WebSphere® software

Lotus® software

Enterprise and Web 2.0 application support in a modern mainframe environment

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Introduction

Users all over the world rely on the IBM System z® platform as their strategic computing solution and value its reliability, availability, serviceability and superior security infrastructure. However, a new generation of mission-critical applications with Web-facing front ends presents new challenges to strategic System z clients. System z clients are understandably leery of adding Web-facing workloads because of a deserved reputation for unpredictability and for causing peak processor utilization. To run Web-facing workloads that take full advantage of the strengths of System z technology, a stable environment is required.

Enter IBM WebSphere® Portal for System z software. WebSphere Portal software already provides a premier Web portal interface, both in terms of marketshare and the number of organizations using it for critical, enterprise-scale Web applications. On the System z platform, users can leverage the two variants of WebSphere Portal for System z software as appropriate—IBM WebSphere Portal Enable for IBM z/OS® and IBM WebSphere Portal software running under the Linux® platform on the System z mainframe. The former leverages traditional z/OS resources such as IBM RACF® and IBM z/OS Workload Manager technology, and the latter takes a multiplatform approach.

This white paper outlines the advantages of WebSphere Portal for System z software and provides essential information to those considering adding Web-facing workloads on their mainframe hardware. Also, with these WebSphere Portal for System z options, IBM illustrates its ongoing commitment to mainframe computing and underscores the business value that remains inherent in the System z platform.

About WebSphere Portal software

WebSphere Portal software contains a broad set of features and functions that users can select from in order to develop a Web presence tuned precisely for their needs. Core and optional features include:

- *Customization, personalization, branding and site navigation.*
- *Web and enterprise content management.*
- *Business process management.*
- *Business dashboards.*
- *Electronic forms.*
- *Collaboration using instant messaging, team workplaces and e-mail integration.*
- *Departmental, enterprise and wide-area search options.*
- *Web 2.0 capabilities such as blogs, wikis, activity management, social bookmarking and employee profiles.*
- *Full service-oriented architecture (SOA) support, including tooling and IBM WebSphere Enterprise Service Bus software.*
- *Integration tools for corporate applications.*
- *Single sign-on; fine-grained access control over portal resources.*
- *Tooling for quickly deploying portlets in composite applications and/or business mashups.*
- *Tooling and support for the creation of "write-once, deploy anywhere" Web pages and portlets to mobile devices.*

About WebSphere Portal Enable for z/OS software

Designed and optimized for the z/OS platform, WebSphere Portal Enable for z/OS software exploits the System z platform's availability, reliability and serviceability, and provides a virtually unmatched platform for the transformation and integration of legacy applications and data. In addition, users benefit from horizontal and vertical scalability features, which support nondisruptive growth, optimized utilization, and highly responsive, autonomic workload management. Using IBM WebSphere Portlet Factory software, these

services can be leveraged to deliver SOA-based portal applications. Because WebSphere Portal software utilizes an SOA, these applications can use existing assets and can be quickly modified to meet changing roles and business conditions.

Further, users can access thousands of no-charge portlets from IBM and IBM Business Partners to access applications, databases, e-mail systems and more. WebSphere Portlet Factory software also provides prebuilt integrations for existing applications such as IBM Lotus Notes®, IBM Lotus® Domino®, SAP, PeopleSoft and Siebel technology, as well as databases and Web services, allowing you to quickly build and deploy high-value composite applications from enterprise back-end systems. This flexibility can provide a path for modernization while leveraging your existing investment in systems, data and applications.

