IBM Software Group

z/OS Expo

Session W34:
WebSphere Portal Enable for z/OS V.5.1 – Overview

Lotus software

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Topics

- **Portal 5.1 Family Focus Areas**

Portal for z/OS 5.1

Why z/OS?

What's Next?

Additional Resources

Portal Family 5.1 Focus Areas

- Content Management
- PDM
- IWWCM
- Personalization
- Search
- Business Process Integration
- Collaboration and Workplace Integration
- Operations and Deployment
- Standards
- Programming Model
- Tools Support
- Administering a Portal
- Virtual Portal
- Security
- Performance
- Platform Exploitation

Platform Exploitation

- New platforms supported with Portal 5.1
  - Linux on iSeries and pSeries
  - AIX 5.1 ML4
  - AIX 5.2 ML1 + APAR IY44183
  - RH Enterprise Linux 3.0 for zSeries
  - RH Enterprise Linux / Intel V3.0
  - Windows XP SP1a
  - Windows 2000 SP 4
  - POWER5 eSeries
  - **z/OS 1.4, 1.5, and 1.6**
  - **z/OS 1.7 – 5.1.0.2 fixpack**

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Topics

Portal 5.1 z/OS Platform Enhancements

- Implementation Details
- Installation
- Configuration
- Security
- Database
- Miscellaneous Enhancements
- Portlets

Portal for z/OS 5.1 Implementation Details

- Based on Portal Multi-platform 5.1.0.1 and rolled up service
- Includes all components and facilities present in Portal MP 5.1.0.1
- General philosophy is to install and manage Portal as a z/OS product
- All other operational aspects of Portal on z/OS are as Portal MP
- Includes limited license for WBISF for z/OS 5.1.1 and WebSphere Application Server for z/OS 5.1.0.2 for use with Portal
- Includes full copy of Portal 5.1.0.1 MP CDs for use with Portal

Required z/OS Pre-requisites

- z/OS 1.4
- SAF/ RACF
- WebSphere Application Server V5.1.0.2 + PTFs
- WebSphere Business Integrator Server Foundation (WBISF) V.5.1.1 + PTFs
  - Work Manager / Asynchronous Beans
  - Process Choreographer
  - Human Task Manager
- SDK 1.4.2 sr2a
- Unicode Support
- Cloudscape

Optional Pre-requisites

- For production database
  - DB2 for z/OS 7.1 + PTFs
  - Required for vertical and horizontal clustering including multiple servant regions
- For security
  - IBM Secureway Directory LDAP Server for z/OS
  - Tivoli Access Manager
    - WebSEAL Authentication Proxy
    - Authorization Server
    - Policy Server
- For remote web container
  - IBM HTTP Server

Optional Pre-requisites *(cont.)*

- For business processes
  - WebSphere Integral JMS provider

    or
  - WebSphere MQ 5.3.1

- For remote business process container
  - Portal 5.1.0.1 Multiplatform installation
    - WebSphere 5.1.1 for MP
    - WBISF 5.1.1 for MP
    - Portal 5.1.0.1 for MP
  - WebSphere Integral JMS provider

    or
  - WebSphere MQ 5.3.1

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Optional Pre-requisites (*Cont.*)

- For remote document conversion
  - WebSphere 5.1.1 Multiplatform installation
    - WebSphere 5.1.1 for MP
    - WBISF 5.1.1 for MP
- For remote spell check
  - WebSphere 5.1.1 Multiplatform installation
    - WebSphere 5.1.1 for MP

