

WebSphere Application Server What's New?

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IBM

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WebSphere Application Server on z/OS



Session	Day	Time	Room	Title	Speaker
11377	Monday	11:00	Grand Ballroom Salon B	What Can I Do With the SMF 120s?	David Follis
11371	Monday	3:00	Orange County Salon 2/3	Administrator Hands On Lab	David Follis / Michael Stephen / Ken Irwin
11378	Tuesday	12:15	Grand Ballroom Salon B	Spelunking the Admin Console	John Hutchinson
11375	Tuesday	4:30	Grand Ballroom Salon B	Being the Back-Up Administrator	Mike Loos
11374	Wednesday	11:00	Grand Ballroom Salon B	Liberty Profile – Rumors Dispelled	David Follis
11373	Thursday	4:30	Grand Ballroom Salon B	What's New?	David Follis / John Hutchinson / Michael Stephen
11370	Thursday	6:00	Grand Ballroom Salon B	Potpourri	Anybody
11376	Friday	8:00	Platinum Ballrom Salon 10	zWAS – In Real Life	David Follis / Rod Feak

WAS – What's New?

- **Level 2 Update**
- Liberty
- Compute Grid
- Virtual Enterprise
 - Dynamic Clustering & Intelligent Routing
 - Health Management
 - Application Edition Management
- Other
 - Java 7 SDK
 - IBM Mobile Foundation

Versions, Dates and Service Levels..oh my

	GA	End of Marketing	End of Support
Version 6.1	6/30/2006	7/25/2011	9/30/2012
Version 7	9/26/2008		
Version 8	6/17/2011		
Version 8.5	6/15/2012		

- If delivered by Stack Product, EOS is that of Stack Product
- V8 (and beyond) iFixes for ALL Platforms
- http://www.ibm.com/software/support/lifecycle/index_a_z.html

WebSphere V8.5 Pre-Reqs Liberty Profile

- Z/OS Pre-REQs:

Program Number	Product Name and Minimum VRM/Service Level
5694-A01	z/OS V01.11.00 or later
5694-A01	PTF UA51978 (z/OS V01.11.00) Required for IHS V8.5 with SSL
5694-A01	APAR OA38745 for Distributed Mapping Identity function
5694-A01	APAR OA37620 (Metal-C) for Liberty Profile
5694-A01	APAR OA39035 (Metal-C) for Liberty Profile
5694-A01	APAR OA39236 (Metal-C) for Liberty Profile
5694-A01	APAR OA39528 (RRS) for Liberty Profile
5635-DB2	APAR PM59162 (DB2) for Liberty Profile

USS Info APAR II14684


- Severe Performance degradation with z/OS UNIX Apps
 - WebSphere App Server z/OS
 - Performance issues during server startup or heavy load
 - Significantly higher usage of GCP's for zAAP/zIIP eligible work
 - Slow HFS / zFS access
 - CML Lock contention
 - occurs with OEM security support of FSACCESS
 - even if not explicitly have the FSACCESS class profile defined
- TSS fixes: TR44615, TR48511
- ACF2 fix: TR44615
- <http://www.ibm.com/support/docview.wss?uid=isg1II14684>

FITS No More

- The FITS requirement process (for WAS anyway) is gone
- Now you can participate directly via the Request For Enhancements (RFE) process on DeveloperWorks:
 - <http://www.ibm.com/developerworks/rfe/>
- Search
- Submit
- Comment/Discuss
- VOTE!

developerWorks > RFE Community >

IBM RFE Community



Welcome Request for Enhancement (RFE) Community users! Here you have an opportunity to collaborate directly with the IBM product development teams and other product users.

- [Search for RFEs](#) (view, comment, vote, and watch)
- [Submit RFEs](#)
- [Track your RFEs](#) (My RFEs)

Complete your sessions evaluation online at SHARE.org/AnaheimEval

Spotlight
→ Announcements
→ Give us your feedback

WOLA - History of Functional Updates



- **Development/Test**

- Test code on distributed development machine and have WOLA call "proxied" to z/OS where WAS z/OS server and backend data systems are located
- Support for inbound calls for EJB that resides in another WAS server from that connected to with WOLA registration

- **Work Distribution**

- Ability to round-robin between multiple external address spaces registered into server with the same register name

- **Monitoring**

- New SMF 120.10 record for outbound WOLA calls
- Correlator tokens for WAS to CICS TS 4.2 requests

8.0.0.1

8.0.0.4

2-Phase Commit
Support for IMS->WAS
(RRS=YES)

8.0.0.0

- **Install** -- integrated, `olaInstall.sh` no longer needed
- **Usage** - IMS multi-segment/large message (>32K) support
- **Availability** -- Failover to alternate connection factory JNDI and failback
- **Monitoring** -- better visibility to WOLA *inbound* workload in SMF 120.9

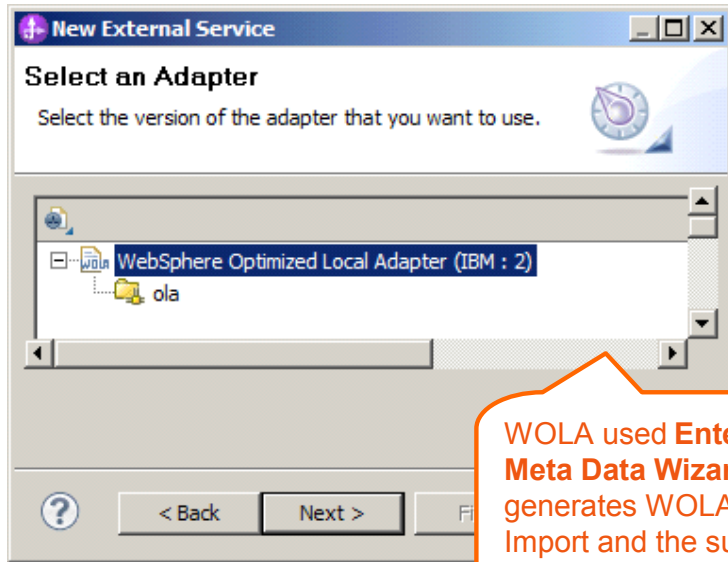
7.0.0.12

- **Usage** -- Two-phase commit support WAS ⇔ CICS 4.1
- **Usage** -- IMS support

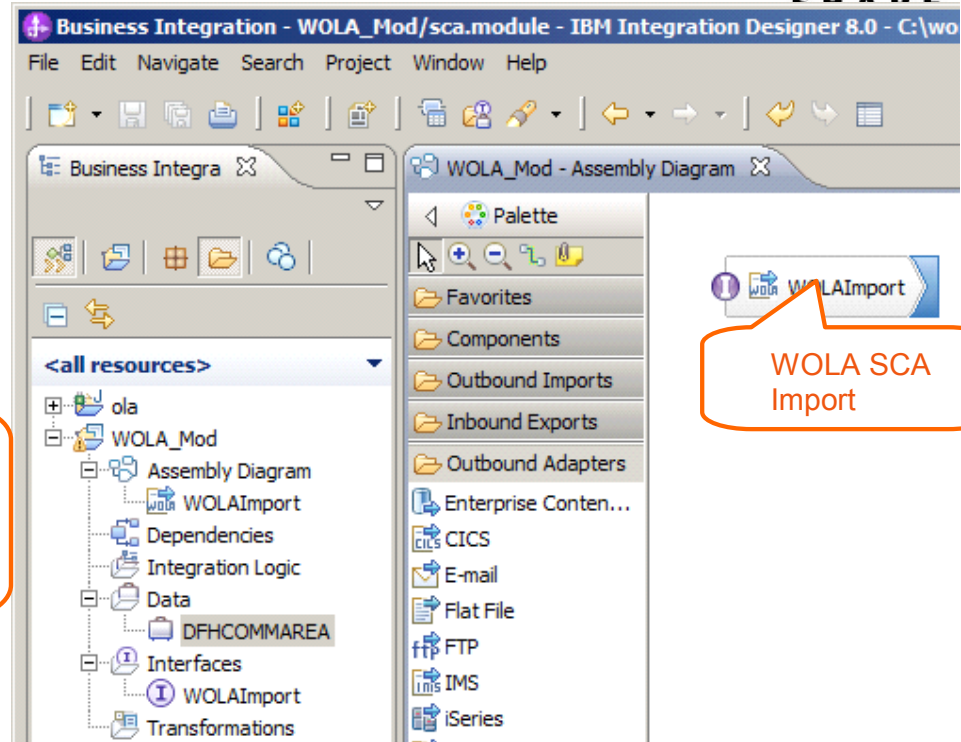
7.0.0.4

Original release of the WebSphere
Optimized Local Adapters function

BPM: WOLA Adapter Tools Support



WOLA used **Enterprise Meta Data Wizard** generates WOLA Adapter Import and the supporting artifacts: Interface; BOs



