.software.ibm.com/webapp/iwm/web/reg/download.do?source=swerpws-wasndv7-3&S_PKG=library&lang=en_US
 - Vmware images
 - Information Center
 - Documentation

Thank You