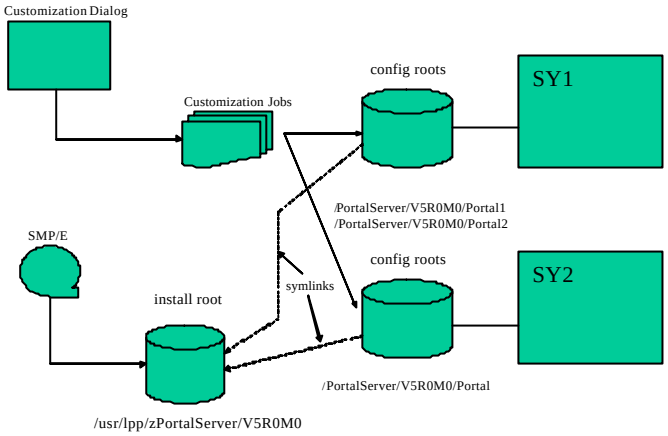
Optional Pre-requisites (*Cont.*)

- For portlet development
  - RAD 6.0
- For business process development
  - WSAD-IE 5.1.1

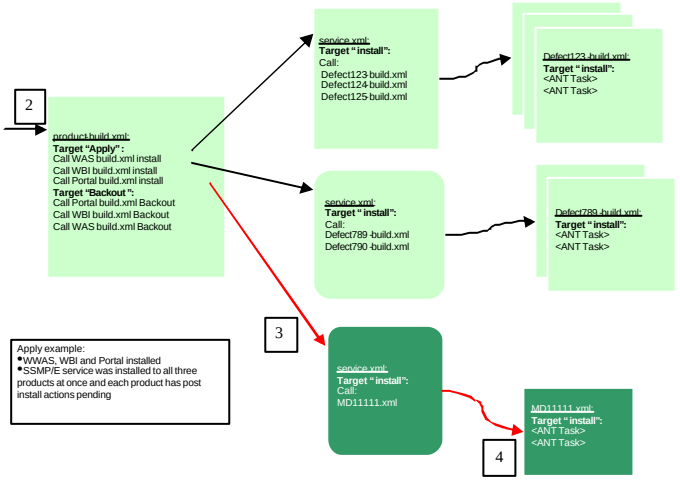
Install

- Basic Product Installation
  - Portal MP is installed via ISMP
  - Portal z/OS is installed using SMPE
  - SMPE 3.1 is used to install individual jar, class, xml, and properties files
- Enhanced Portal install process allows for easier maintainance
  - Provides support for the SMPE JAR installer and the z/OS Common PTF installer and Post processor, as well as a reworked file structure to support simple, incremental, ptf fix installs
    - Portal z/OS does not require complete reinstall/ reconfiguration in order to install maintanence
  - Portal z/OS supports seperate install directory and multiple configuration directories
    - No R/W files reside in the install directory

