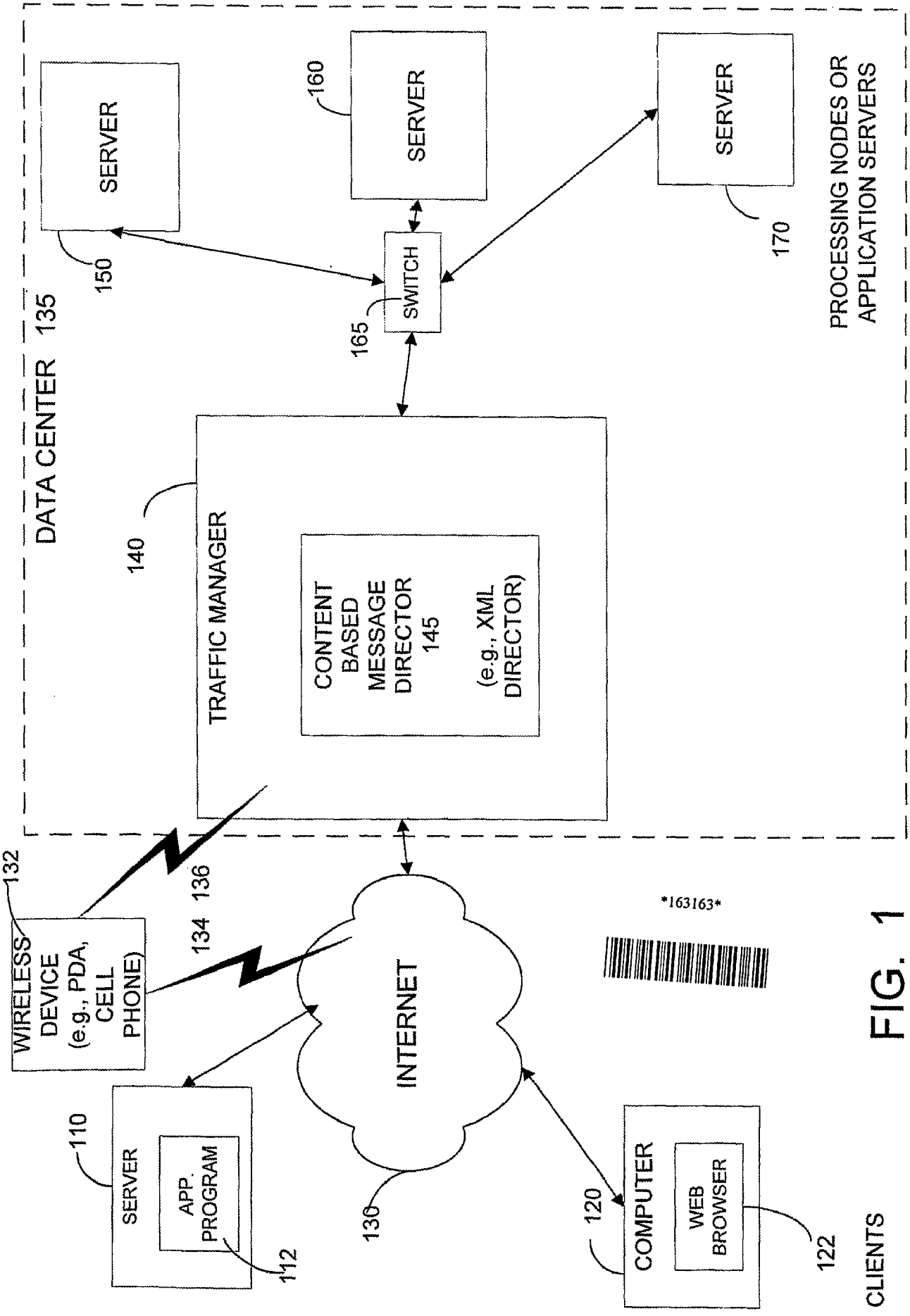

DATA CENTER 135
SERVER
150
SERVER
160
SERVER
170
PROCESSING NODES OR APPLICATION SERVERS
SWITCH
165
TRAFFIC MANAGER
140
CONTENT BASED MESSAGE DIRECTOR 145
(e.g., XML DIRECTOR)
WIRELESS DEVICE (e.g., PDA, CELL PHONE)
132
134
136
INTERNET
163163
SERVER
APP. PROGRAM
110
112
130
COMPUTER
WEB BROWSER
120
122
CLIENTS

