



SOA Concepts

Service Oriented Architecture
Johns-Hopkins University

Session #1 Today's Agenda



Reading

Text: "Service Oriented Architecture: Concepts, Technology and Design", Thomas Erl, Edition 05

To have been completed before today's lecture

Erl Chap. 1: Introduction (to book)

Erl Chap. 2: Case Studies

Erl Chap. 3: Introducing SOA

Introduction to the Book and Software

Lecture: Introduction to Service Oriented Architecture (SOA)

Book



Service-Oriented Architecture : Concepts, Technology, and Design

By Thomas Erl

ISBN-10: 0131858580

2005

Overview of the Course - 1 of 2



Goals of the Course, that students will:

Understand what an SOA is, and how it differs from other architectures

Know what Web Services are and their difference from and relationship to SOA

Be able to build simple Web Services

Be able to analyze and design example SOA systems, and implement them using basic Web Services

Introduction to the Books



Service Oriented Architecture: Concepts, Technology and Design

One of the most popular books on the subject, one of several written by Erl on OSA

Covers the core of the course material

Lecture: Introduction to Service Oriented Architecture (SOA)



Introduction to the Erl Book

Erl Chapter 1: Why this book is important

Introduction to Erl book's case studies

Erl Chapter 2: Case Studies

Introduction to SOA

Erl Chapter 3: Introducing SOA

Introduction to EHS Text, EHS

Chapter 1: Why this book is important



Goals:

Understand SOA, service orientation and Web Services

Learn how to build SOA with Web Services

Warning, your author is a "true believer"

The value of SOA to the industry may be over sold in the text.

The author's presentation of SOA is no less valuable because of his excitement about it.

Chapter 1: More Points to Remember



The Number One Mistake

SOA benefits are attainable simply by investing more in Web services.

Ideal SOA

A universal model in which automation logic and even business logic conform to a vision in which resources are cleanly partitioned and consistently represented.

The real SOA

Based on an understanding of service-orientation, how it shapes technical architecture into SOA, and concrete step by step processes for realizing SOA⁸

Chapter 1: More Points to Remember



Objectives of book

Understanding SOA, service orientation and Web services

Primitive and contemporary SOA

Fundamental web services

WS-*specs

Building SOA with Web Services

Introduction to Erl book's, Chapter 2: Case Studies



Case Studies

Purpose: Give real world context to what the book covers

Case Study Businesses

RailCo Ltd

Small business (40 staff)

IT immature

Both efficiency (implied) and opportunity (explicit) reasons for adopting SOA

Efficiency improvements for outdated business processes and IT infrastructure

Opportunity to participate in existing service oriented B2B networks

Introduction to SOA: Erl Chapter 3: Introducing SOA



Fundamental SOA

Service oriented: services are independently managed and employed by multiple consumers.

Analogy of small businesses as service oriented

Web Services: The Preferred but Not the only SOA Implementation Technology



Consuming a SOAP based Web Service
Amazon Associate Web Service

Web Service Protocols



SOAP over HTTP

Simple Object Access Protocol

Lightweight Web Service Protocol

Supported by Visual Studio and IIS

Can run over multiple communication protocols (e.g. NNTP) but almost always runs over HTTP in commercial systems

Language and operating platform agnostic.

SW-* Extensions (optionally)

A set of extensions to Web Services

This will be covered in later class sessions