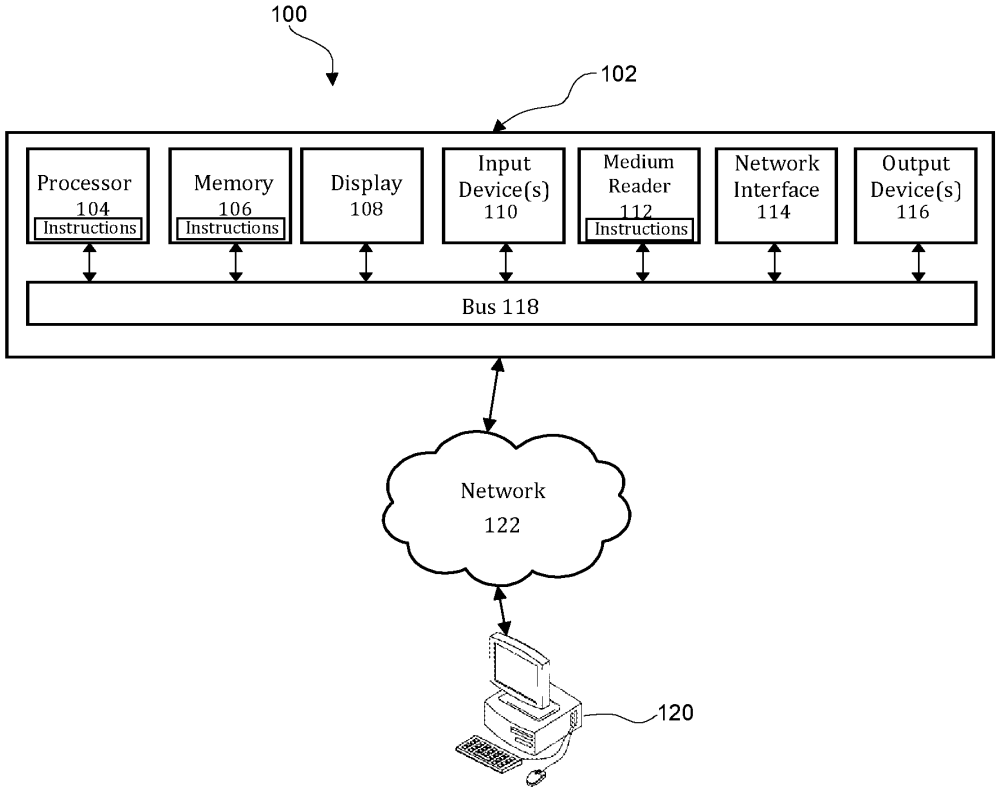
100
102
Processor
104
Instructions
Memory
106
Instructions
Display
108
Input
Device(s)
110
Medium
Reader
112
Instructions
Network
Interface
114
Output
Device(s)
116
Bus 118
Network
122
120