FIG. 1

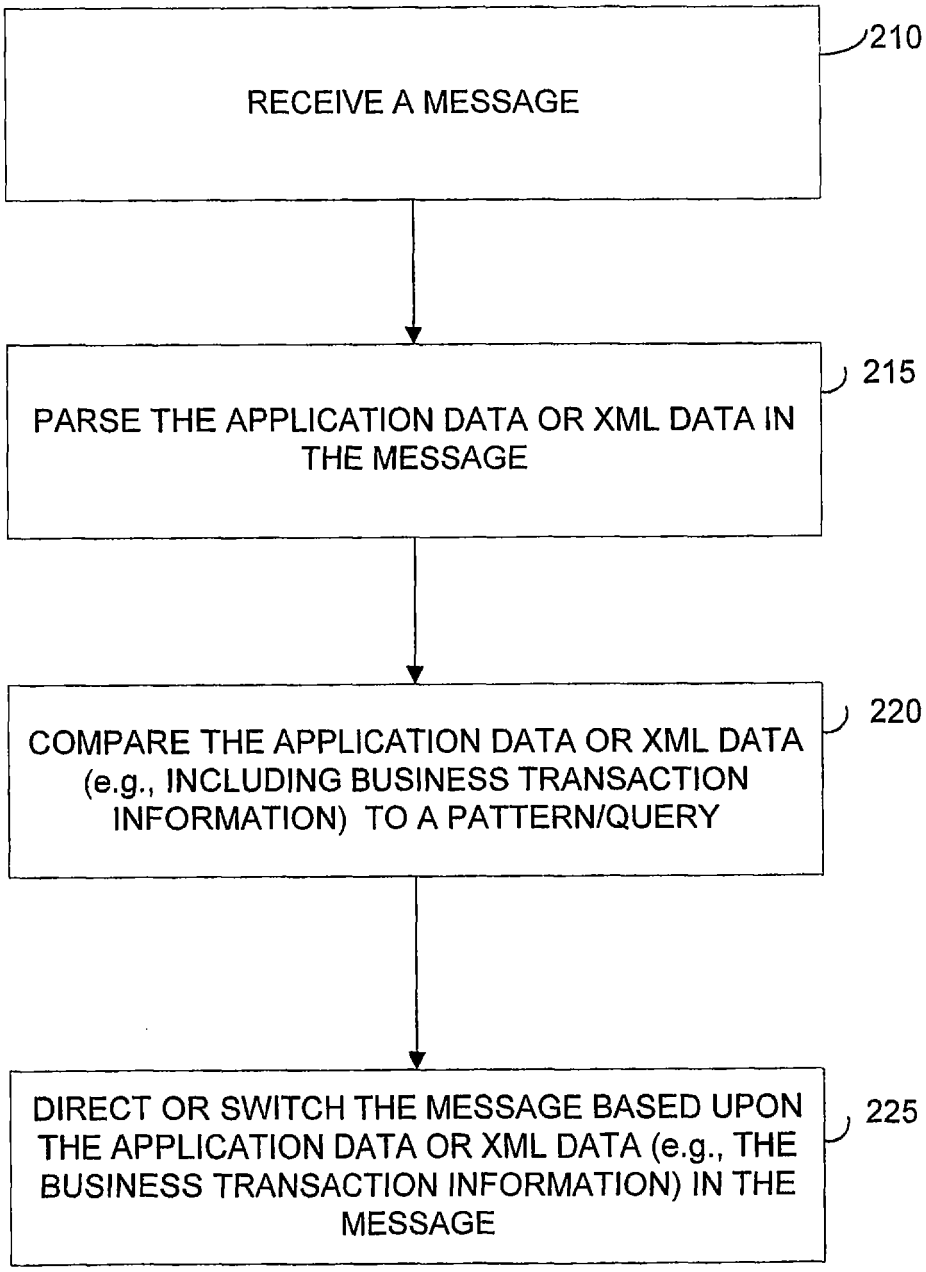

RECEIVE A MESSAGE
210
PARSE THE APPLICATION DATA OR XML DATA IN THE MESSAGE
215
COMPARE THE APPLICATION DATA OR XML DATA (e.g., INCLUDING BUSINESS TRANSACTION INFORMATION) TO A PATTERN/QUERY
220
DIRECT OR SWITCH THE MESSAGE BASED UPON THE APPLICATION DATA OR XML DATA (e.g., THE BUSINESS TRANSACTION INFORMATION) IN THE MESSAGE
225

FIG. 2

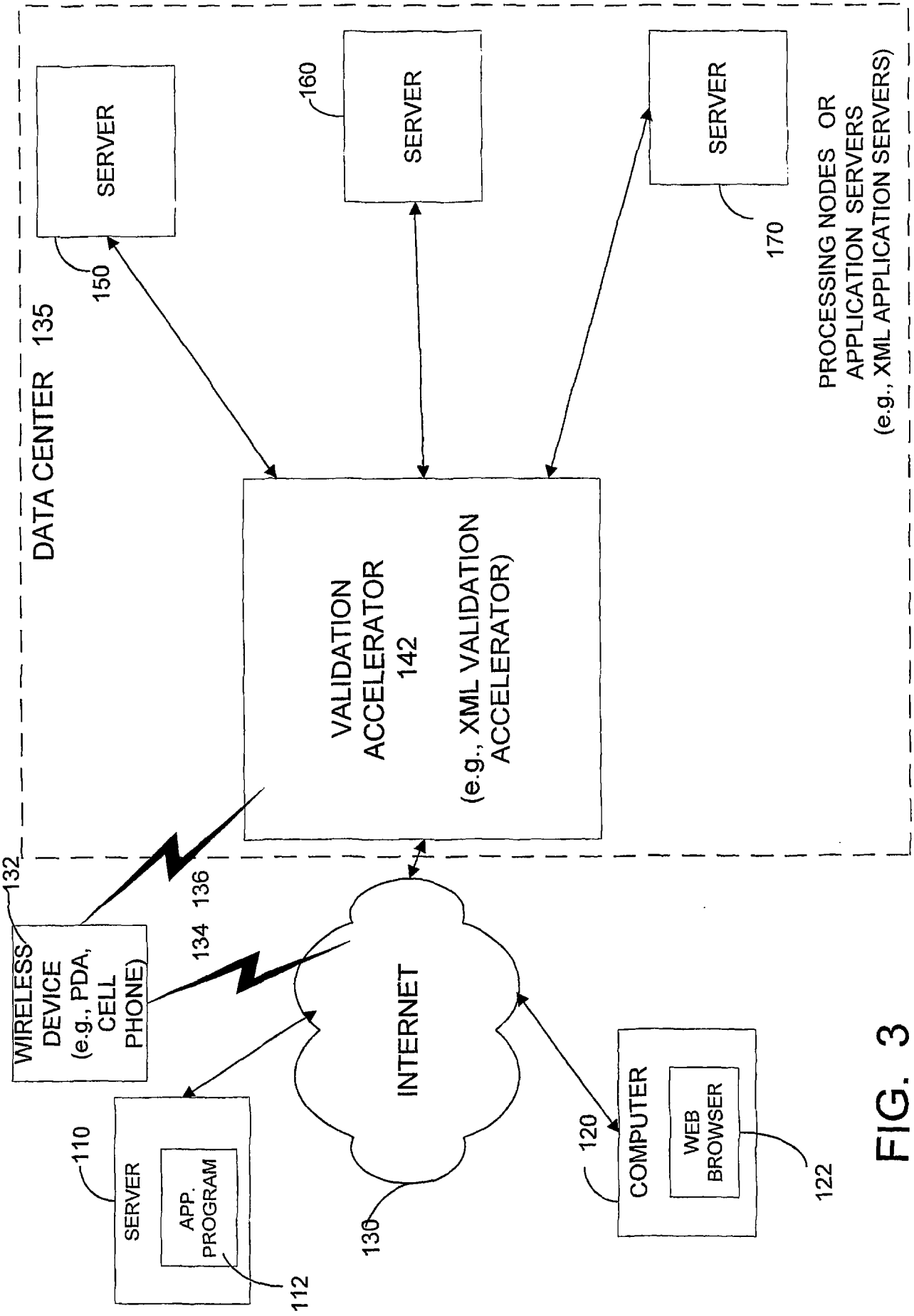

DATA CENTER 135
SERVER
150
160
SERVER
SERVER
170
PROCESSING NODES OR APPLICATION SERVERS (e.g., XML APPLICATION SERVERS)
VALIDATION ACCELERATOR 142 (e.g., XML VALIDATION ACCELERATOR)
132
WIRELESS DEVICE (e.g., PDA, CELL PHONE)
134
136
INTERNET
130
110
SERVER
APP. PROGRAM
112
120
COMPUTER
WEB BROWSER
122

