Next Generation SOA

A Concise Introduction to Service Technology & Service-Orientation

by Pethuru Cheliah, Thomas Erl, Clive Gee, Jürgen Kress, Robert Laird, Berthold Maier, Hajo Normann, Leo Shuster, Bernd Trops, Clemens Utschig, Philip Wik, Torsten Winterberg

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Contents at a Glance

Chapter 1

Introduction

Innovative service technologies are becoming valuable assets for businesses that need to stay competitive in the face of increasing globalization and market complexity. While computer processing power is becoming faster and cheaper, search engines, instant messaging, and social media channels are generating floods of information that escalate demands for consumable and accessible data.

As the world's economies engage one another through offshoring, outsourcing, and supply chaining, localization is required to accommodate different currencies and languages. Globalization, recession, invention, and communication are some of the driving forces behind a next generation of technologies and practices that revolve around software programs designed in accordance with the paradigm of service-orientation. Such programs, referred to as "services," are expected to do more for less with greater efficiency in order to meet business challenges head-on.

We have reached a stage in the evolution of service-oriented computing where modern service technology innovation is building upon mature service platforms at the same time that proven delivery techniques and design patterns are building upon an established service-orientation paradigm. These developments have made it possible to create service-oriented solutions of unprecedented sophistication.

About This Book

This book provides a concise, plain English guide to the paradigm of service-orientation and the service technologies that can be leveraged to build contemporary service-oriented solutions.

Who This Book Is For

Anyone looking for a simple introductory tour of SOA, service-orientation, and service technologies will benefit from this book. It was conceived of as a brief and gentle foray into these topic areas for those who only seek a high-level of understanding, and also to act as a point of entry for the assortment of detailed technical reference text books that are part of the *Prentice Hall Service Technology Series from Thomas Erl*.

What This Book Does Not Cover

In order to fulfil its purpose as a brief, high-level orientation this book does not cover any topic in technical detail or provide any detailed guidance or best practices on how to apply any referenced technologies and techniques. If you are already familiar with the topics covered in the upcoming chapters, you may not need to read this book.

How This Book Is Organized

The remainder of this book is organized into the following chapters:

Chapter 2: An Overview of SOA & Service-Orientation

This chapter introduces the concept of services before focusing on service-orientation, documenting its history, and associating it with SOA, service-oriented computing, and the relevance of design patterns.

Chapter 3: A Look at How Services are Defined and Composed

This chapter steps readers through a process that demonstrates how service-orientation is applied to shape different types of services as part of service-oriented solutions.

Chapter 4: An Exploration of Service-Orientation with the SOA Manifesto

This chapter explores the service-orientation paradigm through the priorities and guiding principles of the SOA Manifesto. It elaborates on individual statements and associates them with aspects of SOA and service-orientation. Content in this chapter is based on the Annotated SOA Manifesto, which was specifically authored for this book in the days following the release of the SOA Manifesto.

Chapter 5: An Overview of Service Technology

This chapter briefly introduces a diverse range of traditional and modern technologies relevant to services and service-based architectures.

Chapter 6: A Look at Service-Driven Industry Models

This chapter provides a series of brief examples of how next generation SOA practices and technologies can be used collectively and collaboratively.

Chapter 7: A Case Study

This chapter concludes the book with a detailed case study that demonstrates the use of several of the practices, models, and service technologies previously described.

Appendix A: Additional Reading for Applying Service-Orientation

This appendix provides supplemental reading resources for service-orientation principles, SOA characteristics and types, as well as SOA design patterns. This content is comprised of excerpts from the *SOA Principles of Service Design* and *SOA Design Patterns* series titles.

Appendix B: Additional Reading for Planning for and Governing Service-Orientation

This appendix provides supplemental reading resources for service-orientation pillars, organizational maturity levels, and SOA governance controls. This content is comprised of excerpts from the *SOA Governance: Governing Shared Services On-Premise & in the Cloud* series title.

Appendix C: Additional Reading for Cloud Computing

This appendix provides supplemental reading resources for cloud computing benefits, risks, and challenges. This content is comprised of excerpts from the *Cloud Computing: Concepts, Technology & Architecture* series title.

Additional Information

These sections provide supplementary information and resources for the *Prentice Hall Service Technology Series from Thomas Erl*.

Updates, Errata, and Resources (www.servicetechbooks.com)

Information about other series titles and various supporting resources can be found at the official book series Web site: www.servicetechbooks.com. You are encouraged to visit this site regularly or connect to its social media channels to stay updated on content changes and corrections.

Service Technology Specifications (www.servicetechspecs.com)

This site provides a central portal to the original specification documents created and maintained by primary industry standards organizations.

The Service Technology Magazine (www.servicetechmag.com)

The Service Technology Magazine is an online publication provided by Arcitura Education Inc. and Prentice Hall and is officially associated with the *Prentice Hall Service Technology Series from Thomas Erl*. The Service Technology Magazine is dedicated to publishing specialized articles, case studies, and papers by industry experts and professionals.

Service-Orientation (www.serviceorientation.com)

This site presents papers, book excerpts, and content dedicated to describing and defining the service-orientation paradigm, associated principles, and the service-oriented technology architectural model. Online access to the service-orientation principle profiles published in Appendix A is also available through this site.

What Is REST? (www.whatisrest.com)

This reference site provides a concise overview of REST architecture and the official constraints that are referenced throughout this book.

What Is Cloud? (www.whatiscloud.com)

This reference site is dedicated to fundamental cloud computing topics.

SOA and Cloud Computing Design Patterns (www.soapatterns.org, www.cloudpatterns.org)

These two reference sites contain summarized pattern profiles from the *SOA Design Patterns* and *Cloud Computing Design Patterns* series titles.

SOA Certified Professional (SOACP) (www.soaschool.com)

The official site for the SOA Certified Professional (SOACP) curriculum dedicated to specialized areas of service-oriented architecture and service-orientation, including analysis, architecture, governance, security, development, and quality assurance.

Cloud Certified Professional (CCP) (www.cloudschool.com)

The official site for the Cloud Certified Professional (CCP) curriculum dedicated to specialized areas of cloud computing, including technology, architecture, governance, security, capacity, virtualization, and storage.

Big Data Science Certified Professional (BDSCP)
(www.bigdatascienceschool.com)

The official site for the Big Data Science Certified Professional (BDSCP) curriculum dedicated to specialized areas of data science, analytics, data analysis, machine learning, and Big Data solution engineering.

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