Portal capabilities specific to the z/OS platform include:

- *Support for the z/OS file system (zFS)—WebSphere Portal Enable for z/OS software strategically supports z/OS file systems as the logical choice for creating shared file systems for use in a sysplex. The hierarchical file system (HFS) is also supported.*
- *Close proximity and tight integration with IBM DB2®, IBM CICS® and IBM IMS™ subsystems, which can provide highly optimized, security-rich access to data and transaction systems.*
- *Optimization for running mixed workloads—IBM System z and z/OS Workload Manager software support high scalability and provide proven results on service-level agreements.*
- *Exploiting IBM z/OS Communications Server technology for a high-speed, enhanced-reliability and fault-tolerant environment for running WebSphere Portal software.*
- *Utilization of the IBM System z Application Assist Processor (zAAP) dedicated coprocessor for Java™ workloads, which helps improve price performance.*

A national railway system reduces administrative and energy costs with help from IBM

RENFE, Spain's national railway system with revenues of US$2 billion, used the z/VM, SUSE Linux platform to streamline human resources (HR) processes, making employees more productive while significantly reducing IT and administrative support costs. With a unified WebSphere Portal environment, management can now easily share company information across all 18 divisions. The IBM zSeries® 990 server enables RENFE to activate and deactivate extra processors that came with its mainframe on a daily basis, only paying IBM for the time it used the processors (based on a prearranged agreement). The overall benefits of the zSeries solution also include lower total cost of ownership (TCO) compared to a distributed solution, saving

About WebSphere Portal software for Linux and System z platforms

WebSphere Portal software offerings for operating systems other than the z/OS platform also support Linux software on System z platforms. Linux software runs natively on System z platforms and does not require the IBM z/VM® platform. The combination of System z and Linux platforms makes good sense from a performance/value standpoint. As an open source operating system, the Linux platform offers stability, performance, scalability and security features. The System z platform provides proven virtualization technology, which can allow businesses to realize even greater performance, availability, security and scalability capabilities and practically unmatched failover and recovery capabilities.

For businesses that have stabilized their growth of mainframe applications, the Linux software for System z platform offers a low-cost strategy that helps avoid many of the risks of complex migrations to other server platforms. Users can leverage mainframe qualities of service and can optimize their investment in System z technology.

Further, businesses already using the Linux for System z platform may have underutilized Linux for System z or Integrated Facility for Linux (IFL) processors. WebSphere Portal software is an excellent way to utilize this extra capacity while helping to simplify and optimize the existing infrastructure for comprehensive WebSphere applications—ultimately helping to reduce costs and complexity.

Leverage the System z platform for server consolidation to save energy and floor space

The System z platform offers the ability to run multiple logical environments, multiple operating systems and multiple images of each operating system using the IBM z/VM platform, making it suitable for running multiple applications concurrently, reliably and in a security-rich manner. For mixed workloads, System z hardware is a leading enterprise/infrastructure hub platform. It is extraordinarily suited to run multiple, disparate workloads. Virtualization extends to the hardware and its reliability. Built-in redundancy

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RENFE nearly 50 percent in software costs alone compared to a comparable distributed UNIX® solution; a smaller footprint and lower energy costs, with the benefits compounding as the addition of distributed systems is avoided; better management capabilities, with the ability to integrate Linux disk backups using IBM Data Facility Storage Management Subsystem (DFSMS™) and existing remote copy procedures; and higher availability.

Nationwide Insurance consolidated over 250 production, development and test servers to the Linux platform for System z mainframe and six IFL processors. It expects to save US$16 million over the next three years; savings will be realized in cooling, maintenance, software and equipment costs.

of the hardware gives customers the confidence to choose System z technology for mission-critical applications and data, and it permits utilization rates of up to 80 - 100 percent—well beyond those of other distributed hardware platforms.

Computer operations are stressed by the high cost of administration and staff required to maintain and manage distributed systems, the increasing expense of energy (both power and cooling) and the unsustainable growth in floor space requirements. Distributed server and software costs increase linearly and add complexity with no economies of scale. Further, they tend to be inflexible, with an inability to scale up quickly for unpredictable workloads.