FIG. 1

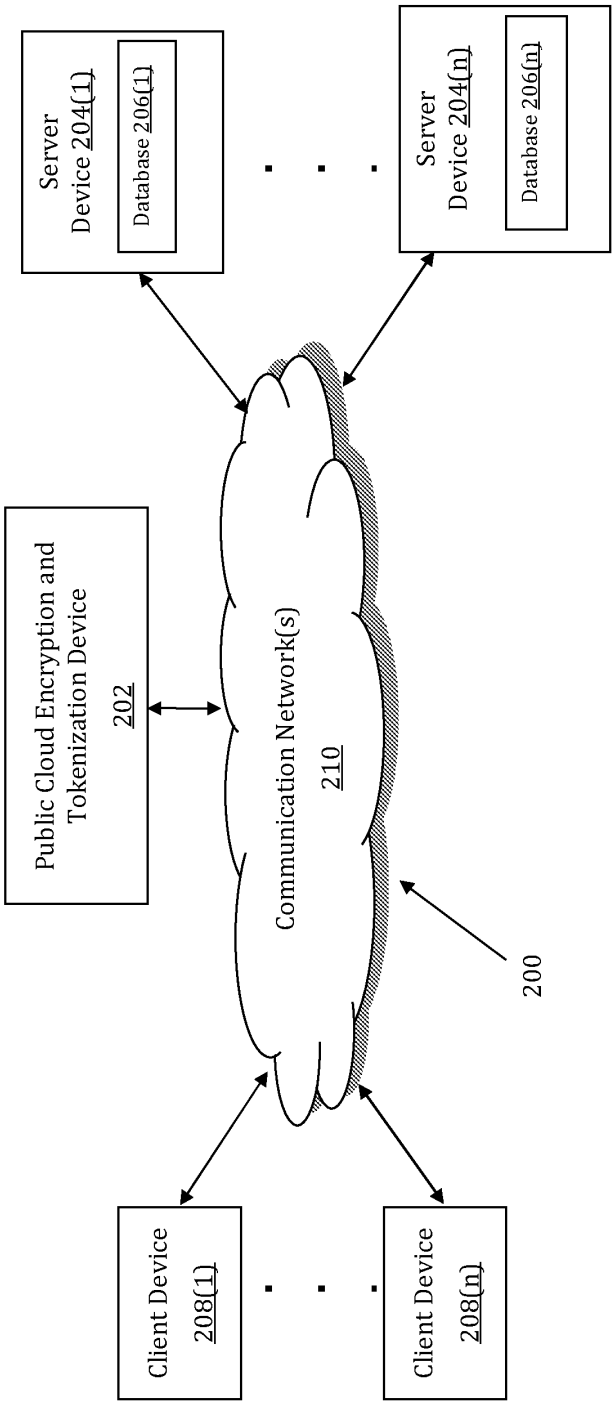
Server Device 204(1)
Database 206(1)
Server Device 204(n)
Database 206(n)
Public Cloud Encryption and Tokenization Device 202
Communication Network(s) 210
200
Client Device 208(1)
Client Device 208(n)

FIG. 2

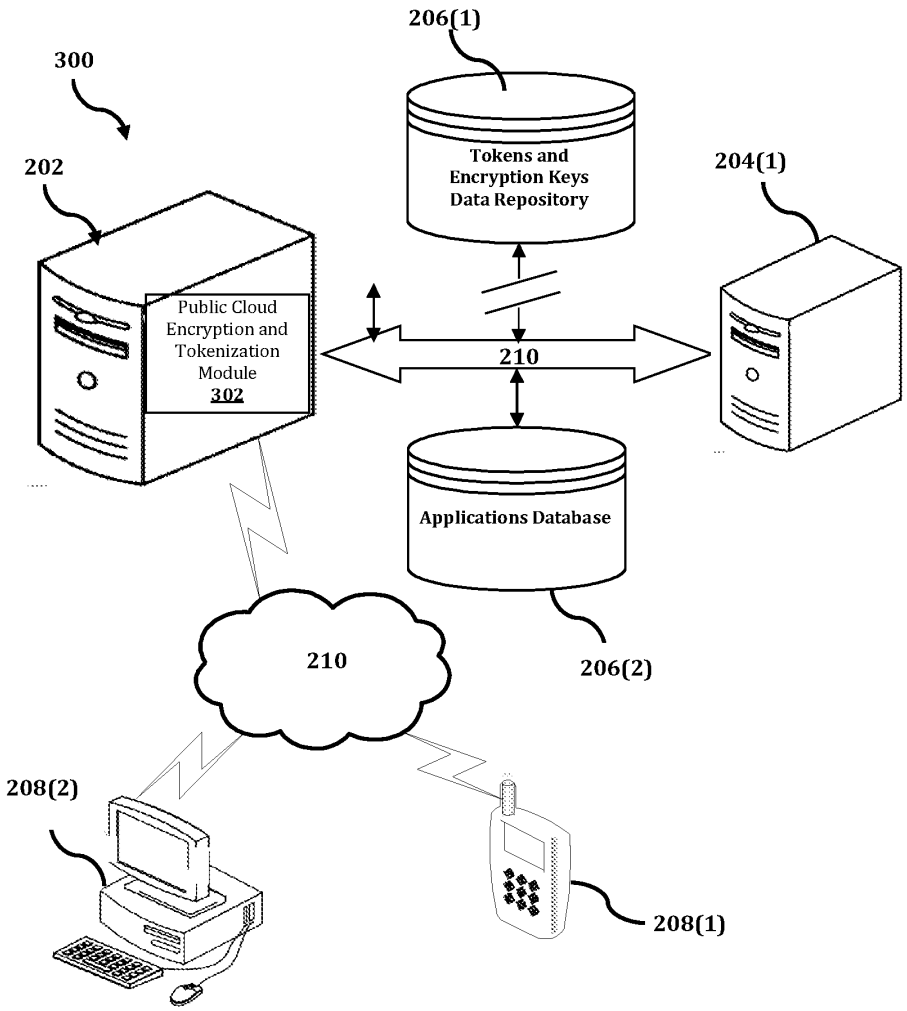
206(1)
300
Tokens and Encryption Keys Data Repository
202
204(1)
Public Cloud Encryption and Tokenization Module 302
210
Applications Database
206(2)
210
208(2)
208(1)

