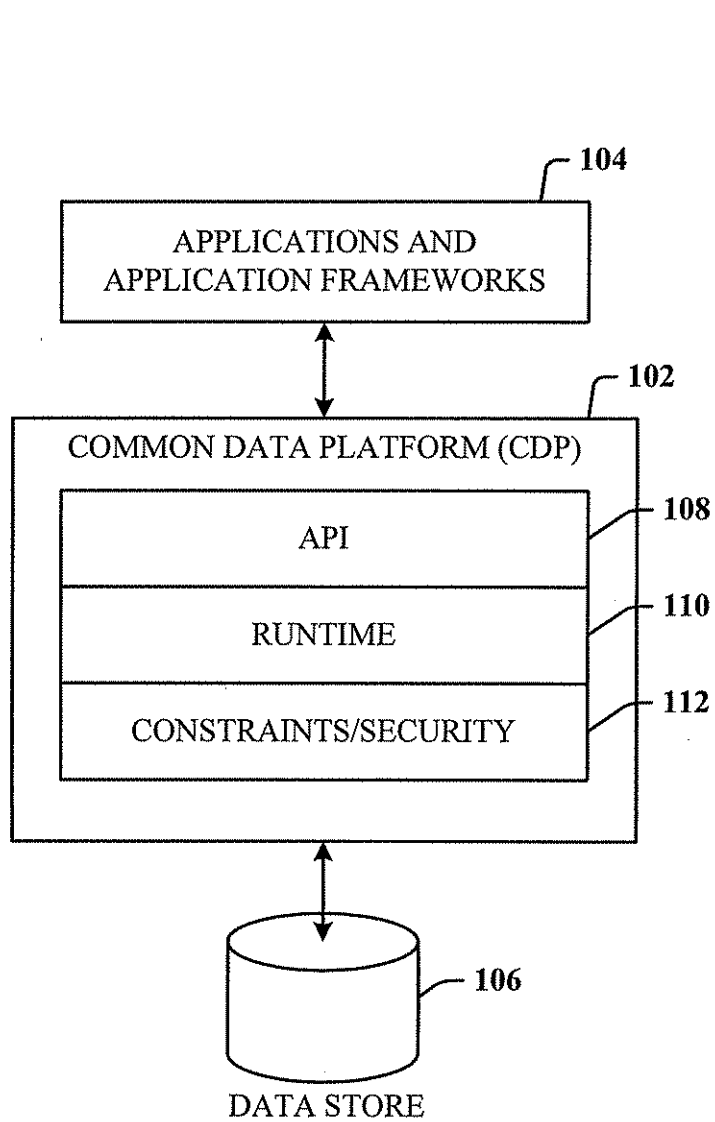

100
104
APPLICATIONS AND
APPLICATION FRAMEWORKS
102
COMMON DATA PLATFORM (CDP)
API
108
RUNTIME
110
CONSTRAINTS/SECURITY
112
106
DATA STORE

FIG. 1

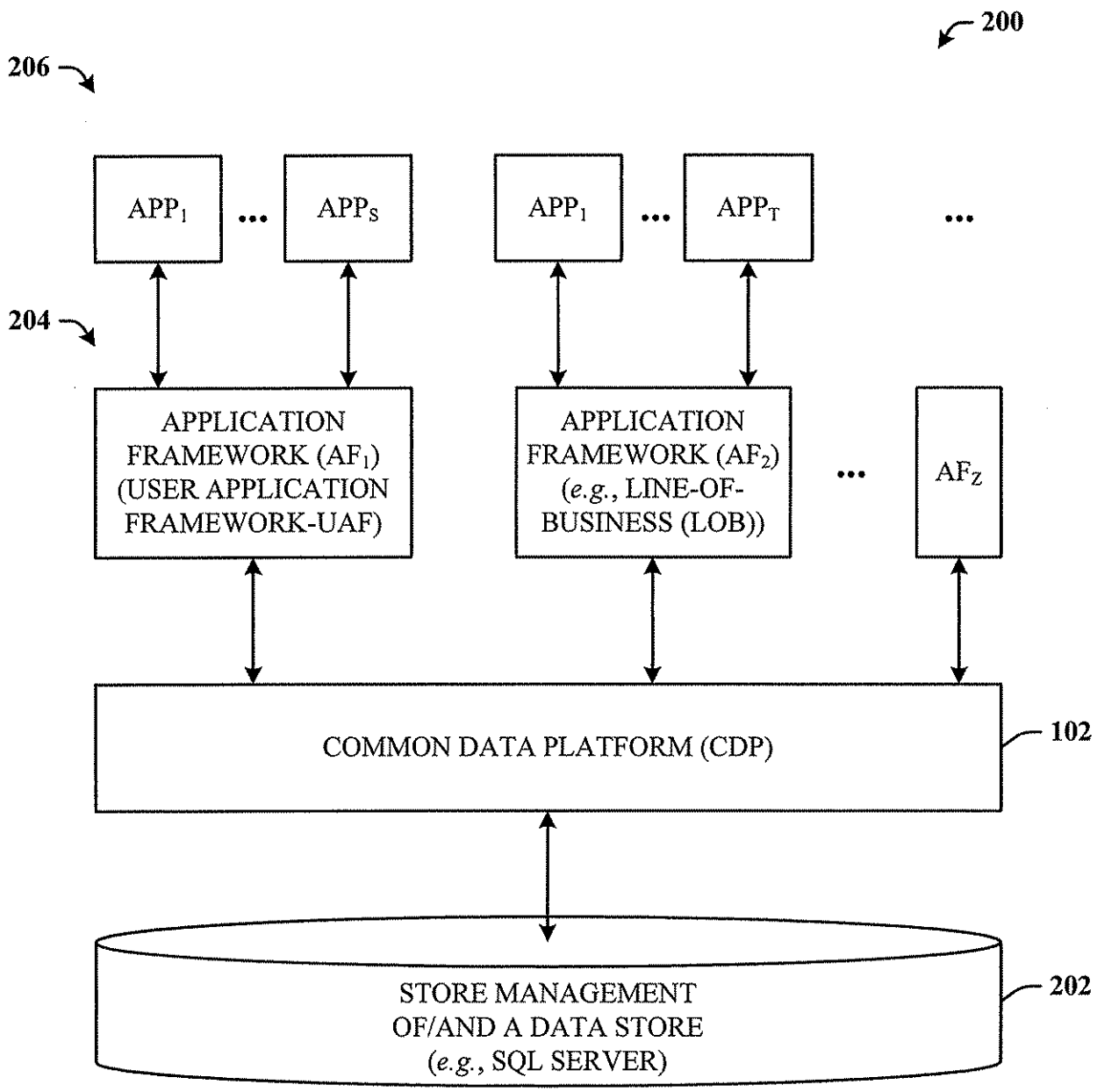

200
206
APP1
...
APPS
APP1
...
APPT
...
204
APPLICATION FRAMEWORK (AF1) (USER APPLICATION FRAMEWORK-UAF)
APPLICATION FRAMEWORK (AF2) (e.g., LINE-OF-BUSINESS (LOB))
...
AFZ
COMMON DATA PLATFORM (CDP)
102
STORE MANAGEMENT OF/AND A DATA STORE (e.g., SQL SERVER)
202

FIG. 2

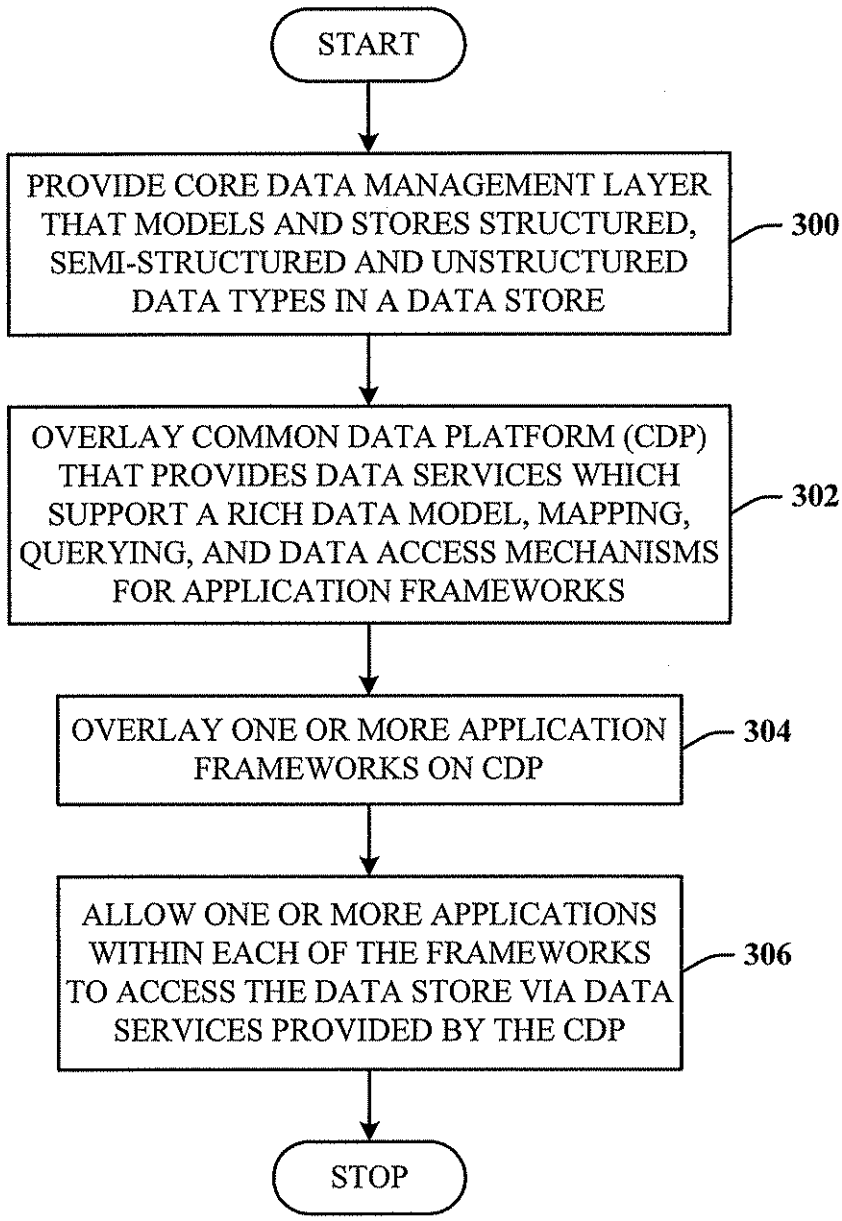

START
PROVIDE CORE DATA MANAGEMENT LAYER THAT MODELS AND STORES STRUCTURED, SEMI-STRUCTURED AND UNSTRUCTURED DATA TYPES IN A DATA STORE
300
OVERLAY COMMON DATA PLATFORM (CDP) THAT PROVIDES DATA SERVICES WHICH SUPPORT A RICH DATA MODEL, MAPPING, QUERYING, AND DATA ACCESS MECHANISMS FOR APPLICATION FRAMEWORKS
302
OVERLAY ONE OR MORE APPLICATION FRAMEWORKS ON CDP
304
ALLOW ONE OR MORE APPLICATIONS WITHIN EACH OF THE FRAMEWORKS TO ACCESS THE DATA STORE VIA DATA SERVICES PROVIDED BY THE CDP
306
STOP