FIG. 3

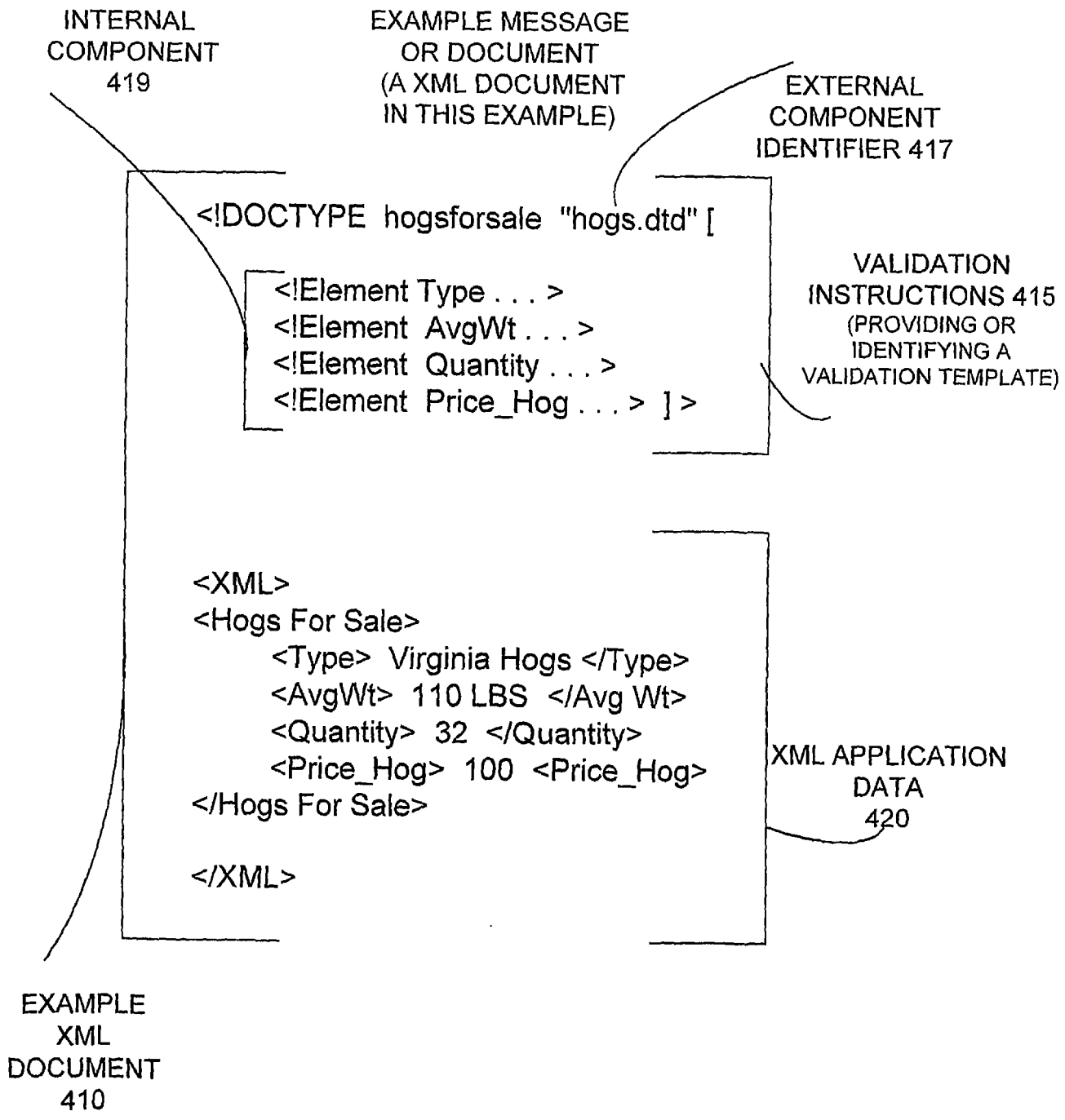

INTERNAL COMPONENT 419
EXAMPLE MESSAGE OR DOCUMENT (A XML DOCUMENT IN THIS EXAMPLE)
EXTERNAL COMPONENT IDENTIFIER 417
<!DOCTYPE hogsforsale "hogs.dtd" [
<!Element Type . . . >
<!Element AvgWt . . . >
<!Element Quantity . . . >
<!Element Price_Hog . . . >] >
VALIDATION INSTRUCTIONS 415 (PROVIDING OR IDENTIFYING A VALIDATION TEMPLATE)
<XML>
<Hogs For Sale>
<Type> Virginia Hogs </Type>
<AvgWt> 110 LBS </Avg Wt>
<Quantity> 32 </Quantity>
<Price_Hog> 100 <Price_Hog>
</Hogs For Sale>
</XML>
XML APPLICATION DATA 420
EXAMPLE XML DOCUMENT 410