With the above in mind, the System z platform is a logical choice for massive server consolidation. Consolidation of workloads on the System z platform can dramatically decrease (up to 1:8) administration and management costs, due to its lower complexity and fewer points of failure, thus freeing up staff resources. Further, compared to farms of distributed systems, System z technology can reduce energy and floor space by up to 40 - 80 percent and provide industry-leading security features and comprehensive, enterprise-wide performance and availability.

In comparison to other consolidation strategies, the System z platform provides high quality of service, including reliability, scalability, virtualization and security features; a simple paradigm for system management; performance and availability; high environmental value considering energy, cooling and physical footprint; a low TCO for mixed workloads; and an improved set of integrated software tools for management of the consolidated image.

Representative WebSphere Portal workloads for the System z platform

WebSphere Portal software–based solutions are available to help organizations increase productivity and automate business processes. Dashboards, for example, help interconnect people, processes, systems and technology. Web content management capabilities help organizations deliver realtime, personalized information while reducing the cost of deploying and managing Web sites. And collaborative Web sites can allow a geographically dispersed workforce to efficiently collaborate on projects.

Business process automation

Because WebSphere Portal Enable software can be implemented on IBM WebSphere Process Server software, WebSphere Portal software provides a full-function environment for the automation of business processes. Also, because more than 80 percent of business processes are based on forms, users can utilize intelligent electronic forms supporting both simple Web forms and complex forms incorporating business logic, pixel-perfect forms representation and digital signatures. Thus, WebSphere Portal software includes tools that can help increase productivity through the automation of forms-based processes.

The benefits of business process automation using a WebSphere Portal software–based solution can include:

- *Increased revenue through faster, automated and streamlined approval processes.*
- *Decreased expenses through reduced rework, reduced or eliminated paper handling, and realtime identification and validation of information.*
- *Increased efficiency as a result of straight-through processing that can significantly reduce the time required to complete a decision/approval process and a single point of access to mission-critical processes with a common user interface.*
- *Improved audit and/or regulatory compliance through the logging of business transactions.*
- *Improved customer service via easy-to-use, Web-based data capture.*
- *Enhanced time to market for process applications, leveraging WebSphere Portal software–based development tools–such as a forms designer–and the ability to integrate with WebSphere Process Server software, IBM FileNet® Business Process Manager software and custom process engines.*

Performance dashboards

Every organization aspires to great performance. To this end, WebSphere Portal for System z dashboard solutions can interconnect people, processes, systems and technology to help organizations achieve their goals and objectives. Objectives-based management is supported through a WebSphere Portal software–based implementation of the "balanced scorecard" business management methodology. This allows users to understand their key performance indicators (KPIs), assign accountability, monitor progress and accelerate exception resolution. Also included is the ability to quickly and easily create and deploy other dashboard solutions that can "watch" data values in databases, applications or spreadsheets, and present that data to users in a personalized and graphically useful fashion.

The benefits of performance dashboards on WebSphere Portal software can include:

- *Achieving rapid insight into performance through actionable, in-context dashboards and scorecards and intuitive navigation.*
- *Improving productivity by providing tools to rapidly assemble personalized dashboard views of information pertinent to each user's area of interest and expertise.*
- *Facilitating problem resolution by proactively alerting managers to changes in KPIs.*
- *Leveraging existing technology investments through the use of an SOA and fast, flexible access to a variety of systems or data stores.*
- *Tracking business results in realtime to catch issues before they become a problem.*
- *Simplifying organization and management of KPIs.*
- *Communicating and assigning concrete performance targets and metrics consistently across the organization.*

Web content management and Web publishing

The corporate Web site is the company's face to the world. If content is outdated, inaccurate or difficult to find, companies risk frustrating their site visitors and losing their opportunity to communicate with them. The challenge is to keep content relevant and protected without overstretching teams and budgets. By using the Web content management capabilities of WebSphere Portal for System z software, WebSphere Portal software can help your organization increase the value of internal and external Web sites by delivering realtime, personalized information while reducing the cost of deploying and managing Web sites. Further, business users can be empowered to manage their own content through easy-to-use portlets that automate the updating of content on the site. And, because Web site content is more valuable when users can easily find what they need, a comprehensive search capability provides fast and accurate search results while protecting sensitive information.

