Index

A
abstract components 127, 172
abstract solution space 126
accountability 61
ACID properties 249, 252, 254
Amazon 212
American Red Cross 221
API handshake principle 149
  service syndication 136, 150-152
Application Programming Interface (API) 136-138, 145
Application Service Provider (ASP) 206, 210, 227
architectural erosion 108, 115
architectural mismatch 115
aspect adaptation 116, 172
aspect composition 175
aspect library (aspect space) 167
Aspect-Oriented Programming (AOP) 29-30, 114, 159-160, 163
  on Component-Based Systems 165
  on Enterprise Service Bus (ESB) 164
  on Middleware 164
aspects-to-aspects composition 175
aspect weaver 171
aspect weaving process 177
Author Solution 221

B
brand monitoring 241
Business Process Management System (BPMS) 110

C
cache aspect 169
call analysis
  of legacy systems 6
City of Carlsbad 221
cloud computing 2, 55, 144, 188, 204-206, 249
  alternative models 221
  architecture 208
  challenges 218, 225
  characteristics 206, 251
  consumer benefits 216
  five model characteristics 144
  provider benefits 216
  reasons to move 2
  ten best practices 61
  vs. grid computing 223
cloud computing infrastructures 111
cloud model 144
  for QoS 187
Coca-Cola Enterprises (CCE) 220
colocation centers 223
community support 241
component-based development (CBD) 74, 107
component-based source code 53
component libraries 52
component-oriented architectures 52
components 52
computation independent model (CIM) 30
configurable 65
congestion detection interval 191

data access model 180
Data-as-a-Service (DaaS) 209
data consistency 259
data-intensive applications 10
data reengineering 9
dedicated servers 222
Denial of Service (DoS) 81
dependency injection 54
design erosion - See architectural erosion.
differentially fed artificial neural network (DANN) 190
Index

digital payment components 58
DOMain Elicitation Template (DOMET) 263
Domain Specific Kits (DSK) 112
dynamic questionnaire system 285
dynamic scaling 57

E
ease of use 64
elasticity 65
elevation of privileges 81
Enterprise 2.0 229
Enterprise Service Bus (ESB) 109, 148, 155, 158, 160, 182
commonality 158, 162
variability 161
exchange mechanisms 51
extensible frameworks 63

F
Feature Identification 11
feature modeling 118
Feature-Oriented Programming (FOP) 29-30
Flat Transaction Model 249, 256
four orthogonal properties that any basic reusable component must possess 140
frameworks 53

G
Gartner’s Magic Quadrant 237
GoGrid 213
Google 215
graphical user interfaces 54
grid computing 211
vs. cloud computing 223

H
hierarchical model instance sharing 29

I
information disclosure 80
Infrastructure-as-a-Service (IaaS) 111, 209
interoperability 143
intuitive requirements 121
Inversion of Control (IoC) pattern 54

J
JAsCo component model 165
Java Business Integration (JBI) 161, 185
JavaScript Object Notation (JSON) 79

L
large scale reuse 112
legacy systems 3
call analysis of 6
modernisation of 3
types to be migrated 6
loose coupling 143

M
Message Queuing Middleware (MQM) 161
metering mechanisms 212
Microsoft 214
Microsoft Enterprise Library (MEL) 113
migration case studies 14
migration strategies 4
minimalist 64
model composition graph instance (MCG instance) 29, 31
model composition graph (MCG) 28-29, 31
model composition graph schema (MCG schema) 29, 31
Model-Driven Architectures (MDA) 29-30
model expansion 37
model expansion method 41
model view controller frameworks 61
Multi-Architecture Reusable Components 115, 132, 163
development methodology 121-122, 132
multi-task adaptive learning (MTL) 281, 289
multi-tenancy 211

N
Nested Transaction Model 256
non-relational database model 56

O
object clustering 7
object orientation 139
on-demand CRM 234
online file sharing 206
on-premise CRM 233

P
partition tolerance 259
Platform-as-a-Service (PaaS) 111, 209
platform independent model (PIM) 30
platform specific model (PSM) 30
Plausible Justification Tree (PJT) 289
Preserving Causal Dependencies of Expanded Model Instances 39
PRISMA 250, 261
proactive loader 170
product line requirements engineering 258
proxy 174
public on-demand computing model 206

R
Rackspace 213
Random Early Detection (RED) 186-187
reactive loader 170
real memory management (RMM) 45
reengineering user interfaces 8
relational database model 55
Represenational State Transfer (REST) 79
repudiation 80
resilience 62
reusable component development 113

S
Salesforce 215
scaling
of the components 192
of the queue dynamics 193
of the RTT dynamics 199
of the window dynamics 197
scaling out 57
scaling up 57
schema-based model expansion 34
schema-based model refinement 30-31
Scribd 220
segmented 62
server functionalities 8
service 72, 140, 143
constituent elements 72
service broker 73
service client 73
Service Component Architecture (SCA) 161
Service Hosting Environment (SHE) 109
service orientation 142
service oriented 62
Service-Oriented Analysis and Design (SOAD) 86
Service-Oriented Architecture (SOA) 70, 137, 143, 157, 211, 279
migration challenges 71
misconceptions 72
service-oriented computing paradigm 279
service requirement ontology 282
service requirements reconciliation process (SRRP) 287
service syndication 147
based on API handshake 136, 150-152
Simple Object Access Protocol (SOAP) 82
skeleton components 172
Social CRM 228, 230
analytics 241
applications and tools 239
deployment options 233
ethical and legal challenges 242
vendors and platforms 237
social media platforms 241
social networks 206
Software-as-a-Service (SaaS) 111, 209, 234
Software Development Kits (SDK) 54
software product line engineering 256
Software Product Line (SPL) 107, 111, 133, 183
software reuse 108
SPLACID 250, 264
standards compliant 66
Strict Separation of Concerns (SoC) 117
system availability 259

tampering 80
toy computation 267
transaction models 255

U
Use Case Elicitation Template (UCET) 263
user interface separation 8

V
virtualization 211
virtual memory management (VMM) 45
Virtual Private Servers (VPS) 222
volunteer computing 206

W
Washington Post 220
Web 2.0 211
Web hosting 205
Web wrapping 12