WebSphere® software

IBM WebSphere Service Registry and Repository, Version 6.1

Highlights

- **Enable enterprise governance throughout the service life cycle.**

- **Encourage reuse and eliminate redundancies by increasing visibility of services.**

- **Quickly create or modify business processes using existing services.**

- **Increase runtime flexibility by dynamic service-selection and intelligent message-routing support for your ESB.**

- **Optimize the use of services in SOA by exchanging rich service information with runtime monitoring tools and operational data stores.**

- **Institute best practices and enforce policies in your SOA deployments, including role-based access to services, service changes, versioning and retirement.**

- **Enable governance and life-cycle management of your high-value applications, such as WebSphere MQ, CICS and IMS.**

Service oriented architecture (SOA) has the potential to drive business agility, business-process vitality, reuse of your existing services, improved connectivity and closer alignment of IT to business. Making the most of this potential depends on how well you govern and manage the services in your SOA.

Businesses without proper governance and management risk losing control over their services. They face barriers to reusing services, such as redundant services, misalignment with business processes, and lack of application consistency and integrity.

Store, access and manage information to support a successful SOA

IBM WebSphere® Service Registry and Repository provides management and governance capabilities that enable you to get the most business value from your SOA. It facilitates storing, accessing and managing service information, called *service metadata*, so that you can easily select, invoke, govern and reuse your services.
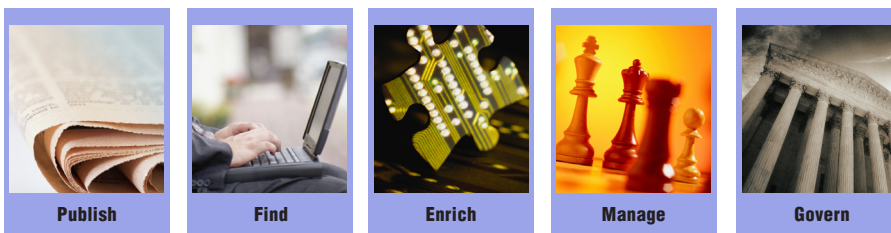
Publish	Find	Enrich	Manage	Govern

Figure 1. WebSphere Service Registry and Repository enables you to publish, find, enrich, manage and govern the services in your SOA.

What is a registry?
A *registry* contains information about services, such as service interfaces, operations and parameters.

What is a repository?
A *repository* has information about services coupled with a robust framework and extensibility to suit the diverse nature of service usage.

WebSphere Service Registry and Repository is based on a highly scalable and available architecture along with robust registry and repository capabilities. WebSphere Service Registry and Repository has tight integration with IBM SOA Foundation, an integrated, open standards-based set of software, best practices and patterns for SOA. WebSphere Service Registry and Repository is an essential component of your SOA.

WebSphere Service Registry and Repository is an industrial-strength tool that enables you to publish, find, enrich, manage and govern services in your SOA.

Encourage reuse
The *publish* and *find* capabilities of WebSphere Service Registry and Repository promote service reuse in SOA projects by providing greater visibility of and easier access to existing services. These capabilities also expose redundant or inefficient services.

For example, when a request-for-service need is approved, a query to WebSphere Service Registry and Repository searches to determine if the service is available. If a service exists, the service owner can be contacted to approve the reuse of the service. But if the service requires modification, the owner can choose whether to permit the alteration after analyzing the impact of those changes. If the alteration is approved, a new version of the service is published to WebSphere Service Registry and Repository. Finally, if an appropriate service was not found during the initial search, a new service-development request is initiated and the new service, when available, is published to WebSphere Service Registry and Repository.

Service discovery
The new discovery engine discovers services on both IBM WebSphere Application Server and Microsoft® .NET platforms, allowing you to keep an accurate record of deployed services as well as intended services in your SOA and enabling more reuse and control.

Faceted search
The new faceted search provides a natural and user-friendly way to find the services you are looking for. You can progressively refine search results using attributes, document types or classification.