WOLA SCA Import

```

CALCAMNT.ccp
identification division.
program-id. CALCAMNT.
environment division.
data division.
working-storage section.
01 UnitCost1      USAGE COMP-2.
01 UnitCost2      USAGE COMP-2.
LINKAGE SECTION.
01 DFHCOMMAREA.
02 UnitsOf1       PIC 9(18) BINARY.
02 UnitsOf2       PIC 9(18) BINARY.
02 PartNumber1    PIC 9(18) BINARY.
02 PartNumber2    PIC 9(18) BINARY.
02 PurchaseCost1  USAGE COMP-2.
02 PurchaseCost2  USAGE COMP-2.
02 TotalPurchaseCost USAGE COMP-2.
procedure division.
    
```

WOLA EMD Wizard transforms a Cobol Copy Book to a BO

DFHCOMMAREA	
<Click to filter...>	
UnitsOf1	long
UnitsOf2	long
PartNumber1	long
PartNumber2	long
PurchaseCost1	double
PurchaseCost2	double
TotalPurchaseCost	double

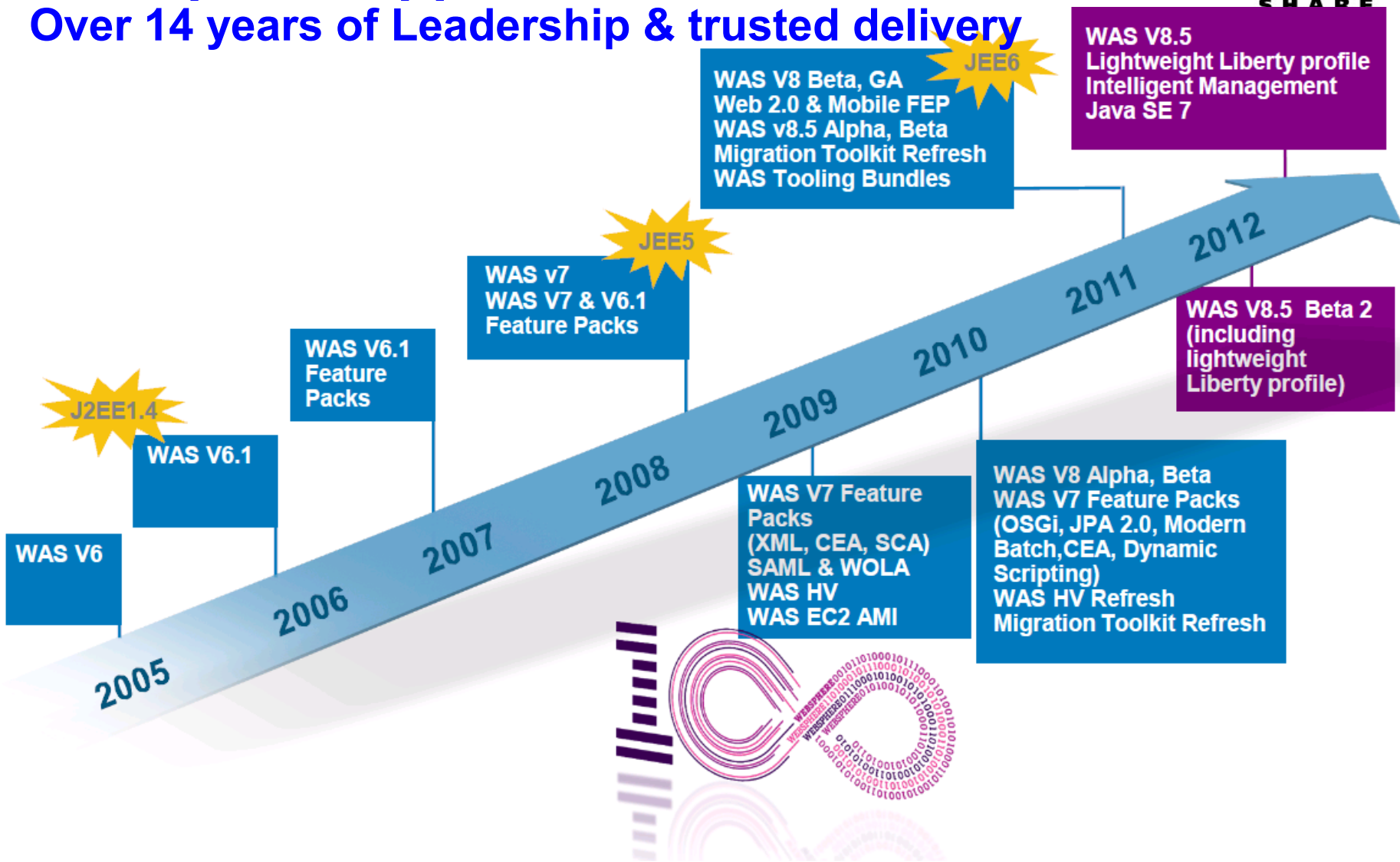
Complete your sessions evaluation online at SHARE.org/AnaheimEval

WAS – What's New?

- Level 2 Update
- **Liberty**
- Compute Grid
- Virtual Enterprise
 - Dynamic Clustering & Intelligent Routing
 - Health Management
 - Application Edition Management
- Other
 - Java 7 SDK
 - IBM Mobile Foundation

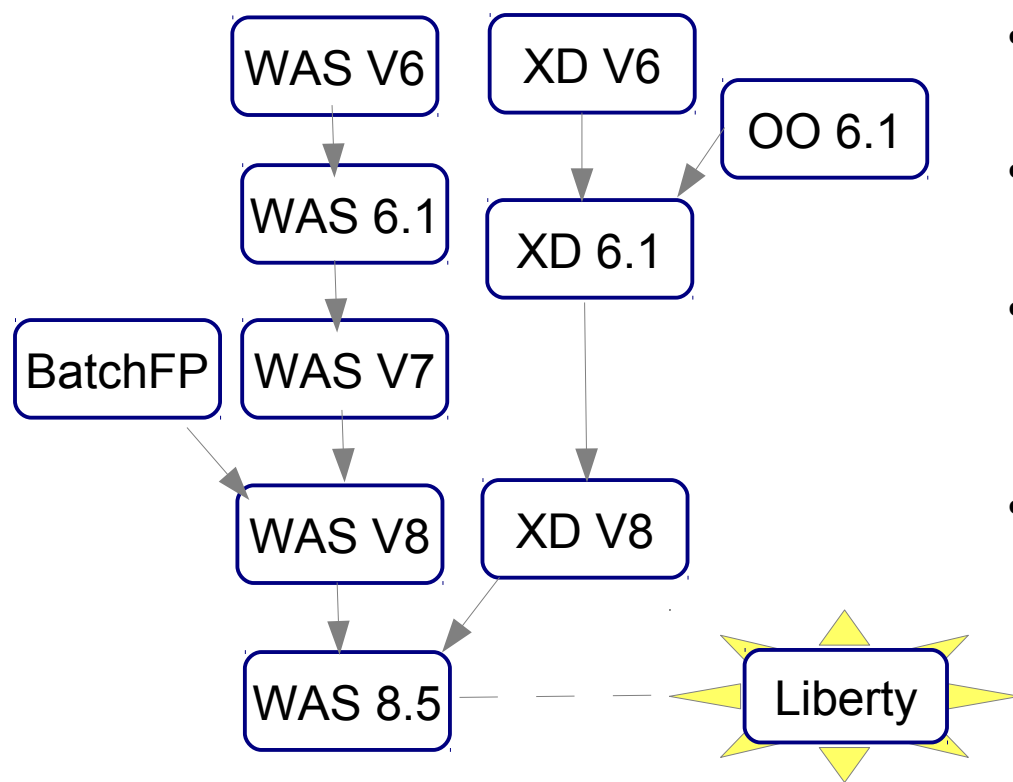
WebSphere Application Server

Over 14 years of Leadership & trusted delivery



Where did WAS 8.5 come from?

WebSphere Application Server on z/OS



- XD = Extended Deployment
 - a.k.a. Compute Grid (CG)
- OO = Operations Optimization
 - Virtual Enterprise (part of XD 6.1)
- BatchFP = Modern Batch FP
 - Subset of XD (CG)
 - Included in WAS V8
- WAS 8.5 includes CG, XD, VE, plus:
 - Liberty Profile
 - Java 7 SDK
 - XCT (Cross-Comp. Trace)
 - ISA (IBM Support Asst.)

What is the Liberty profile?

A lightweight, dynamic, composable runtime

Lightweight

- Server install is only about 55 MB
- Extremely fast server starts – typically well under 5 seconds

Dynamic

- Available features are user selected and can change at runtime
- Restarts are not required for server configuration changes

Composable

- Features are implemented as loosely coupled components with lazily resolved optional and mandatory dependencies
- The availability of features and components determines what Liberty *can* do and what's available to applications

What is the Liberty profile?

An easy to configure runtime environment

- Simple, extensible, and sparse configuration model
 - Configuration can live in a single XML document
 - Configuration is by exception
 - Defaults are provided by contributing feature
 - Only modifications to the defaults are required
- Flexible configuration structure
 - Include mechanism allows for shared configuration elements
 - Variable indirection mechanism allows for customization when distributed across multiple JVMs
 - Easily managed by version control systems if desired

What is the Liberty profile?