FIG. 3

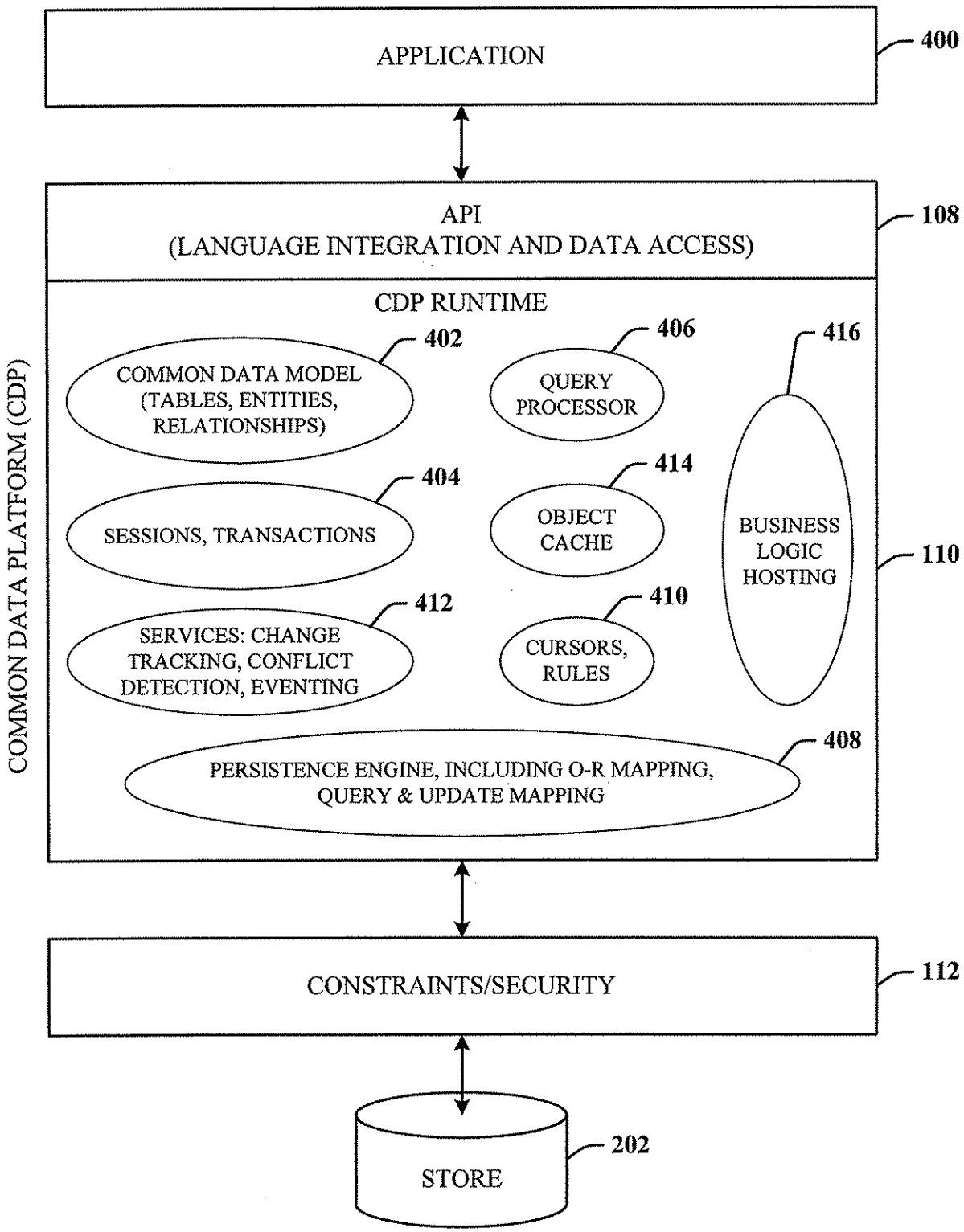

APPLICATION
400
API
(LANGUAGE INTEGRATION AND DATA ACCESS)
108
CDP RUNTIME
COMMON DATA PLATFORM (CDP)
COMMON DATA MODEL (TABLES, ENTITIES, RELATIONSHIPS)
402
QUERY PROCESSOR
406
BUSINESS LOGIC HOSTING
416
SESSIONS, TRANSACTIONS
404
OBJECT CACHE
414
110
SERVICES: CHANGE TRACKING, CONFLICT DETECTION, EVENTING
412
CURSORS, RULES
410
PERSISTENCE ENGINE, INCLUDING O-R MAPPING, QUERY & UPDATE MAPPING
408
CONSTRAINTS/SECURITY
112
STORE
202

FIG. 4

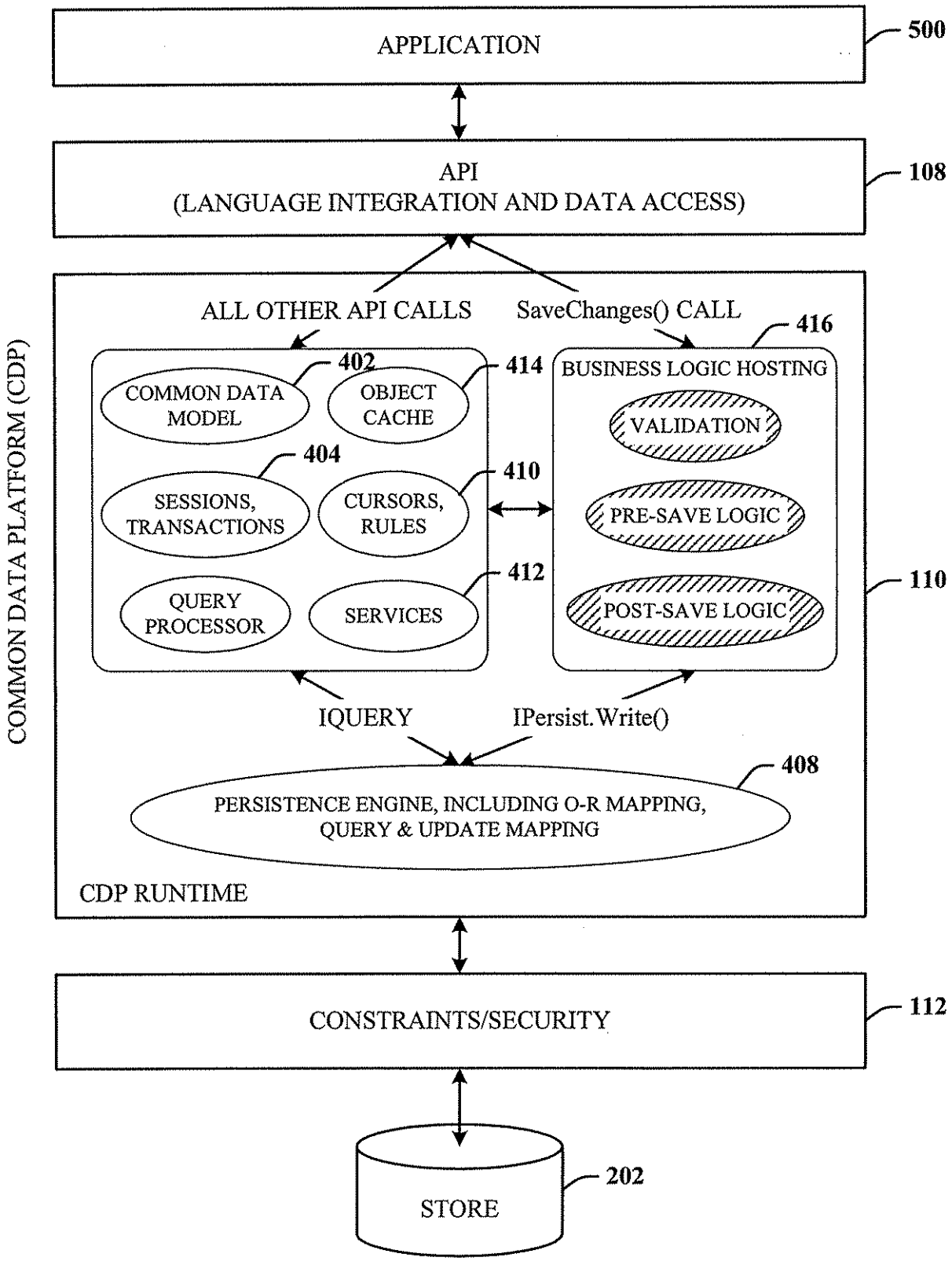

APPLICATION
500
API
(LANGUAGE INTEGRATION AND DATA ACCESS)
108
ALL OTHER API CALLS
SaveChanges() CALL
416
COMMON DATA PLATFORM (CDP)
402
COMMON DATA MODEL
414
OBJECT CACHE
BUSINESS LOGIC HOSTING
VALIDATION
404
SESSIONS, TRANSACTIONS
410
CURSORS, RULES
PRE-SAVE LOGIC
412
QUERY PROCESSOR
SERVICES
POST-SAVE LOGIC
110
IQUERY
IPersist.Write()
408
PERSISTENCE ENGINE, INCLUDING O-R MAPPING, QUERY & UPDATE MAPPING
CDP RUNTIME
CONSTRAINTS/SECURITY
112
STORE
202

FIG. 5

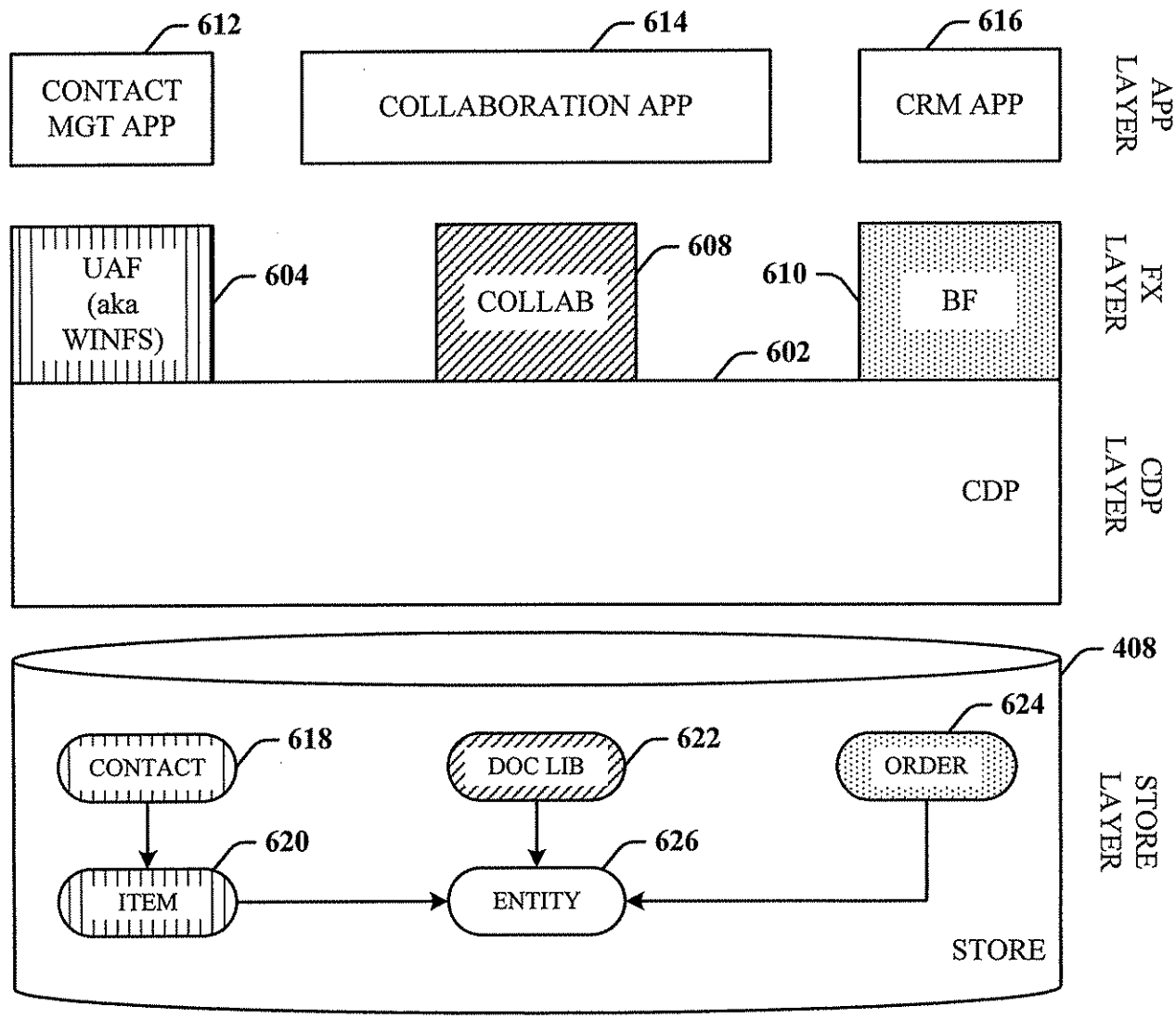

612
614
616
CONTACT MGT APP
COLLABORATION APP
CRM APP
APP LAYER
UAF (aka WINFS)
604
COLLAB
608
610
BF
602
FX LAYER
CDP
CDP LAYER
408
624
618
622
CONTACT
DOC LIB
ORDER
620
626
ITEM
ENTITY
STORE
STORE LAYER