Help mainframe applications on System z to participate fully in enterprise SOA
WebSphere Service Registry and Repository helps high-value mainframe applications on IBM System z™ (such as IBM CICS® and IBM IMS™) to participate fully in enterprise SOA. For example, IBM CICS Transaction Server for z/OS, Version 3 can be both a provider and a requester of Web services. When it is a provider, it can publish CICS applications exposed as Web services to WebSphere Service Registry and Repository. As a requester it can use WebSphere Service Registry and Repository as a catalog of available Web services.

WebSphere MQ endpoints support

The new metamodel and extensible parser support service representation of IBM WebSphere MQ endpoints. This support extends the reach and visibility of applications connected to WebSphere MQ as Web services and enables reuse, governance, visibility, composition and change-impact assessment.

WebSphere Service Registry and Repository helps in quickly creating or modifying business processes using existing services. A powerful query mechanism allows you to search and find the services that best fit the requirements of a given process. For example, using IBM WebSphere Integration Developer, a tool for IBM WebSphere Process Server, an integration developer can search for the existing services in WebSphere Service Registry and Repository, import them into the workspace and then simply drag them to the assembly diagram to build a new business process. After the new business process has been built, it can be exposed as a Web service. The integration developer can easily publish the new process Web service to WebSphere Service Registry and Repository by using the Publish Document option.
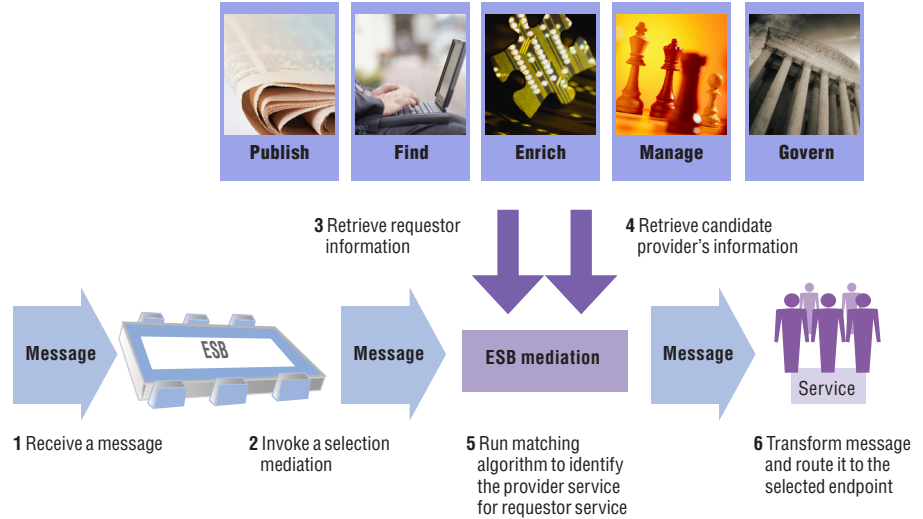

Figure 2. WebSphere Service Registry and Repository enables an ESB to make intelligent message-routing decisions

Enhance connectivity

The *enrich* capability enables dynamic and efficient access to services information by both runtime applications and processes that facilitate better connectivity and efficiency.

With an enterprise service bus (ESB), WebSphere Service Registry and Repository increases runtime flexibility of applications and processes by providing dynamic selection of services (for example, Web services) based on service metadata stored in WebSphere Service Registry and Repository, making intelligent decisions to route messages.

When the ESB receives a message from a client application or a business process that requests a service which meets the criteria encoded in the message, the ESB sends the message to a mediation flow. Based on the request, the mediation looks up the candidate services in WebSphere Service Registry and Repository. For each of these services, WebSphere Service Registry and Repository provides information about the service in terms of its availability, usage criteria and performance. The mediation then selects the optimal service provider that matches the request, and routes the request to that provider.

IBM WebSphere Message Broker can use service information from WebSphere Service Registry and Repository to resolve and select service endpoints dynamically at run time. This is enabled by predefined WebSphere Message Broker nodes that look up services in WebSphere Service Registry and Repository.

IBM WebSphere Enterprise Service Bus can dynamically route client requests to services managed by WebSphere Service Registry and Repository by way of a mediation that enforces the business rules to select service providers. The mediation can be constructed using predefined mediation primitives available with WebSphere Enterprise Service Bus.