A transportable runtime for your applications

Use “server package” to generate an archive that contains a tested, self-contained, pre-configured server instance that includes your application

- Enables an application-centric deployment model that allows for easy scale-out
- Light-touch admin builds on the ND job manager infrastructure to manage Liberty server instances

A runtime environment with fidelity to full WAS

- Liberty *is* WebSphere
- Applications that are developed and tested on Liberty will run on the full profile

Liberty and traditional profile capabilities

There are functional differences between traditional WAS and the Liberty profile – Liberty provides a useful subset of traditional WAS

Liberty Profile

- Bean validation
- Blueprint
- Java API for RESTful Web Services
- Java Database Connectivity (JDBC)
- Java Naming and Directory Interface (JNDI)
- Java Persistence API (JPA)
- Java Server Faces (JSF)
- Java Server Pages (JSP)
- JMX
- Monitoring
- OSGi JPA
- Remote connector
- Secure Sockets Layer (SSL)
- Security
- Servlet
- Session Persistence
- Transaction
- Web application bundle (WAB)
- z/OS Security (SAF)**
- z/OS Transactions (RRS)**
- z/OS Workload Management**

Traditional WAS Profile

Everything Liberty has...

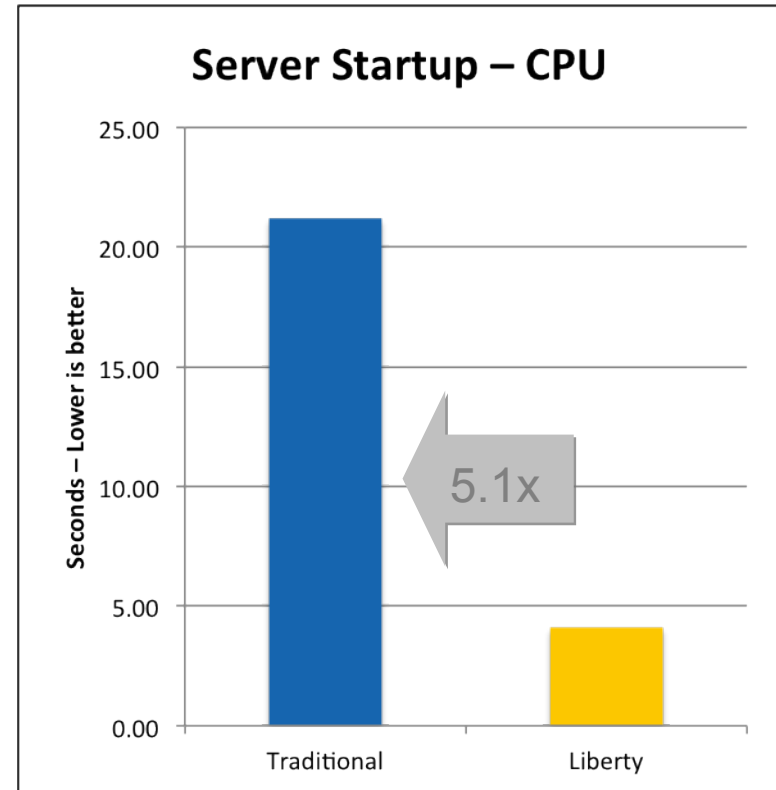
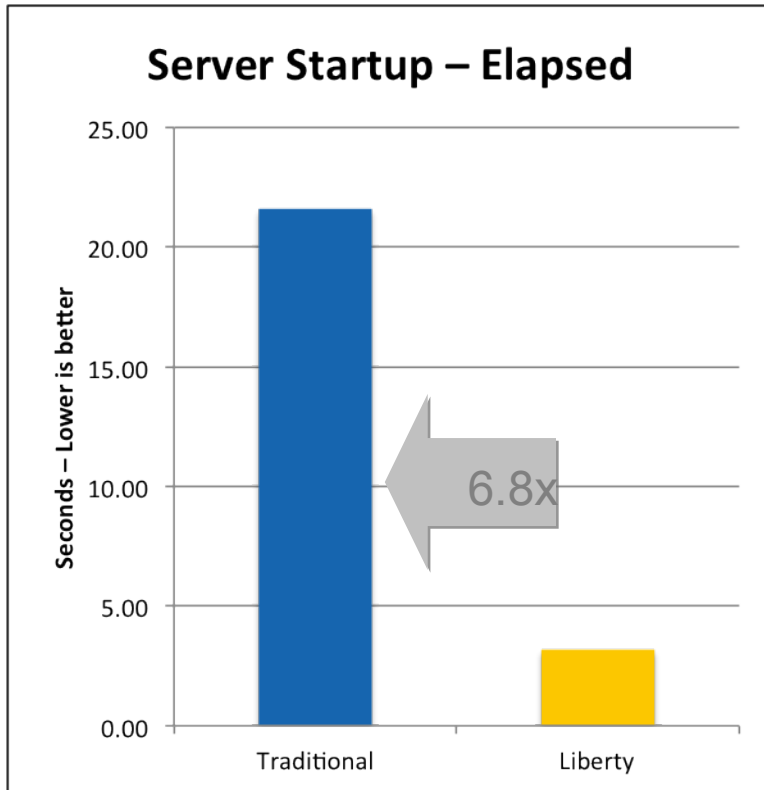


- Enterprise Java Beans (EJBs)
- Messaging (JMS)
- Web Services
- Service Component Arch (SCA)
- Java Connector Architecture (JCA)
- Clustering
- WebSphere Optimized Local Adapters
- Administrative Console
- WSADMIN scripting
- Multi-JVM Server Model**

And much more ...

Why Liberty on z/OS?

Performance: Startup time – 3.2 seconds!

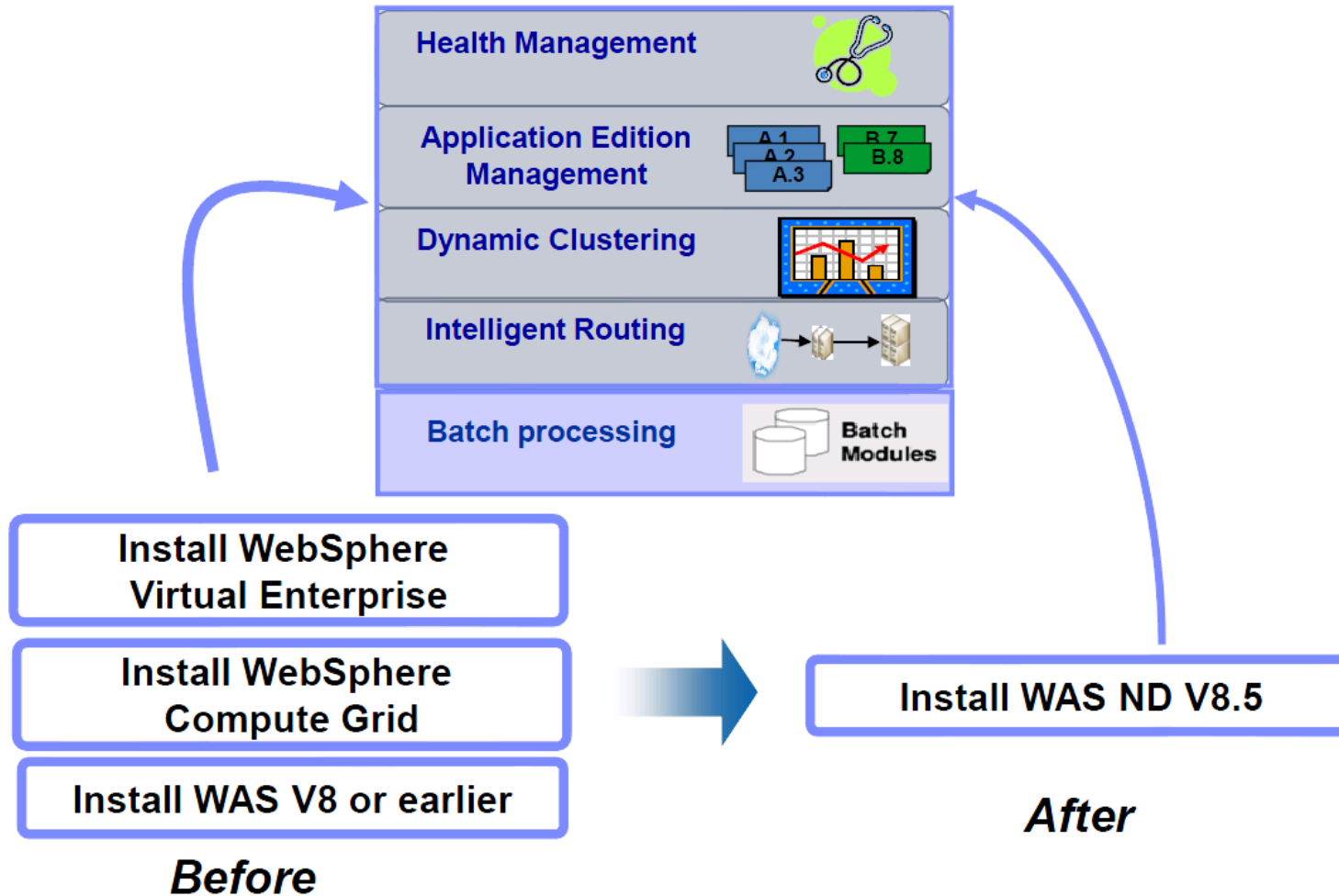


- Liberty – 64bit IBM Java 6.0.1, 64/64MB min/max heap, 60MB shared class cache, TradeLite installed
- Traditional – 64bit IBM Java 6.0.1, 1SR, 128/256MB min/max CR heap, 256/512MB min/max SR heap, 75MB CR shared class cache, 75MB SR shared class cache, no applications installed

WAS – What's New?