FIG. 6

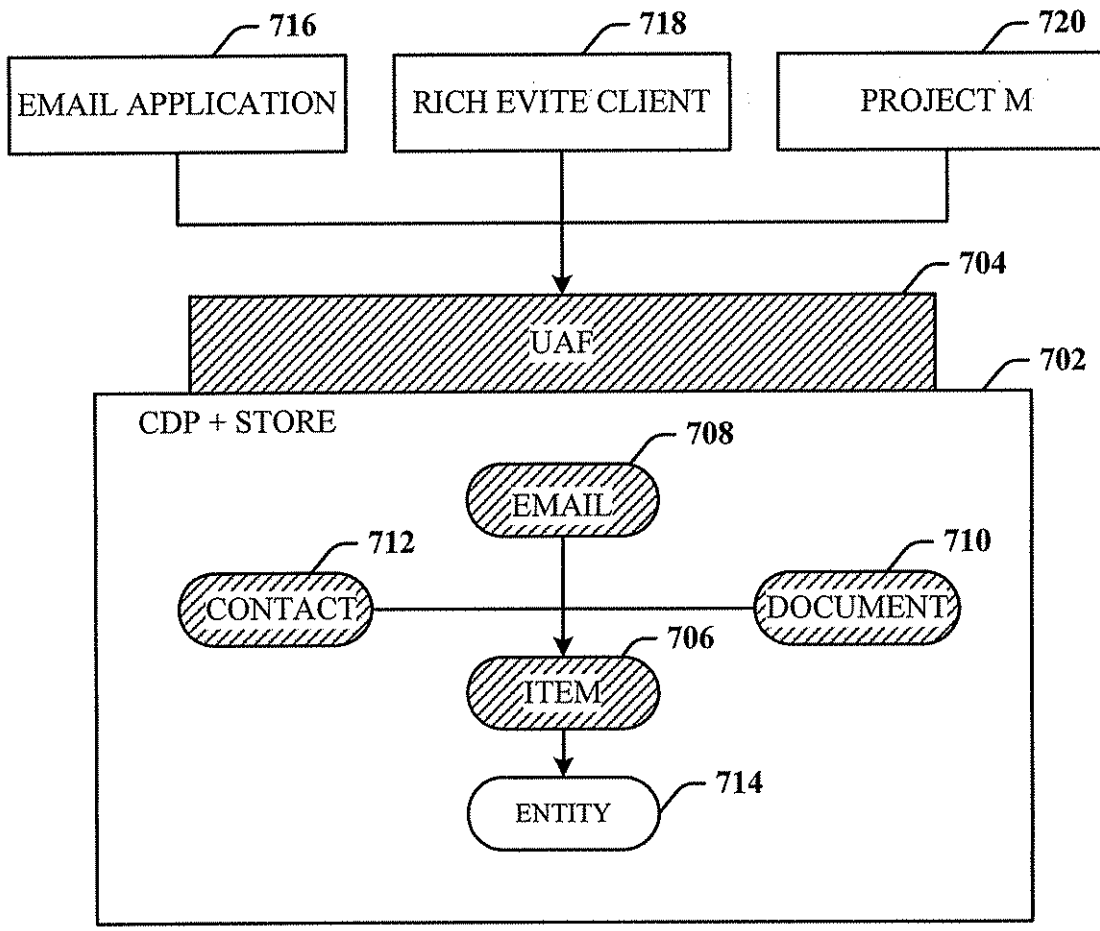

716
718
720
EMAIL APPLICATION
RICH EVITE CLIENT
PROJECT M
704
UAF
702
CDP + STORE
708
EMAIL
712
710
CONTACT
DOCUMENT
706
ITEM
714
ENTITY

FIG. 7

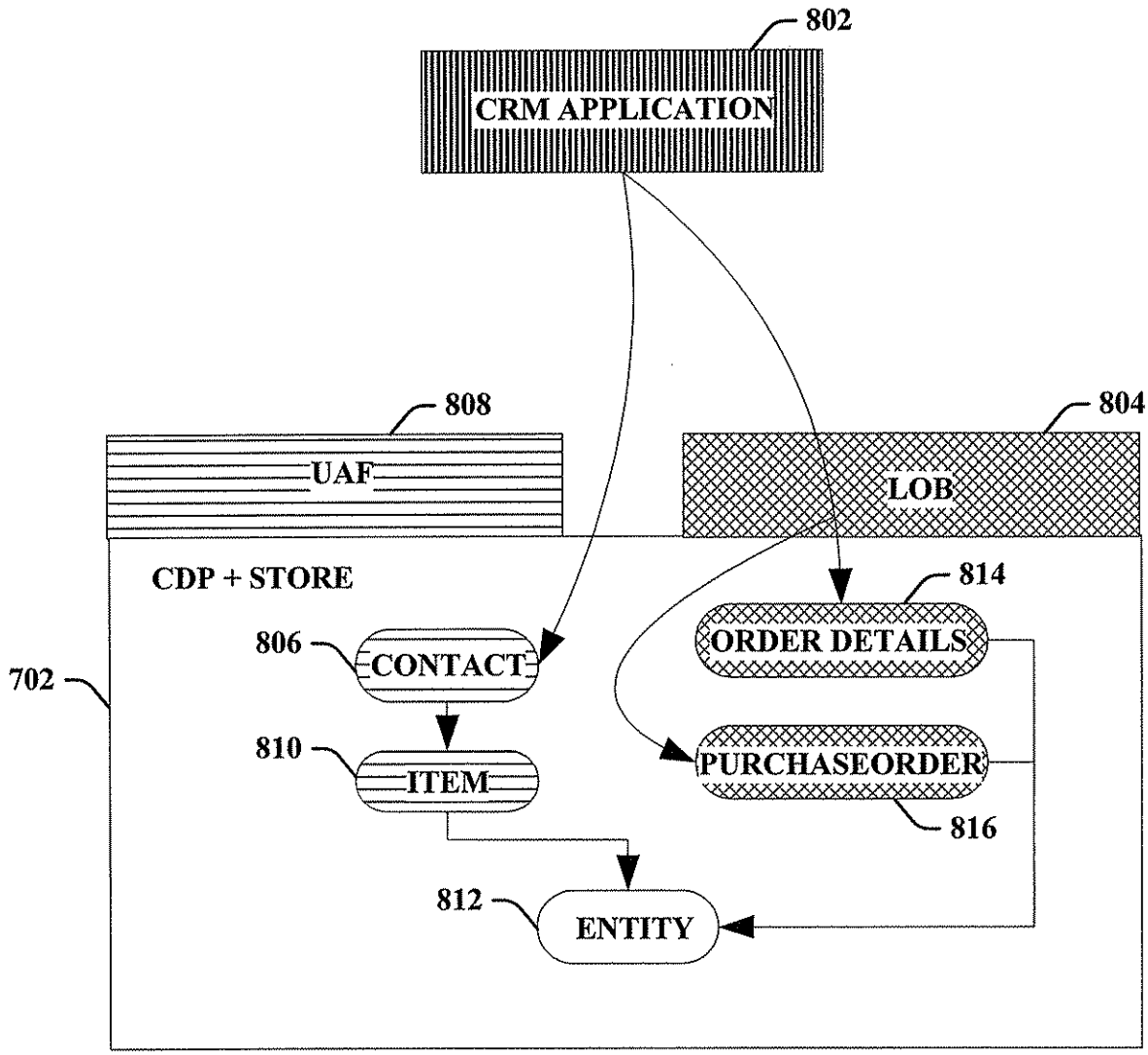

802
CRM APPLICATION
808
UAF
804
LOB
CDP + STORE
814
ORDER DETAILS
806
CONTACT
702
810
ITEM
PURCHASEORDER
816
812
ENTITY

FIG. 8

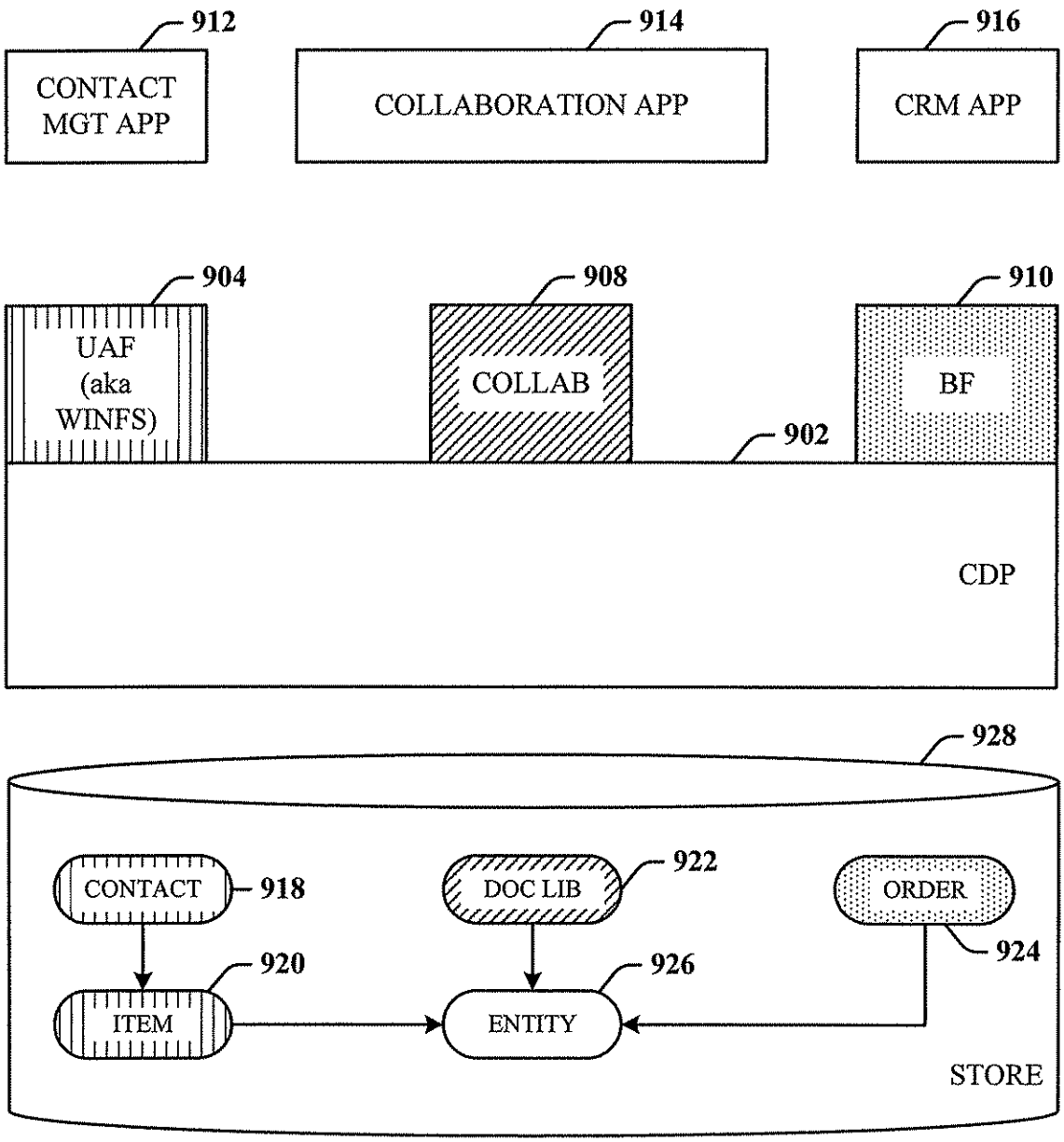

912
CONTACT MGT APP
914
COLLABORATION APP
916
CRM APP
904
UAF (aka WINFS)
908
COLLAB
910
BF
902
CDP
928
CONTACT
918
DOC LIB
922
ORDER
924
920
926
ITEM
ENTITY
STORE

