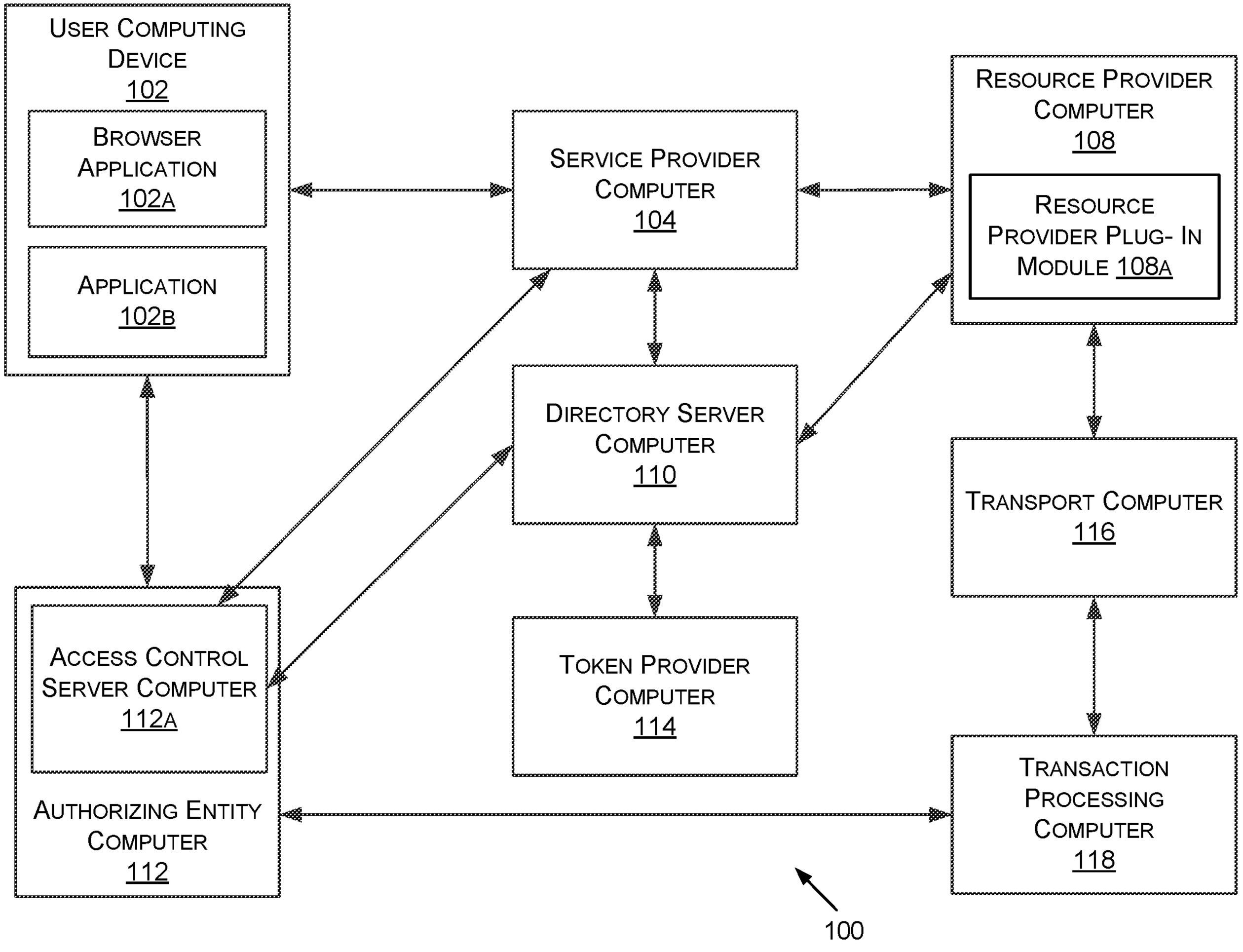

User Computing Device
102
Browser Application
102A
Application
102B
Service Provider Computer
104
Resource Provider Computer
108
Resource Provider Plug- In Module 108A
Directory Server Computer
110
Transport Computer
116
Access Control Server Computer
112A
Token Provider Computer
114
Transaction Processing Computer
118
Authorizing Entity Computer
112
100