FIG. 4

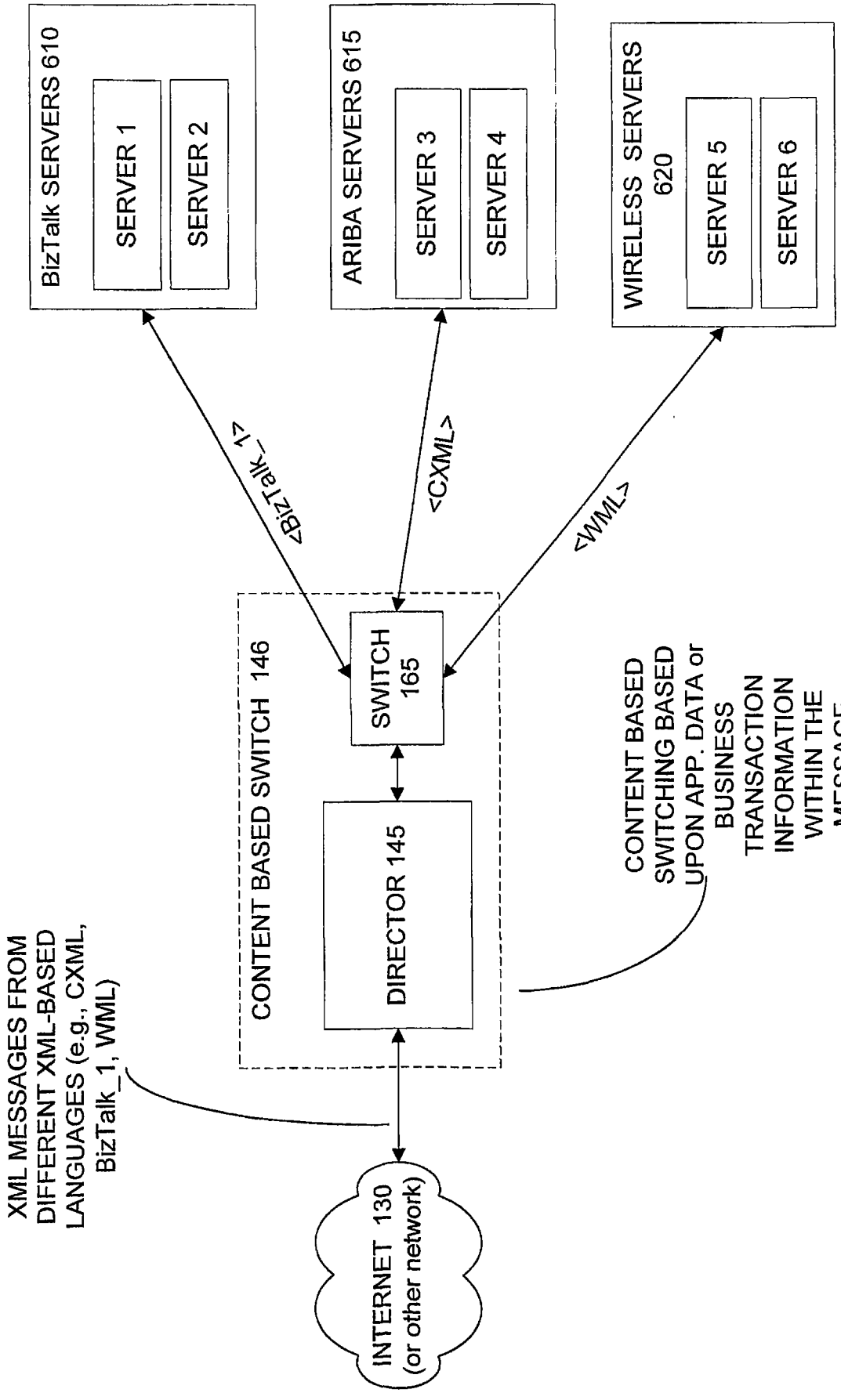

BizTalk SERVERS 610
SERVER 1
SERVER 2
ARIBA SERVERS 615
SERVER 3
SERVER 4
WIRELESS SERVERS 620
SERVER 5
SERVER 6
<BizTalk_1.7
<CXML>
<WML>
CONTENT BASED SWITCH 146
SWITCH 165
DIRECTOR 145
CONTENT BASED SWITCHING BASED UPON APP. DATA or BUSINESS TRANSACTION INFORMATION WITHIN THE MESSAGE
XML MESSAGES FROM DIFFERENT XML-BASED LANGUAGES (e.g., CXML, BizTalk_1, WML)
INTERNET 130 (or other network)

