

Fig.1

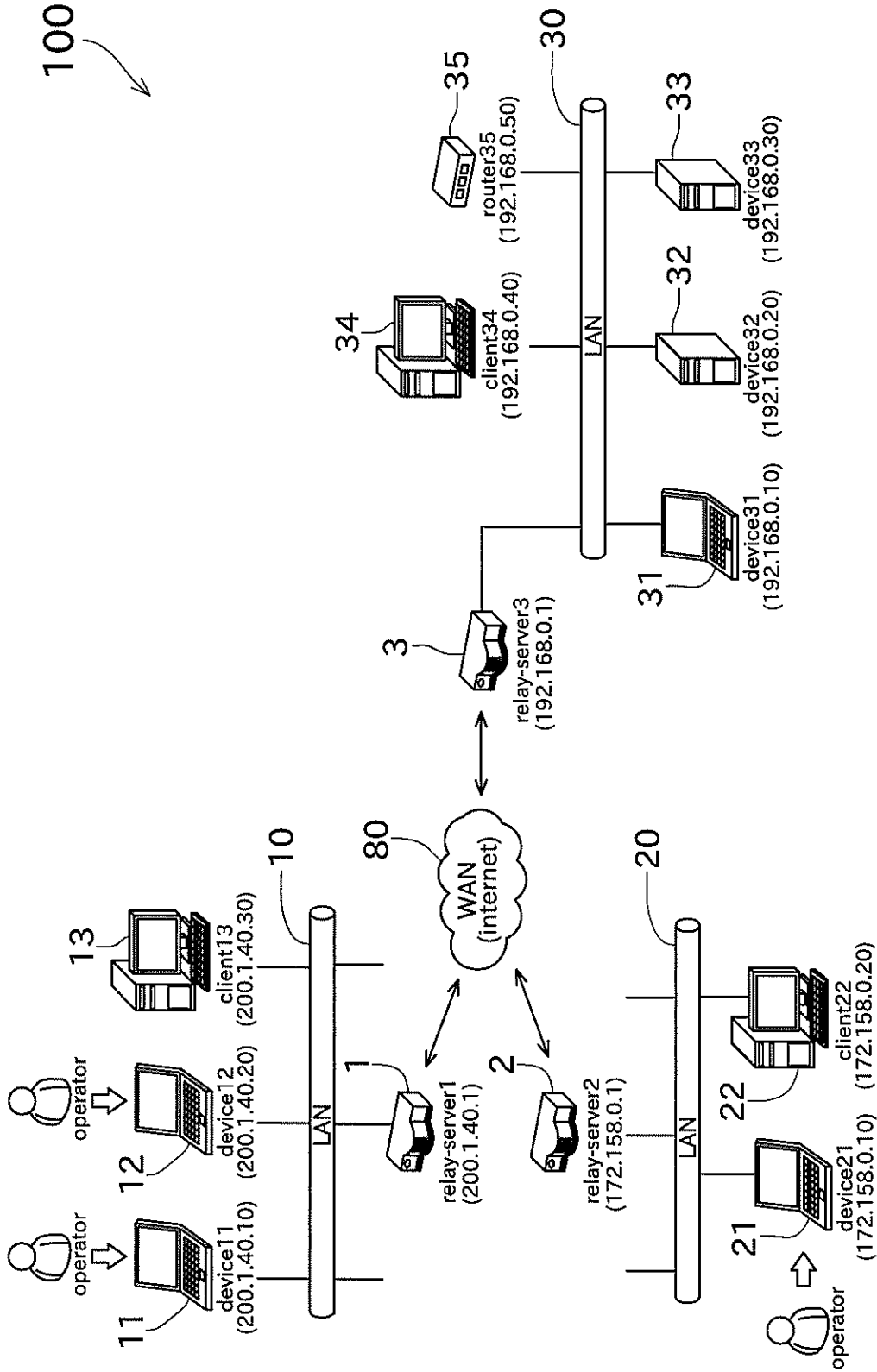


Fig.2

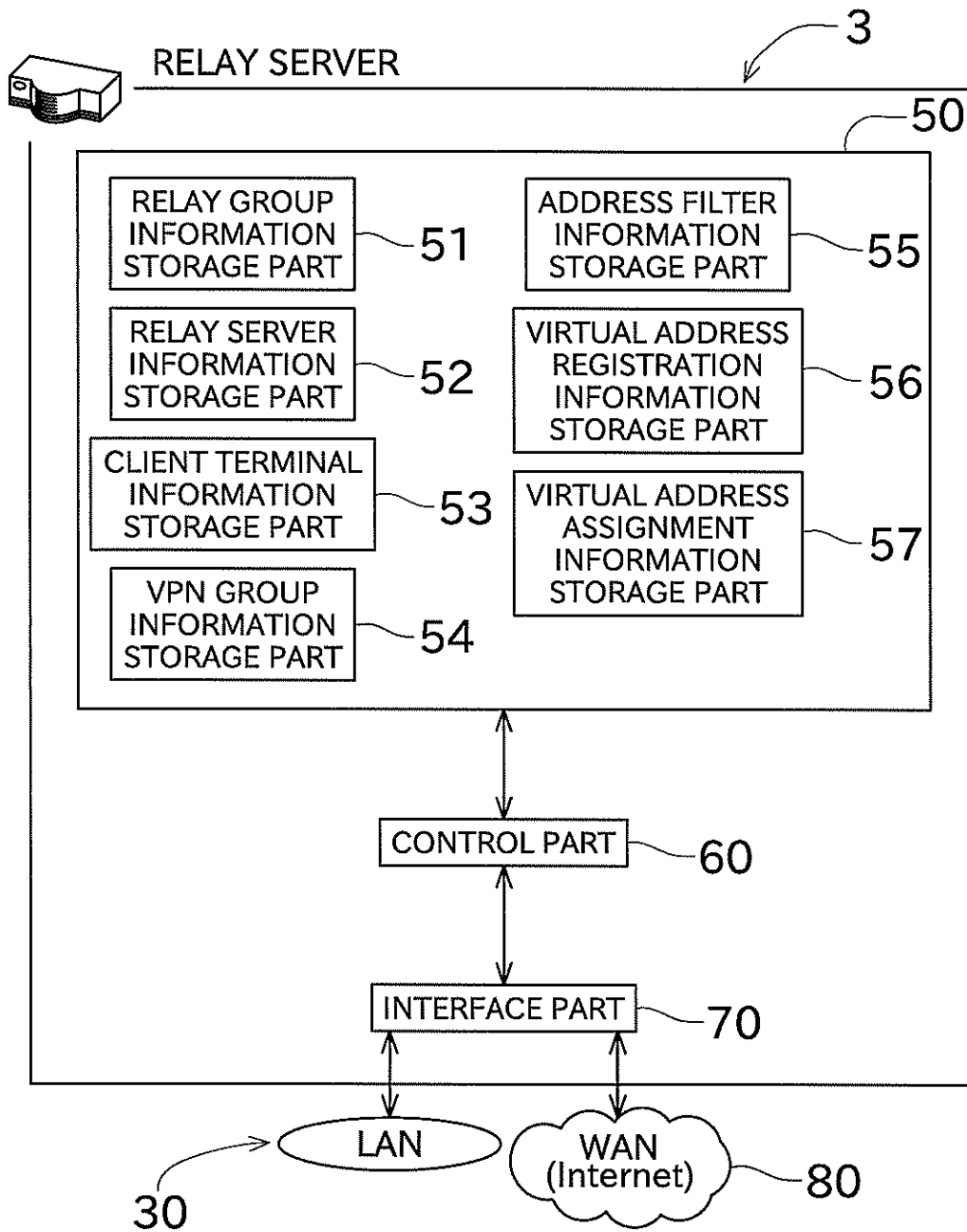


Fig.3

```

<?xml version="1.0" encoding="UTF-8" ?>
-<root>
  -<group id="group-a@relaysystem.net"
    lastmod="20090402133100" name="GROUP A">
    <site id="server1@relaysystem.net" rel="allow"/>
    <site id="server2@relaysystem.net" rel="allow"/>
    <site id="server3@relaysystem.net" rel="allow"/>
  </group>
-</root>

