

TT7040 Understanding Secure SOA (2 days)

According to research by the National Institute of Standards, 92% of all security vulnerabilities are now considered application vulnerabilities and not network vulnerabilities

Trivera Technologies' *Best Defense™ Security Training Series* is a suite of developer-oriented, application security courses that provide complete coverage of the recently released CWE/SANS *Top 25 Most Dangerous Programming Errors* (<http://cwe.mitre.org/top25/>). These errors, as determined by a consortium of cyber security organizations, enable cyber espionage and crime. Our comprehensive application security and secure coding classes address each of these critical issues head-on, as our courses, seminars and workshops explicitly:

- Teach programmers what these errors are
- Demonstrate, in real terms, the potential impact of each of these errors
- Provide experience in how to recognize and properly address these errors
- Teach stakeholders how to defend against the potential consequences of security breaches in other parts of their IT infrastructure.

COURSE SNAPSHOT

Course: TT7040: Understanding Secure SOA

Duration: 2 days

Skill Level: Introductory

Focus: Practical SOA

Audience: Technical managers & stake holders

Format: Seminar / Lecture: Expert lecture combined with open discussions and high-level demonstrations. No student machines are required for this course.

Delivery Format: Available for onsite private classroom presentation, or live online / virtual presentation

Customizable: Yes

***Understanding Secure Service-Oriented Architectures* is a two-day SOA security overview course geared for managers and project stakeholders who need to understand the impact of SOA, what is different about SOA and the overall process of adoption and implementation. This course also takes a look at the issues involved in deploying secure services in a secure SOA as well as mapping the SOA concepts and terminology to .Net and JEE.**

A key component to our *Best Defense Security Training Series*, this workshop is a companion course with several developer-oriented courses and seminars. Although this edition of the course is language-agnostic, it may also be presented using Java, .Net or other programming languages or environments.

► **Course Objectives: What You'll Learn**

Organizations are struggling with how to translate SOA's vision into practical terms and concepts. ***Understanding Secure SOA: A Technical Overview*** is designed for enterprise managers and stakeholders who wish to understand what services and service-oriented architectures are and how implementing a SOA system will impact their projects. This course focuses on what separates an ad hoc set of web services (NOT SOA) from a managed, vibrant, reusable catalog of enterprise services (definitely SOA).

While our training is "technology centric", it is vendor independent, meaning that the content is not clouded by sales and marketing messages. Although a specific SOA product can

be discussed, the comprehensive lessons are geared towards teaching the practical application of SOA, rather than focusing on the finer points of the tools in use. Of course, SOA is not a technology but a set of practices and concepts that hold the promise of more closely aligning business with IT applications.

This course introduces the most common security vulnerabilities faced by applications today, as well as the challenges that face service providers and users. The course also explores the services needed within a service provider's infrastructure and how those services can be implemented in conjunction with the Enterprise Service Bus (ESB).

► **What You'll Learn**

Understanding Secure SOA: A Technical Overview provides coverage of practical issues for enterprise applications relative to SOA. The goal of this course is to empower students with the knowledge and foresight they need to lead and participate in the implementation of realistic SOA-based business application projects. In addition, there is an extensive review of topics such as Enterprise Service Bus (ESB), the Business Process Execution Language (BPEL), SOAP, Web Services Description Language (WSDL), and Web Services.

Working in a dynamic learning environment, students will be able to:

- Explain the concepts behind a SOA
- Discuss how a common framework is embodied in both a technical infrastructure and an organizational entity in the form of governance
- Understand the history of services-oriented architecture and what design processes led up to SOA
- Discuss the challenges to adopting SOA in the enterprise
- Understand the various standards, conventions, and best practices in implementing and supporting SOA
- Explain how Enterprise Application Integration affects the reuse of existing applications
- List the various roles involved in Service-oriented Analysis and Design (SOAD)
- Understand the importance of business process modeling
- Relate a SOA maturity model and **adoptance (is this a real word?)** process to where an organization currently is and where they are trying to go
- Discuss business process analysis and its relation to BPEL
- Understand the difference between OO analysis and design and SOA analysis and design
- Compare SOA best practices
- Understand the responsibilities crucial to governance
- Explain what an Enterprise Service Bus is and its relationship to SOA
- Discuss ESB security and roles
- Understand the relationship between SOA and web services.
- Discuss how the concept of event-driven processing relates to business processes, workflow, and service orchestration
- Understand the concepts and terminology behind supporting, designing, and deploying secure services
- Appreciate the magnitude of the problems associated with service security and the potential risks associated with those problems
- Understand what are the currently accepted best practices for supporting the many security needs of services.