IBM WebSphere DataPower® Integration Appliance XI50 retrieves and binds to services that are managed by WebSphere Service Registry and Repository. The XI50 periodically refreshes its cache to capture any changes made to the services in WebSphere Service Registry and Repository. It also enforces runtime policies and security that are associated with the services.
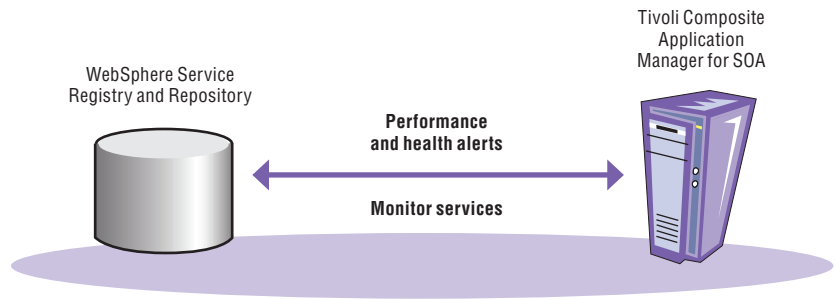

Figure 3. WebSphere Service Registry and Repository records alerts from Tivoli Composite Application Manager for SOA as service metadata.

Optimize service usage

The *manage* capability enables management of service metadata, as well as service interactions, dependencies and redundancies. You can classify services into meaningful groupings based on business objectives, manage policies for service usage and monitor how services are changed and versioned. Also, you can link related binary documents (such as Word and PDF files) to service metadata. This capability helps you optimize the use of services in an SOA by exchanging rich service metadata with runtime monitoring tools and operational data stores.

For example, IBM Tivoli® Composite Application Manager for SOA builds a dynamic view of services by using SOA agents to observe the services in operation. WebSphere Service Registry and Repository can subscribe to performance and health alerts that Tivoli Composite Application Manager for SOA publishes based on service level agreements and record that information as service metadata. This metadata then can then be used by the ESB infrastructure to make intelligent service-selection decisions.
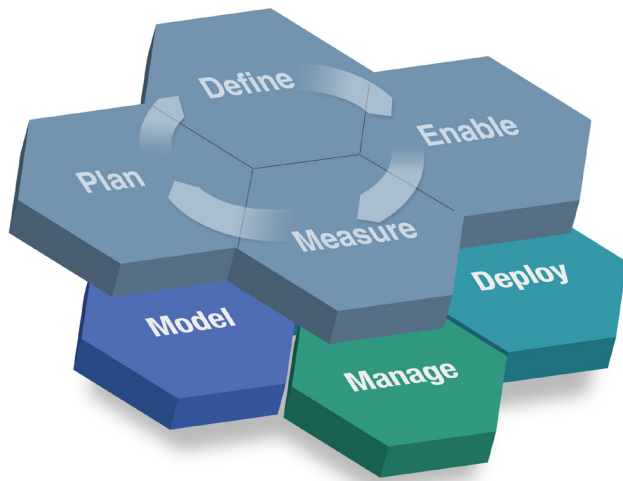
Figure 4. WebSphere Service Registry and Repository enables enterprise governance by handling decision rights, policies, versioning, classifications and change notifications throughout the service life cycle.

Tight integration with WebSphere Business Services Fabric

This new integration helps ensure consistency among business models across your business services in IBM WebSphere Business Services Fabric and corresponding IT services in WebSphere Service Registry and Repository. This rich and complete metadata allows you to link business and technical aspects of services for SOA business solutions (composite applications).

Enable enterprise governance

The *govern* capability of WebSphere Service Registry and Repository plays an enabler role for enterprise SOA governance during each stage of the service life cycle (model, assemble, deploy and manage) by supporting:

Access control

You can control the visibility and access to service metadata for sharing and reuse by using role-based access. Using the new access-control editor, you can easily set up access-control rules that align with your business.

Service classification

You can classify services and related metadata into groups that are meaningful in the domain of your organization and that align with your business needs. Using the new classification editor, you can improve productivity by easy set-up and modifications to your classification schemas.

