IBM

System p Configurations for SOA Entry Points

IT managers have long had to deal with the challenge of shifting IT processing resources during periods of peak activity—such as dealing with unpredictable surges in Internet traffic or processing increased levels of stock transactions. While embracing a service oriented architecture (SOA) strategy means improved business flexibility, it also brings new challenges for the underlying IT infrastructure.

Today's businesses require flexibility and agility out of their information systems. Success with SOA requires a flexible, robust infrastructure that can be used in conjunction with your existing infrastructure and IT assets to create additional business value. Getting started with SOA is easier with the System p Configurations for SOA Entry Points— an integrated, open standards-based set of software, hardware and best practices for SOA.

SOA is a business-centric IT architectural approach that supports integrating business processes as linked, repeatable tasks or services. SOA helps to build composite applications, which are applications that draw upon functionality from multiple sources within and beyond the enterprise to support horizontal business processes.

Highlights

- *IBM System p™ servers and IBM SOA software stack that includes reference architecture with planning and configuration guide.*

- *Solution building block for the SOA infrastructure with superb vertical and horizontal scaling for a flexible infrastructure*

- *Virtualization technology to improve infrastructure responsiveness—complementing SOA deployments*

At first, people don't normally discuss hardware when they're discussing an SOA; however, it's only a matter of time before they need to look at their underlying architecture in terms of performance characteristics, number of services and the dynamics of each service. Hardware matters. A challenge is that IT infrastructure complexity is inhibiting agility, performance and the ability to realize maximum value from SOA. A company can't be successful with SOA if that company fails to realign and adapt its existing IT infrastructure to support the new model. Organizations that are serious about SOA need to be assured that their services will be available and perform as expected.

SOA Infrastructure is the IT infrastructure—hardware, operating system, database and middleware software—to support the implementation of business services in the development and runtime environments. As businesses adopt SOA and Web Services, these new, simplified, virtualized and distributed application frameworks pose new infrastructure challenges that must be addressed. To ensure that the new applications can meet their performance, availability, scalability, security and management requirements, the IT infrastructure needs to be assessed and transformed.

SOA lets service components join and rejoin together in any combination.

IBM is creating several SOA Entry Point stacks. These stacks consist of pretested configurations of hardware and software tailored to address typical entry points in an SOA journey. Pretesting assures interoperability and ease of deployment while facilitating the variants and additions that will frequently be requested.

IBM has identified five SOA entry points based on our success helping clients achieve business results with SOA. Based on feedback from clients across industry segments, these entry points provide effective starting points for business and IT leaders to pursue SOA adoption. The people, information and process entry points provide the

System p perspective on best practices for the IT infrastructure when clients implement portal, data base and business process modeling initiatives. The connectivity and reuse entry points describe the infrastructure technical considerations for enterprise service bus and a repository for reuse of SOA assets. The objective of these entry points is to enable clients to pursue SOA at the adoption pace of their business. To further build on these entry points, IBM has created five corresponding System p configurations to include hardware and how to leverage embedded features, such as virtualization, to enhance the IT infrastructure in support of SOA objectives. These extensions will document implementation steps and best practices of using the hardware.

IBM's Advanced POWER™ Virtualization technology allows a single server to be divided into multiple partitions that can each run different operating systems such as UNIX® and Linux® running multiple applications. It also allows processing resources to be instantaneously shifted from one partition to another when needed in times of peak demand to provide business flexibility. In addition, the optional High Availability Cluster Multiprocessing (HACMP™) program can provide fail-over protection in the SOA Infrastructure to provide continuous availability.

The new System p Configurations for SOA Entry Points provide documentation on how to combine the best of IBM server technology with IBM's SOA software to make it easier to deploy new systems in an SOA Infrastructure. This powerful combination will help clients adapt to business change with a flexible infrastructure, reduce IT costs, increase quality of service and simplify the utilization of system resources.

The tested configurations combine selected IBM System p servers running IBM WebSphere®, Lotus®, Tivoli® and DB2® software. In addition, implementation services from IBM Systems and Technology Lab Services, IBM Software Services, IBM Global Services or a qualified IBM Business Partner can help clients start faster and lower the cost of entry into SOA.