The benefits of using WebSphere Portal software for Web content management can include:

- *Increased productivity through a ready-to-use set of capabilities that allow business users, not IT specialists, to rapidly develop and manage intranet, extranet, Internet and portal assets.*
- *Increased efficiency by placing content authoring, workflow, management and publishing in the hands of content experts.*
- *Improved time to market due to the availability of ready-to-use portlets that leverage the role-based personalization capabilities of WebSphere Portal software.*
- *Improved Web site relevancy through easy updating, plus the ability to activate and deactivate site changes on a certain date.*
- *Improved regulatory and audit compliance by logging changes and saving past versions of the Web site.*
- *Greater accountability by applying approval workflows to proposed Web site changes, forcing authorization before "going live" without any increase in the time to update the site.*

The above characteristics provide the potential for increasing Web site visitations by supporting and deploying rich, accurate and high-quality content, for reducing the time it takes to get content from producers to consumers, for improving communications with customers and prospects, and for ensuring a consistently branded look and feel. And this can all be accomplished at a lower cost as compared to more traditional Web site coding.

Collaborative Web sites

WebSphere Portal for System z software can be used to deploy collaborative Web sites, allowing a geographically dispersed workforce to collaborate on projects wherever or whenever is most efficient. Collaborative Web sites on WebSphere Portal software include the following capabilities:

- **Security-rich instant messaging**—*Provide employees and partners with the ability to interact and collaborate on business matters in realtime.*
- **Team places**—*Quickly and easily build ad hoc Web sites for project teams or departments using a broad set of prebuilt site templates. Enhance team places with content libraries that are easy to set up using a native repository or other repositories such as FileNet or IBM Content Manager software, if those applications are deployed.*
- **Personal file sharing**—*Create personal content libraries; instead of sending copies of files through e-mail, simply send links to those files to other collaborators.*
- **Profiles**—*Easily search through the corporate directory to find people to collaborate with who have the skills you need. View their pictures, resumes, contact information and reporting structure, depending on how your company deploys the functionality.*
- **Communities**—*Establish groups of individuals interested in particular areas of the business and allow them to collaborate with one another using various tools.*
- **Blogs**—*Allow employees to blog about their interests, jobs, projects or tasks and collaborate through threaded responses, creating a method of capturing employee expertise.*

- **Wikis**–*Allow employees to create wikis on various subjects, building a library of corporate knowledge and processes over time.*
- **Shared bookmarking**–*Let users see the bookmarked pages of other users, enhancing the site's search capabilities in order to find information quickly and easily.*
- **Activities**–*Manage activities within projects and provide a centralized set of pointers to relevant e-mails, documents, wikis, files or blogs on that topic.*
- **Personal home page**–*Allow employees to build a personal home page from templates, providing one-stop access to their social networking and collaborative tools.*

The benefits of using WebSphere Portal software to build collaborative Web sites can include:

- **Increased efficiency**–*Users can find subject matter experts (SMEs) based on personally created profiles and can quickly add Web 2.0 collaborative capabilities to an existing portal.*
- **Increased productivity**–*Users have the tools they need to collaborate more effectively without learning a new interface.*
- **Improved user satisfaction**–*Users can surface the information they find most useful and can quickly contact the right experts.*

Summary
WebSphere Portal for System z software can provide an efficient way for mainframe users to extend the value of the System z platform to the Web. By leveraging the broad set of WebSphere Portal functionality, mainframe users can unlock significant value to their customers and employees while availing themselves of the performance, scalability and quality of service offered by the System z platform.

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For more information

To learn more about IBM WebSphere Portal for System z software, contact your IBM representative or IBM Business Partner, or visit:

ibm.com/software/genservers/portalzos

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