```

} 511  
 } 512

Fig.4

```

<?xml version="1.0" encoding="UTF-8" ?>
-<root>
  -<site id="server1@relaysystem.net"           } 521
    name="RELAY SERVER 1" stat="active">
      -<node group="group-a@relaysystem.net"
        id="client13@server1.net"
        name="CLIENT 13" site="server1@relaysystem.net"/> } 522
      </node>
    </site>
  -<site id="server2@relaysystem.net"           } 521
    name="RELAY SERVER 2" stat="active">
      -<node group="group-a@relaysystem.net"
        id="client22@server2.net"
        name="CLIENT 22" site="server2@relaysystem.net"/> } 522
      </node>
    </site>
  -<site id="server3@relaysystem.net"           } 521
    name="RELAY SERVER 3" stat="active">
      -<node group="group-a@relaysystem.net"
        id="client34@server3.net"
        name="CLIENT 34" site="server3@relaysystem.net"/> } 522
      </node>
    </site>
</root>

```

Fig.5

(a)

```
<?xml version="1.0" encoding="UTF-8" ?>
-<root>
  -<node addr="200.1.40.30"
    group="group-a@relaysystem.net"
    id="client13@server1.net"
    name="CLIENT 13" pass="abc" port="5070">
  </node>
</root>
```

(b)

```
<?xml version="1.0" encoding="UTF-8" ?>
-<root>
  -<node addr="172.158.0.20"
    group="group-a@relaysystem.net"
    id="client22@server2.net"
    name="CLIENT 22" pass="abc" port="5070">
  </node>
</root>
```

(c)

```
<?xml version="1.0" encoding="UTF-8" ?>
-<root>
  -<node addr="192.168.0.40"
    group="group-a@relaysystem.net"
    id="client34@server3.net"
    name="CLIENT 34" pass="abc" port="5070">
  </node>
</root>
```

Fig.6

```
<?xml version="1.0" encoding="UTF-8"?>
-<root>
  -<vnet group="group-a@relaysystem.net"
    id="vpn-group-1@relaysystem.net"
    lastmod="20090410162500" name="VPN-GROUP 1">
    <rp id="server1@relaysystem.net"/>
    <rp id="server3@relaysystem.net"/>
    <ssn sp="server3@relaysystem.net"
      ep="server1@relaysystem.net"/>
  </vnet>
</root>
```

} 541  
 } 542  
 } 543

Fig.7

(a)

| ADDRESS FILTER INFORMATION |                 |
|----------------------------|-----------------|
| ROUTING OBJECT ADDRESS     | NAME            |
| 200.1.40.10                | OPERATION PC 11 |
| 200.1.40.20                | OPERATION PC 12 |

(b)

| ADDRESS FILTER INFORMATION |                 |
|----------------------------|-----------------|
| ROUTING OBJECT ADDRESS     | NAME            |
| 172.158.0.10               | OPERATION PC 21 |

(c)

| ADDRESS FILTER INFORMATION |                    |
|----------------------------|--------------------|
| ROUTING OBJECT ADDRESS     | NAME               |
| 192.168.0.10               | OBJECT TERMINAL 31 |
| 192.168.0.20               | OBJECT TERMINAL 32 |
| 192.168.0.30               | OBJECT TERMINAL 33 |

Fig.8

| TERMINAL ID OF ROUTING APPARATUS | ADDRESS FILTER INFORMATION |                    |
|----------------------------------|----------------------------|--------------------|
|                                  | ROUTING OBJECT ADDRESS     | NAME               |
| server1@relaysystem.net          | 200.1.40.10                | OPERATION PC 11    |
|                                  | 200.1.40.20                | OPERATION PC 12    |
| server3@relaysystem.net          | 192.168.0.10               | OBJECT TERMINAL 31 |
|                                  | 192.168.0.20               | OBJECT TERMINAL 32 |
|                                  | 192.168.0.30               | OBJECT TERMINAL 33 |

SECOND ROUTING OBJECT ADDRESS

FIRST ROUTING OBJECT ADDRESS

Fig.9

| VIRTUAL ADDRESS REGISTRATION INFORMATION |                 |
|------------------------------------------|-----------------|
|                                          | 150.100.10.0/24 |
|                                          | 150.100.11.0/24 |

Fig.10

| VIRTUAL ADDRESS ASSIGNMENT INFORMATION |                |                 |
|----------------------------------------|----------------|-----------------|
| NAME                                   | ACTUAL ADDRESS | VIRTUAL ADDRESS |
| OPERATION PC 11                        | 200.1.40.10    | 150.100.10.1    |
| OPERATION PC 12                        | 200.1.40.20    | 150.100.10.2    |