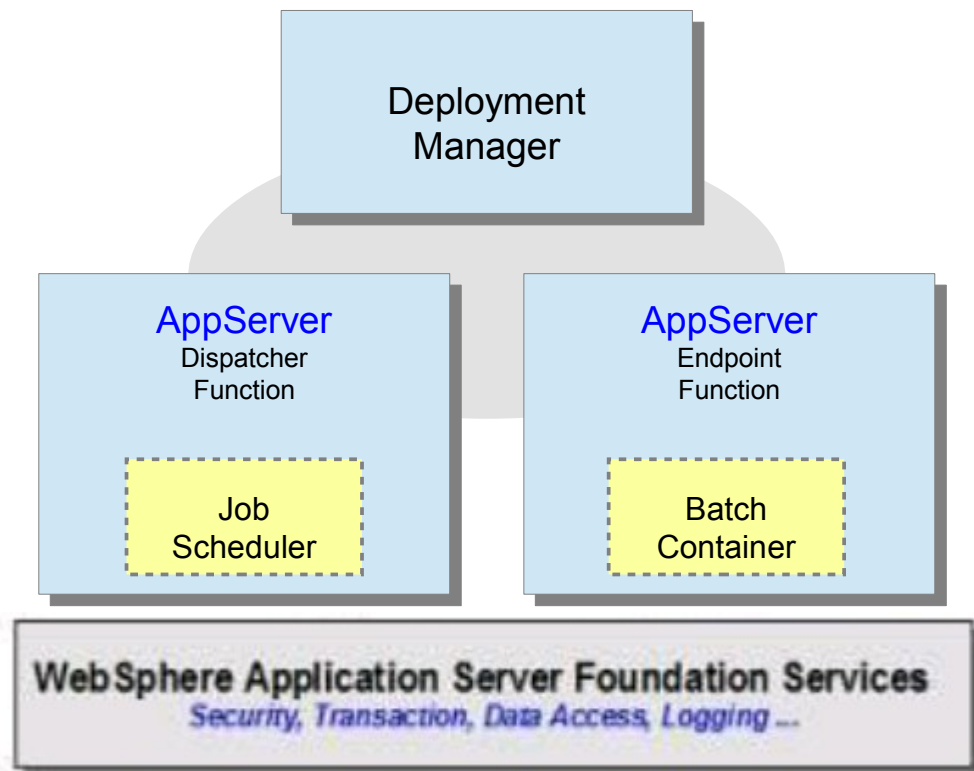
- Level 2 Update
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WAS ND V8.5: Resiliency enhancements – WebSphere Virtual Enterprise & WebSphere Batch



Compute Grid Included in WAS 8.5

- **“Modern Batch”**: Job Scheduler & Endpoint Server
 - Function Equivalent to WebSphere XD Compute Grid V8



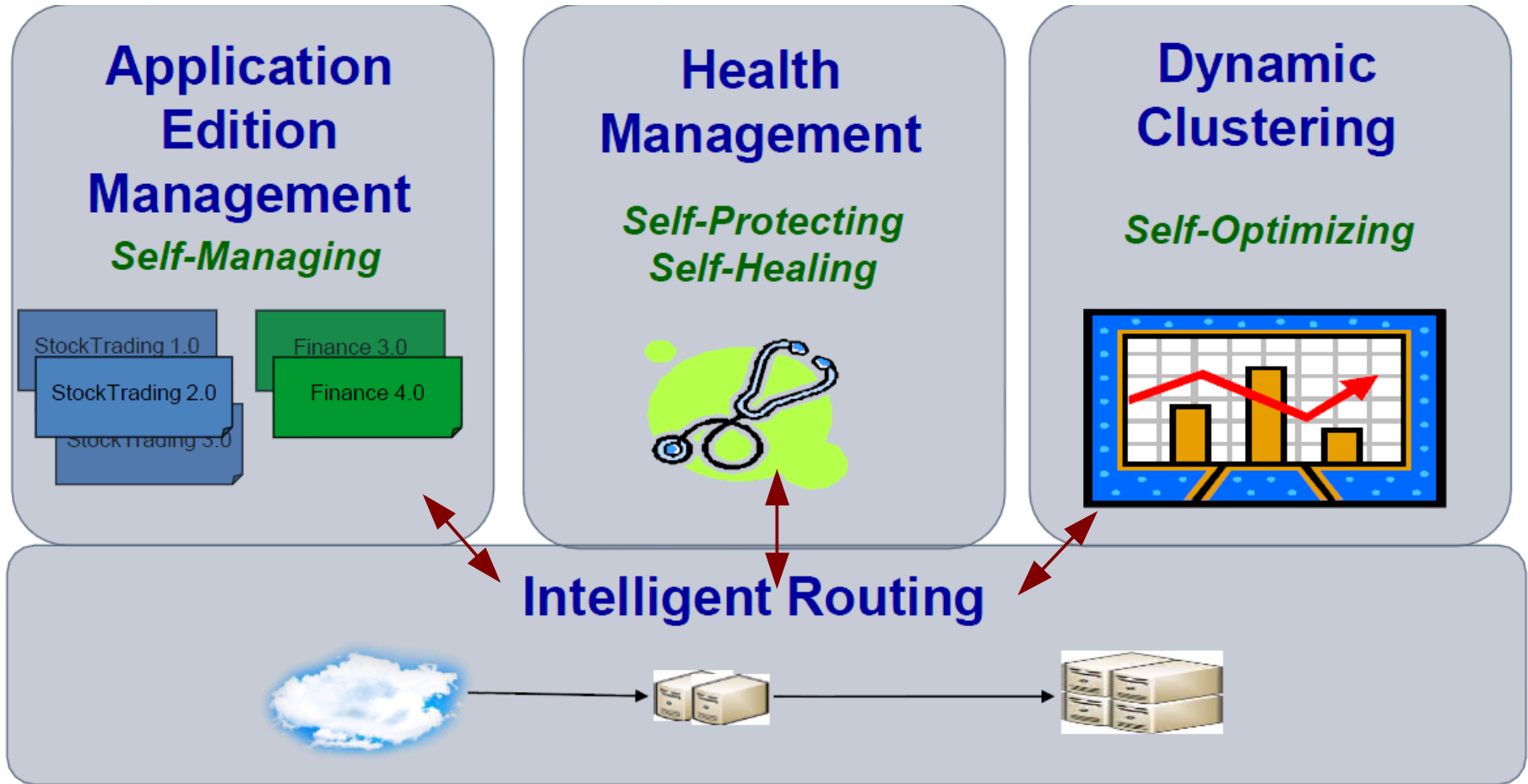
- Concurrent execution of batch & OLTP work
- Container managed checkpoint and restart
- Integrate with JES schedulers
- Utility to package batch app'ns
- Parallel Batch Job processing
- COBOL and CICS Support
- Many SPI & programming model improvements.

WAS – What's New?

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Virtual Enterprise (VE) Included in WAS 8.5 “Intelligent Management”

- Integration of 4 autonomic features:



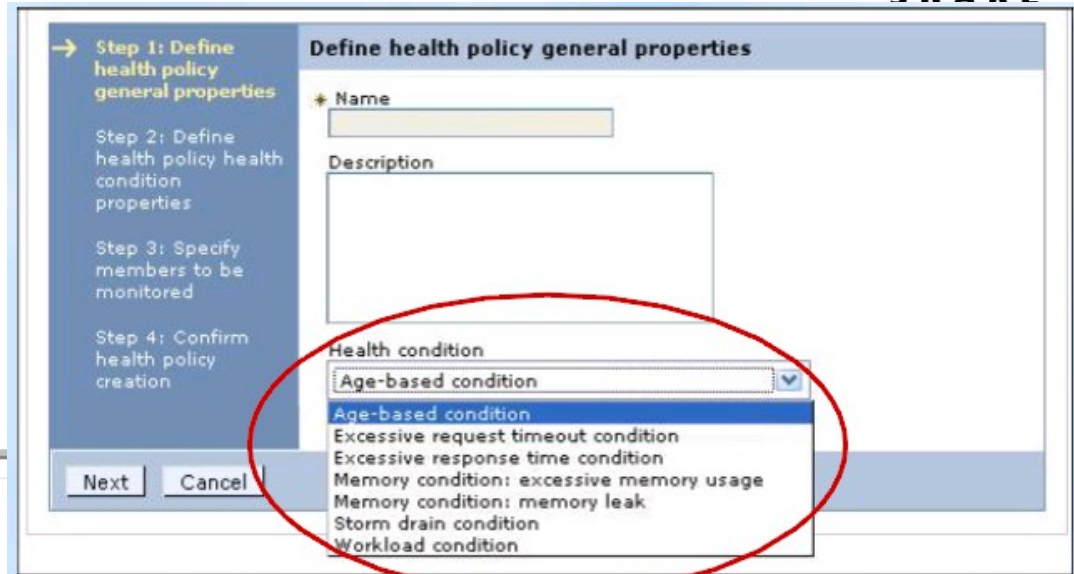
Application Edition Management

Multiple Editions of an Application in a WebSphere cell

- Interruption-free rollout of application updates
- Ability to “roll back” to a previous application version
- “Validation mode” to verify functionality with subset of users
- **Edition** = “Instance of an J2EE application” (i.e., version)
 - Each edition is numbered (or named) based on build level, or deployment bindings (or both)
- **Group Rollout or Atomic Rollout**
- **Validation Mode or Concurrent Activation Mode**
 - Use Routing Policies & Dynamic Clusters to control traffic to the new editions.