Basic z/OS System Configuration



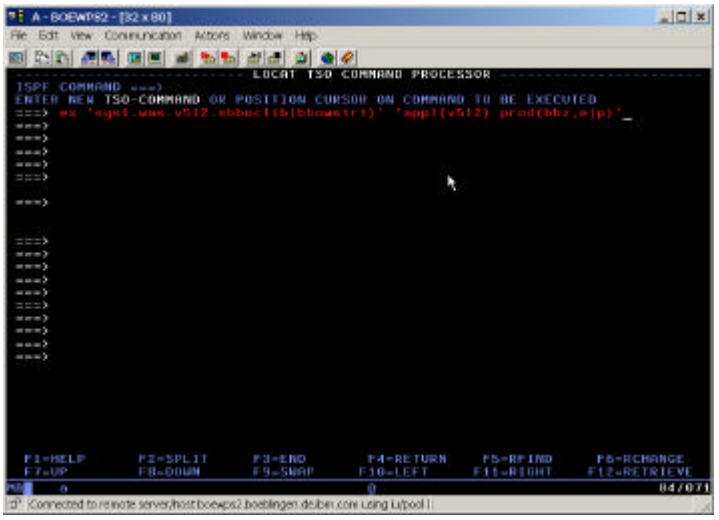
PTF Install Process



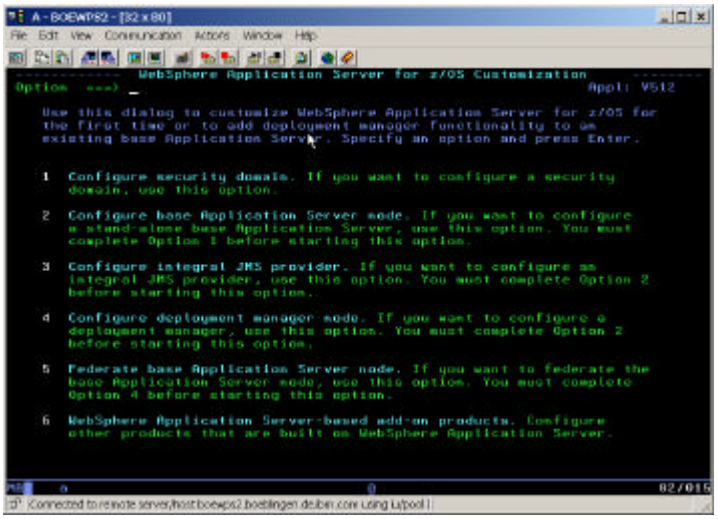
Configuration

- ISMP is used for portal MP to configure the product. For z/OS we use an ISPF application to accomplish the same task
- ISPF panels are used for specifying configuration parameters. After verifying and validating the values specified, the panels then build and/ or drive JCL jobs that issue BPXBATCH calls which in turn drive existing portal MP shell scripts and ANT scripts to complete the install process
- Portal configuration panels are driven from an option in the existing websphere ISPF panel application
- Other than the GUI (ISPF) used to drive it, the process and steps used to configure portal on z/OS are exactly the same as for portal multi-platform
- Existing portal configuration documentation has been modified to substitute JCL jobs instead of command line invocations of WPSConfig for common configuration tasks
- All portal z/OS configuration is completed using the ISPF panel application, the portal admiistrative console, and the websphere application server administrative console

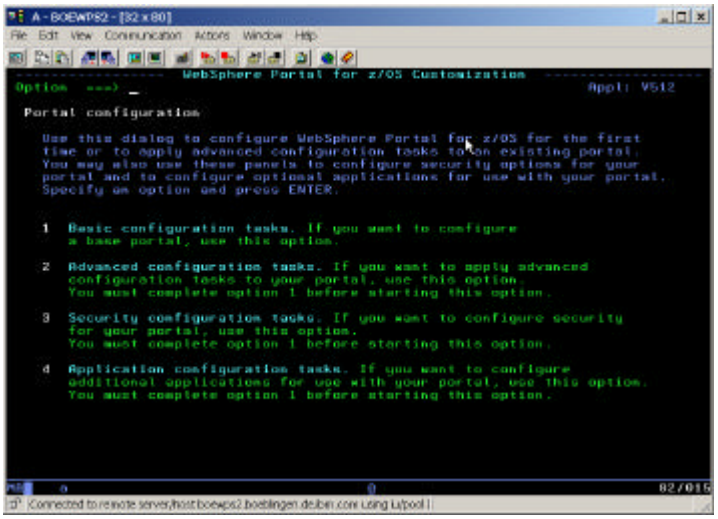
Invoking the WebSphere Application Server ISPF Configuration Application