If your team requires more advanced materials or custom topics, this course may be easily adjusted to accommodate. We offer many additional SOA classes, which may be blended with this course for a track that best suits your development objectives.

► **Experiential Learning – Course Structure**

Attending students will be led through a series of advanced

topics comprised of integrated lectures, group discussions and comprehensive demonstrations. The course provides a solid foundation in basic terminology and concepts, extended and built upon throughout the engagement.

► **Audience & Pre-requisites: Who Should Attend**

This an **overview level** SOA training course, designed for people who need to understand and manage existing or upcoming SOA projects. Experience with managing and working with enterprise applications will be helpful. We will explore the terminology, the specification, the processes and technologies specific to SOA.

Attendees should have a minimum of 2 years working knowledge in the IT industry. A basic understanding of software development and web-based applications is necessary. Actual development working knowledge is helpful but not necessary.

► **Related Courses – Suggested Learning Path**

Take Before: Students should have basic understanding and a working knowledge in the following topics, or attend these courses as a pre-requisite:

- **TT4000 Understanding Internet Architectures**
- **TT5000 Understanding J2EE (DAN DO THEY NEED THIS? I thought it was agnostic)**
- **Is TT7000 a pre-req?**

Take Instead: We offer other courses that provide different levels of knowledge or focus:

- For a more technical, in-depth look at SOA security consider **TT8150 Mastering SOA Security**

Please note all development courses may also be offered in other programming languages or environments, as well as tailored to best suit your needs. Please contact us for details.

Take After: We offer a variety of introductory through advanced development, project management, engineering, architecture and design courses. Students may want to consider the following topics as a follow-on to this course. Please contact us for recommended next steps tailored to your longer term education, project or development objectives.

- Additional SOA and Design topics – overview through advanced
- **Dan which SOA or security classes specifically would make sense after this?**
- Web Services – Intro through Advanced
- Software design and application development security
- Application development or web development topics
- Advanced .Net developer topics
- Architecture & Analysis courses
- Software Engineering, Design or Project Management tracks

Please note all development courses may also be offered in other programming languages or tailored to suit your unique requirements.

We will work with you to structure with the best solution to ensure your needs are met, whether we customize the material, or devise a different educational path to help your team best prepare for this training. Please contact us for recommended next steps tailored to your longer term education, project or development objectives.

► **Student Materials: What You'll Receive**

Our robust course materials include much more than a simple slideshow presentation handout. Student materials include a comprehensive hard-copy course manual, complete with detailed course notes, code samples, diagrams and current reference materials, all directly related to the course at hand, indexed for ease of use. Step-by-step lab instructions and project descriptions are clearly illustrated and commented for maximum learning and ease of use.

For course deliveries or virtual presentation using open-source tools or demonstrations / code walkthroughs, we'll provide our unique **LoadNGo Instant Classroom Kit**, which enables students to run the entire course off of a DVD that hosts the entire course set up software, labs, and other pertinent useful educational resources or demonstrations, whitepapers and more. You only need to provide the hardware and appropriate O/S, and we'll do the rest. No installation needed. **Great for secure environments.** Minimum set up burden for your team or firm, with maximum results for your students.

No matter which set up option or software your firm requires, we're pleased to provide a detailed set up guide for all private or on-site courses, and as much assistance as you require to

prepare your students or classroom for the course. Our course kits are designed to serve as an excellent and useful reference set, long after we leave your classroom.

► **Optional Pre / Post-Testing & Skills Assessment**

We work with you to ensure that your resources are well spent. Through our basic course pre-testing and/or post-course assessments, we ensure your team is up to the challenges that this course offers. Our goal is to structure the best solution to ensure your needs are met, whether we customize the material, or devise a different educational path to prepare for this course.

► **Bridging the Gap: Collaborative Mentoring Services**

Our team of technical experts is also available for various project assistance services to help your team apply their newly-learned classroom skills to their real-world project in a meaningful, practical way, right after the training ends.