Health Monitoring

- Define Health Policies to take corrective action based on unacceptable behavior:



Define health policy general properties

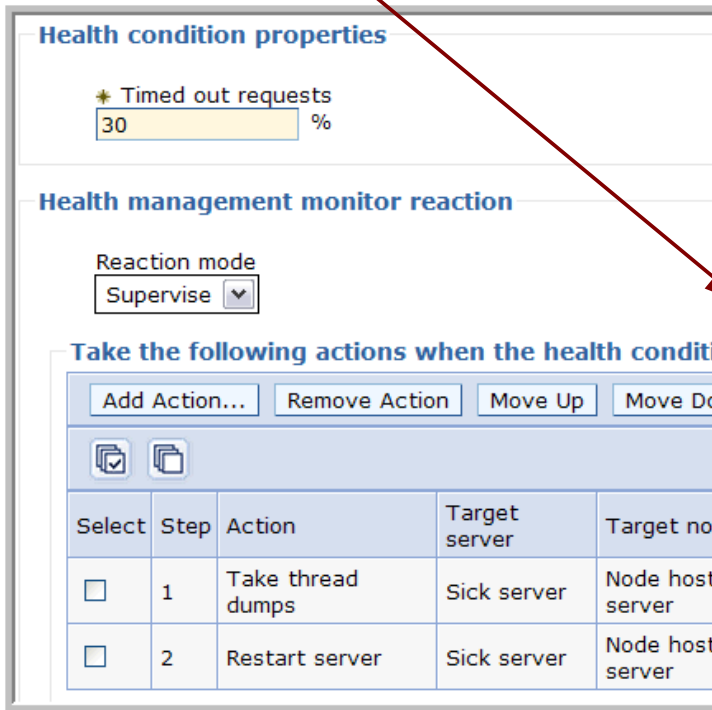
* Name

Description

Health condition

- Age-based condition
- Excessive request timeout condition
- Excessive response time condition
- Memory condition: excessive memory usage
- Memory condition: memory leak
- Storm drain condition
- Workload condition

Next Cancel



Health condition properties

* Timed out requests

30 %

Health management monitor reaction

Reaction mode

Supervise

Take the following actions when the health condition is triggered

Add Action... Remove Action Move Up Move Down

Select	Step	Action	Target server	Target node
<input type="checkbox"/>	1	Take thread dumps	Sick server	Node host server
<input type="checkbox"/>	2	Restart server	Sick server	Node host server

Health Conditions

- Excessive request timeouts:** % of timed out requests
- Excessive response time:** average response time
- Excessive garbage collection:** % of time spent in GCs
- Excessive memory:** % of maximum JVM heap size
- Age-based:** amount of time server has been running
- Memory leak:** JVM heap size after garbage collection
- Storm drain:** significant drop in response time
- Workload:** total number of requests

Health Monitoring

- **Health Policies**

- Unacceptable behavior
- Corrective Actions

- **Health Conditions**

- Aged-based
- Workload
- Timeouts
- Response time
- Memory usage
- Memory Leak
- Storm Drain

- **Target Elements**

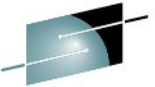
- Servers
- Clusters
- Cluster members
- Cell

- **Reactions**

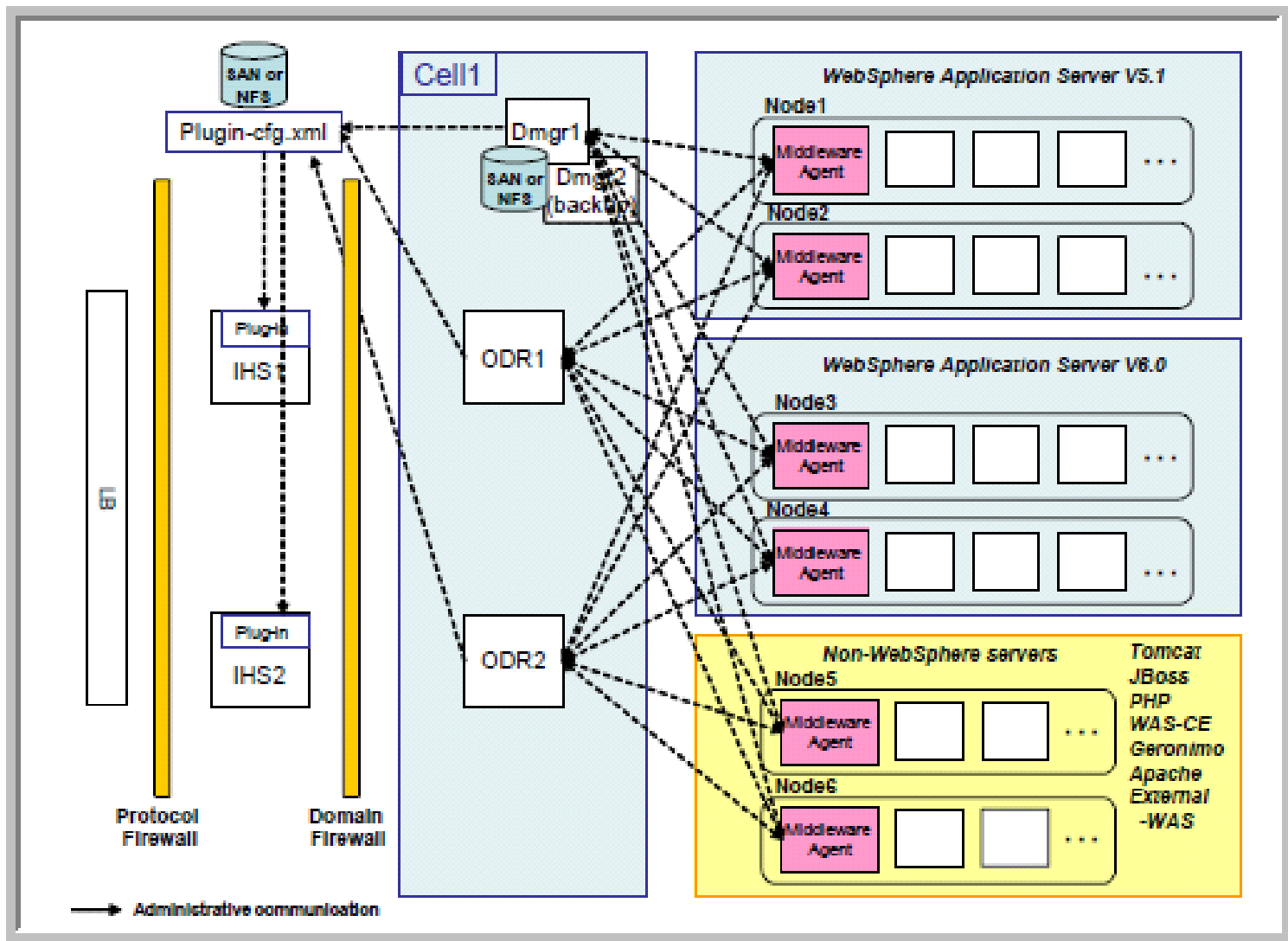
- Server Restart
- Dump Threads
- Dump JVM Heap
- Put Server in maint. mode

