



TPF Users Group Fall 2007

SOA Update:
What's new in z/TPF Web services support?

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Main Tent

AIM Enterprise Platform Software






IBM z/Transaction Processing Facility Enterprise Edition 1.1.0

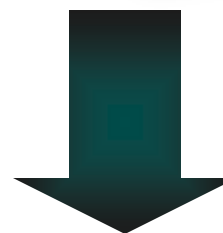
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SOA entry points and z/TPF

Although some of the technologies used in implementing a Service Oriented Architecture (SOA) may be new, the basic concepts behind the architecture are not:

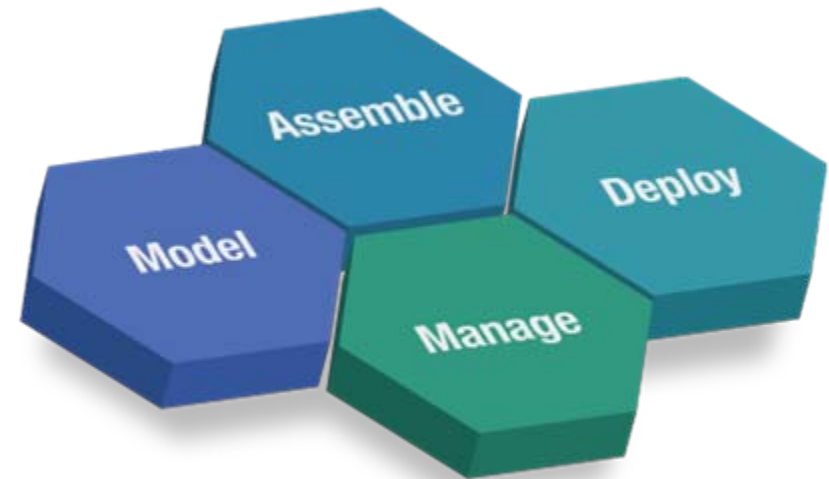
-  **Reuse:** unleash the power of existing business logic on z/TPF
-  **Connectivity:** connect z/TPF systems to rest of the enterprise
-  **Process:** achieve business process innovation
-  **Information:** integrate data on z/TPF in enterprise solutions
-  **People:** deliver role-based interaction and collaboration



Begin the SOA journey with the **Entry Point** that most closely aligns to your business needs and goals ...

SOA lifecycle and z/TPF

- Identify those assets that provide value-add outside of traditional z/TPF transactions and service-enable those assets (“bottom-up” development)
- Determine new services that are needed on z/TPF and create them (“top-down” development)
- Deploy services on z/TPF test system
- Run and test services
- Deploy services on z/TPF production system
- Manage and monitor services



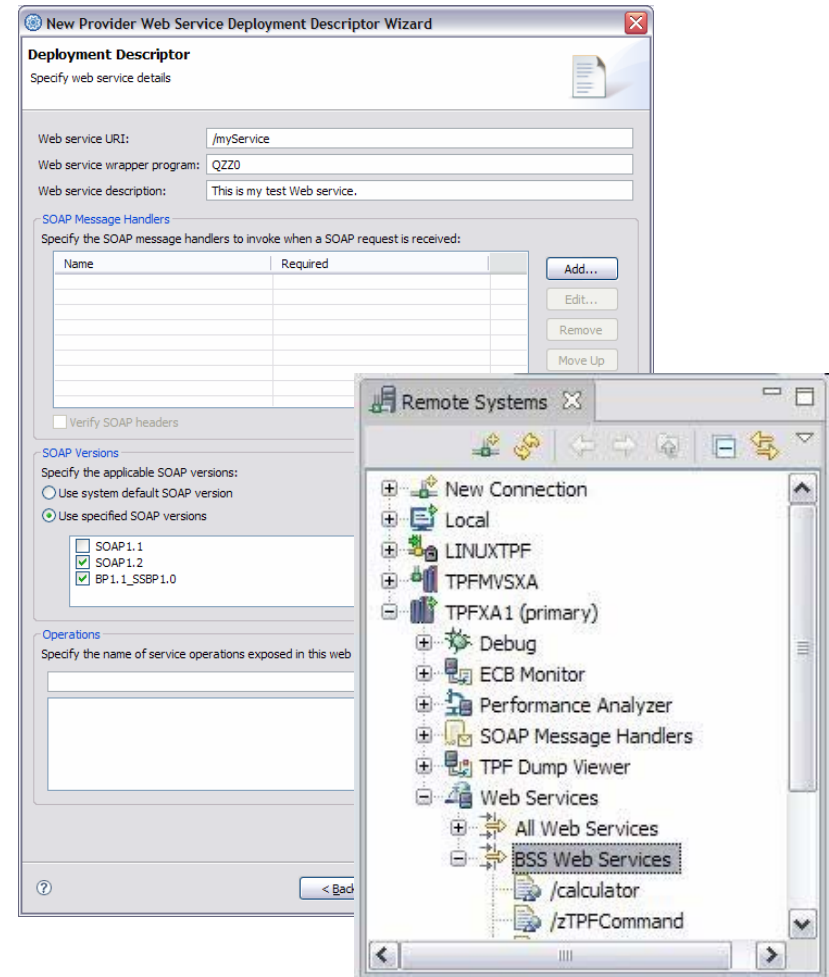
Build upon the **SOA Lifecycle** for design and implementation ...