FIG. 3

400

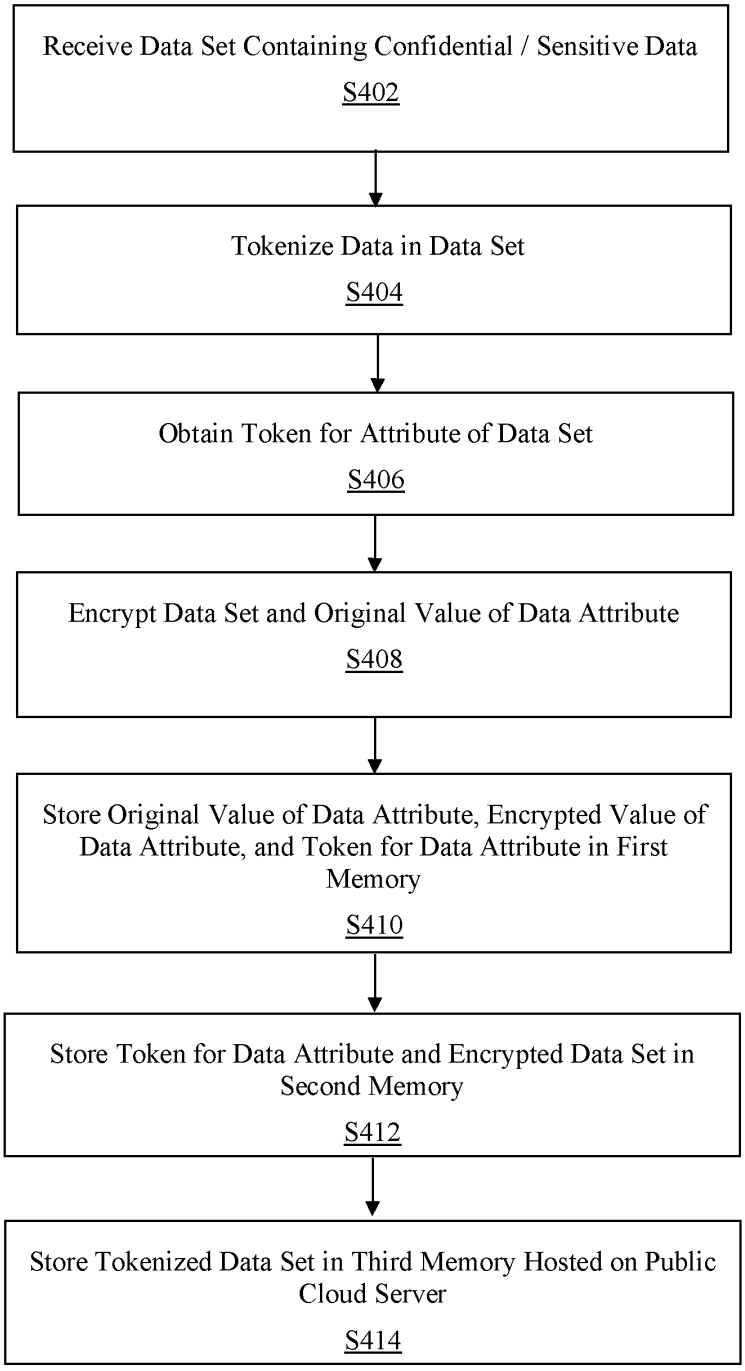
Receive Data Set Containing Confidential / Sensitive Data
S402
Tokenize Data in Data Set
S404
Obtain Token for Attribute of Data Set
S406
Encrypt Data Set and Original Value of Data Attribute
S408
Store Original Value of Data Attribute, Encrypted Value of Data Attribute, and Token for Data Attribute in First Memory
S410
Store Token for Data Attribute and Encrypted Data Set in Second Memory
S412
Store Tokenized Data Set in Third Memory Hosted on Public Cloud Server
S414

