

GSAW 2011 Tutorial B:

Service-Oriented Architecture (SOA) Software Infrastructure for System Integration

Length: Full day

Overview:

The service oriented architecture style offers a comprehensive approach for harmonizing ground data systems from collections of reusable services. Combination occurs through a standards-based process layer that minimizes the cost (time and money) of responding to changing customer needs. Successful SOA adoption leads to the reuse of services across organizational boundaries, collectively implementing an application services architecture that integrates functionality via carefully designed message-based information flows.

The discipline required to develop services, reuse of services across organizational boundaries, service runtime dependency and execution management, service re-composition to support changing customer needs, and efficient information transformation and exchange have led the industry to develop a comprehensive offering of enterprise-class SOA infrastructure software. The purpose of this tutorial is to provide participants with an overview of the SOA infrastructure service landscape. After introducing the principles of service oriented architecture, the tutorial reviews the major services typically found in SOA deployments including their architectures, standards implemented, best practices, and a high-level assessment of currently available open source and commercial product offerings.

The tutorial concludes with a question-and-answer panel by engineers working on the Lunar Mapping & Modeling Project (LMMP) at the Jet Propulsion Laboratory. Included is a demonstration of how this project uses a modern services infrastructure that has a cloud computing backend and an iPad frontend.

Instructors: Steven Fonseca, AdeptArch; Ugo Corda, Independent Consultant

Biographies:

Dr. Fonseca is a chief software architect with 13 years of experience helping organizations achieve state-of-the-practice results for software development with a focus on distributed systems middleware and applications in mission critical and applied R&D contexts. He has held positions at the Jet Propulsion Laboratory, Hewlett Packard Labs, British Telecommunications Labs, Intel, and NASA Ames Research Center. His technical interests include service oriented architecture, ontologically-based information systems, enterprise-class middleware, the dynamics of organizational change, and R&D technology transfer. Steven completed his PhD in Computer Science from UC Santa Cruz in collaboration with HP Labs. Steven completed a MS in Computer Science from UC Santa Cruz and a Bachelor of Science in Computer Engineering from UC Davis. He is currently pursuing an MBA at UCLA.

Dr. Ugo Corda is a chief SOA architect with more than 30 years of experience in the computer industry. For a good portion of his career he worked for software vendors, including Teradata, Xerox, SeeBeyond and Sun Microsystems, and specialized in technology areas like compilers, object-oriented frameworks, data bases, document management and systems architecture. For the last 10 years, Ugo has been focusing on SOA and BPM architectures and technologies. He has authored many Web services and BPM standards including SOAP 1.2, WSDL 2.0, UDDI 3.0, WS-I Basic Profile, JAX-WS, BPEL 2.0 and BPMN 1.1; and he has been consulting on these architectures and technologies for the last 5 years. Ugo holds a Doctorate in Physics from the University of Milan, Italy, and a Certificate in Artificial Intelligence from UCLA.

What Participants Should Expect to Learn:

The tutorial is meant for anyone interested in gaining an appreciation of SOA infrastructure software. The tutorial is particularly helpful to folks working on initiatives that rely on SOA infrastructure and those folks tasked with performing product evaluations.

Who Should Attend:

The content is suitable for anyone with beginning or intermediate level knowledge of SOA.