

Index

A

AA-Request (AAR) 227
 ACL (Agent Communication Language) 22
 active open source project 19
 adaptive distributed systems 18
 Agentcities Task Force 5, 6, 15
 Agent Communication Languages (ACL) 3
 Agent Management System (AMS) 5
 Agent Peer Group 25
 Agent Platform (AP) 4
 AgentWeb 6, 7, 16
 aggregating resources 163
 AI planning technique 56
 AMS (Agent Management System) 19
 Anomaly based Intrusion Detection (AID) 37
 Application Driven QoS 223, 228, 229, 230, 232
 application programming interfaces (APIs) 219
 Application Server (AS) 221
 ArguBroker 51, 59, 60, 61, 62, 64, 65
 ARGUGRID project 49, 50, 51, 58, 63
 ARGUGRID system 50, 58
 Asynchronous (ASYN) 140
 asynchronous messages 21
 automatic composition process 56
 Autonomous Agent 1, 15, 114
 auxiliary services 56

B

Bayesian Network (BN) 42
 bi-directional connection 21
 buffer chart (BC) 210, 214
 buffer window (BW) 210

C

CAIA system 114, 117, 119, 121, 125, 128
 Call Detail Records (CDRs) 222
 Call Session Control Functions (CSCFs) 221
 CDN organization 207
 central directory (CD) 170
 Charging Control 219, 220, 221, 223, 235
 Charging Data Function (CDF) 222
 ClassLoader 185, 194
 client profile database 95, 96
 clustered peer-to-peer systems 158, 159, 163, 164, 165, 170
 cluster management 204
 Code reuse 179
 Collaborative Autonomous Interface Agent (CAIA) 114, 117
 collaborative environments 178, 190
 collaborative platform 179, 180, 200
 Communication Abstraction Layer (CAL) module 187
 Communication Protocol 7
 Composite fidelity 56
 consumer-oriented (CO) 134
 content adaptation 91, 92, 93, 94, 95, 96, 106, 107, 108, 109, 110, 111, 112
 Content Delivery Network (CDN) 205
 content passing 91, 96, 101, 105, 106, 107
 content suitability 91
 Context Architecture 69
 Context-aware computing 69, 70, 90
 context-awareness 69, 70, 71, 89
 Context Lookup 69
 context mapping 91, 92, 106, 108
 Context Modeling 69, 71
 Context Monitoring 69, 74

Index

Context Retrieval 69
Context Sensing 69, 73
Credit-Control-Answer (CCA) 228
Credit-Control-Request (CCR) 228
cross media adaptation 91, 92, 93
CSSL (Composite Service Specification Language) 57

D

DARPA Agent Markup Language (DAML) 117
Data Access Abstraction Layer (DAAL) 182
Data Access Module 182, 196, 197
data-driven approach 209, 210
Data Flow 51, 52
Decision Making Layer 60
Decision Tree (DT) 37, 40
Denial of service (DOS) 43
diffusive load balancing 158, 160, 165, 167, 168, 169, 170, 174, 176
Directory Facilitator (DF) 3, 4, 19
directory initiated (DI) 170
Directory Name Service (DNS) 161
discover-to-exchange (D2E) 213
Distillation-based adaptation 92
distributed agents 178
distributed algorithms 158
distributed hash table (DHT) 86, 163
distributed library management 178
distributed system 1, 91, 94
distribution of context services 70, 88
dynamic resource allocation 158

E

effective time 186, 187
End Point Reference (EPR) 139
engineering tools 160
Ensemble Network 36
eQuus 159, 163, 170, 175
E-speak 116, 117
execution time 186, 187, 198, 199, 200

F

Fault Tolerant Agent Communication Language, FT-ACL 9

fidelity adaptation 92
FIPA specifications 19, 23, 25
“flash crowd” 207
Framework 133, 140, 141, 156
Fully-Meshed Graph 69
Fuzzy Inference Systems (FISs) 37

G

generic concepts 51
Generic Discovery Advertisement 25
Generic Discovery Protocol 25
Generic Discovery Service 25
Genetic Programming (GP) 39
Georgia Tech Internetwork Topology Model Generator (GT-ITM) 80
Google search engine 118, 123
Google Web APIs 125, 130
Gossip protocols 210
grid platforms 178, 179, 180, 188, 189, 193, 194, 195, 201
Grid Service 50, 58, 66

H

heterogeneity 133
heterogeneous devices 91
hosting platform 158, 159, 160, 162, 163, 164, 165, 173, 174
Hybrid video streaming scheme 207
Hypertext Transfer Protocol (HTTP) 2