FIG. 9

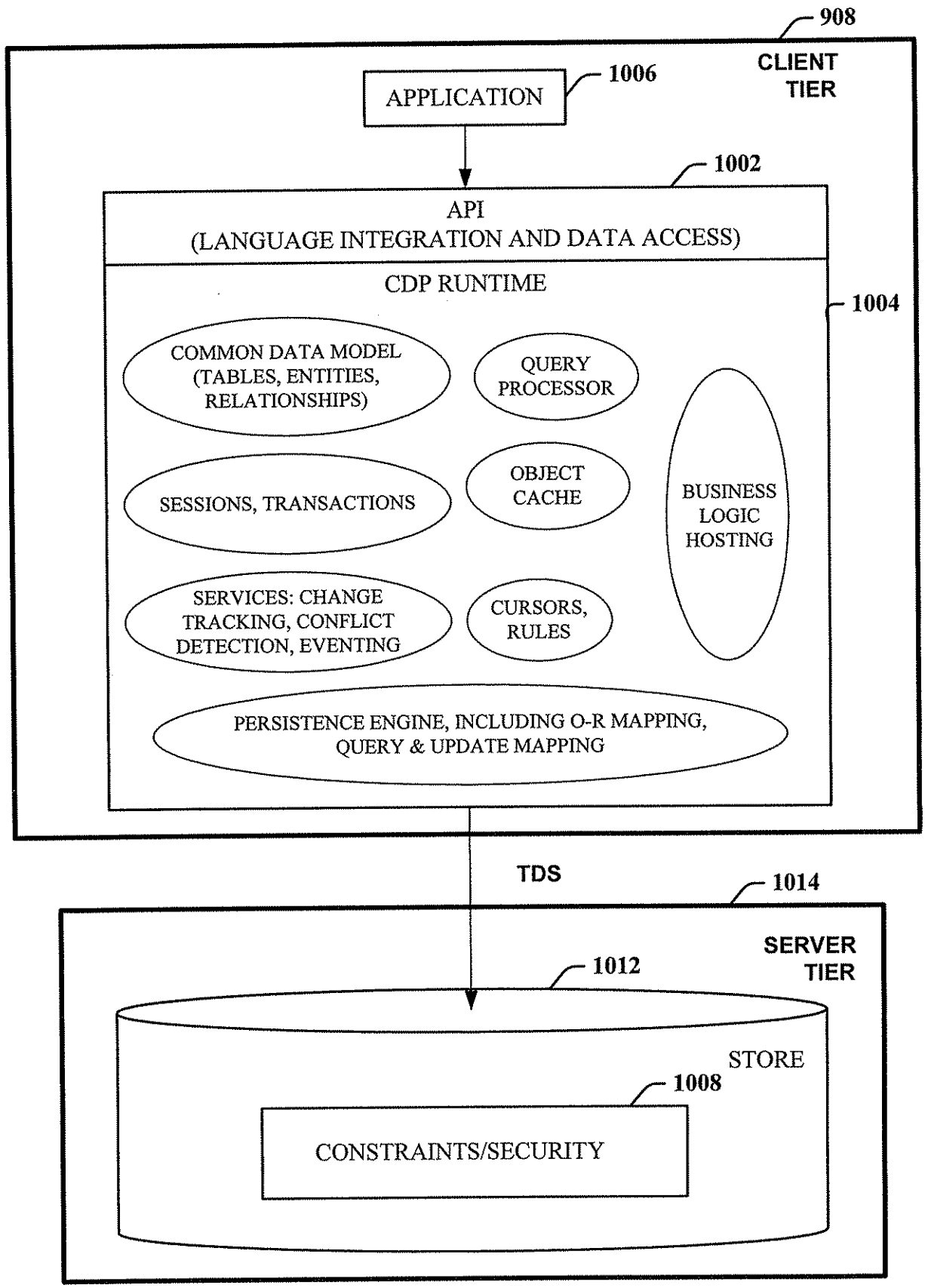

908
CLIENT TIER
APPLICATION
1006
1002
API
(LANGUAGE INTEGRATION AND DATA ACCESS)
CDP RUNTIME
1004
COMMON DATA MODEL (TABLES, ENTITIES, RELATIONSHIPS)
QUERY PROCESSOR
SESSIONS, TRANSACTIONS
OBJECT CACHE
BUSINESS LOGIC HOSTING
SERVICES: CHANGE TRACKING, CONFLICT DETECTION, EVENTING
CURSORS, RULES
PERSISTENCE ENGINE, INCLUDING O-R MAPPING, QUERY & UPDATE MAPPING
TDS
1014
SERVER TIER
1012
STORE
1008
CONSTRAINTS/SECURITY

FIG. 10

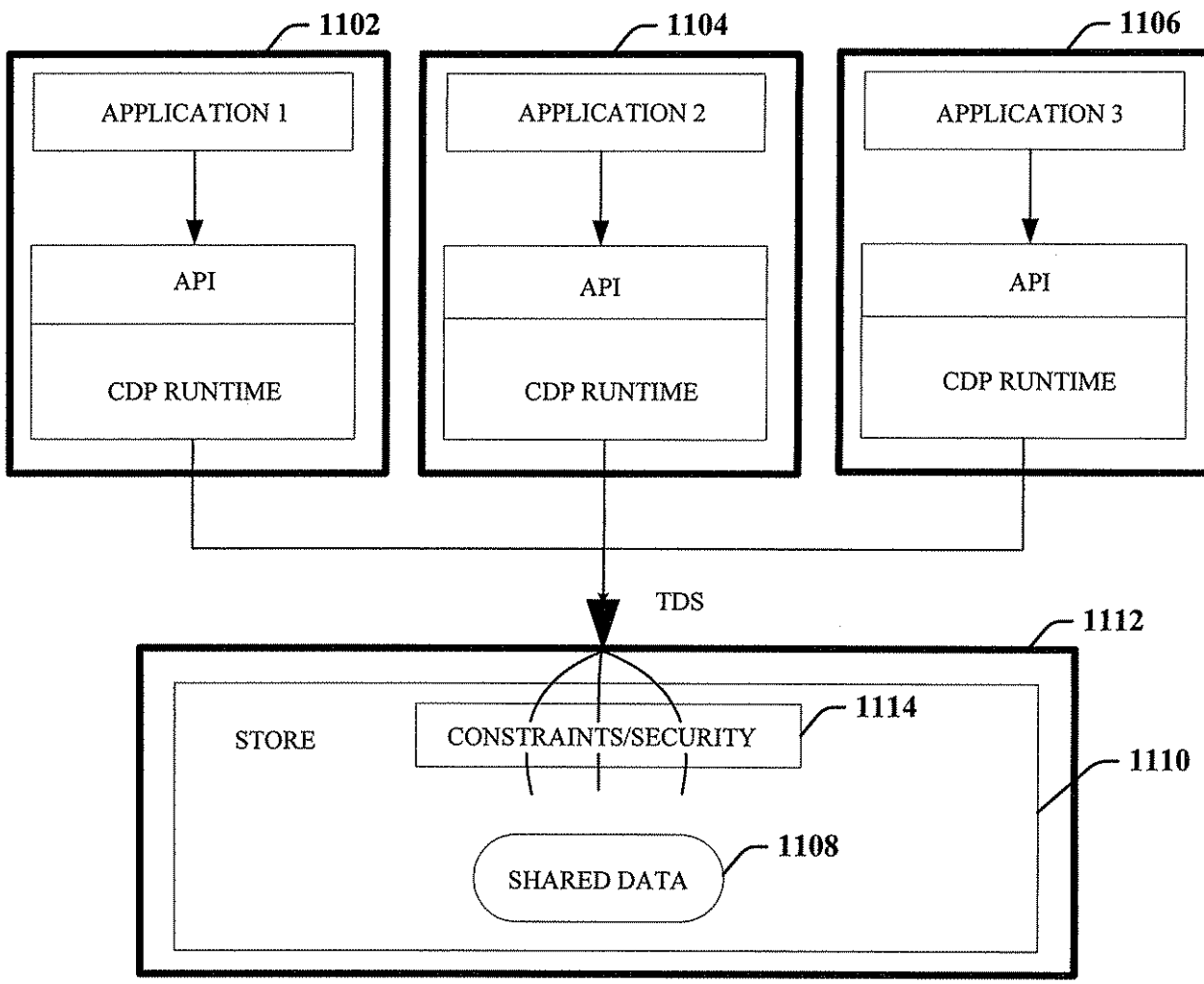

1102
1104
1106
APPLICATION 1
APPLICATION 2
APPLICATION 3
API
API
API
CDP RUNTIME
CDP RUNTIME
CDP RUNTIME
TDS
1112
STORE
CONSTRAINTS/SECURITY
1114
1110
SHARED DATA
1108

FIG. 11

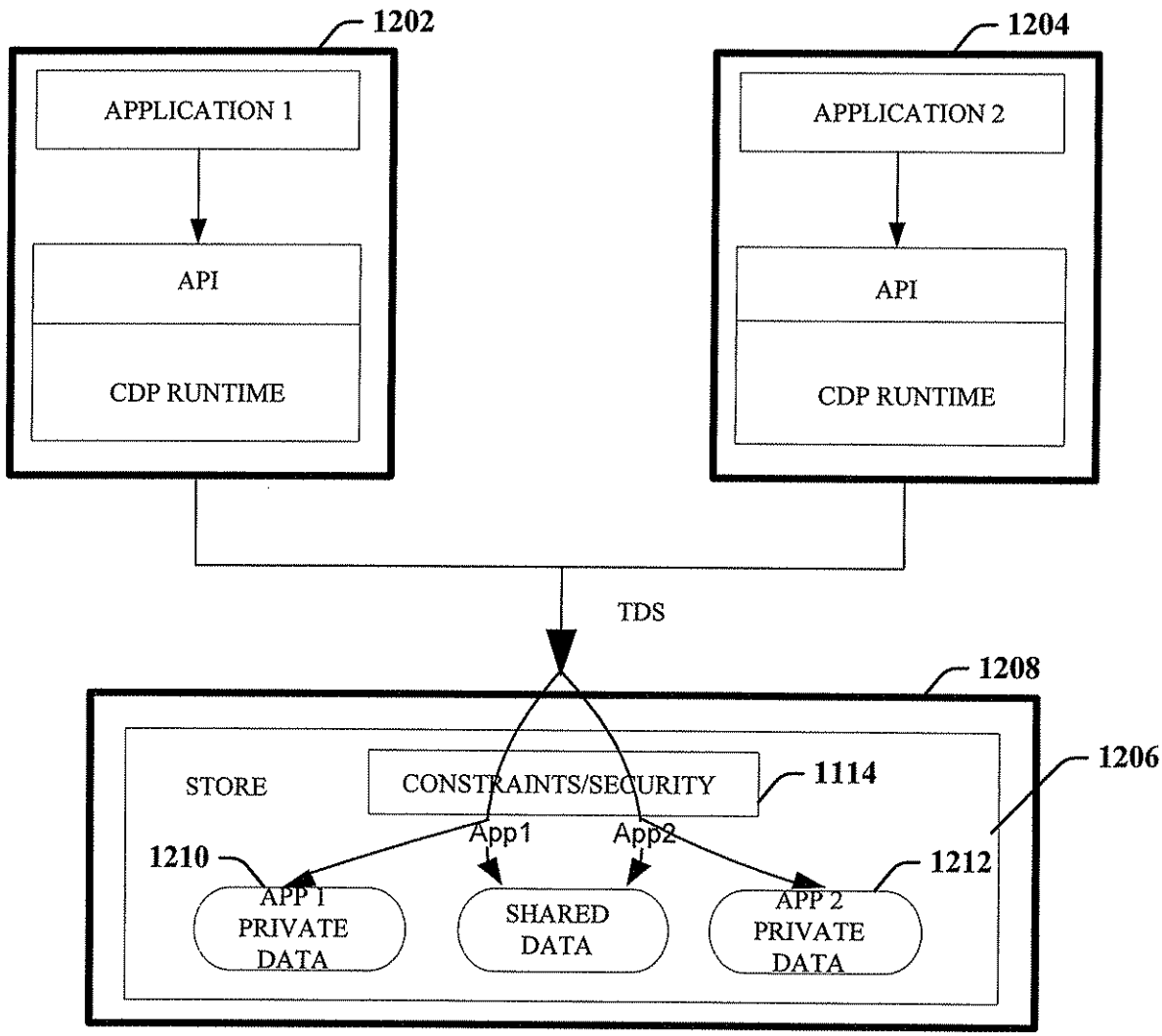

1202
APPLICATION 1
API
CDP RUNTIME
1204
APPLICATION 2
API
CDP RUNTIME
TDS
1208
STORE
CONSTRAINTS/SECURITY
1114
1206
App1
App2
1210
1212
APP 1 PRIVATE DATA
SHARED DATA
APP 2 PRIVATE DATA