Impact analysis

By maintaining relationships, WebSphere Service Registry and Repository has extensive support for analyzing the impact of service introduction, deletion or alteration. Using new graphical views, you can intuitively understand the service relationships and dependencies and determine the impact of making changes to services in your SOA environment. Registered clients can be notified of these changes through user-defined notification schemes, basic Java™ Message Service (JMS) publication of events and e-mail-based notification.

Service life cycle

By creating user-definable entities and customizing the service life cycle, you can configure WebSphere Service Registry and Repository precisely according to your business needs. WebSphere Service Registry and Repository supports tracking of service metadata as it makes its way through its governed life cycle, including approvals, deprecation and retirement in development, testing, staging and production environments. You can easily implement best practices for service life-cycle management with the ability to promote services and associated metadata based on life-cycle validations. Using custom validators, you can guard transitions in the life-cycle states of services.

Policy support

You can publish policies that apply to services stored in WebSphere Service Registry and Repository, including policy specifications that are compliant with the Web Services Policy Framework (WS-Policy). These policies are enforced by the clients of WebSphere Service Registry and Repository, such as an ESB, and help you institute best practices in your SOA deployment.

Governance profile

To help you get started easily and quickly, WebSphere Service Registry and Repository provides a well-defined service model that includes templates, associated life cycles, governance policies with a generic validator, a classification system, roles and perspectives. You can customize the model to suit your business needs.

Federation with other SOA repositories

WebSphere Service Registry and Repository federates with other SOA repositories to enable governance and management of the complete service life cycle. At the model and assemble phases, WebSphere Service Registry and Repository is complemented by repositories that specialize in managing SOA development artifacts. For example, WebSphere Service Registry and Repository supports federated search and publish with IBM Rational® Asset Manager, which manages bundles of artifacts describing reusable assets in the software-development life cycle.

In the deploy and manage phases, WebSphere Service Registry and Repository can work with a configuration management database (CMDB) to acquire and manage detailed information about the environment and topology in which service endpoints run. WebSphere Service Registry and Repository and CMDB federation enable users to get detailed information about the environment and runtime status of a service. CMDB users can obtain detailed descriptions of the shape and semantics of service endpoints from WebSphere Service Registry and Repository.

For more information

To learn more about IBM WebSphere Service Registry and Repository, Version 6.1, contact your IBM representative or IBM Business Partner, or visit:

ibm.com/software/integration/wsrr

To join the Global WebSphere Community, visit:

www.websphere.org

IBM WebSphere Service Registry and Repository, Version 6.1 at a glance

Hardware requirements

- IBM AIX®: IBM System p™ servers
- HP-UX: Hewlett-Packard HP-9000 systems
- Linux® on Intel®: 32-bit Intel PC hardware
- Linux on IBM POWER™: IBM PowerPC® and IBM POWER5™
- Linux on System z: System z processor
- Sun Solaris Operating Environment: Sun SPARC processor systems
- Microsoft Windows® Server 2003: x86-compatible PC hardware
- IBM z/OS®, V1.7 or V1.8: any compatible server

Software requirements

Server platforms
- IBM AIX 5L™, V5.3
- HP-UX 11.23 (on PA-RISC and Itanium® platform)
- Windows 2003 Server Standard and Enterprise Editions (32-bit)
- Red Hat Enterprise Linux AS, V 4.0
- Red Flag DC Server, V5 (Asian languages support)
- Sun Solaris Operating Environment, V 2.9 or 2.10
- Itanium 11i, V2 and V3
- SUSE Linux Enterprise Server (SLES) 10 on System z, System p and IBM System x™

Repository databases
- IBM DB2® Universal Database™ Enterprise Server Edition, V 9.1 with Fix Pack (FP) 5 (supplied with WebSphere Service Registry and Repository)
- Oracle 10g Enterprise Edition Release 10.2.0.1.0
- Apache Derby 10.1 (IBM Cloudscape™)

Application servers
- IBM WebSphere Application Server Network Deployment, V6.0.2 with Fix Pack 11 or later installed
- WebSphere Application Server, V6.0.2 with Fix Pack 11 or later installed

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