FIG. 1

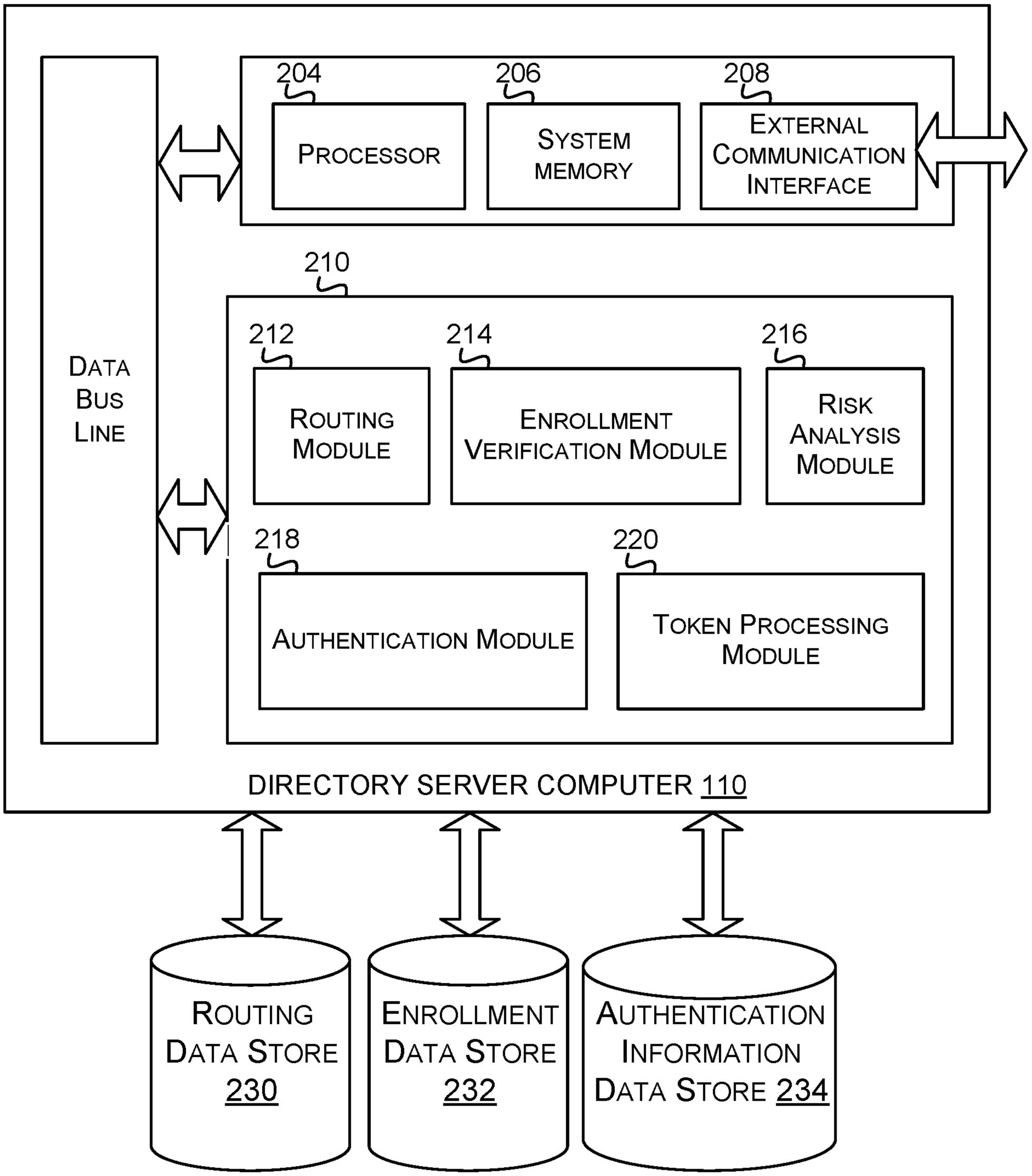

DIRECTORY SERVER COMPUTER 110
DATA BUS LINE
204
PROCESSOR
206
SYSTEM MEMORY
208
EXTERNAL COMMUNICATION INTERFACE
210
212
ROUTING MODULE
214
ENROLLMENT VERIFICATION MODULE
216
RISK ANALYSIS MODULE
218
AUTHENTICATION MODULE
220
TOKEN PROCESSING MODULE
ROUTING DATA STORE 230
ENROLLMENT DATA STORE 232
AUTHENTICATION INFORMATION DATA STORE 234
200