FIG. 12

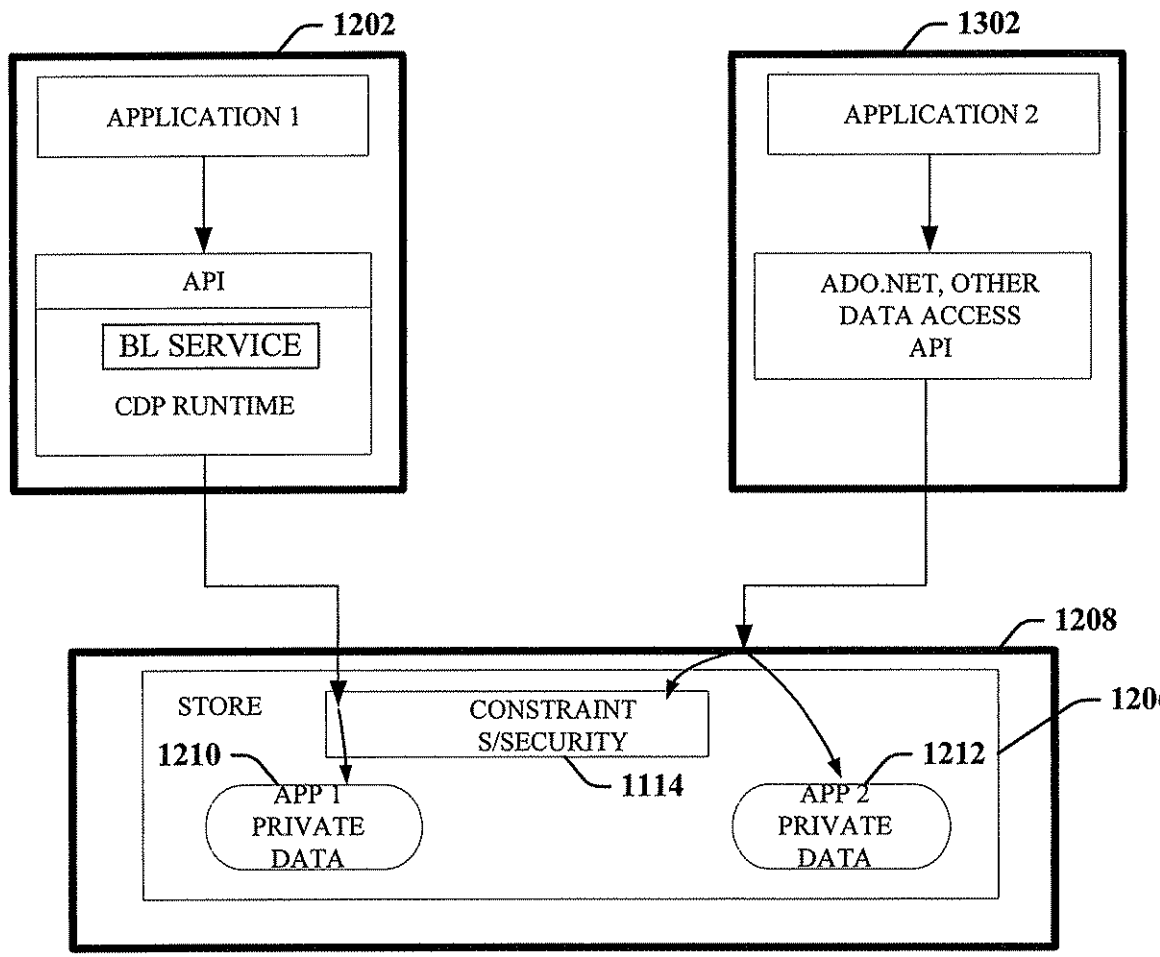

1202
APPLICATION 1
API
BL SERVICE
CDP RUNTIME
1302
APPLICATION 2
ADO.NET, OTHER DATA ACCESS API
1208
1206
STORE
CONSTRAINT S/SECURITY
1114
1210
APP 1 PRIVATE DATA
1212
APP 2 PRIVATE DATA

FIG. 13

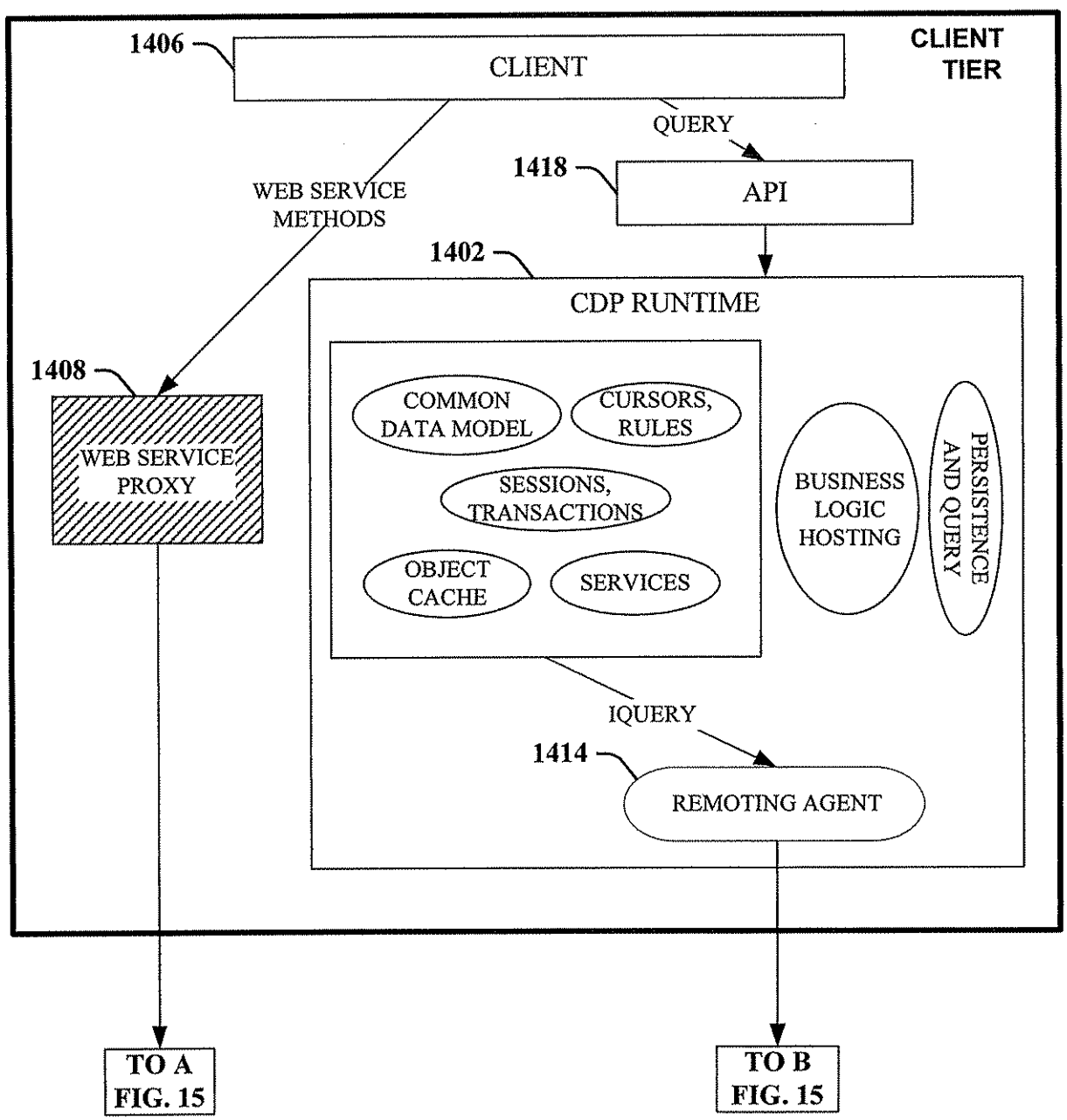

1406
CLIENT
CLIENT TIER
QUERY
1418
API
WEB SERVICE METHODS
1402
CDP RUNTIME
1408
WEB SERVICE PROXY
COMMON DATA MODEL
CURSORS, RULES
SESSIONS, TRANSACTIONS
OBJECT CACHE
SERVICES
BUSINESS LOGIC HOSTING
PERSISTENCE AND QUERY
IQUERY
1414
REMOTING AGENT
TO A FIG. 15
TO B FIG. 15