FIG. 4

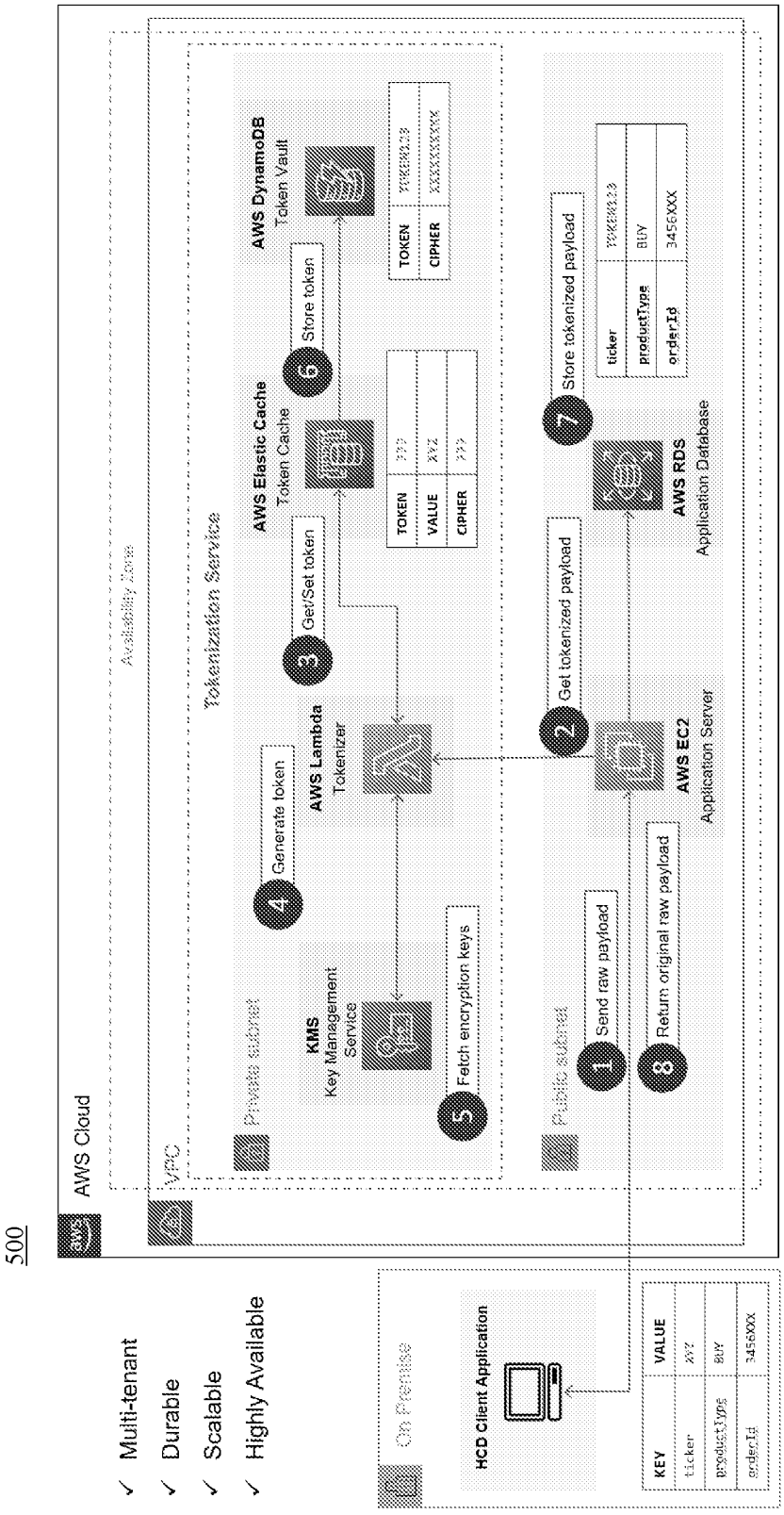
500
AWS Cloud
Availability Zone
VPC
Tokenization Service
Private subnet
Public subnet
KMS
Key Management Service
AWS Lambda
Tokenizer
AWS Elastic Cache
Token Cache
AWS DynamoDB
Token Vault
AWS EC2
Application Server
AWS RDS
Application Database
On Premise
HCD Client Application
1 Send raw payload
2 Get tokenized payload
3 Get/Set token
4 Generate token
5 Fetch encryption keys
6 Store token
7 Store tokenized payload
8 Return original raw payload
KEY
VALUE
ticker
productType
orderId
TOKEN
VALUE
CIPHER
TOKEN
CIPHER
ticker
productType
orderId
✓ Multi-tenant
✓ Durable
✓ Scalable
✓ Highly Available