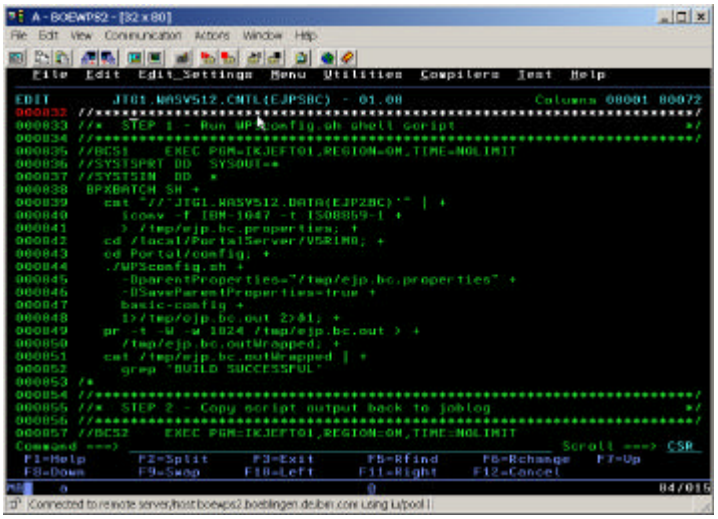
WebSphere Application Server ISPF Application Main Menu



Portal ISPF Application Main Menu



Sample JCL Batch Job



Security – Authentication

- Portal uses
  - WebSphere forms based authentication
  - WebSphere Member Manager for storing user data and authentication credentials
  - SSO tokens for single sign-on support
    - LTPA and ICSF
  - A user registry
    - LDAP based registry
    - Custom User registry
- Portal also supports Proxy Authentication through WebSEAL using Tivoli supplied TAI or LTPA token forwarding

Security - Authorization

- Portal:
  - Uses role based access control data to enforce its own Access Control Policy
  - Has a very rich set of roles based tools and facilities including trees, and inheritance
  - Controls access to Pages, Pagelists, etc.
  - Stores data in tables in DB2 for z/OS 7.1
  - Retrieves all user entitled resources at Portal user login time
- Access Control can be delegated incrementally to an external Security Manager such as Tivoli Access Manager Authorization and Policy Server

Database Support

- Portal installs and uses Cloudscape by default
  - Cloudscape is shipped with Portal
  - Can only be used in a WebSphere Base node configuration
- DB2 for z/OS Support
  - Portal supports the use of DB2 for z/OS, but requires a Post install step to migrate from Cloudscape to DB2 for z/OS 7.1
  - Required for clustering and/or multiple server servant regions
- Portal uses JCC Universal JDBC driver to talk to DB2 for z/OS 7.1
  - Type 2 when used from Portal z/OS
  - Type 4 when used from Portal MP
    - Manual configuration required to configure Portal z/OS to talk to DB2 for z/OS on another z/OS image
- DB2 Data Sharing required when configuring a Portal horizontal cluster

Additional Database Support

- DB2 for z/OS 8.1 support
  - Support - 5.1.0.2
- Tailorable database create jobs
  - Support - 5.1.0.3
- Multiple Schema Names for all Portal Databases
  - Allows all Portal, WMM, LWWCM, Feedback, and Likeminds databases to be qualified by a schema name
  - Schema name will default to userid of database creator
    - Can be overridden
    - Most often should be Server Region id
  - Support - Future release

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Additional WebSphere Support

- WAS V6.0
  - Support - WAS 6.0.2 and Portal 5.1.0.2
- WBI Server V6.0 Support
  - In order to enable Portal workflow components when running on WAS 6.0, business process container must be run on a separate platform and workflow calls must be remoted to that platform
  - Support – Future release

Miscellaneous Enhancements

- Support for the z/OS System Logger
  - WPS std.out, std.error
    - Supported today
    - Support is provided by configuring the base WebSphere Application Server to use the z/OS System Logger
    - Portal V.5.0 now uses native WebSphere Application Server Logging by default
  - WPS logs, JCR logs, and WCM logs
    - Support – Future release

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Miscellaneous Enhancements

- Document Conversion Services (DCS)
  - Document converters are provided by Stellent and require the GDI api suite to be resident on the machine where it runs. Since GDI is not supported on z/OS, all converter service calls must be remoted to another machine for execution.
  - Portal has added support to remote the DCS engine to another platform while providing hooks in the Portal code to seamlessly invoke the apis.
  - This support also provides performance gains by moving potentially expensive CPU cycles used for converting documents to another less expensive platform.
  - PDM, Search, and Mail Portlets all optionally require Document Converters