FIG. 14

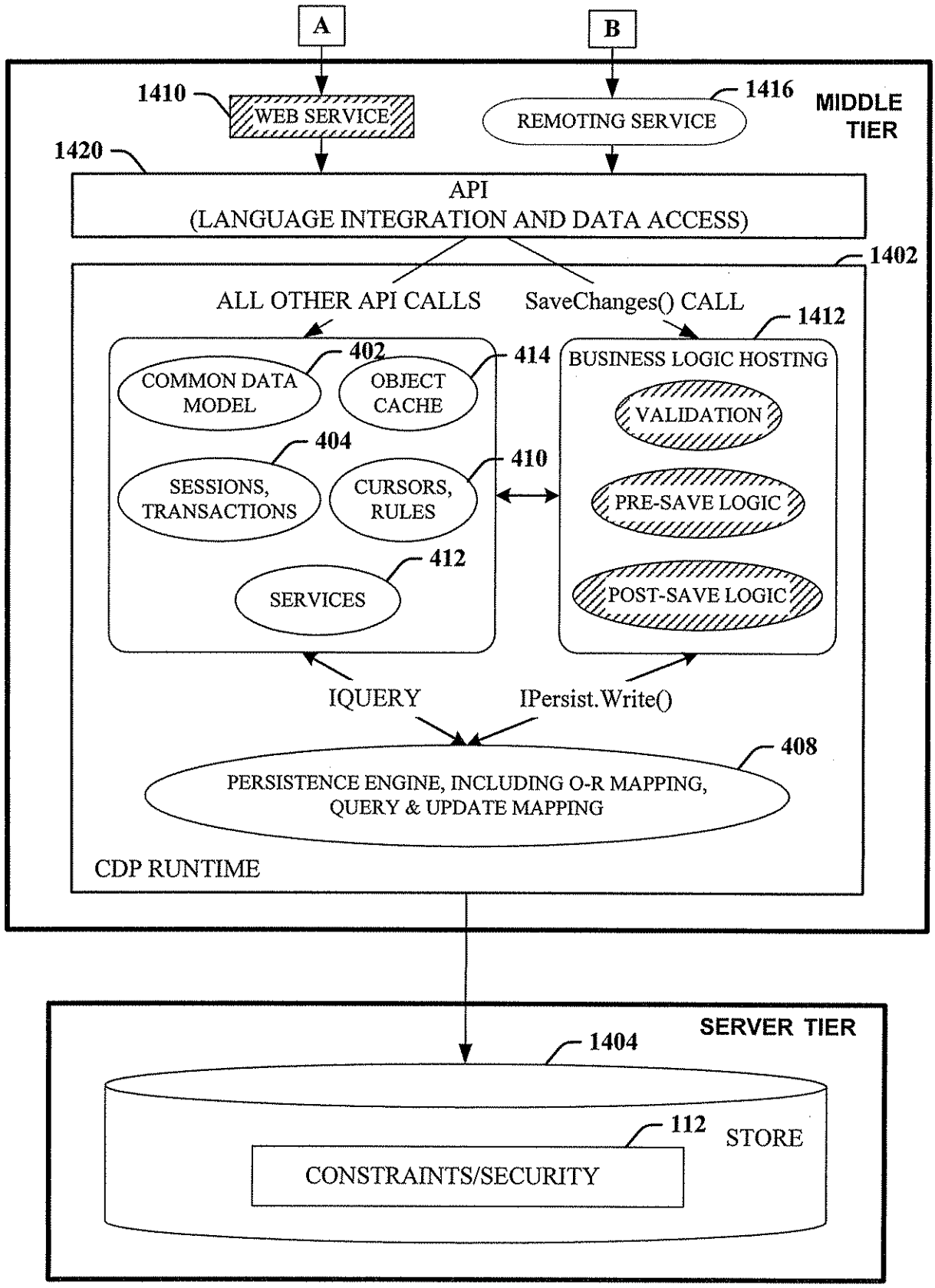

A
B
1410
WEB SERVICE
1416
REMOTING SERVICE
MIDDLE TIER
1420
API
(LANGUAGE INTEGRATION AND DATA ACCESS)
1402
ALL OTHER API CALLS
SaveChanges() CALL
1412
402
414
COMMON DATA MODEL
OBJECT CACHE
BUSINESS LOGIC HOSTING
VALIDATION
404
410
SESSIONS, TRANSACTIONS
CURSORS, RULES
PRE-SAVE LOGIC
412
SERVICES
POST-SAVE LOGIC
IQUERY
IPersist.Write()
408
PERSISTENCE ENGINE, INCLUDING O-R MAPPING, QUERY & UPDATE MAPPING
CDP RUNTIME
SERVER TIER
1404
112
STORE
CONSTRAINTS/SECURITY

FIG. 15

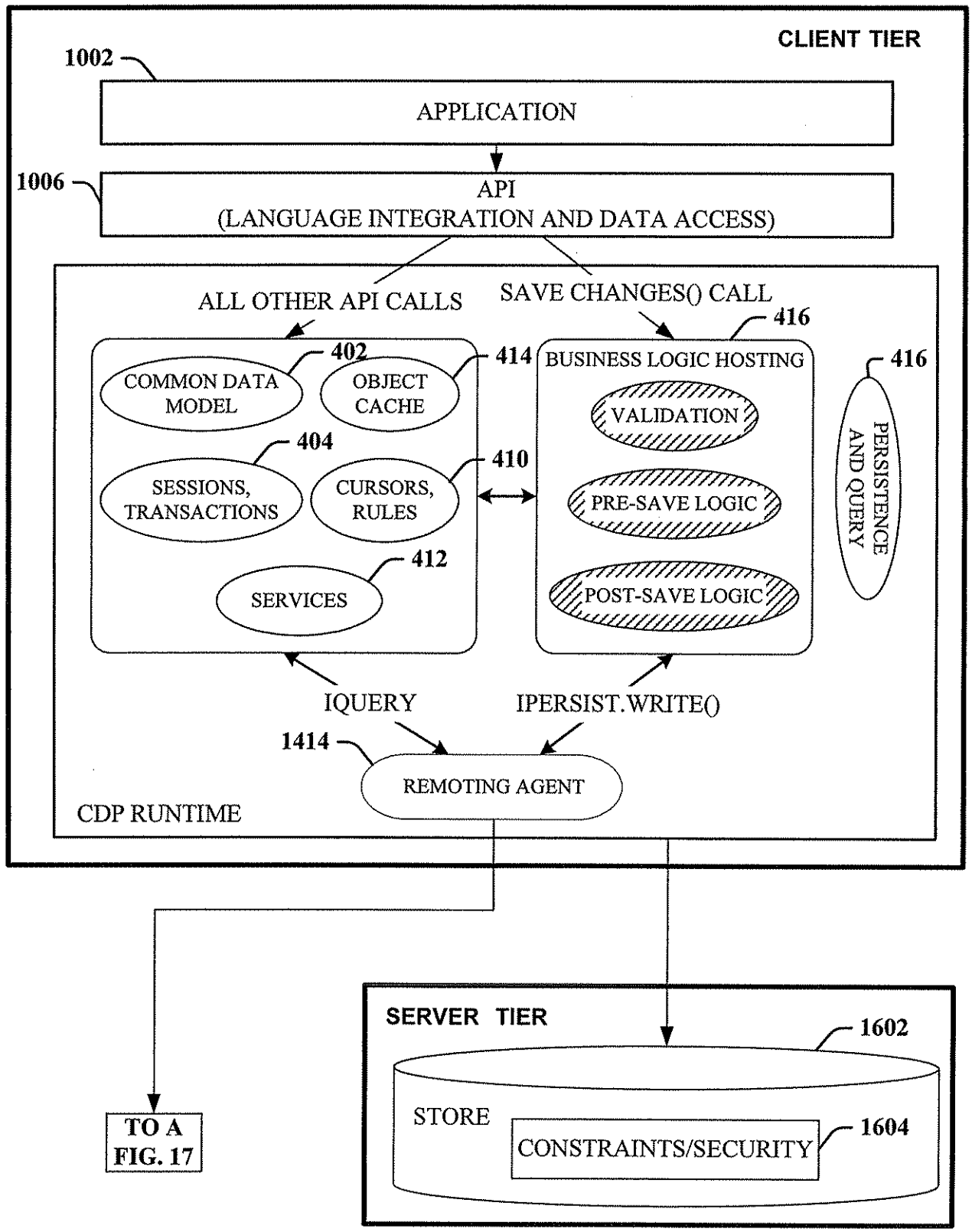

CLIENT TIER
1002
APPLICATION
1006
API
(LANGUAGE INTEGRATION AND DATA ACCESS)
ALL OTHER API CALLS
SAVE CHANGES() CALL
416
402
414
COMMON DATA MODEL
OBJECT CACHE
BUSINESS LOGIC HOSTING
VALIDATION
PRE-SAVE LOGIC
POST-SAVE LOGIC
416
PERSISTENCE AND QUERY
404
410
SESSIONS, TRANSACTIONS
CURSORS, RULES
412
SERVICES
IQUERY
IPERSIST.WRITE()
1414
REMOTING AGENT
CDP RUNTIME
TO A FIG. 17
SERVER TIER
1602
STORE
CONSTRAINTS/SECURITY
1604

FIG. 16

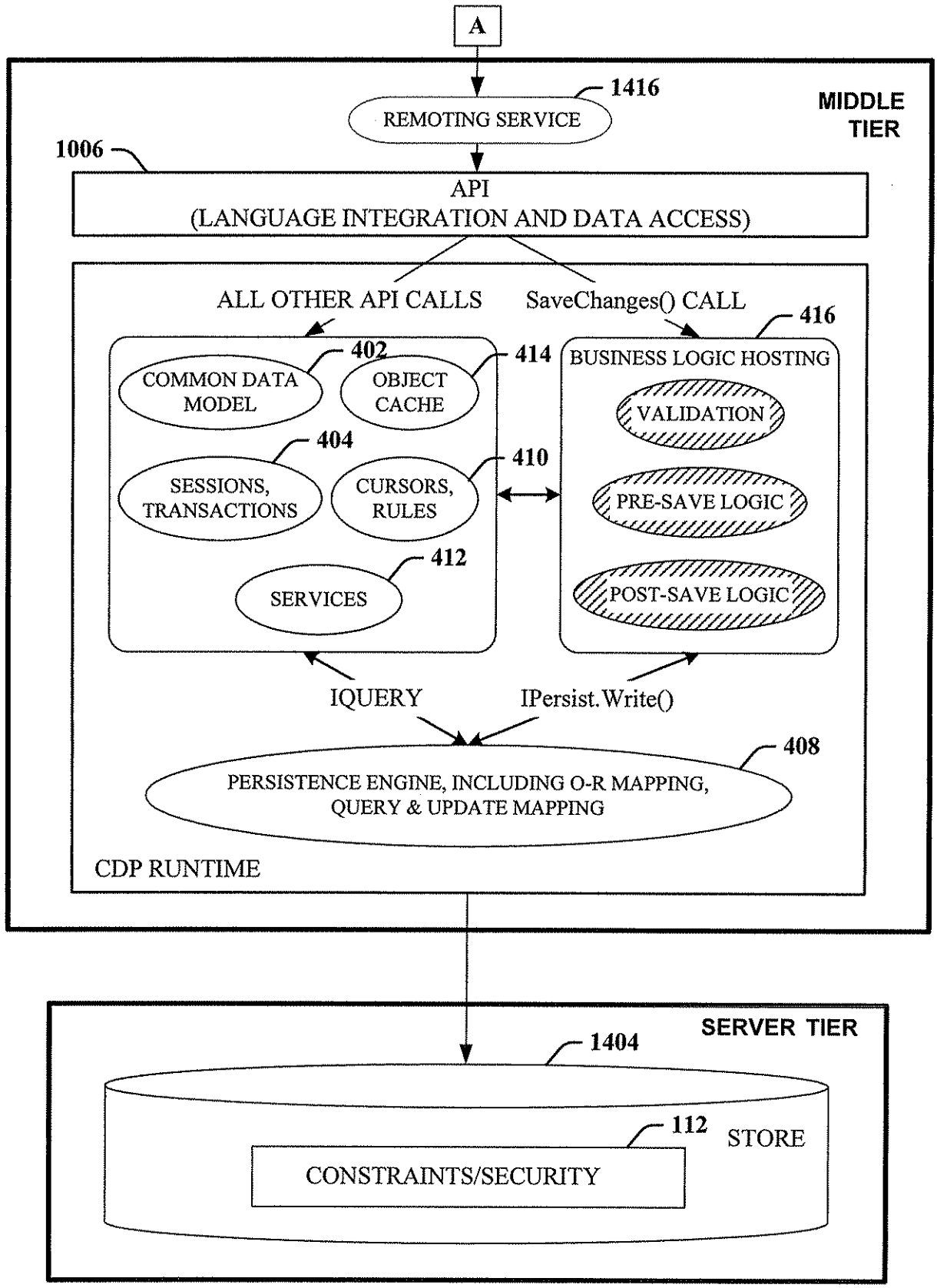

A
1416
REMOTING SERVICE
MIDDLE TIER
1006
API
(LANGUAGE INTEGRATION AND DATA ACCESS)
ALL OTHER API CALLS
SaveChanges() CALL
416
402
414
COMMON DATA MODEL
OBJECT CACHE
BUSINESS LOGIC HOSTING
VALIDATION
404
410
SESSIONS, TRANSACTIONS
CURSORS, RULES
PRE-SAVE LOGIC
412
SERVICES
POST-SAVE LOGIC
IQUERY
IPersist.Write()
408
PERSISTENCE ENGINE, INCLUDING O-R MAPPING, QUERY & UPDATE MAPPING
CDP RUNTIME
SERVER TIER
1404
112
STORE
CONSTRAINTS/SECURITY