> *"There are cultural challenges and there are integration challenges and there are technical challenges—and they will inevitably have to be faced as a SOA implementation progresses. However, there is likely to be an advantage in having a starter pack, like those IBM is offering, that have already been tested in action and embody the lesson learned from early SOA engagements."*
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> —Hurwitz & Associates, You want to get started with SOA? IBM has it by the Box Full, 16 March 2007

The initial five configuration family members:

- *System p Configuration for SOA Entry Point—People*
- *System p Configuration for SOA Entry Point—Process*
- *System p Configuration for SOA Entry Point—Information*
- *System p Configuration for SOA Entry Point—Connectivity*
- *System p Configuration for SOA Entry Point—Reuse*

The System p Configurations for SOA Entry Points start with the premise that the IBM System p platform provides a flexible IT infrastructure that can easily adapt to changing business needs. They describe the capabilities of System p server technologies, including Advanced POWER Virtualization, that provide the ability to automatically scale to support additional services, Capacity on Demand to activate processing resources and HACMP for improved availability. These technologies can be leveraged to maximize flexibility, improve quality of service and minimize cost when implementing SOA entry point stacks on various IBM System p server configurations including partitions, blades and clusters.

IBM System p Servers

The System p Configurations for SOA Entry Points includes technology designed to provide higher flexibility to accommodate faster rate of business change—for example, automatically scaling in response to change to support SOA application services and a dynamic operating environment that can run with minimal disruption. Get the most out of resources by automating

and simplifying for greater cost effectiveness. The System p platforms provide quality of service with quick, efficient and predictable execution of work, fast transaction processing and access to data, avoids or recovers failures without disruption and intelligently provisions to business priorities.

System p SOA infrastructure capabilities play an important role in support of SOA projects and environments by providing the foundation for a flexible infrastructure. As SOA deployments grow, companies begin to consider the necessary infrastructure challenges and capabilities to support services, dynamic applications and business processes. One of these is complexity. As applications are decomposed into constituent services, the associated infrastructure complexity can be a challenge. System p server optimization can complement SOA deployments.

Further, organizations often struggle with having to scale their infrastructure to support "hot" services. This is especially true when services are used in new, unexpected ways. Dynamic resource allocation allows scaling infrastructure resources to support popular services.

Virtualization is a key enabler of infrastructure responsiveness in support of services and dynamic applications. First, virtualization facilitates easily scaling infrastructure resources in response to "hot" services and dynamic applications. Second, virtualization of services can help better prioritize infrastructure resources across multiple business processes. This is important as SOA environments grow. Finally, virtualization is an enabler of dynamic infrastructures and can help reduce the complexity of SOA environments as the number of services and dynamic applications increase.

The infrastructure platform provides the necessary performance, availability, scalability, security and management so the benefits of SOA can be fully realized. This offering includes the scaleable System p platforms ranging from small to large servers.

IBM Systems and Technology Group Lab Services

Expert skills to assist in delivering AIX® and Linux-based solutions across multiple hardware platforms. With access to Systems Development lab skills, consultants can provide consultation, planning, installation, configuration, migration, performance analysis and tuning, and training on the latest Systems Group technologies.

STG Lab Services consultants can assist AIX and Linux clients with the adoption of virtualization technologies. Services include consulting, architecture and configuration of Enterprise Workload Manager (eWLM) and IBM Director Multi-Platform.

"Three years ago, we set out to build a shared enterprise IT infrastructure that would allow MetLife to grow with agility—we now have a solid framework for integrating the systems of the companies we acquire. Infrastructure virtualization through logical partitioning on these servers gives us tremendous flexibility to effectively allocate processing power to meet the needs of our business."