- **Reaction Modes**

- Automatic
- Supervised

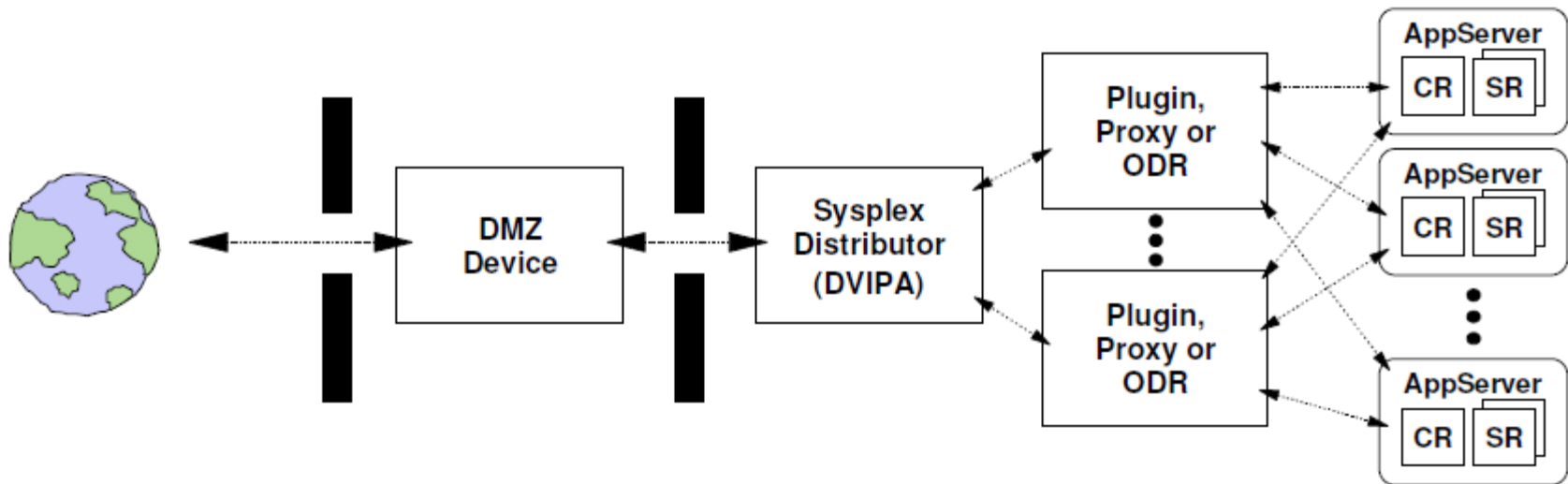


On-demand Router Solution



On-Demand Routers & Dynamic Operations

- ODRs and Dynamic Clusters are redundant with z.OS WLM and Dynamic Servant address spaces
 - May Increase Complexity and Overhead....
- Sysplex Distributor with HTTP plugins, or Proxy servers can balance your work across multiple Servers, and WLM-managed Servants for changes in demand....



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Selectable Java SDK Level

IBM Java SDK V7 Improvements:

- Language enhancements
- New File I/O – Asynch I/O (for Data mining & Analytics)
- Concurrent Library support for large multi-core systems (z & p)

Java 6.0.1 improvements:

- GC policies: 'Balanced' targets short & consistent pause times on large heaps
- Shared Cache
- Diagnostics

Java 6 or Java 7 Selectable by Node or by Server (31 or 64 bit)

- Used for servers, or command-line tools

Configure for your topology using:

- The manageSDK command-line utility
- The ISC
- wsadmin AdminTask commands

Java 7.0 – What to look for

- from 11823: Running Java on Linux on System z



New I/O

- Meets the increasingly I/O intensive demands of data mining and analytics workloads
- Significant performance and footprint gains from async I/O

Concurrency Libraries

- Exploit larger multi-core systems, such as next generation Power and System z, by providing better scalability, higher throughput and lower total cost of ownership from server consolidations

Dynamic language support

- Leverage the advantages of a single runtime for dynamic language applications written in PHP, Groovy, jRuby and jython

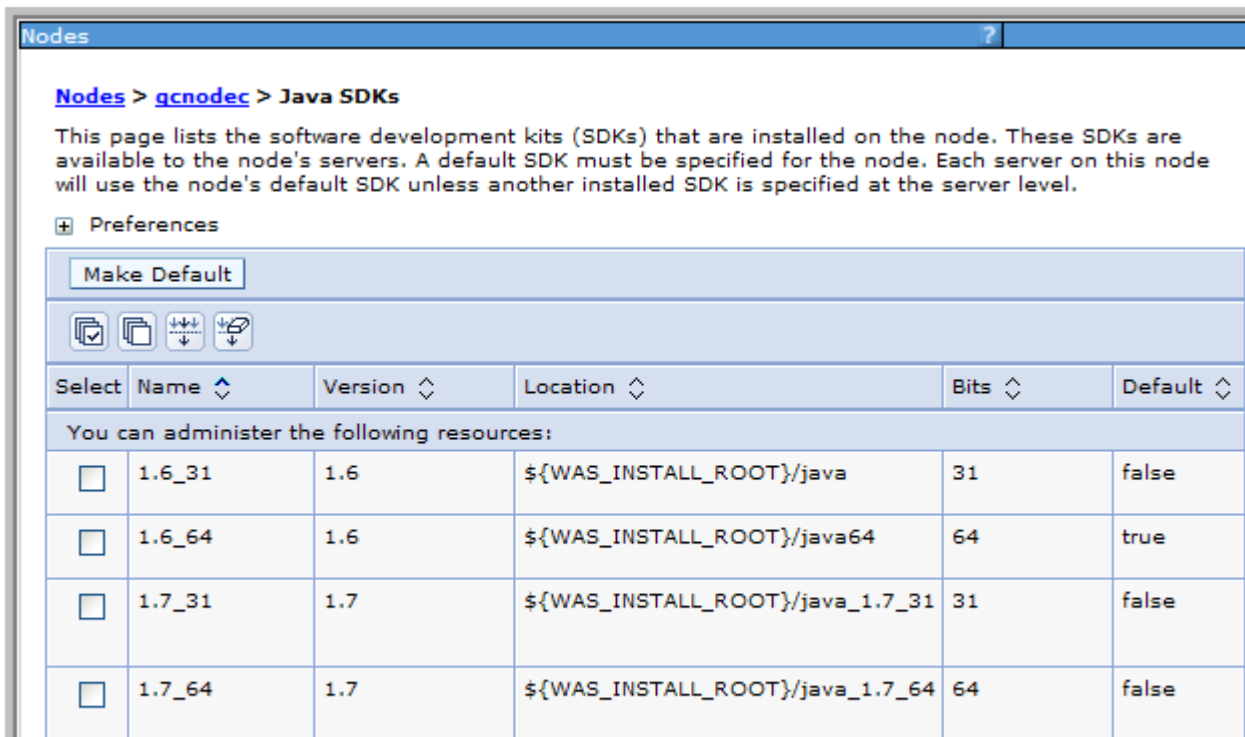
Language improvements

- Improved efficiency through simplified day-to-day programming tasks
- Protect developer commitment to, and customer/ISV investment in, the Java ecosystem.

Java Level Selectable by Server, Node, etc.

Using the ISC (Admin Console):

- Servers > server_name > Java SDKs.
- System administration > Deployment manager > Java SDKs.
- System administration > Nodes > node_name > Java SDKs.
- System administration > Administrative agent > Java SDKs.
- System administration > Job manager > Java SDKs.



Nodes > [gcnodec](#) > Java SDKs

This page lists the software development kits (SDKs) that are installed on the node. These SDKs are available to the node's servers. A default SDK must be specified for the node. Each server on this node will use the node's default SDK unless another installed SDK is specified at the server level.

⊕ Preferences

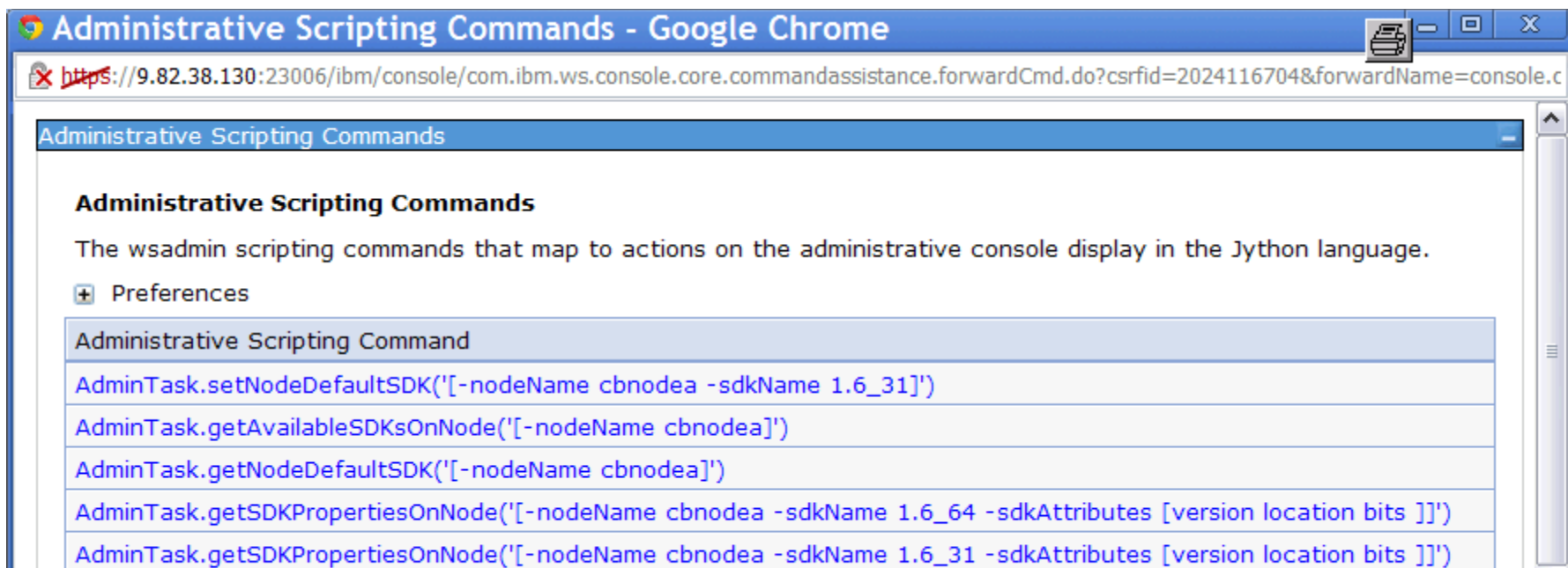
Make Default

⊞ ⊞ ⊞ ⊞

Select	Name	Version	Location	Bits	Default
You can administer the following resources:					
<input type="checkbox"/>	1.6_31	1.6	\${WAS_INSTALL_ROOT}/java	31	false
<input type="checkbox"/>	1.6_64	1.6	\${WAS_INSTALL_ROOT}/java64	64	true
<input type="checkbox"/>	1.7_31	1.7	\${WAS_INSTALL_ROOT}/java_1.7_31	31	false
<input type="checkbox"/>	1.7_64	1.7	\${WAS_INSTALL_ROOT}/java_1.7_64	64	false

Java Level Selectable by Server, Node, etc.