FIG. 17

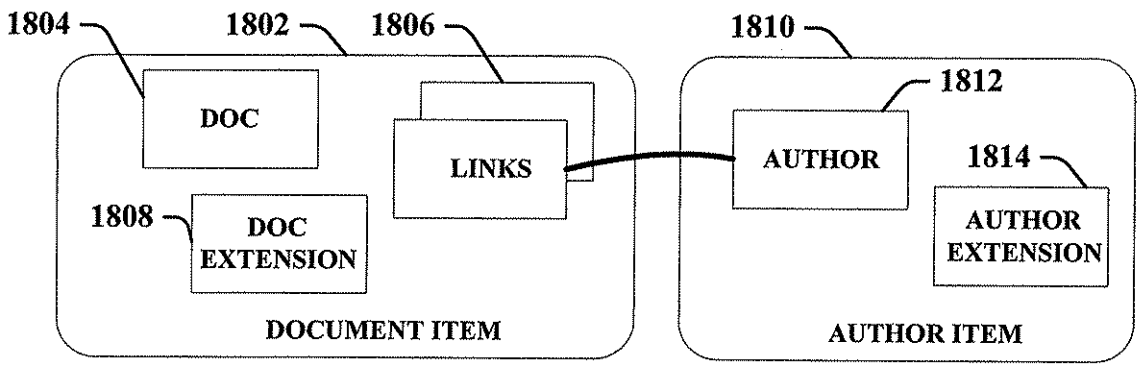

1804
1802
1806
1810
1812
DOC
LINKS
AUTHOR
1814
1808
DOC EXTENSION
AUTHOR EXTENSION
DOCUMENT ITEM
AUTHOR ITEM

FIG. 18

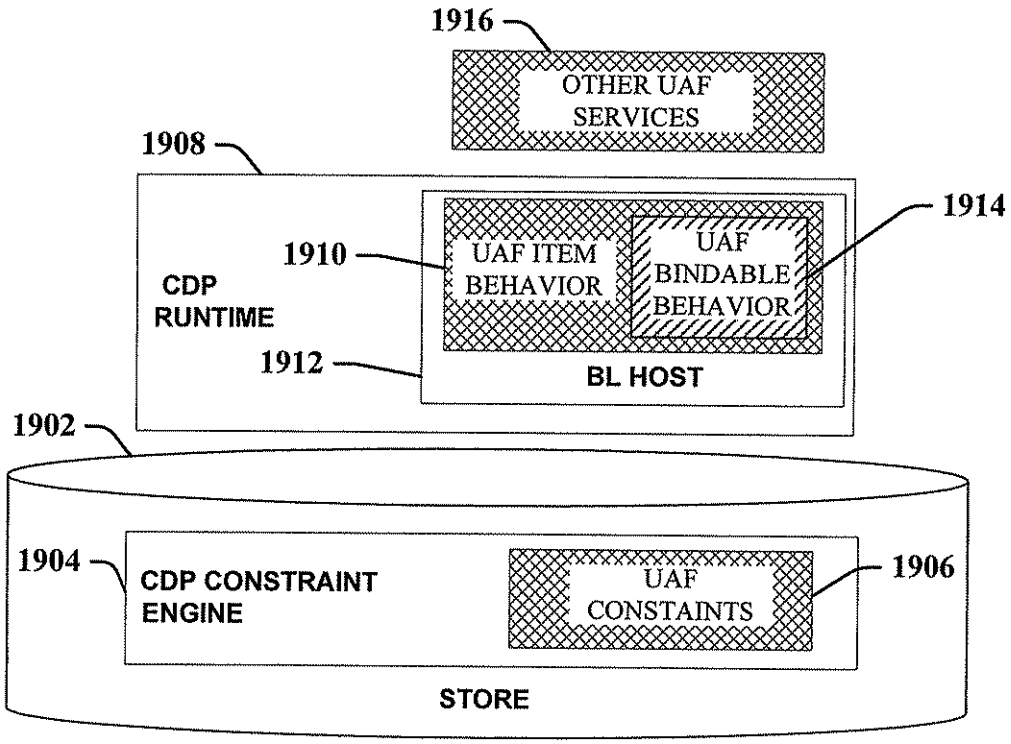

1916
OTHER UAF SERVICES
1908
1914
1910
UAF ITEM BEHAVIOR
UAF BINDABLE BEHAVIOR
CDP RUNTIME
1912
BL HOST
1902
1904
CDP CONSTRAINT ENGINE
UAF CONSTAINTS
1906
STORE

FIG. 19

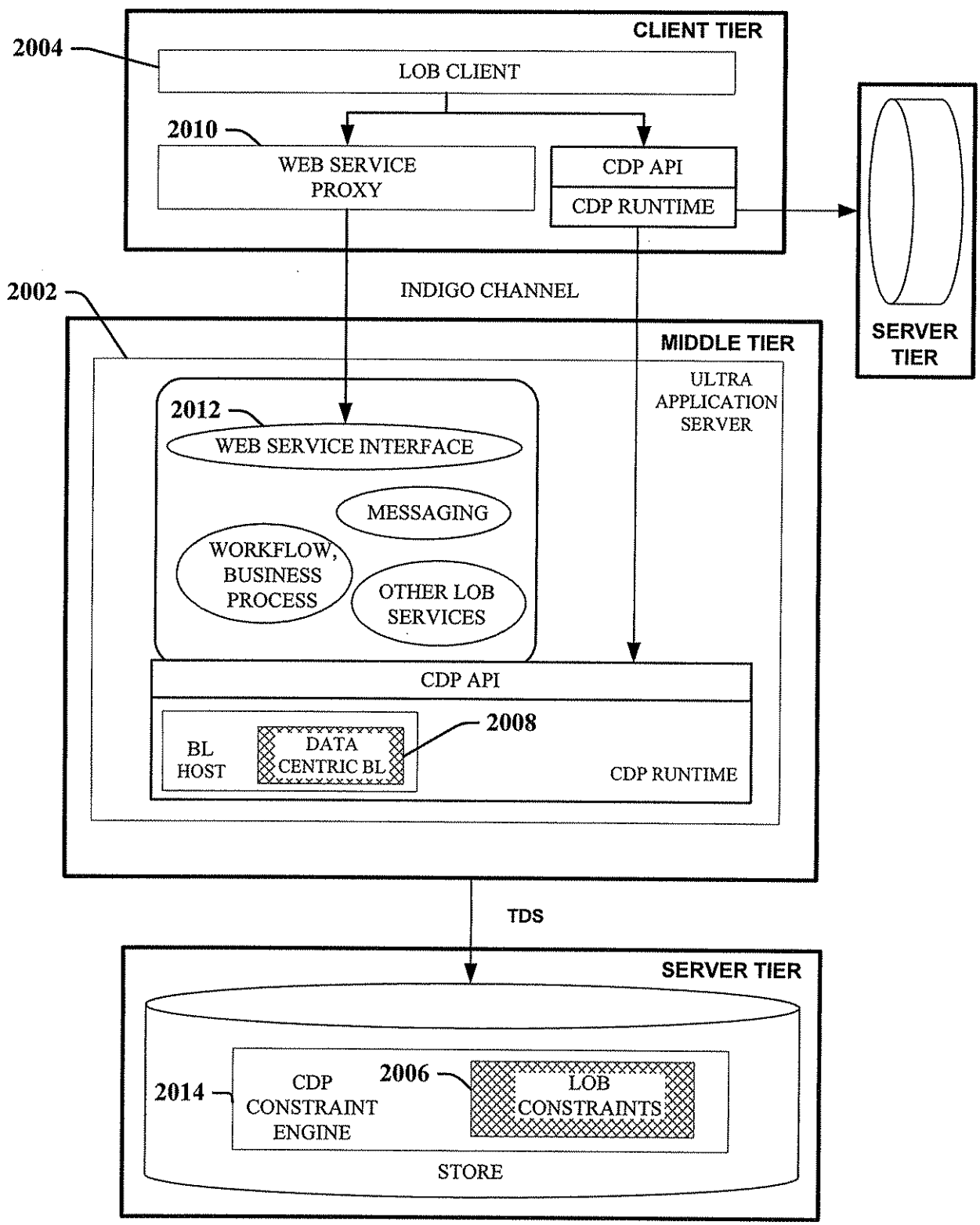

CLIENT TIER
2004
LOB CLIENT
2010
WEB SERVICE PROXY
CDP API
CDP RUNTIME
SERVER TIER
INDIGO CHANNEL
2002
MIDDLE TIER
ULTRA APPLICATION SERVER
2012
WEB SERVICE INTERFACE
MESSAGING
WORKFLOW, BUSINESS PROCESS
OTHER LOB SERVICES
CDP API
BL HOST
DATA CENTRIC BL
2008
CDP RUNTIME
TDS
SERVER TIER
2014
CDP CONSTRAINT ENGINE
2006
LOB CONSTRAINTS
STORE

FIG. 20

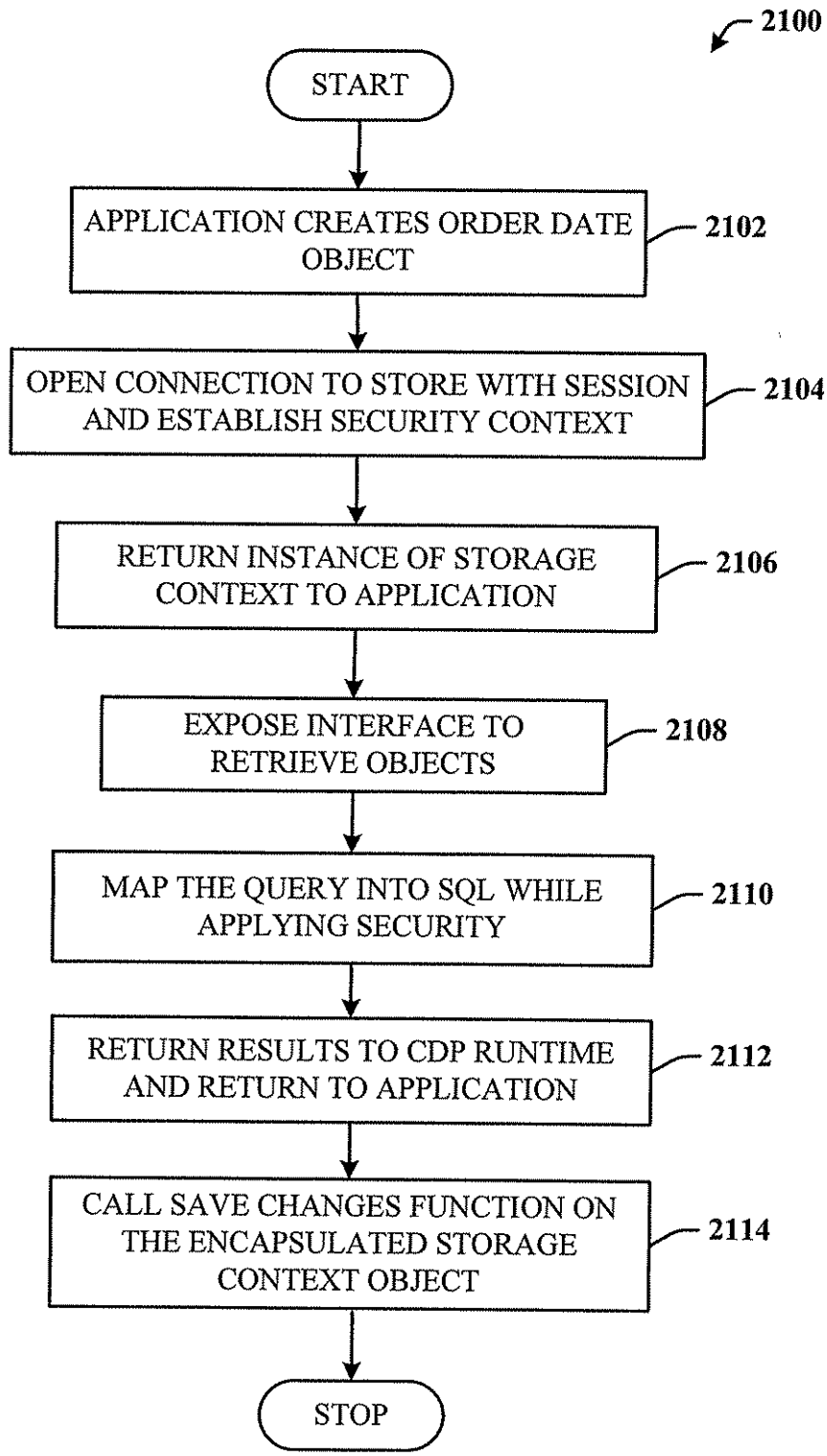

2100
START
APPLICATION CREATES ORDER DATE OBJECT
2102
OPEN CONNECTION TO STORE WITH SESSION AND ESTABLISH SECURITY CONTEXT
2104
RETURN INSTANCE OF STORAGE CONTEXT TO APPLICATION
2106
EXPOSE INTERFACE TO RETRIEVE OBJECTS
2108
MAP THE QUERY INTO SQL WHILE APPLYING SECURITY
2110
RETURN RESULTS TO CDP RUNTIME AND RETURN TO APPLICATION
2112
CALL SAVE CHANGES FUNCTION ON THE ENCAPSULATED STORAGE CONTEXT OBJECT
2114
STOP

