

1. Record Nr.	UNINA9910966793803321
Autore	Lau Kung-Kiu
Titolo	Component-based software development : case studies / / Kung-Kiu Lau
Pubbl/distr/stampa	River Edge, N.J., : World Scientific, c2004
ISBN	9786611347635 9781281347633 1281347639 9789812562425 9812562427
Edizione	[1st ed.]
Descrizione fisica	1 online resource (312 p.)
Collana	Series on component-based software development ; ; v. 1
Disciplina	005.3
Soggetti	Computer software - Development Computer software industry
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Component-Based Software Development: Case Studies; Contents; Preface; 1. A Survey of Proposals for Architecting Component Software; 1.1 Introduction; 1.2 COTS Software Components; 1.2.1 Component Models; 1.2.2 COTS Components and the Software Development Process; 1.2.3 The Maturity of COTS Products and COTS-based Systems; 1.2.4 COTS Components in Real-time and Embedded systems; 1.2.5 Risks and Benefits of COTS Components; 1.3 Components and Software Architecture; 1.3.1 Integration of Software Components; 1.3.2 Software Components and Product line Architecture 1.4 COTS Components and Software Architecture 1.4.1 COTS Components and Product line Architecture; 1.4.2 MOTS Frameworks and COTS Components; 1.4.3 Desirable Properties for Component Software Architecture; 1.4.4 Patterns for the Architecture of COTS-intensive Systems; 1.4.4.1 Middleware Layers; 1.4.5 COTS Component Integration; 1.4.6 Architectural Mismatch; 1.4.7 Maintainability of Component Software Architecture; 1.4.8 Architectural Views and COTS Components; 1.4.9 UML-RT and COTS Component Integration; 1.4.10 COTS Components in the Layers Associated with the Infrastructure

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1.5 Discussion and ConclusionsReferences; 2. Describing Specifications and Architectural Requirements of COTS Components; 2.1 Introduction; 2.2 Definition of Commercial Components; 2.2.1 Component Interfaces; 2.2.2 Semantic and Protocol Levels; 2.2.3 Interface Notation; 2.2.4 COTS Documents; 2.3 A COTS-based Application Example; 2.4 Software Architecture; 2.5 UML Real-Time; 2.6 Composing the Software Architecture; 2.6.1 The GTS Software Architecture; 2.6.2 Mapping the UML-RT GTS Example to UML Standard; 2.6.3 Including Information into Capsules

2.7 Integrating the Architecture into other CBD Methodologies2.8 Concluding Remarks; References; 3. Definition of COTS Software Component Acquisition Process - The Case of a Telecommunication Company; 3.1 Introduction; 3.2 Overview of the Case; 3.3 Towards the CSCA Process - Analysis of Existing Models; 3.3.1 Overview of the Reference Models; 3.3.2 Acquisition Process Framework based on the Existing Models; 1. Planning; 2. Contracting; 3. Delivery and Use of the Component; 3.4 Requirements for the CSCA Process - the Purchaser's Perspective; 3.4.1 Main concerns Revealed by the Interviews Contracting and negotiationEvaluation of components and suppliers; Management of components and supplier relationships; 3.5 Illustration of the Defined CSCA Process Framework; 3.6 Evaluation of the Process Model - The Server Project; 3.6.1 Feedback from the Evaluation; 3.6.2 Conclusions - General Implications; References; 4. The Library Systems Product Line: A Case Study Demonstrating the KobrA Method; 4.1 Introduction; 4.2 KobrA Components; 4.2.1 Modeling Dimensions; 4.2.2 Containment; 4.2.2.1 Component Specification versus Realization; 4.2.2.2 Containment Trees; 4.2.3 Genericity 4.2.3.1 Generic Components

Sommario/riassunto

Component-based software development (CBD) is an emerging discipline that promises to take software engineering into a new era. Building on the achievements of object-oriented software construction, CBD aims to deliver software engineering from a cottage industry into an industrial age for Information Technology, wherein software can be assembled from components, in the manner that hardware systems are currently constructed from kits of parts. This volume provides a survey of the current state of CBD, as reflected by activities that have been taking place recently under the banner of CBD, with a view to giving pointers to future trends. The contributions report case studies -- self-contained, fixed-term investigations with a finite set of clearly defined objectives and measurable outcomes -- on a sample of the myriad aspects of CBD. The book includes chapters dealing with COTS (commercial off-the-shelf) components; methodologies for CBD; compositionality, i.e. how to calculate or predict properties of a composite from those of its constituents; component software testing; and grid computing.