- Using `wsadmin.sh` script with `AdminTask` commands:
 - `getNodeDefaultSDK`
 - `getSDKVersion`
 - `getServerSDK`
 - `getUnusedSDKsOnNode`
 - `setNodeDefaultSDK`
 - `setServerSDK`



The screenshot shows a Google Chrome browser window titled "Administrative Scripting Commands - Google Chrome". The address bar contains the URL: `https://9.82.38.130:23006/ibm/console/com.ibm.ws.console.core.commandassistance.forwardCmd.do?csrfid=2024116704&forwardName=console.c`. The main content area is titled "Administrative Scripting Commands" and contains the following text:

Administrative Scripting Commands

The wsadmin scripting commands that map to actions on the administrative console display in the Jython language.

+ Preferences

Administrative Scripting Command
<code>AdminTask.setNodeDefaultSDK(['-nodeName cbnodea -sdkName 1.6_31'])</code>
<code>AdminTask.getAvailableSDKsOnNode(['-nodeName cbnodea'])</code>
<code>AdminTask.getNodeDefaultSDK(['-nodeName cbnodea'])</code>
<code>AdminTask.getSDKPropertiesOnNode(['-nodeName cbnodea -sdkName 1.6_64 -sdkAttributes [version location bits]'])</code>
<code>AdminTask.getSDKPropertiesOnNode(['-nodeName cbnodea -sdkName 1.6_31 -sdkAttributes [version location bits]'])</code>

managesdk.sh examples

```
Cd /wasv85config/qccell/qcnodec/AppServer/bin
```

List the Available SDK levels for a Node:

```
-> ./managesdk.sh -listAvailable
```

List the SDK level for Servers:

```
-> ./managesdk.sh -listEnabledProfileAll
```

Enable an SDK level for a Node:

```
-> ./managesdk.sh -enableProfileAll -sdkname 1.6_64
```

Display the SDK level for a Node:

```
-> ./managesdk.sh -getNewProfileDefault
```

Set the SDK level for Commands run from the
`app_server_root/bin` directory:

```
-> ./managesdk.sh -setCommandDefault -sdkname 1.7_64
```

```
CWSDK1021I: The command default SDK name is now set to 1.7_64.
```

```
CWSDK1001I: Successfully performed the requested managesdk task.
```

Selecting 31-bit or 64-bit JVM

- Independent of the Java 6/7 level

- ISC to select 31-bit or 64-bit JVM for a particular Server:

Application servers > cbsr01a

Use this page to configure an application server. An app enterprise applications.

Runtime Configuration Reports Operations

General Properties

Name
cbsr01a

Node name
cbnodea

* Short Name
CBSR01A

Unique ID
C96F3B970223A687000003A40000001E00000008

Run in 64 bit JVM mode

XCT log viewer

Output your logs using advanced format so that you can see the request ID information in the logs. *For example:*

```
<profile_root>/bin-> ./logViewer.sh
```

```
Using <profile_root>/logs/cbsr03a as repository directory.
```

Instance ID	Start Date
1337030555018	05/14/12 17:22:35.018
1337030555018/0000018400000006-CBSR03AS_STC06101	05/14/12 17:22:48.460
1337789556138	05/23/12 12:12:36.138
1337789556138/000001B400000001-CBSR03AS_STC06163	05/23/12 12:12:49.857

```
logViewer.sh ./logViewer.sh -minLevel WARNING -format advanced -instance
1337789556138/000001B400000001-CBSR03AS_STC06163
```

```
Using /wasv85config/cbcell/cbnodea/AppServer/profiles/default/logs/cbsr03a
as repository directory.
```

```
. . .
```

```
[5/23/12 12:12:51:333 EDT] 00000001 W UOW=
```

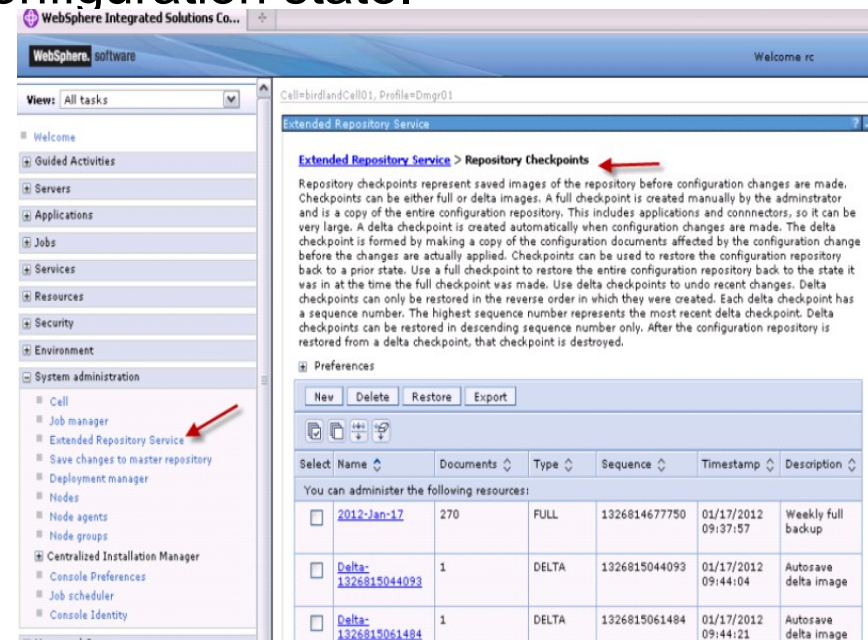
```
source=com.ibm.ws.ssl.config.WSKeyStore class= method= org=IBM
```

```
prod=WebSphere component=Application Server thread=[main]
```

```
CWPKI0041W: One or more key stores are using the default password.
```

Configuration Repository Checkpoints for Auditing and Recovery

- The Repository Service is consolidated from WVE.
- Provides “full” and “delta” checkpoints of the master configuration repository.
- Simplifies restoration to a previous configuration state.
 - Full checkpoint created manually
 - Delta checkpoints, when enabled, are created automatically in checkpoint repository on every configuration-save.
- New Security Audit event - ADMIN_REPOSITORY_SAVED refers to corresponding delta checkpoint records.
 - Delta checkpoint can be exported to review configuration changes when needed.



ISA (IBM Support Assistant) Data Collector

- Automatically Collect Data for Problem Analysis and Send to IBM Support. Very simple to use:
- Invoke from `<profile_root>/bin/isadc.sh`
- Prompts for Options (if not specified):
 - Location of zip file to be created
 - Transfer to IBM (HTTPS, FTP) or to some other host.
 - PMR Number
 - License (“I agree”)
 - Produces a zip file and FTPs to IBM (or specified host):

```
:/u/hutch-> jar -tvf 12345.678.000.cbcell-cbnodea-WAS-ISADC.zip
 24700 Wed May 23 11:10:44 EDT 2012 autopdzip/autopd/log/Trace_Viewer.xml
 39422 Wed May 23 11:10:44 EDT 2012 autopdzip/autopd/log/Viewer_Translations.js
  1515 Wed May 23 11:11:28 EDT 2012 autopdzip/autopd/log/isadc-error0.log
 97158 Wed May 23 11:11:28 EDT 2012 autopdzip/autopd/log/isadc-trace0.xml
  5008 Wed May 23 11:10:44 EDT 2012 autopdzip/autopd/log/isadc-trace1.xml
210119 Wed May 23 11:12:16 EDT 2012 RAS_Collect_Tool/Debug/config/Output.txt
  2992 Wed May 23 11:11:10 EDT 2012 RAS_Collect_Tool/autopd-collection-environment-v2.xml
42 2245826 Wed May 23 11:12:16 EDT 2012 RAS_Collect_Tool/collector.jar
```

ISA Data Collector Sample use

- Create a response file that contains the answers to all the questions for a certain run through the data collector:

```
profile_root/bin/isadc.sh -record response_filename
```

- Use the following command to provide the response file when starting the tool:

```
profile_root/bin/isadc.sh -silent response_filename
```


WebSphere Sample Applications

Samples no longer packaged with the WebSphere product.