—Bob Fratangelo, vice president of distributed systems at MetLife
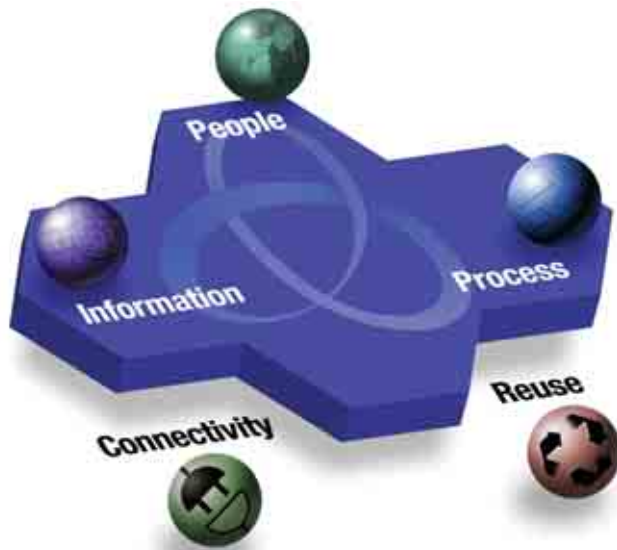
Get started with SOA using any one of five entry points.

STG Lab Services offerings include:

- *Advanced POWER Virtualization*
- *Performance Analysis and Tuning*
- *BladeCenter® Enablement (PowerPC® blades)*
- *Cluster Systems Management (CSM) Implementation*
- *HACMP Assessment*
- *HACMP Consulting and Implementation*
- *HACMP/XD Consulting and Implementation*

IBM System Storage

Today, IBM is one of few vendors that can provide storage solutions that encompass a full spectrum of offerings—tape systems, disk systems, SAN, NAS, storage software and services—to help deliver superior storage infrastructure for your organization's SOA mission efficiently, cost-effectively and helps to reduce the amount of time and effort to realize the value of SOA. This range of IBM System Storage™ offerings, together with System p servers, can help optimize a test environment, an SOA sandbox and later a mission critical environment to achieve an optimal server and storage combination, helping to keep business-critical data available and readily accessible.

IBM System Storage offers virtualization capabilities that are designed to enhance the flexibility and adaptability of your IT infrastructure to meet SOA demands today and application demands of tomorrow. Coupled with the scalability, modular design, networking and file sharing capabilities and comprehensive management software designed for ease of use, IBM System Storage with System p is the infrastructure for SOA and the future.

IBM Software

The people entry point

IBM WebSphere Portal extends the portal concept with support for workflows, content management, simplified usability, administration, open standards, security and scalability.

According to IDC, IBM led the world-wide enterprise portal software market for the fourth consecutive year, achieving double digit growth from 2004 to 2005.[1]

The process entry point

IBM WebSphere Process Server is a high-performance business engine that executes mission-critical business processes securely, consistently and with transactional integrity.

IBM WebSphere Business Monitor enables you to monitor business processes in real-time, providing a visual display of business process status.

The information entry point

IBM DB2 for Linux, UNIX—Hybrid data server for both XML and relational data; Enabled for SOA; Optimized for SAP.

The connectivity entry point

IBM WebSphere MQ provides a reliable messaging backbone for applications and services to help fully leverage your existing software and hardware.

IBM WebSphere Enterprise Service Bus (ESB) provides Web services connectivity, JMS messaging and service oriented integration to power SOA.

IBM WebSphere Message Broker delivers an advanced Enterprise Service Bus providing connectivity and universal data transformation for both standard and non-standards-based applications and services to power your service oriented architecture.

The reuse entry point

IBM WebSphere Application Server delivers the secure, scalable, resilient application infrastructure needed for a service oriented architecture.

WebSphere Service Registry and Repository provides a single, comprehensive description of a service by bringing together service metadata that may otherwise be scattered across an enterprise.