Miscellaneous Enhancements

- Spell Check Services
  - Spell check services require the POE data engine be resident on the machine where it runs. Since POE is not supported on z/OS, all spell check service calls must be remoted to another machine for execution.
  - Portal has added support to remote spell check service calls to another platform while providing hooks in the Portal code to seamlessly invoke the apis.
  - This support also provides performance gains by moving potentially expensive CPU cycles used for spell checking documents to another less expensive platform.
  - PDM, Search, and Mail Portlets all optionally require Spell check services

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Miscellaneous Enhancements

- Sub-Capacity Pricing Support
  - Adds the support for the compliance checking mechanism in support of sub-capacity pricing for z/OS software.
  - Provided by a set of java interfaces provided by the z/OS operating system that under the covers write SMF 89 records.
  - A post processor tool (SCRT) analyzes this data for capacity usage and compliance.

Support for Existing Portlets

- All existing Portlets should be deployable on z/OS
  - As part of our Portal 5.1 SVT test we will
    - Test all Portlets that ship with the Portal product
    - Test a subset of IBM Portlets that ship in the Portlet Catalog
  - z/OS will be added as an additional test platform for our quarterly Portlet Catalog updates
  - We will investigate PMRs for problems encountered with IBM supplied Portlets which work on other platforms

Support for Portlet Factories and Builders

- Downloadable from the Portlet Catalog
- All existing WPAI Builders are supported
  - Seibel, SAP, etc.
  - z/OS Connectors required
- We are investigating and prioritizing support for additional Portlet Factories that will enable access to CICS and IMS transactions
  - Look for these new factories to appear in the future in the Portlet Catalog

Topics

Portal Family 5.1 Focus Areas

Portal for z/OS 5.1

Why z/OS?

What's Next?

Additional Resources

Why Deploy Portal on z/OS?

- Portal exploits the capabilities of the zSeries z990 hardware
  - Legendary availability and superior reliability
  - Architected instructions for ebusiness workloads
    - Checksum, PLO, IEEE floating point, SSL
  - Dedicated co-processors
    - ICSF, zAAP, IFL
  - Self configuring through capacity upgrades on demand
  - Self protecting and self healing through PPRC and XRC
  - Superior virtualization techniques through LPAR, PR/SM, and IRD

Why Deploy Portal on z/OS?

- Portal exploits the capabilities of the z/OS operating system
  - Native WLM controls and algorithms
    - Samples all key z/OS system parameters such as CPU, memory, paging, swap, dispatch priorities and time slicing, and I/O dispatching four times a second
    - Automatically makes policy adjustments every 10 seconds to meet or exceed customer driven policies and goals
  - Parallel Sysplex
    - Provides built-in peer to peer failover and redundancy while maintaining superior availability
    - Exploits Automatic Restart Manager capabilities to restart and/or resume failed server workloads in place or on another system in the sysplex

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Why Deploy Portal on z/OS?

- Portal exploits the capabilities of WebSphere for z/OS
  - WebSphere for z/OS is a natural cluster composed of a Controller and one or more Servants
    - Controller
      - System code only, key 0, authorized
      - Application code is completely isolated from the z/OS operating system
    - Servants
      - Customer code (ie, Java), key 8, problem state
      - No access to authorized system code or resources
      - Each Servant is an isolated application environment with its own JVM
  - WebSphere, WLM, and z/OS work together to maintain system integrity through isolated work environments
  - WLM manages the WebSphere Cluster by automatically starting and stopping WebSphere Servers (Nodes) as needed

Why Deploy Portal on z/OS?