FIG. 5

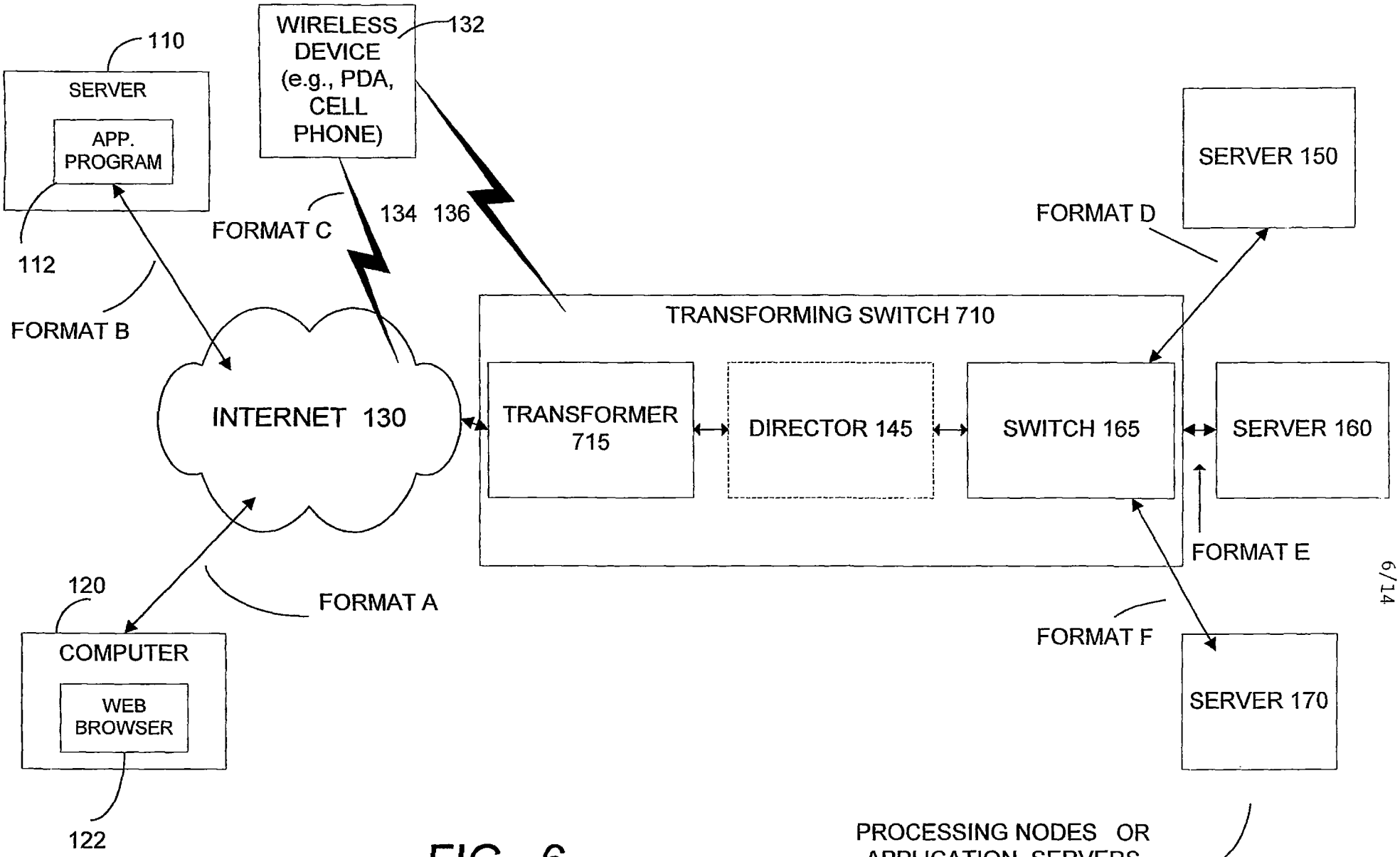

110
SERVER
APP. PROGRAM
112
FORMAT B
WIRELESS DEVICE (e.g., PDA, CELL PHONE)
132
FORMAT C
134
136
INTERNET 130
120
COMPUTER
WEB BROWSER
122
FORMAT A
TRANSFORMING SWITCH 710
TRANSFORMER 715
DIRECTOR 145
SWITCH 165
SERVER 150
FORMAT D
SERVER 160
FORMAT E
FORMAT F
SERVER 170
PROCESSING NODES OR APPLICATION SERVERS (e.g., XML APPLICATION SERVERS)

FIG. 6

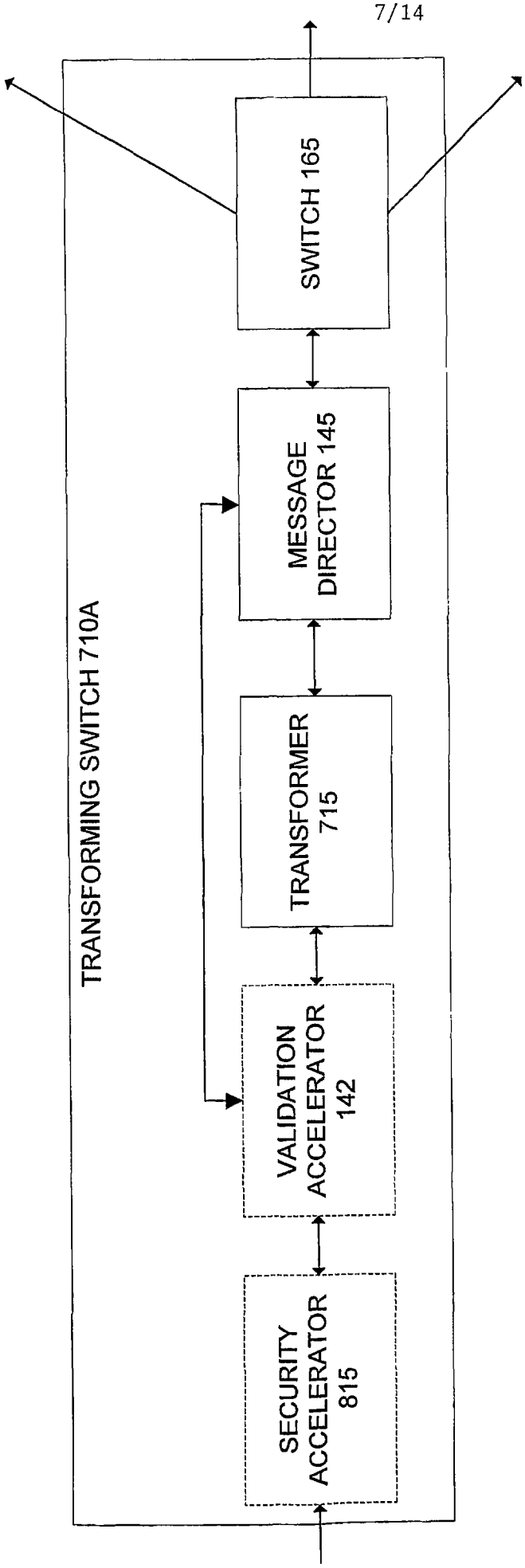

TRANSFORMING SWITCH 710A
SWITCH 165
MESSAGE DIRECTOR 145
TRANSFORMER 715
VALIDATION ACCELERATOR 142
SECURITY ACCELERATOR 815

FIG. 7

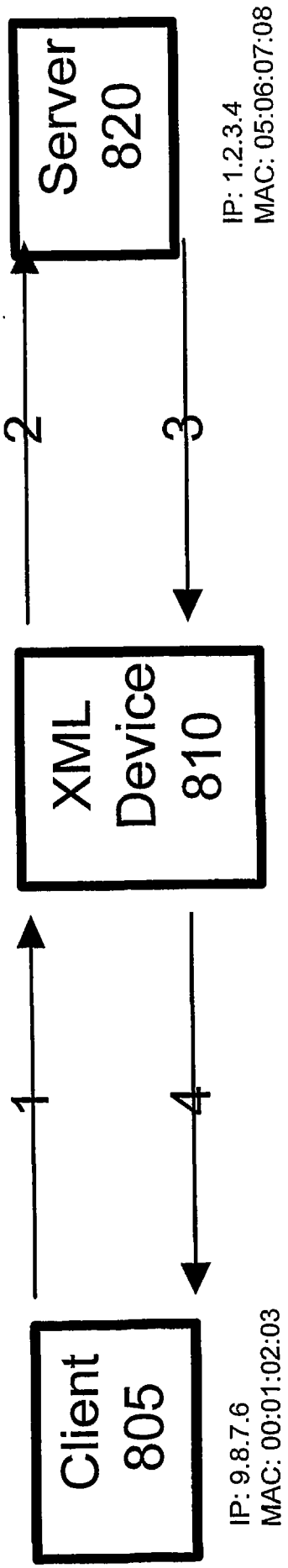

Server
820
IP: 1.2.3.4
MAC: 05:06:07:08
2
3
XML
Device
810
1
4
Client
805
IP: 9.8.7.6
MAC: 00:01:02:03