FIG. 21

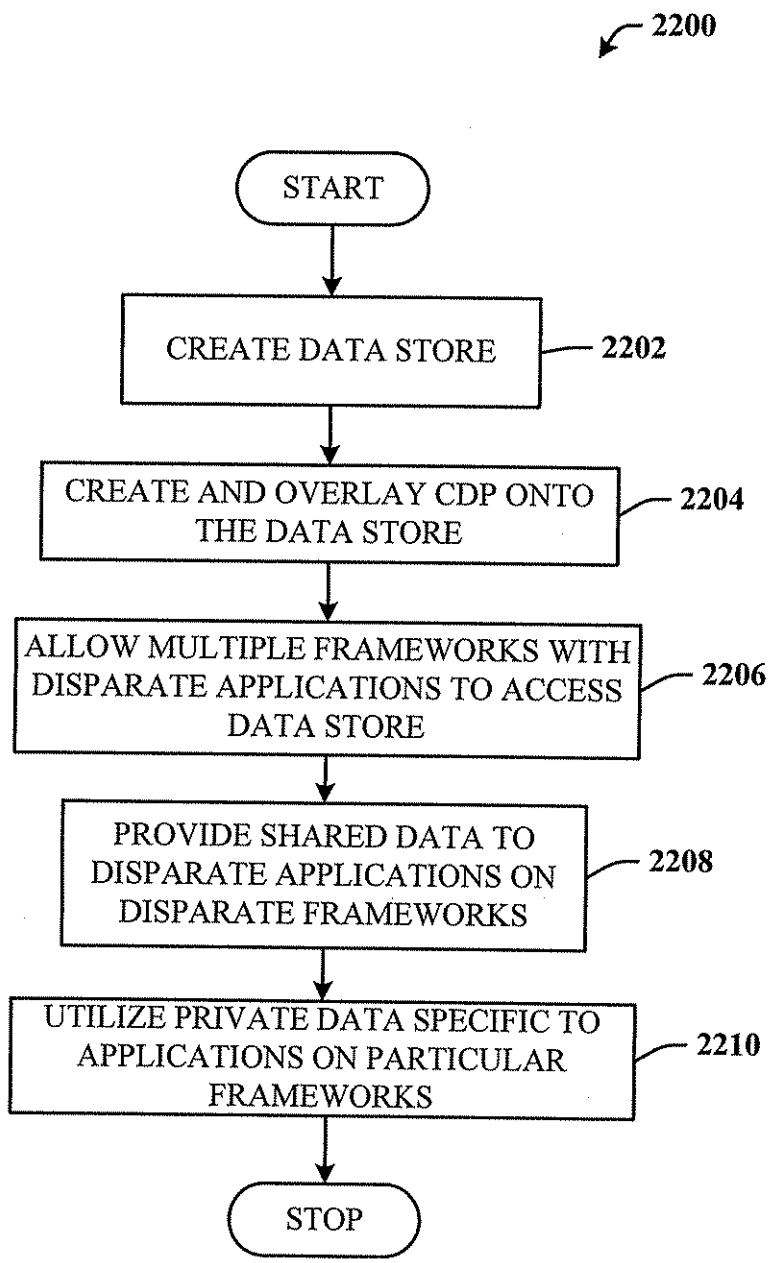

2200
START
CREATE DATA STORE
2202
CREATE AND OVERLAY CDP ONTO THE DATA STORE
2204
ALLOW MULTIPLE FRAMEWORKS WITH DISPARATE APPLICATIONS TO ACCESS DATA STORE
2206
PROVIDE SHARED DATA TO DISPARATE APPLICATIONS ON DISPARATE FRAMEWORKS
2208
UTILIZE PRIVATE DATA SPECIFIC TO APPLICATIONS ON PARTICULAR FRAMEWORKS
2210
STOP

FIG. 22

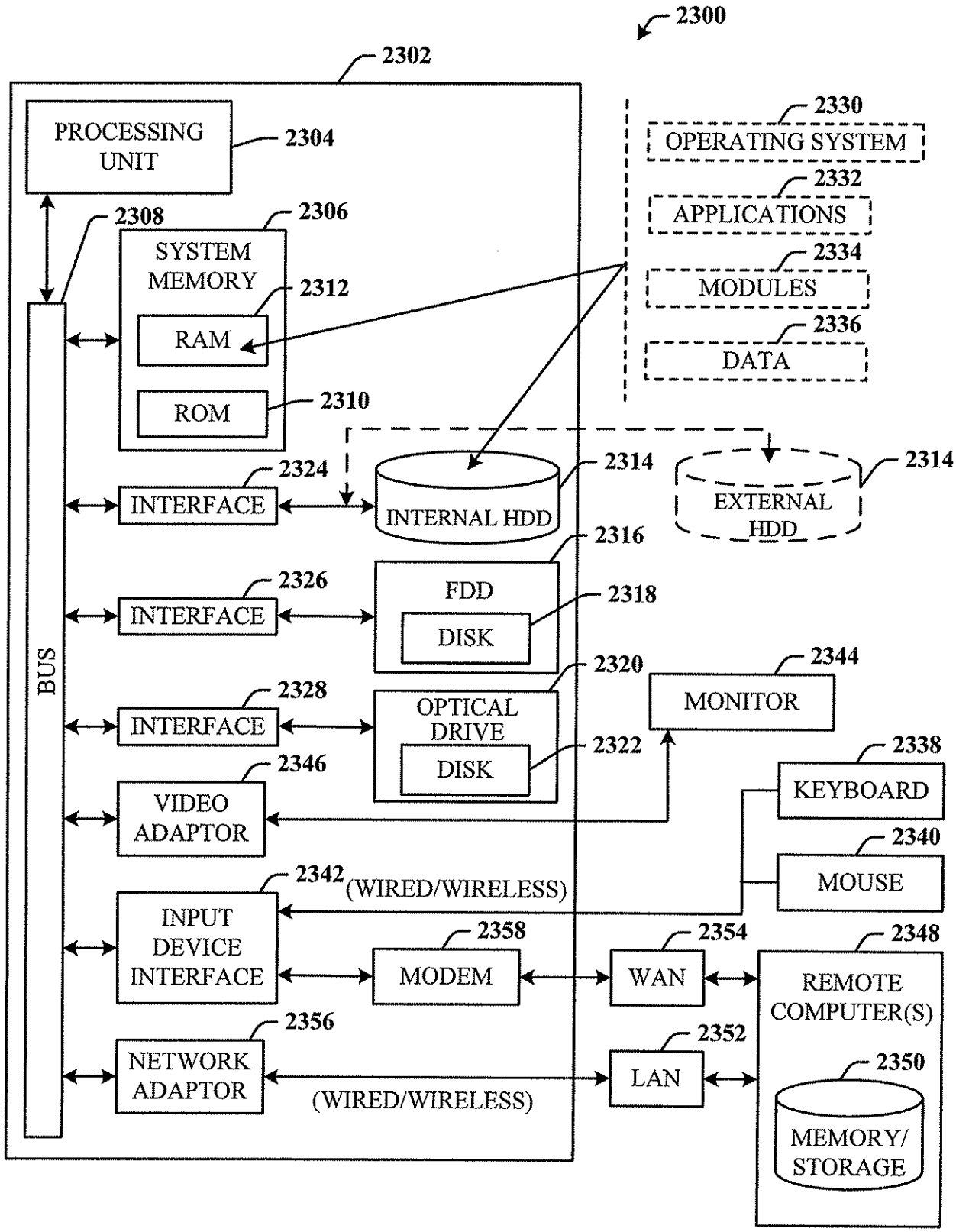

2300
2302
PROCESSING UNIT
2304
2308
2306
SYSTEM MEMORY
2312
RAM
ROM
2310
BUS
2330
OPERATING SYSTEM
2332
APPLICATIONS
2334
MODULES
2336
DATA
2324
INTERFACE
INTERNAL HDD
2314
EXTERNAL HDD
2314
2316
2326
INTERFACE
FDD
DISK
2318
2320
2328
INTERFACE
OPTICAL DRIVE
DISK
2322
2344
MONITOR
2338
KEYBOARD
2346
VIDEO ADAPTOR
2340
MOUSE
2342
(WIRED/WIRELESS)
INPUT DEVICE INTERFACE
2358
MODEM
2354
WAN
2348
REMOTE COMPUTER(S)
2356
NETWORK ADAPTOR
(WIRED/WIRELESS)
2352
LAN
2350
MEMORY/ STORAGE

FIG. 23

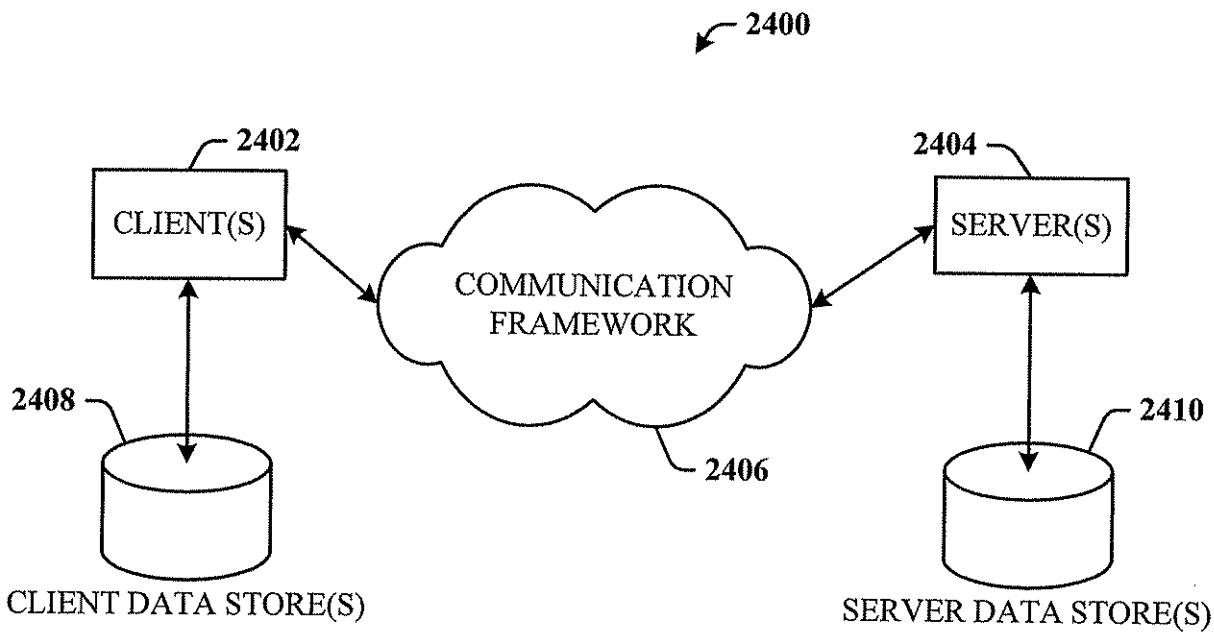

2400
2402
CLIENT(S)
2404
SERVER(S)
COMMUNICATION FRAMEWORK
2406
2408
2410
CLIENT DATA STORE(S)
SERVER DATA STORE(S)

FIG. 24