FIG. 2

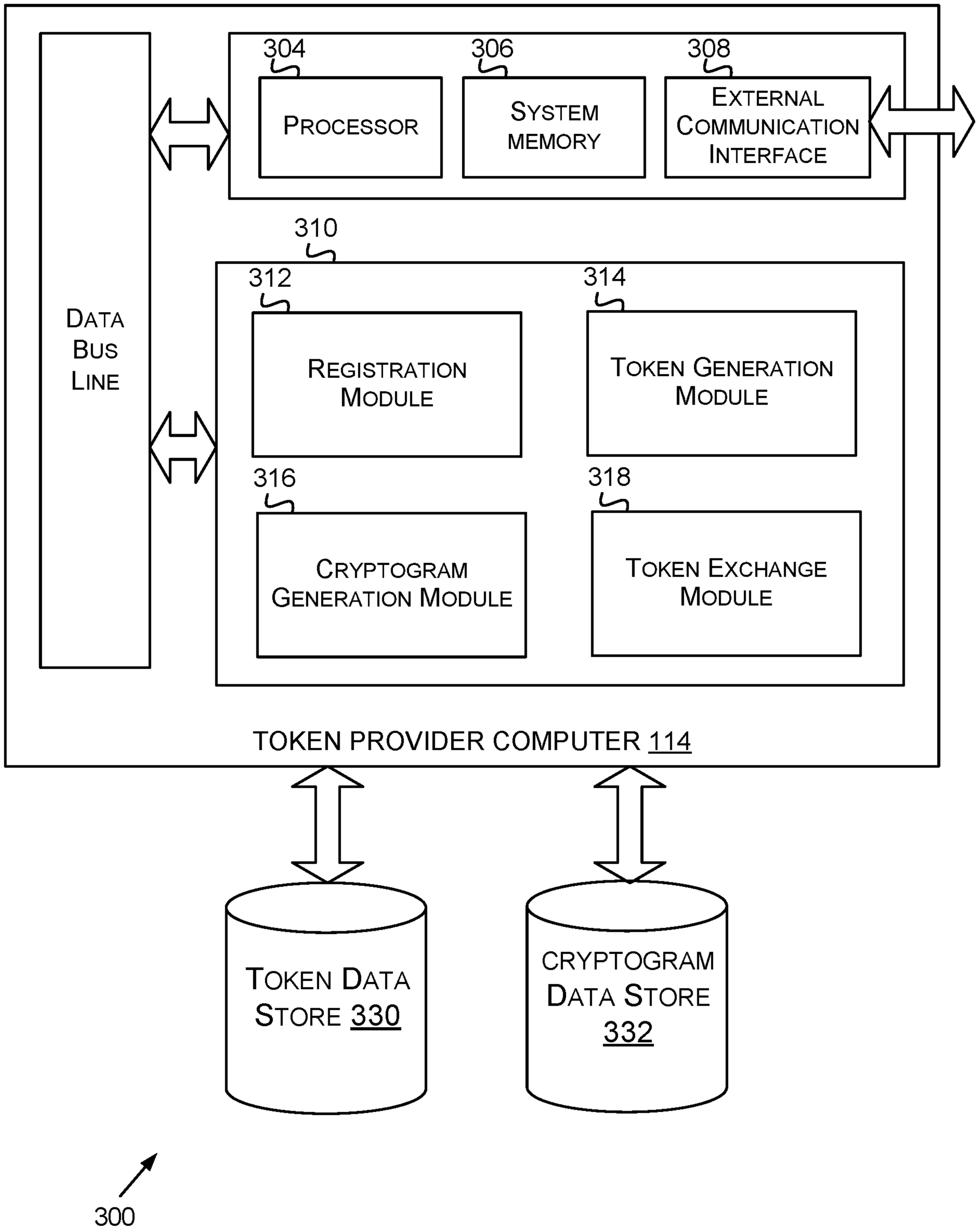

304
306
308
PROCESSOR
SYSTEM MEMORY
EXTERNAL COMMUNICATION INTERFACE
310
312
314
DATA BUS LINE
REGISTRATION MODULE
TOKEN GENERATION MODULE
316
318
CRYPTOGRAM GENERATION MODULE
TOKEN EXCHANGE MODULE
TOKEN PROVIDER COMPUTER 114
TOKEN DATA STORE 330
CRYPTOGRAM DATA STORE 332
300