FIG. 8

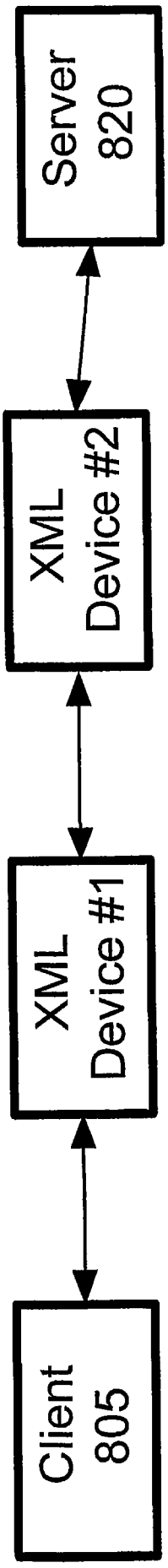

Server
820
XML
Device #2
XML
Device #1
Client
805

FIG. 9

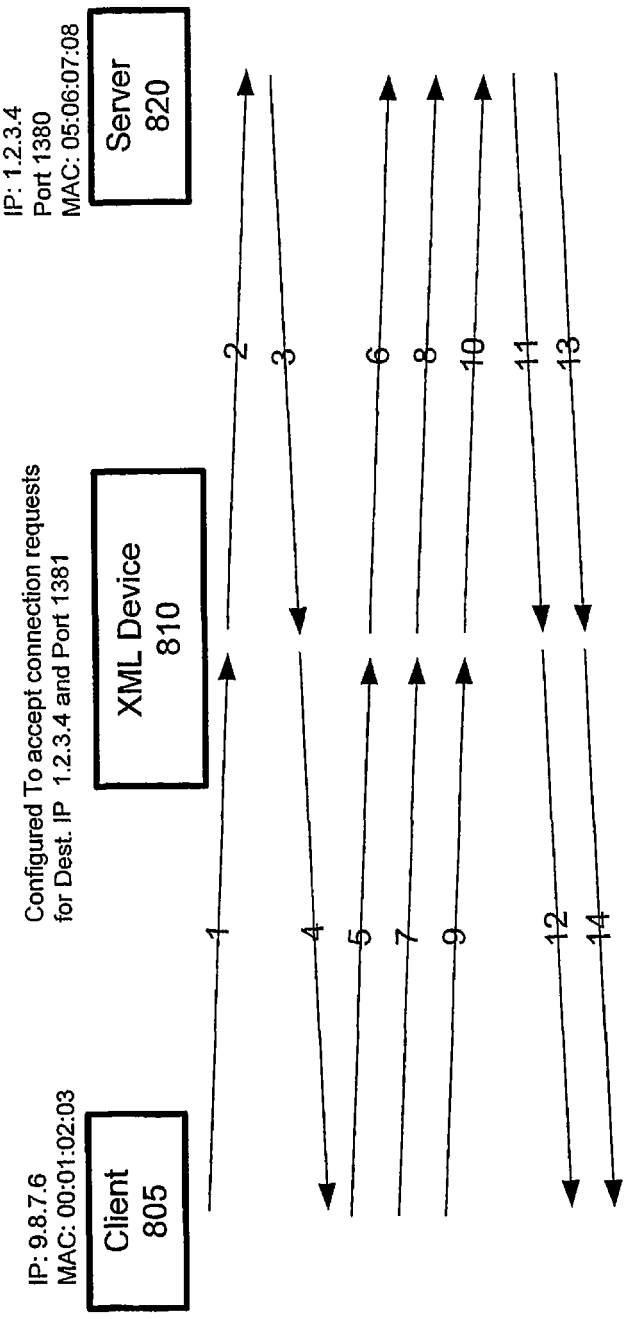

IP: 9.8.7.6
MAC: 00:01:02:03
Client
805
Configured To accept connection requests
for Dest. IP 1.2.3.4 and Port 1381
XML Device
810
IP: 1.2.3.4
Port 1380
MAC: 05:06:07:08
Server
820
1
2
3
4
5
6
7
8
9
10
11
12
13
14

FIG. 10

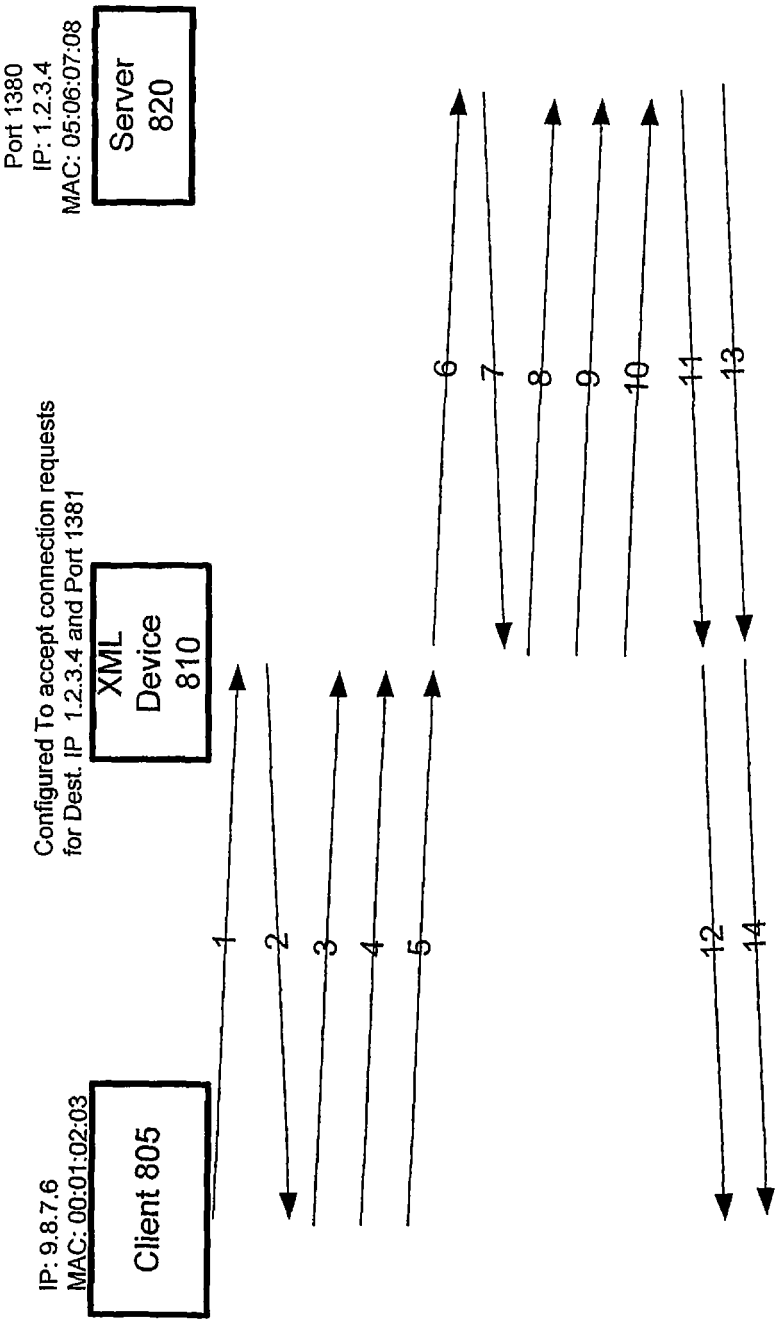

Client 805
IP: 9.8.7.6
MAC: 00:01:02:03
XML Device 810
Configured To accept connection requests for Dest. IP 1.2.3.4 and Port 1381
Server 820
Port 1380
IP: 1.2.3.4
MAC: 05:06:07:08
1
2
3
4
5
6
7
8
9
10
11
12
13
14