I

index of the current minute (ICM) 213
index of the requested minute (IRM) 213
Induction of the DT (ID3) 41
Information Technology (IT) 133
Intelligent Agent 58
Internet Protocol Multimedia Subsystem 219
interoperable systems 18, 31
Intrusion Detection Expert System (IDES) 38
Intrusion Detection (ID) 37
Intrusion Detection Systems (IDS) 36
IP address 21, 27
IP multicast model 206, 207
IP policy 221

J

JADE (Java Agent DEvelopment framework) 19, 125
 JADE Message Transport System 20
 JADE multi-agent platform 27
 JADE multi-agent system 20, 25
 JaDiMa components 181, 188, 196
 JaDiMa implements 186
 JaDiMa (Java Distributed Machine) 178, 179
 Java Context Awareness Framework (JCAF) 76, 77, 89
 Java thread 23
 JXTA protocols 24, 25
 JXTA technology 24, 25

K

Kepler workflow system 53
 key-value pairs 71
 KFUPM keywords 121
 knowledge of environmental (contextual) information 69, 70

L

large-scale networks 70
 “Last Recently Used” (LRU) 187
 LEAP (Lightweight Extensive Agent Platform) 20
 legacy systems interoperability 18
 library Repository Agent 181
 limited resources 20, 23
 Linear Genetic Programming (LGP) 37
 Load balancing 165, 175, 176
 load balancing mechanism 159, 164, 166
 load balancing system 159
 load migration 165, 167

M

membership management 163, 164, 165
 membership service 164
 mesh-based approach 208
 Message Complexity (MC) 85
 Message Transport Protocols (MTPs) 27
 Message Transport Service (MTS) 5, 7
 Messaging 133, 140, 141, 156
 Metadata 52

metadata file 184, 194
 Method Map (MM) 148
 middleware 133, 156, 162
 Mobile Agents 1
 Mobile Asynchronous Interaction (MAI) 136, 138
 mobile nodes 133, 134, 145
 Mobile Server 133
 Mobile Synchronous Interaction (MSI) 136
 mobile terminals 19
 model-based approach 38
 movie identifier (MID) 213
 Multi-agent 36
 multi-agent model 23
 multi-agent systems (MAS) 1, 2, 6, 13, 15, 17, 18, 19, 23, 31, 49, 51
 multi-criteria decision making 91
 Multiple Description Coding (MDC) 208
 multi-service provisioning 161, 162

N

Network Security Monitor (NSM) 37, 47
 Neuro-Fuzzy (NF) 38
 node placement 166

O

object placement 166
 offline charging 221, 222, 223, 229, 230, 231
 on-demand streaming systems 204, 205
 on-demand video (VoD) 204, 205
 Online Charging Function (OCF) 221
 Ontology Web Language (OWL) 53
 Open access 222
 open Agent Platform 2
 Open Service Access (OSA) 220, 235
 overlay network 204, 205, 206, 207, 208, 209, 210, 211, 213, 216, 217

P

P2P application layer 162
 P2p Computing 133
 P2P computing scenario 140
 P2P network 178, 184, 185, 186, 189, 190, 192, 198, 199
 p2p networking model 178

Index

P2P streaming applications 205
P2P system 136, 137, 138, 139, 140
P2P technology 205
Parlay X Gateway 219, 220, 221, 223, 224,
225, 227, 228, 234
Parlay X Web Services 219, 220, 224, 232,
233, 235
path determination strategy 91
Payload Creator (PC) 148
Peering Table Size (PTS) 85
peer-to-peer overlay networks 69, 70, 88
Peer-to-Peer (P2P) 69, 204, 205
peer-to-peer systems 158, 159, 162, 163, 164,
165, 166, 167, 170, 173, 174, 176
peer-to-peer technologies 205
Performance Evaluation 133
performance management 158
Personalization 114, 115
Policy Control 219
Pollution Map 54, 55
Prefetch Module 187
Probabilistic Agent-based Intrusion Detection
(PAID) 39
Probing 43
processing loop 51
process-oriented (PO) 134
Profile-Update-Answer (PUA) 224, 225
Push-Profile-Answer (PPA) 224, 225
Push-Profile-Request (PPR) 224, 225

Q

QoS parameters 221, 222, 223, 224, 225, 226,
227, 228, 229, 230, 232, 234
QoS provisioning 222
quality of composition (QoC) parameters 57
Quality of Service Management 219, 222, 236
quality of service (QoS) 135, 160, 219
Query by Image Content (QBIC) 115