FIG. 3

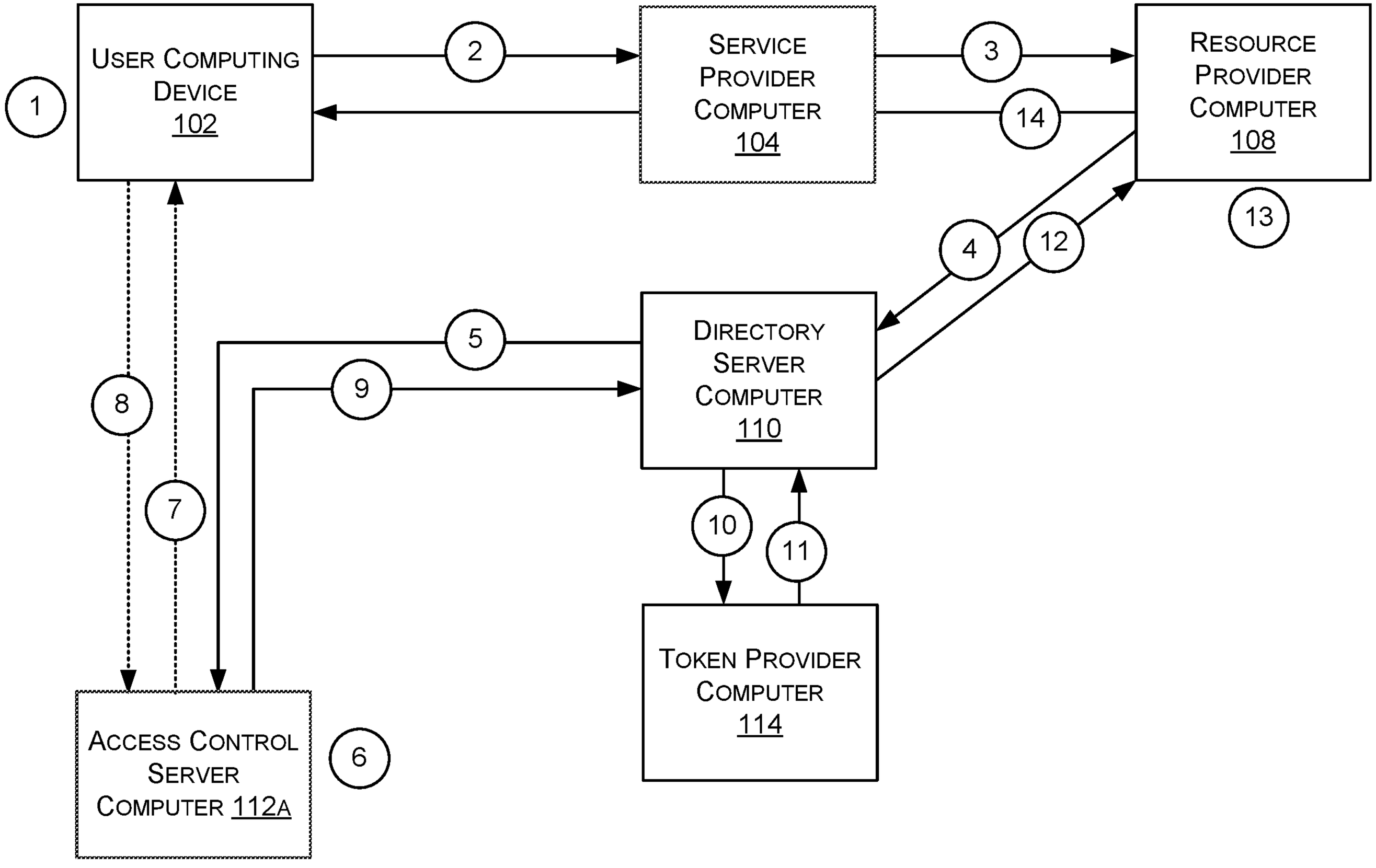

User Computing Device 102
Service Provider Computer 104
Resource Provider Computer 108
Directory Server Computer 110
Token Provider Computer 114
Access Control Server Computer 112A
1
2
3
4
5
6
7
8
9
10
11
12
13
14
400