FIG. 11

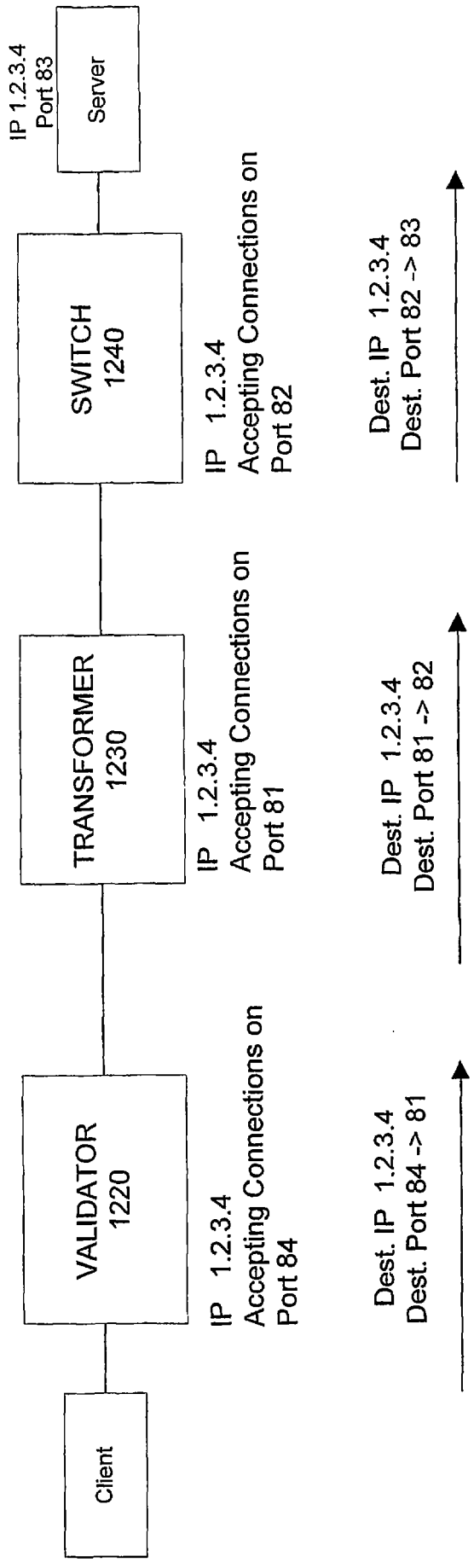

Client
VALIDATOR
1220
TRANSFORMER
1230
SWITCH
1240
Server
IP 1.2.3.4
Port 83
IP 1.2.3.4
Accepting Connections on
Port 84
IP 1.2.3.4
Accepting Connections on
Port 81
IP 1.2.3.4
Accepting Connections on
Port 82
Dest. IP 1.2.3.4
Dest. Port 84 -> 81
Dest. IP 1.2.3.4
Dest. Port 81 -> 82
Dest. IP 1.2.3.4
Dest. Port 82 -> 83

FIG. 12

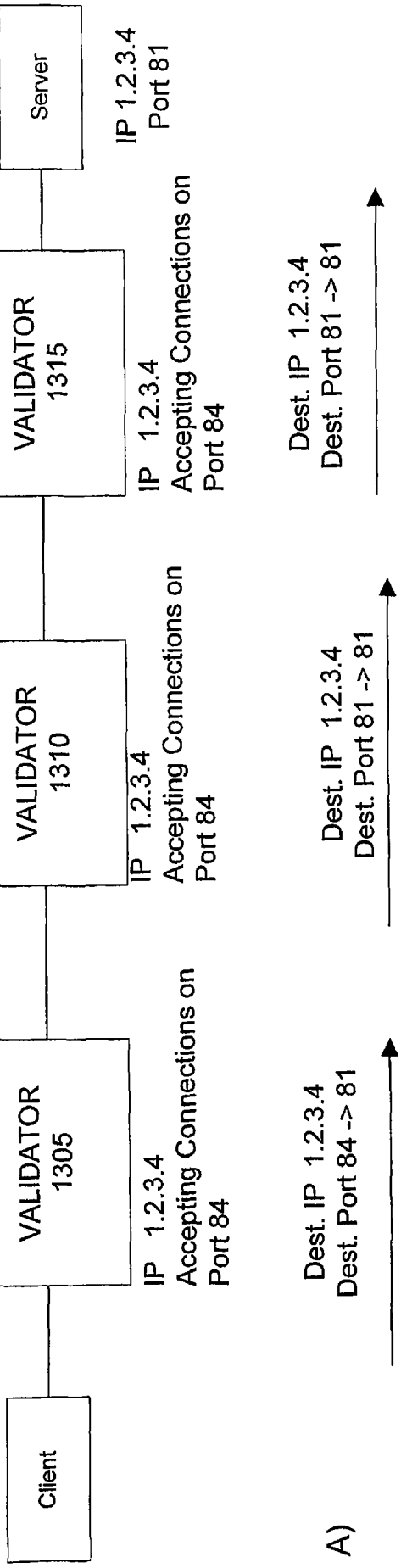

A)
Client
VALIDATOR 1305
IP 1.2.3.4 Accepting Connections on Port 84
VALIDATOR 1310
IP 1.2.3.4 Accepting Connections on Port 84
VALIDATOR 1315
IP 1.2.3.4 Accepting Connections on Port 84
Server
IP 1.2.3.4 Port 81
Dest. IP 1.2.3.4 Dest. Port 84 -> 81
Dest. IP 1.2.3.4 Dest. Port 81 -> 81
Dest. IP 1.2.3.4 Dest. Port 81 -> 81