Our custom **collaborative mentoring programs** integrate with or extend your team's classroom training experience, to help bring these skills into existing (or inherited) legacy projects, into new projects, or to simply keep your students sharp them in between projects. Our programs can be highly involved and closely integrated with your project timelines or group development efforts, or can be less involved, serving simply as an overarching educational framework or 'spot check' to keep your group skills moving forward in between projects or waiting for projects to begin. Please contact us for details about this exciting custom service.

Workshop Topics Covered

Session: SOA Overview

- Service Defined
- SOA Defined
- Organizational Framework
- Technical Framework
- Orchestration
- Reusability
- Services vs SOA
- SOA in the past
- What is new in SOA
- Business impact/ROI
- Myths/Reality
- Adoption issues

Session: SOA: the Business Proposition

- Drivers For Business-Oriented
- Accessible Services And Data
- Leveraging Business Processes
- Leveraging Legacy Applications
- Challenges To Adoption
- Role Of Governance
- Role Of An ESB
- SOA Maturity Model
- SOA Adoption

Session: Service-oriented Architecture

- Principles
- Business Process-driven development
- SOA team
- Messaging
- Orchestration
- Business Modeling
- Integrating Legacy Applications
 - Extending The Lifetime Of Legacy Apps
- Governance
 - What Needs To Be Governed And What Is Already Governed?
 - Governing IT Vs. SOA
 - Continuous Improvement
 - Strategies

Session: Modeling Business Processes

- Top-Down Process Design
- Bottom-Up Process Design
- WSDL As Service Description

- Identifying Services
- Identifying Messages
- Identifying Collaborations
- BPEL Overview

Session: Service-oriented Analysis and Design

- The SOAD Process
- Analysis
- Design
- Implementation
- Process

Session: SOA Best Practices

- Planning
- Standardizing
- Designing
- Managing
- Implementing

Session: Common Framework: Governance

- Governance Overview
- Importance

- Responsibilities
- Implementation

Session: Common Framework: Infrastructure

- Overview
- Role in SOA
- Security Issues
- Scenarios and Analysis
- ESB Issues

Session: Web Services

- W3C standards
- Binding: SOAP/REST
- Description: WSDL
- Discovery
- Tools
- Implementation technologies

Session: SOA Security Overview

- Terminology and Players
 - Assets, Threats, and Attacks
 - OWASP
 - Basic Principles
- Top Security Vulnerabilities

- SOA Challenges
 - Identity and Propagation
 - Real-time Transactions
 - Diverse Environments
 - Information Protection
 - Standards compliance
- Services and Security
 - SOA Components
 - Service Lifecycle
 - Security Policies
- Security Services
 - Identity
 - Authentication
 - Authorization
 - Confidentiality/Integrity
 - Auditing
 - Non-repudiation

Session: Applying Security to Services

- Direct Service Exposure
- Indirect Service Exposure
- Enterprise Service Bus (ESB)
 - Mediating Security Services
 - Transport-Level Security
 - Message-Level Security
 - Policy Enforcement

- Policy Management
- Protecting the ESB
- Composed Services
 - Single-Sign On
 - Trust Relationships
 - Trust Relationships and Web Services

Session: Mapping Frameworks to SOA

- SOA Concepts and .Net
 - SOA Concepts and JEE

Need more info? Please note that a more detailed outline of the course table of contents, lists of lab exercises and project descriptions is available. Please contact us at Training@triveratech.com for info.

Need courseware? This course is fully customizable, and also available for license with complete support for qualified organizations. Please contact Courseware@triveratech.com for details.

► Why Work With Trivera Technologies?

Whether you are a project leader choosing a training provider or course to bring to your team, or an organization or an instructor looking to potentially license or use course materials to train your own team, or a student looking for an exciting, targeted training class to attend or to recommend to your colleagues - **Our single focus is to make YOUR training event or experience a success.** Here's why choosing Trivera Technologies as your education resource takes the risk right out of your decision making process...