z/TPF enhancements for Web services development

- Until now, development and deployment of Web services on z/TPF has primarily been a manual process that requires knowledge of the internal workings of the Web services stack
- Our goal:
 - Make the development, deployment, and management of Web services on z/TPF, in both procedures and required skills, similar to those needed on other platforms
 - Isolate the application logic from the Web services presentation (XML)
 - Make it easier for z/TPF to interoperate with other platforms
- Enhancements to achieve these goals have been integrated into z/TPF operating system as well as the TPF Toolkit:
 - z/TPF PUT 4: PJ32215
 - IBM TPF Toolkit 3.2.3

Defining and deploying Web services to z/TPF

- Define Web services to the z/TPF system by using **deployment descriptors**:
 - Deployment descriptors are XML documents that contain the processing attributes associated with a given Web service
 - New wizards added to the TPF Toolkit aid in the creation of deployment descriptors and allow you to transfer them to your z/TPF system
- Display and manage Web services on z/TPF by using the **Web services administration tool**:
 - ZWSAT command
 - Remote systems explorer (RSE) actions available from TPF Toolkit

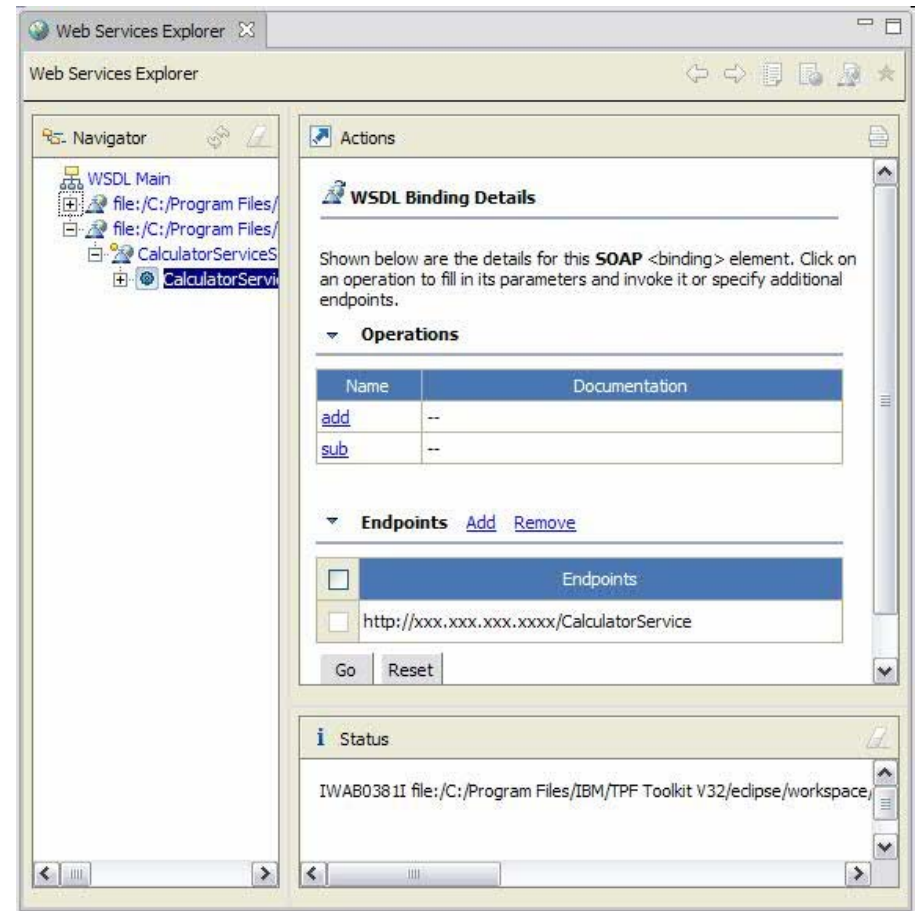


Creating a Web services wrapper program

- Use a **Web service wrapper program** to isolate the application logic from having to know anything about Web service interfaces:
 - Wrapper programs deserialize the XML-formatted SOAP request and invoke the underlying application in the expected manner
 - Wrapper programs take the output from the application and construct the corresponding SOAP response
 - The wrapper program for each Web service is identified in its deployment descriptor
- Create your Web services wrapper program:
 - Tooling exist in TPF Toolkit to generate a wrapper template that can be used as the starting point for creating your Web service wrapper program
 - z/TPF SOAP bridge APIs have been created for use in wrapper programs for invoking traditional z/TPF applications that expect input messages in application message format (AM0SG)

Testing and debugging a Web service wrapper

- Use the existing TPF Toolkit debugger registration capabilities, to register your Web service wrapper program for debugging