FIG. 4

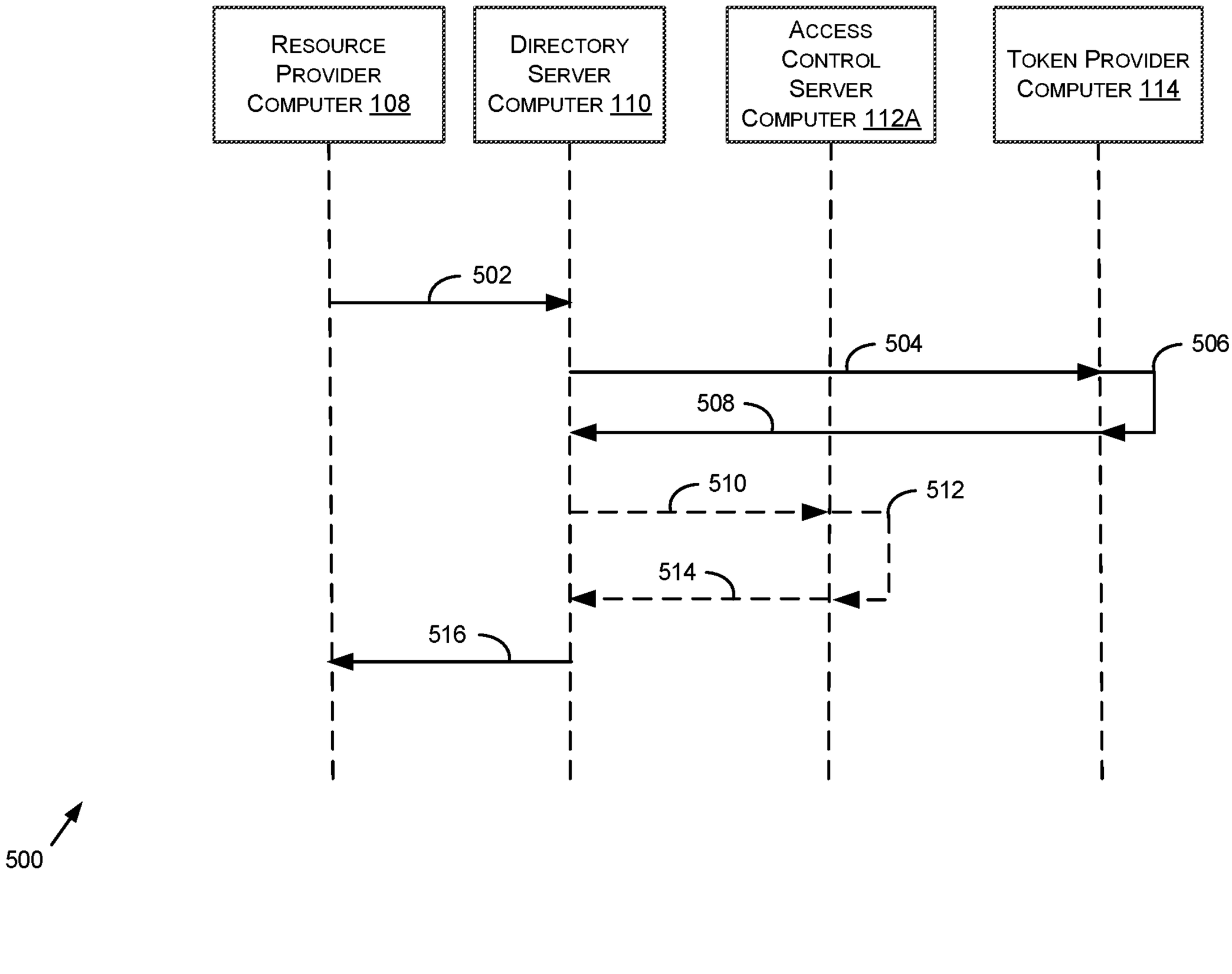

RESOURCE PROVIDER COMPUTER 108
DIRECTORY SERVER COMPUTER 110
ACCESS CONTROL SERVER COMPUTER 112A
TOKEN PROVIDER COMPUTER 114
502
504
506
508
510
512
514
516
500