- Portal exploits the capabilities of native z/OS subsystems
  - DB2 for z/OS 7.1
    - Portal uses the JCC Universal Driver to communicate directly with a DB2 subsystem on the same z/OS image via a high speed native type 2 connector
    - JCC driver is fully XA compliant and supports 2PC
    - DB2 data sharing provides access to shared resources on an almost limitless scale in a parallel sysplex
  - CICS 4.1
    - Portal exploits the underlying JCA connector technology for connecting to CICS via high speed 2PC enabled RRS connectors as well as the newer JCA enabled connectors
  - IMS 8.1
    - Portal supports the underlying JCA and OTMA technologies for connecting to IMS via high speed 2PC enabled RRS connectors

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Why Deploy Portal on z/OS?

- Portal exploits the capabilities of the z/OS Communication Server
  - Sysplex Distributor and VIPA provide connection balancing and automatic failover and redirection in the sysplex
  - The combination of Sysplex Distributor, Dynamic VIPA, WLM, OSA adapters and the z/OS Communication Server provide a very high speed, very reliable, very fault tolerant network environment for running Portal
  - Both the TCP/IP and SNA components of the z/OS Communications Server exploit a set of high performance I/O drivers
    - Allow for memory mapped device I/O through QDIO device drivers
    - Allow for Hypersocket connections between LPARs using standard TCP/IP addressing schemes
    - Allows for multiple LPAR and system integration possibilities consisting of one or more z/OS and/or zLinux images

Topics

Portal Family 5.1 Focus Areas

Portal for z/OS 5.1

Why z/OS?

What's Next?

Additional Resources

IBM's Portal Vision

WebSphere Portal provides:

- User Productivity through Integration
- Team Productivity through Collaboration
- Business Efficiency through Self Service
- Application Development Platform with an Innovative and Differentiated programming model

User Productivity through Integration

- User Experience integration
  - Aggregates user experience of multiple applications and information into a unified, browser-delivered user interface
- Business Process integration
  - The user initiates and interacts with business processes through the portal
- Content Integration
  - All forms of digital content are accessible and re-usable through content applications delivered through the portal
- User Identity Management
  - Portal respects and utilizes user identity for personalization and access control of portal resources
- Application development
  - Portal provides platform-level services to enable personalized, differentiated composite applications to be delivered through the portal

Team Productivity through Collaboration

- Core collaborative underpinnings
  - Document sharing
  - Presence awareness and chat
  - Team Rooms
- Integration into existing mail systems
  - Common Personal Information Management Portlets (CPP) for mail and calendar, plus IBM components for underserved segments

Business Efficiency through Self Service

- Business user driven development patterns enable more end user/ business user self service and shorter time to value
  - eForms for automating common business processes such as HR (hiring, promotions) and customer service (trouble ticket)
  - Web Content Management for publishing content to the web
  - Builder/ Templating/ Wiring/ Collaborative Context
- Templates/ builder and Policy enable more self service
  - Assembling IBM, customer written, ISV and open source components to create business solutions without IT

Application Development Platform with an Innovative and Differentiated programming model

- Composite application assembly
  - Visual composition - Portal page composition/administration
  - Behavioral composition - The page (property broker) wiring tooling
  - Role and Community context
- Templated Applications ease application instantiation

Topics

Portal Family 5.1 Focus Areas

Portal for z/OS 5.1

Why z/OS?

What's Next?

Additional Resources

Additional Resources

- WebSphere Portal for z/OS 5.1 Infocenter
  - http://www.ibm.com/developerworks/websphere/zones/portal/proddoc.html
- WebSphere Portal Zone
  - http://www.ibm.com/developerworks/websphere/zones/portal
- WebSphere Portal Product Documentation
  - http://www.ibm.com/developerworks/websphere/zones/portal/proddoc.html
- WebSphere Portal Family Product Page
  - http://www.software.ibm.com/websphere/portal
- Other WebSphere Family Products
  - http://www.software.ibm.com/websphere
- Other Lotus Products
  - http://www.lotus.com
- Red Books
  - http://www.redbooks.ibm.com
- Accessibility Guidelines
  - http://www.w3.org/WAI