- Download samples from “Samples, V 8.5” info. center.

http://pic.dhe.ibm.com/infocenter/wasinfo/v8r5/topic/com.ibm.websphere.samples.doc/info/ae/ae/welcome_samples.html

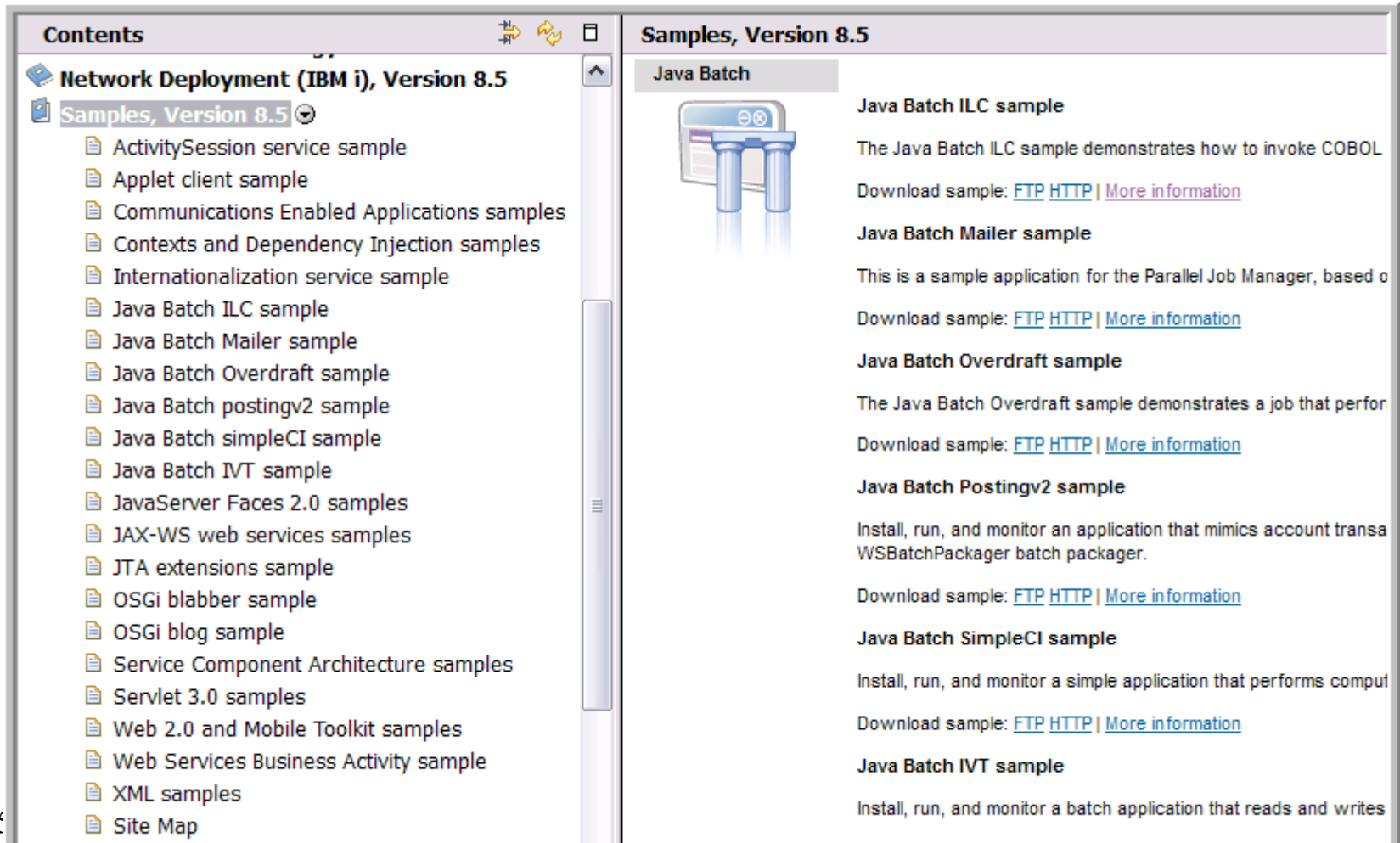
On the Downloads tab, click the Download Sample link for the samples that you want.

- Download compressed file, or individual sample files, to a directory on your workstation.
 - Many sample compressed files have an /installableApps directory that contains deployable prebuilt archives.
 - Other directories contain sample-specific source archives, scripts, and instructions for building deployable archives.
- They are also available for WAS V.8, but not so complete:

http://www14.software.ibm.com/webapp/wsbroker/redirect?version=matt&product=was-nd-mp&topic=welcome_samples

WebSphere Sample Applications

- pic.dhe.ibm.com/infocenter/wasinfo/v8r5/topic/com.ibm.websphere.samples.doc/info/ae/ae/welcome_samples.html



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 - Web Services Business Activity sample
 - XML samples
 - Site Map

Samples, Version 8.5

Java Batch

Java Batch ILC sample
The Java Batch ILC sample demonstrates how to invoke COBOL
Download sample: [FTP](#) [HTTP](#) | [More information](#)

Java Batch Mailer sample
This is a sample application for the Parallel Job Manager, based o
Download sample: [FTP](#) [HTTP](#) | [More information](#)

Java Batch Overdraft sample
The Java Batch Overdraft sample demonstrates a job that perfor
Download sample: [FTP](#) [HTTP](#) | [More information](#)

Java Batch Postingv2 sample
Install, run, and monitor an application that mimics account transa
WSBatchPackager batch packager.
Download sample: [FTP](#) [HTTP](#) | [More information](#)

Java Batch SimpleCI sample
Install, run, and monitor a simple application that performs comput
Download sample: [FTP](#) [HTTP](#) | [More information](#)

Java Batch IVT sample
Install, run, and monitor a batch application that reads and writes
Download sample: [FTP](#) [HTTP](#) | [More information](#)

wasSmpe Directory Changes (No separate directory for “Batch”, “WCG” or “XD”)

```
/wasv85config/qccell/qcdmnode
```

```
wasInstall -> /Service/usr/lpp/zWebSphere/V8R5
```

```
-> ls wasInstall/
```

InstallSamples	installableApps	logs	systemApps
Scheduler	installedConnectors	optionalLibraries	tio
UDDIReg	installedFilters	plugins	tivoli
bin	java	pmi_preprocess.xml	universalDriver
configuration	java64	preprocess.jar	util
derby	java_1.7_31	profileTemplates	web
dev	java_1.7_64	properties	wlp
endorsed_apis	lafiles	runtimes	zOS-config
etc	lib	sar2war_tool	
features	links	scriptLibraries	

Heads Up – Linux for System z Likely to be a Popular Platform for Enterprise Mobile



IBM announced the IBM Mobile Foundation Announced April 24, 2012 and Available June 15, 2012

IBM Mobile Foundation V5.0



Build, connect, manage and secure your mobile enterprise

Product Suite Includes:

- IBM Worklight V5.0
- IBM WebSphere Cast Iron
- IBM Endpoint Manager for Mobile Devices

IBM Worklight V5.0 supported on:

Middleware:

- WebSphere Application Server Network Deployment V7.0 or higher and future releases, modification levels and fix packs
- Apache Tomcat 7.0 and future fix packs

System z operating systems:

- Red Hat Enterprise Linux (RHEL) 5 Update 6 Advanced Platform System z
- Red Hat Enterprise Linux (RHEL) Server 6 System z
- SUSE Linux Enterprise Server (SLES) 11 System z
- SUSE Linux Enterprise Server (SLES) 10 System z

Native, web or hybrid mobile-app development and management

- **IBM Worklight V5.0** helps manage HTML5, hybrid, and native applications using a powerful and flexible mobile IDE. Next-generation mobile middleware, end-to-end security, and integrated management and analytics capabilities are built in.
 - ✓ Uses a standards-based technologies and tools, mobile-optimized middleware, a variety of security mechanisms and integrated management and analytics capabilities.
 - ✓ Enables the creation of rich, cross-platform apps without the use of code translation, proprietary interpreters or unpopular scripting languages



Additional education:

<http://www.websphereusergroup.org/gwcgroupowner/go/gallery/item/1499885?type=video>

System z Social Media

- **System z official Twitter handle:**
 - ♦ [@ibm_system_z](#)

- **Top Facebook pages related to System z:**

- ♦ [Systemz Mainframe](#)
- ♦ [IBM System z on Campus](#)
- ♦ [IBM Mainframe Professionals](#)
- ♦ [Millennial Mainframer](#)

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- ♦ [Mainframe](#)
- ♦ [IBM Mainframe](#)
- ♦ [System z Advocates](#)
- ♦ [Cloud Mainframe Computing](#)

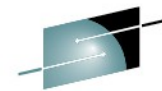
- **YouTube**

- ♦ [IBM System z](#)



- **Leading Blogs related to System z:**

- ♦ [Evangelizing Mainframe \(Destination z blog\)](#)
- ♦ [Mainframe Performance Topics](#)
- ♦ [Common Sense](#)
- ♦ [Enterprise Class Innovation: System z perspectives](#)
- ♦ [Mainframe](#)
- ♦ [MainframeZone](#)
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