

SERVICE-ORIENTED ARCHITECTURE TOOLS

VENDOR	PRODUCT(S)	DESCRIPTIONS
Forum Systems Inc. Sandy, Utah (801) 313-4400 www.forumsys.com	Federal Information Assurance Gateway	Designed specifically for government SOA requirements. Other products include XWALL Web services firewall; XRAY Web services diagnostics; Sentry Web services security appliance; Vulcon vulnerability containment service; and Presidio OpenPGP-based PKI for Web services.
GT Software Inc. Atlanta (404) 253-1300 www.gtsoftware.com	Ivory Service Architect	A mainframe SOA integration suite; consists of Ivory Studio, a graphical modeling environment, and Ivory Server, a high-performance SOAP processor with run-time service orchestration and WSDL repository.
IBM Corp. Armonk, N.Y. (888) 839-9289 www.ibm.com/soa	IBM SOA Foundation	A set of IBM software and development tools centered on the IBM Websphere application server.
Microsoft Corp. Redmond, Wash. (425) 882-8080 www.microsoft.com	Microsoft .NET Framework	Works with other elements of Windows Server 2003 to provide basic Web services infrastructure; Visual Studio.NET provides tools for Web services and SOA development. BizTalk Server can be used for services orchestration.
Oracle Corp. Redwood Shores, Calif. (650) 506-7000 www.oracle.com/technologies/soa	Oracle SOA Suite	Includes development tools, a UDDI version 3 registry, BPEL-based orchestration, security and performance monitoring, and policy enforcement.
Software AG Inc. Reston, Va. (800) 241-9905 www.softwareagusa.com	Crossvision SOA Suite	Includes an SOA registry and repository, Ajax-based application composer, BPEL-based business process manager, information integrator (which combines data from different systems into a single view); an Enterprise service bus for orchestration of services; and a legacy system integrator that creates Web services from existing systems.
Systinet Corp. Burlington, Mass. (781) 362-1300 www.systinet.com	Systinet Registry, Information Manager, Policy Manager, Contract Manager and Governance Interoperability Framework	SOA directory and repository services, including a UDDI-based registry, service lifecycle management, WSDL interface and service access policies management, service agreement and service reuse management, and security and interoperability management.
Tibco Software Inc. Palo Alto, Calif. (650) 846-1000 www.tibco.com	Tibco BusinessWorks	An integration suite with enterprise service bus, Web services, XML-, SOAP- and XSLT-based transformations, and UDDI support.
WebMethods Inc. Fairfax, Va. (703) 460-2500 www.webmethods.com	webMethods Fabric	Suite of SOA tools that includes software for Web services creation, service-based Integration, event-driven messaging, UDDI registry, services management, business process management, activity monitoring and composite application assembly from aggregated services.

RFP CHECKLIST: SERVICE-ORIENTED ARCHITECTURE

IF YOU'RE BUILDING AN INTERNAL SOA, without connecting to outside organizations, then you may be able to go with a single-vendor solution. But odds are your SOA project will need to interoperate with systems that fall outside your control. Therefore you'll need components that can interact with multiple levels of the WS-Interoperability standards set.

1. When seeking an **SOA toolset**, ask the vendors about their interoperability with these standards:

- Web Services Definition Language 1.1
- Universal Description, Discovery and Integration versions 2.0 through 3.0.2
- Simple Object Access Protocol versions 1.1 and 1.2
- Extensible Markup Language schema 1.

2. For **enterprise SOAs**, you should also consider a standard called WS-Reliability, which is a SOAP-based protocol for guaranteed delivery of SOAP messages with no duplicates. This is especially important

for transactional systems.

3. If you're planning to allow **individual client devices** to plug into your SOA, rather than just trusted applications on servers or mainframes, ask vendors if their SOA solutions can integrate with your authentication system, whether it's the Defense Department's PKI infrastructure or another authentication system.

4. Ensure the **SOA platform** supports the following security standards:

- WS-Security, a protocol for guaranteeing the integrity of and associating security tokens with SOAP messages

using X.509 certificates or Kerberos tickets.

- Web Services Security SAML (Security Assertion Markup Language) Token Profile 1.0, a standard for applying SAML tokens to the WS-Security protocol. If your agency uses SAML for single-sign-on as part of the General Services Administration's E-authentication Initiative, this may be a requirement for your SOA.

5. Make sure vendors can meet **National Institute of Standards and Technology FIPS-140-2 encryption requirements** at a level appropriate to your application. And also check to see what the vendor has done to get Common Criteria certification.

6. If you use larger, more structured data

sets, such as EDI transactions, look for an SOA that can support ebXML messages as well as SOAP.

7. Ask vendors specifically about their **interoperability with any major system elements** you've already installed that will be plugged into your SOA. In some cases, there may be alternative ways to link systems into the SOA that overcome problems of matching standards.

8. If you have data in **legacy applications** that aren't directly integrated with a .NET, Java Enterprise Edition or another application server with Web services capabilities, you'll need legacy-to-Web services tools that can connect terminal-based applications or other systems (like CICS) into your SOA.

9. Depending on what systems you're integrating into your SOA, you may require **support over protocols** other than HTTP. For legacy systems, this might include

FTP.

10. Manageability of the deployed SOA depends on a number of factors. Ask vendors what performance and monitoring tools they provide for SOA services, including ways to manage service level agreements for availability—critical if you're planning on serving up services to other agencies or hooking into someone else's SOA.

11. If you're looking for ways to quickly assemble business processes into applications using an SOA, look for products that implement **Business Process Execution Language** to ensure your work can be moved from one SOA implementation to another. This will help pull business processes from enterprise architecture requirements, share processes with other agencies and lower the cost of moving to another tool later if things don't work out.

—S. Michael Gallagher