- **We provide a solid secure, design, coding and implementation foundation.** Students will learn how to code, use (and reuse!) essential secure programming and design skills and concepts properly, using best coding practices, grounding them for advanced curriculum, and will be prepared for designing and implementing solutions. **Students will learn the importance of developing well-defended applications.**
- **Our courses are focused - no "fluff" included.** We offer more than a "laundry list" approach to teaching. All lessons have clear objectives, are fundamental to core secure application development and design practices, and are reinforced by hands-on labs and solid practical examples. Each lesson has performance driven objectives that ensure students will learn technologies and skills core to fundamental server-side application design – nothing more, nothing less.
- **Our materials are comprehensive, and current.** Our comprehensive manuals include not only a hard copy of the course presentation, but also detailed reference notes, pertinent diagrams and charts, current lists of suggested online resources and articles, and often technical tutorials or white papers geared to the topics at hand. Our dedicated course development team keeps everything as current as possible with both industry trends and software editions to ensure your team is getting the most current information available.
- **We set you up!** Hands-on courses also include our unique materials for each student, complete with our **LoadNGo Instant Classroom** course set up DVD, software, and a multitude of learning resources that complement the course. Run the course right off the DVD – minimal set up for your company – maximum results for your students.
- **We foster "Learning by Doing".** Progressive labs are designed in such a way that students get a firm grasp on fundamental skills while they work toward designing a complete application. All labs are take-home, and all solution code is presented in an easy to use self-study format for future use and review.
- **We have to adhere to higher standards.** As a courseware provider to other organizations, training firms or independent instructors, our content and hands-on lab materials are licensed internationally by dozens of firms, and are therefore subject to very stringent quality requirements. Not only will your organization benefit from our own technical team's technical expertise, but also the feedback of hundreds of students and trainers using these materials, worldwide, on a regular basis. This unique fact guarantees that our materials are not only robust and interesting, but also technically correct, current and of the highest quality and usability.

- **We bring years of practical, current experience into the classroom and content.** Our instructors and course authors are also skilled mentors, Java, JEE/JavaEE, J2EE, .Net, Agile, SOA, and web services developers, architects and security-oriented professionals. We believe that learning, using and maintaining solid software execution and delivery methods are as important as gaining sharp coding skills. Best Practices for software development and execution, beyond technical coding skills, are enforced throughout all of our courses and discussions. Our team brings this extensive experience into every classroom and engagement. Our team has trained thousands of students.
- **We're skills-centric.** Although our team has extensive experience using a variety of tools and solutions, our core content is "technology-centric". Our aim is to teach you the best skills and solutions out there – not to sell you software from any particular vendor.
- **We're Java & JEE / J2EE authors and industry speakers.** Our team was selected to write the online *J2EE, EJB, EJB CMP-CMR and Web Services Tutorial Series for IBM developerWorks®* (www.ibm.com) These are the same instructors who train our classes and author the courseware. Most of our trainers/consultants have also authored additional articles on web services, EJB, Struts, J2EE / JEE and advanced Java topics, and are recognized speakers and presenters on the industry technical seminar circuit. Our team is comprised on several successful published authors. Members of our team have written or contributed to: *Eclipse Kick Start, Mastering Eclipse; Professional Jakarta Struts; Using Java Tools for Extreme Programming; Mastering Resin; Mastering TomCat and others.*
- **Our services are guaranteed.** Whether you're a stakeholder organizing your firm's educational services, a student in our live or virtual classroom or a trainer using our materials to educate your own client or team – **Our core mission is to make YOU a success in the classroom.**

► **For Additional Information**

Need dedicated training? All courses can be brought onsite or run virtually for a **private presentation**, anywhere around the world, customized to suit your unique requirements or goals. Please contact Training@triveratech.com for course details, Public Schedule dates and locations, and Special Discount Offers.



Trivera Technologies is a 100%
Female-Owned Small Business Concern
GSA Schedule #GS-35F-0188T
Please contact us for details & pricing.

Need courseware? **Let us take the risk out of your classroom delivery!** All materials are also available on a worldwide basis for corporate license with complete instructor support and free corporate branding. Our LoadNGo Set up is available to partners as well! We guarantee our pricing and service. Samples of our course materials, as well as live client references for all of our services are available upon request. Please contact Courseware@triveratech.com for details.

For more information about our training, mentoring or courseware development or licensing options, or to see our complete list of course offerings and services, please visit us at www.triveratech.com, email Training@triveratech.com or call 609.953.1515.