FIG. 5

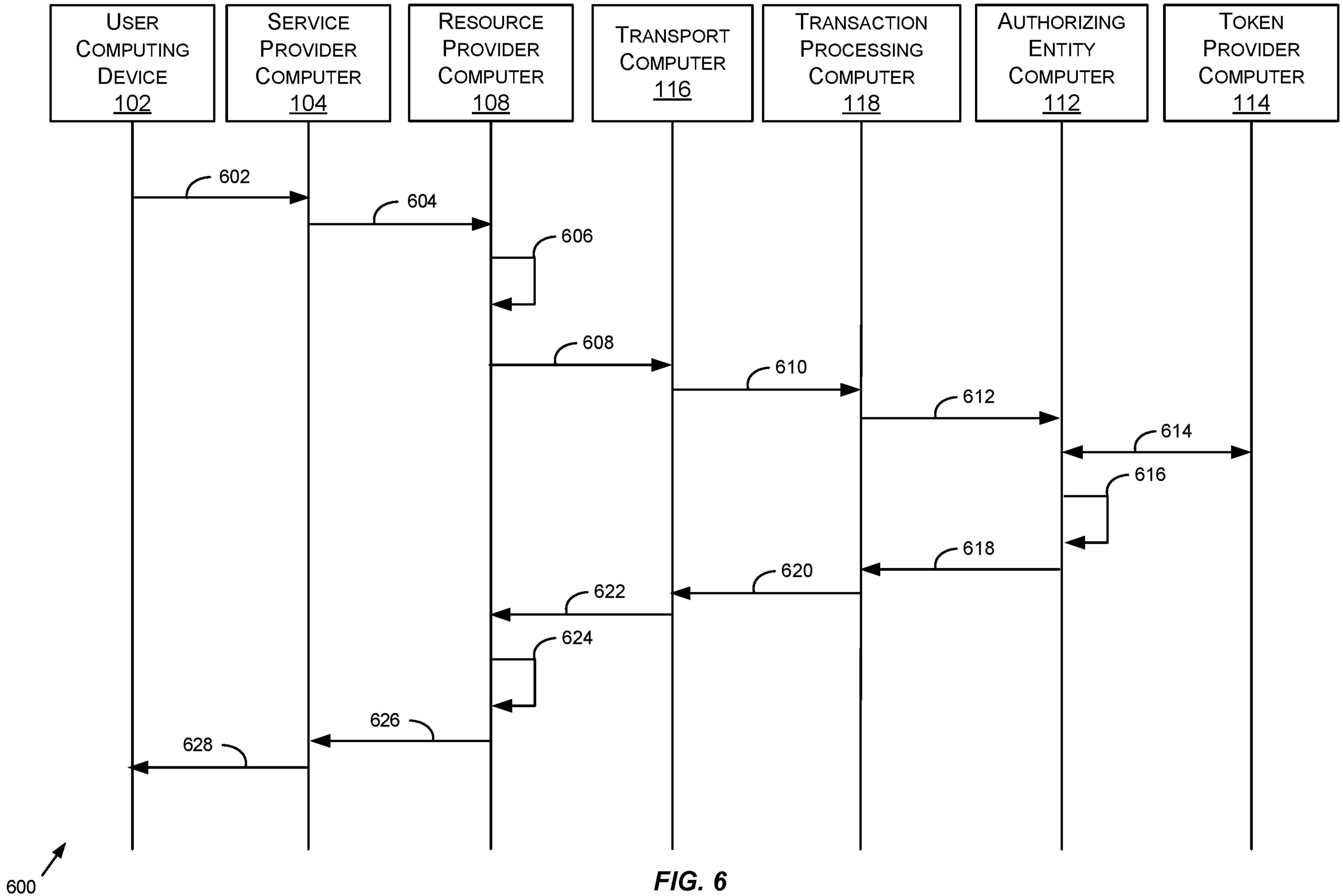

User Computing Device 102
Service Provider Computer 104
Resource Provider Computer 108
Transport Computer 116
Transaction Processing Computer 118
Authorizing Entity Computer 112
Token Provider Computer 114
602
604
606
608
610
612
614
616
618
620
622
624
626
628
600

FIG. 6