- Use the SOAP client that is embedded in the TPF Toolkit to generate SOAP requests for testing newly written or newly exposed Web services



Extending the basic Web services support

- The SOAP specifications allow for a great deal of extensibility by using the “Header” section of SOAP messages
- A large number of secondary specifications have evolved for solving common business problems; collectively, these are known as **SOAP features** or **WS-***
 - WS-Security
 - WS-Addressing
 - WS-Reliable Messaging
- z/TPF now contains infrastructure for you to create reusable Web service extensions, known on z/TPF as **SOAP message handlers**

```
<soap:Envelope>  
  <soap:Header>  
    ...  
  </soap:Header>  
  <soap:Body>  
    ...  
  </soap:Body>  
</soap:Envelope>
```


Interoperating with non-TPF platforms

- Web Services Interoperability Organization (WS-I)
 - Independent organization that has created several “profiles” that further refine some of the most common Web services-related specifications (For example, HTTP, SOAP, WSDL, and UDDI)
 - These refinements are intended to provide a higher degree of interoperability among heterogeneous platforms
- z/TPF can now optionally perform WS-I conformance checking on inbound SOAP requests on a per-service basis
 - Profiles that requests are validated against:
 - Basic Profile 1.1
 - Simple SOAP Binding Profile 1.0
 - Requests that do not conform to the profiles are rejected with SOAP fault messages

Additional tooling for Web services development

- Available in IBM TPF Toolkit 3.2.3
- Web Tools Platform (WTP) Eclipse plug-in integrated in TPF Toolkit:
 - XML editor
 - WSDL editor
 - WSIL creation wizard
 - Publish WSDL documents to UDDI registry
 - Web services explorer (SOAP client for testing)



SOA presentations throughout the conference

- Monday
 - **AAA Task Force:** *z/TPF Recent SOA Deliverables and Future Direction* (Jason Keenaghan)
 - **IBM Hospitality Suite:** *z/TPF SOAP Provider Enhancements and Web Services Tooling Demo* (Jason Keenaghan and Edwin van de Grift)
- Tuesday
 - **Distributed Systems Subcommittee:** *z/TPF Enhancements for SOAP Provider Support and Tooling for Web Services Development* (Jason Keenaghan)
- Wednesday
 - **TPF Education Session:** *Creating Web Services for Your z/TPF System* (Edwin van de Grift)

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