R

Random Graph 69, 79
Rate Adaption Protocol (RAP) 208
Re-Auth-Answer (RAA) 226, 227
receiver-initiated policy 167
receiver initiated (RI) 170
reliance on the Internet 36

Remote Services 58
Remote to user (R2L) 43
Remote to User (R2U) 39
Repository P2P network 185, 186, 190, 198
Request Response Time (RRT) 83
resource migration 160, 162, 163, 165, 166
Resource-Oriented 133, 141
resource-oriented MobWS framework 133
REST Bean (RB) 146
RESTful MSWs (R-MSWs) 141
REST Processor (RP) 146
R-MSW resource 147
rule-based technique 92, 96, 97, 108
run-time interfaces 49, 57, 77

S

scalable distributed systems 18
score tree 92, 94, 107, 108, 109
Search Scope (SScp) 83
selection metrics 55
semantic infrastructure 14
Semantic matching 1
semantic service registry 58, 60
Semantic Services Registry 58
semantic web 201, 202
Semantic Web Services 53, 66
semantic web technologies 50
semantic workflow 53, 54, 56, 57, 58, 59, 60,
62, 64
semantic workflow level 53
server pools 158, 161, 162, 163
server processing latencies 141
Service Capability Servers (SCS) 220
service consumer 69
Service-Description 27
service-level agreement (SLA) 154, 160
service migration 161, 162, 165, 167, 168
Service Model 180, 201
Service Orientation 1
Service-Oriented 133, 156
Service-oriented architectures 49
service oriented architecture (SOA) 91, 94,
133, 160, 179
service-oriented computing 133, 135, 154
Service Oriented paradigm 1
Service Profile 180, 196

Session Description Protocol (SDP) 221, 235
 Session Initiation Protocol (SIP) 219, 235, 236
 Session-Termination-Answer (STA) 228
 shared resource distributed index (SRDI) 25
 Signature based Intrusion Detection (SID) 37
 skeleton 182, 184
 SLA information 62
 SLAs (Service Level Agreements) 54
 SOAP RPC call 145
 SOAP-RPC mechanism 145
 solicit-response 138, 139
 Star Topology 69, 79
 SUMA/G (Scientific Ubiquitous Metacomputing Architecture/Globus) 189
 Synchronous client components 147
 Synchronous (SYN) 140
 system-dependent audit trail match 38

T

TCP Friendly Rate Control (TFRC) 208
 Telecommunication (TelCo) 133
 Trainable Information Extractor (TIE) 196, 203
 tree-based approach 209

U

UC object (UCo) 148
 Underlay Link Stress (ULS) 86
 Universal Description Discovery Integration (UDDI) 3, 95, 116
 Universal Mobile Telecommunication Service (UMTS) 228
 URL Creator (UC) 148
 URL table 121, 122, 123
 user-driven cross-media adaptation 92
 User to Root (U2R) 39, 43
 utility-driven approaches 91

V

Video Streaming 204
 video streaming applications 204, 216
 video streams 204, 206, 207, 209
 Virtual Private Network (VPN) 222

W

WAP Binary XML (WBXML) 144
 Web Application Description Language (WADL) 136, 156
 Web Architecture 1
 Web content 91, 92, 93, 94, 95, 107, 109, 111, 112
 web-enabled mobile phone 93
 Web page-based dimension 93, 107
 Web Server 133, 135, 136, 152
 Web Service Description Language (WSDL) 3, 15, 138
 Web service provider 116, 121
 web services 1, 2, 3, 4, 5, 6, 7, 8, 10, 11, 12, 13, 14, 15, 50, 53, 59, 65, 66, 67, 91, 92, 93, 94, 95, 103, 104, 106, 108, 109, 110, 111, 133, 137, 138, 139, 141, 142, 156, 158, 159, 160, 219, 220, 223, 224, 228, 229, 230, 231, 232, 233, 236
 Web Services Selection 114
 Web Technologies 1
 wired network 19, 20
 Wireless Sensor Networks (WSNs) 134
 WOLF graphical development environment 28
 workflow authoring 51, 52, 53, 55, 61
 Workflow construction 49
 workflow pattern 55
 workflows 49, 50, 51, 52, 55, 57, 58, 60, 61, 65
 workflow system 49, 50, 53, 57, 58, 59, 60, 61, 62, 63, 64
 World Wide Web (WWW) 136
 WSDL (Web Services Description Language) 116
 WSIG (Web Service Integration Gateway) 5
 WSMF (Web Service Modeling Framework) 117

X

XML-based language 3
 XML-based representation language 51