FIG. 13

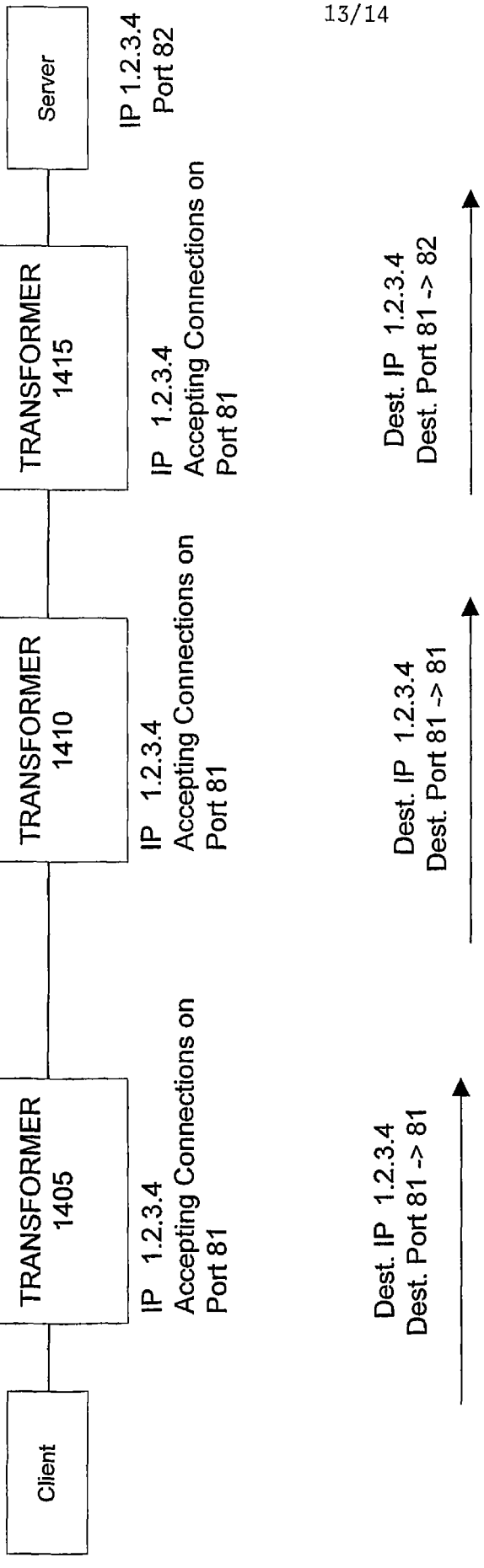

Client
TRANSFORMER 1405
TRANSFORMER 1410
TRANSFORMER 1415
Server
IP 1.2.3.4 Accepting Connections on Port 81
IP 1.2.3.4 Accepting Connections on Port 81
IP 1.2.3.4 Port 82
Dest. IP 1.2.3.4 Dest. Port 81 -> 81
Dest. IP 1.2.3.4 Dest. Port 81 -> 81
Dest. IP 1.2.3.4 Dest. Port 81 -> 82

FIG. 14

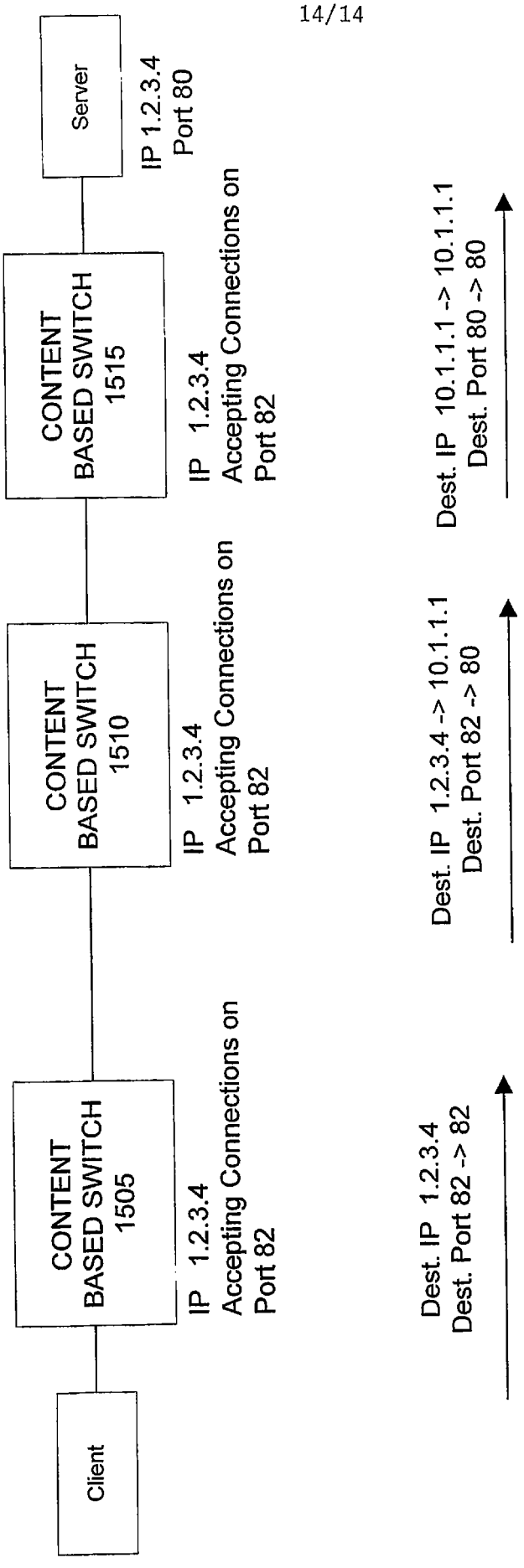

Client
CONTENT BASED SWITCH 1505
CONTENT BASED SWITCH 1510
CONTENT BASED SWITCH 1515
Server
IP 1.2.3.4 Accepting Connections on Port 82
IP 1.2.3.4 Accepting Connections on Port 82
IP 1.2.3.4 Accepting Connections on Port 82
IP 1.2.3.4 Port 80
Dest. IP 1.2.3.4 Dest. Port 82 -> 82
Dest. IP 1.2.3.4 -> 10.1.1.1 Dest. Port 82 -> 80
Dest. IP 10.1.1.1 -> 10.1.1.1 Dest. Port 80 -> 80

FIG. 15