FIG. 5

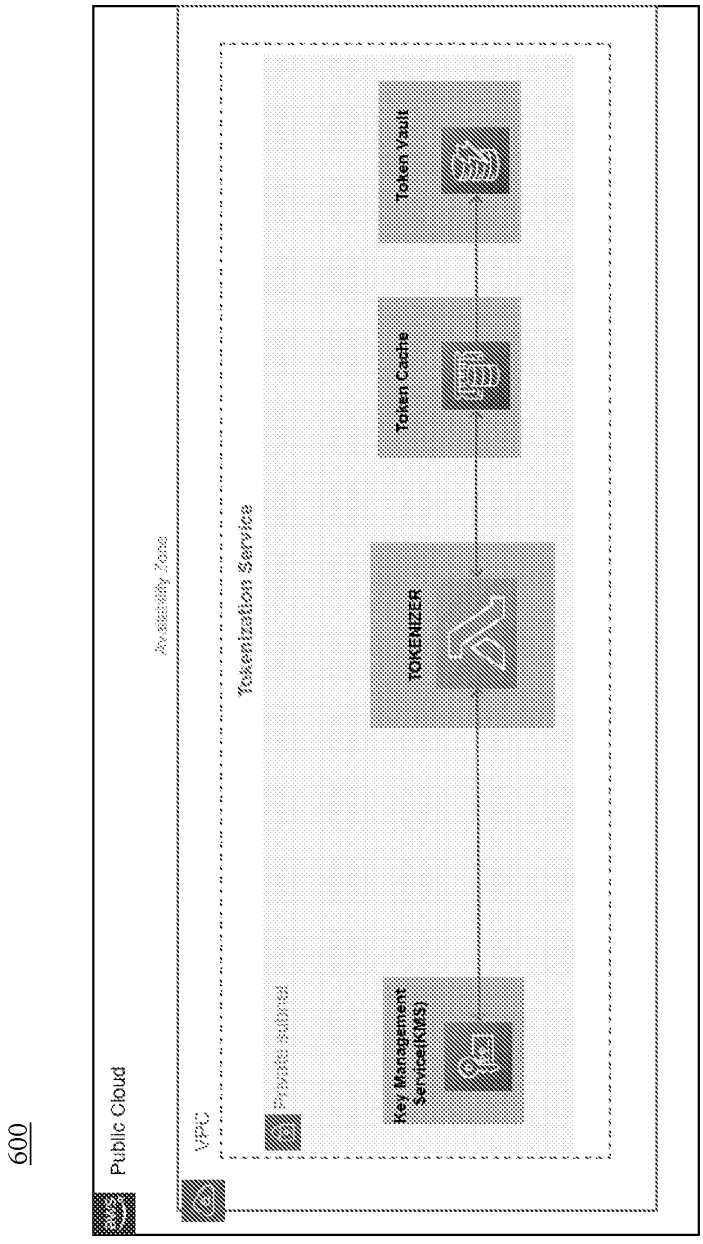
600
Public Cloud
Availability Zone
VPC
Private subnet
Tokenization Service
Key Management Service(KMS)
TOKENIZER
Token Cache
Token Vault

FIG. 6