IBM Software Services

IBM's expert team of software consultants with broad architectural knowledge, deep technical skills and best practices expertise provide value to client SOA implementations. With an SOA blueprint in hand, you can rely on IBM Software Services to integrate your new solution as quickly as possible. IBM consultants have close relationships with IBM development labs to

The nation's 10th largest public power utility relies on its SOA to support its utility outage management application and call center applications. Austin Energy's SOA was developed with the help of IBM architecture services and is based on IBM WebSphere and Rational® software running on a System p server.
"Austin Energy's SOA is built around three fundamental components: presentation, process and information. Our vision of a fully integrated and self-healing enterprise with real-time dashboards for business managers, partners and clients is enabled by IBM Portal Server, IBM Process Server and IBM Information Server." Austin Energy's SOA was developed with the help of IBM architecture services and is based on IBM WebSphere, Rational software and System p servers.

—Andres Carvallo, chief information officer, Austin Energy

ensure access to the latest technologies over the life of your project. Based on business needs, you can choose to apply IBM's software expertise to a tactical SOA-technology project or to a more comprehensive solution by integrating elements from technical consulting, education and mentoring. With an IBM consultant, you can:

- *Minimize your risk*
- *Maximize your investment*
- *Meet your business goals with SOA technology*

Services supporting a service-oriented architecture

IBM GetStarted with Service Oriented Architecture enables a more effective SOA implementation through hands-on workshops designed to help you assess, architect and design, scope, and deploy your SOA project.

ibm.com/software/sw-services/

IBM Global Technology Services

SOA enablement can unleash its own set of complexities. How do you manage an SOA operational environment? How do you minimize the potential risks

associated with SOA adoption? You start by making your IT infrastructure more flexible, malleable and amenable so that it's better aligned to support SOA. In this way, you simplify SOA integration and enable rapid change. SOA enablement requires a roadmap, a coordinated plan that lets you see how to get from where your IT infrastructure is today to an SOA environment tomorrow.

IBM SOA Infrastructure Consulting Services—infrastructure strategy and planning for SOA

- *Supports alignment of IT infrastructure capabilities with strategic business objectives*
- *Develops a practical framework for an IT infrastructure that supports SOA service levels*
- *Helps curb operational costs associated with SOA adoption*
- *Provides access to experienced, trained and skilled technical resources*

IBM Business Partners

The IBM Business Partner Service Oriented Architecture Community, formalized in June 2005 with 50 Business Partner members, has grown to more than 3,000 members that take advantage of IBM software, services, tools and education to help their customers embrace SOA. The IBM Business Partner SOA Specialty, an initiative begun in 2006, recognizes IBM Business Partners that have demonstrated technical expertise with IBM SOA software, best practices and patterns for deploying SOAs. Business Partners who display the "Ready for IBM SOA Specialty" mark have met the rigorous business and technical requirements for invitation to the specialty. The IBM SOA Business Catalog offers thousands of composite applications, reusable assets and services offerings from IBM and from Business Partners in the SOA specialty to help kick-start your evolution to SOA.

Clients are getting value from SOA today

Focused SOA projects with IBM

- Seven of the world's 10 largest banks
- Each of the world's top 10 auto manufacturers
- Two-thirds of the world's 25 largest telecommunications companies
- Half of the world's 50 largest electronics companies
- Six of the world's 10 largest insurers
- 80 percent of the largest U.S. health plans
- Half of the world's 10 largest retailers
- More than 3,000 SOA Business Partners

> *"The IBM System p architecture is a robust option for companies like ours, which require high availability and performance to support 24-7 operations. The System p Express platform offers us a cost-effective way to exploit the performance potential of IBM Power Architecture™ technologies."*
>
> —Vipul Bansal, Chief Executive Officer at Medusind Solutions

For more information

To learn more about the IBM System p Configurations for SOA Entry Points offering, please contact your IBM marketing representative or IBM Business Partner, or visit the following Web sites:

- **ibm.com**/systems/p/solutions
- **ibm.com**/soa
- **ibm.com**/systems/p

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Many of the features described in this document are operating system dependent and may not be available on Linux. For more information, please check: **ibm.com**/servers/eserver/pseries/linux/whitepapers/linux_pseries.html.

[1] IDC, Worldwide Enterprise Portal Software 2006-2010 Forecast Update and 2005 Vendor Shares: When Less is More. #202688, Kathleen Quirk, July 2006.