Fig.11

| GATEWAY TABLE                 |                                 |
|-------------------------------|---------------------------------|
| DESTINATION ADDRESS OF PACKET | GATEWAY                         |
| 150.100.10.0/24               | RELAY SERVER 3<br>(192.168.0.1) |
| 150.100.11.0/24               |                                 |
| OTHERS                        | ROUTER 35 (192.168.0.50)        |

Fig.12

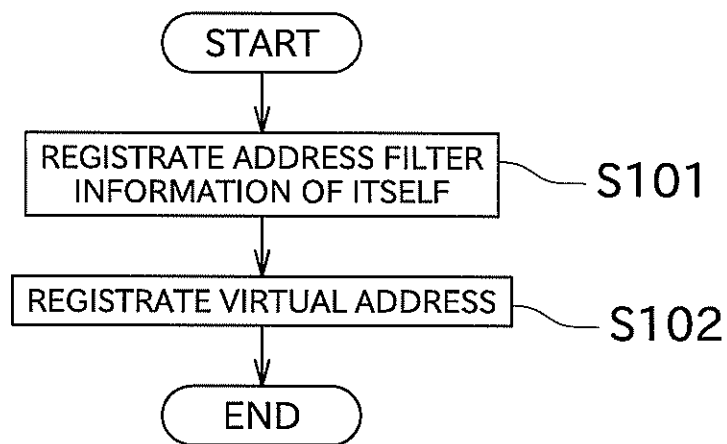


Fig.13

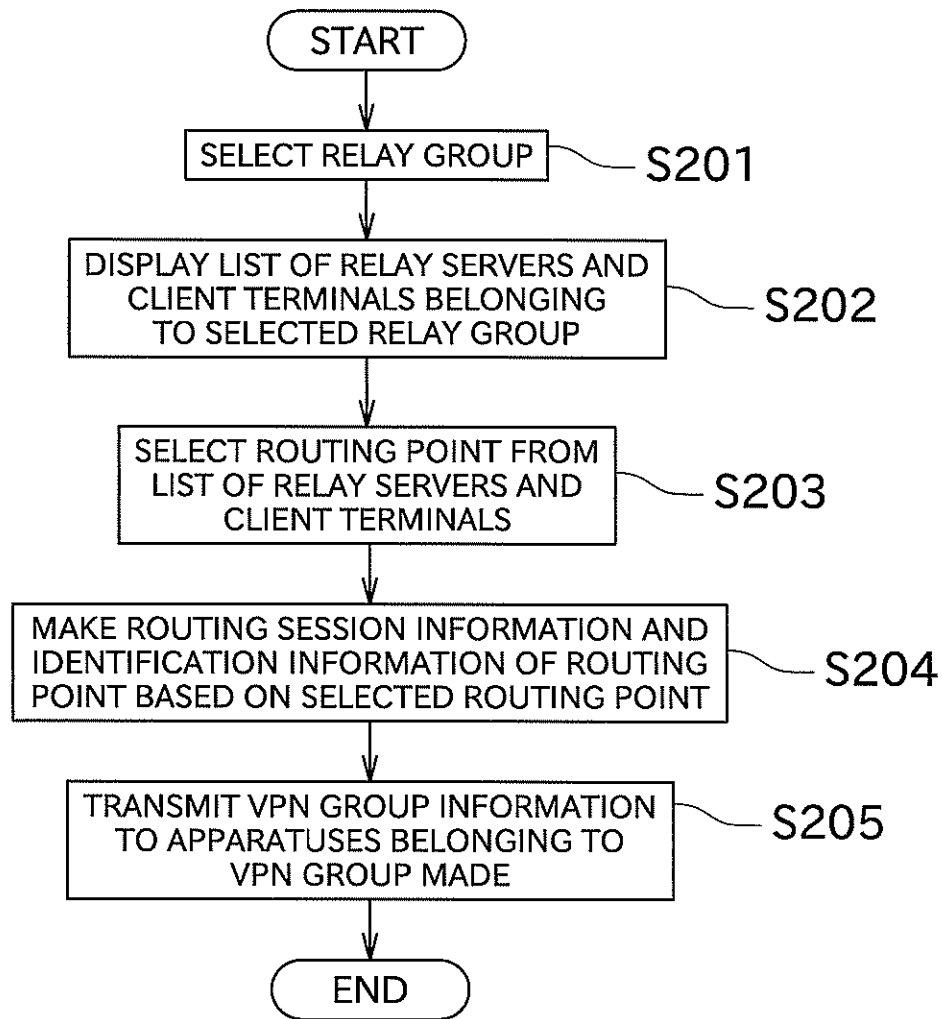


Fig.14

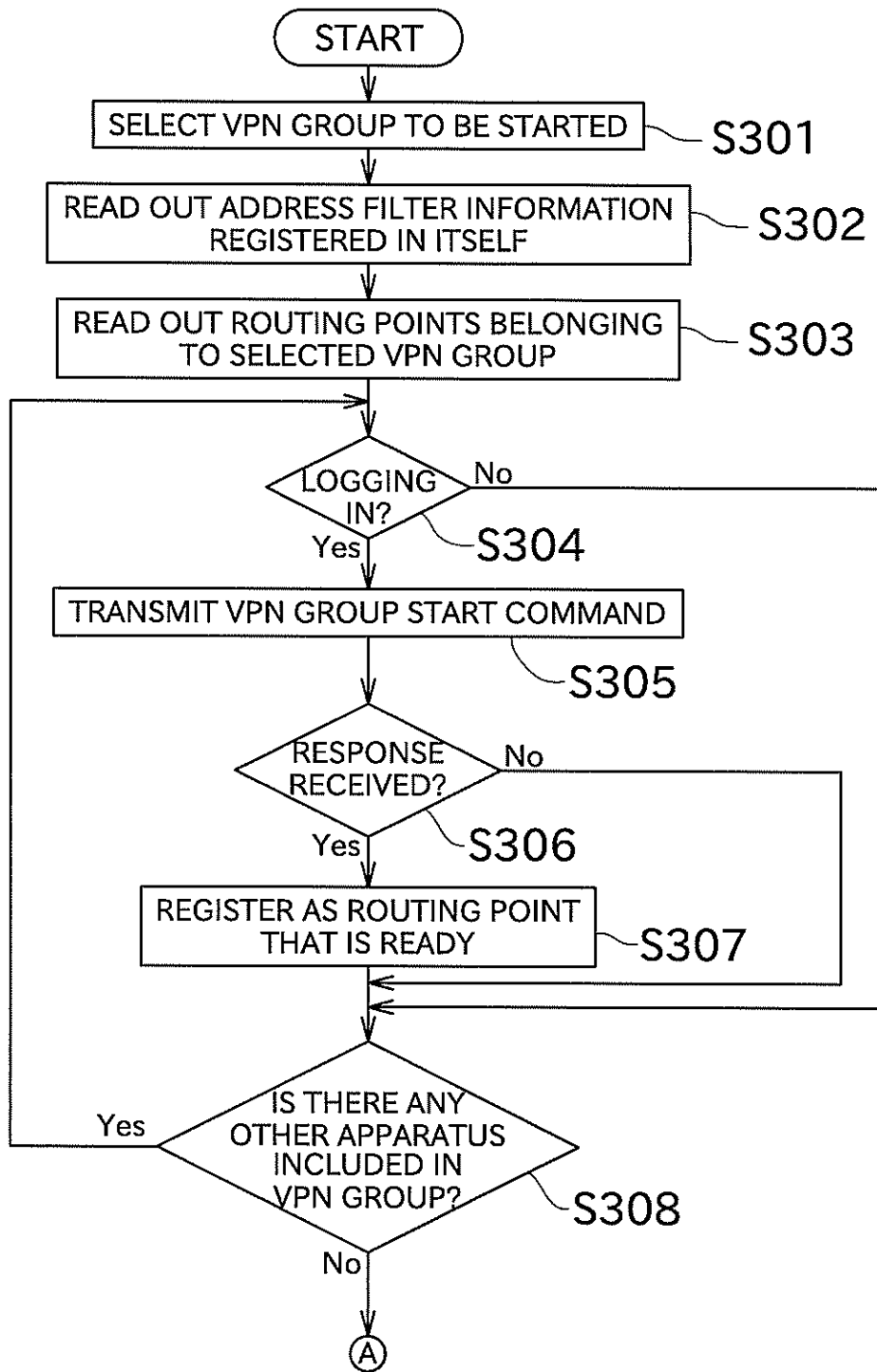


Fig.15

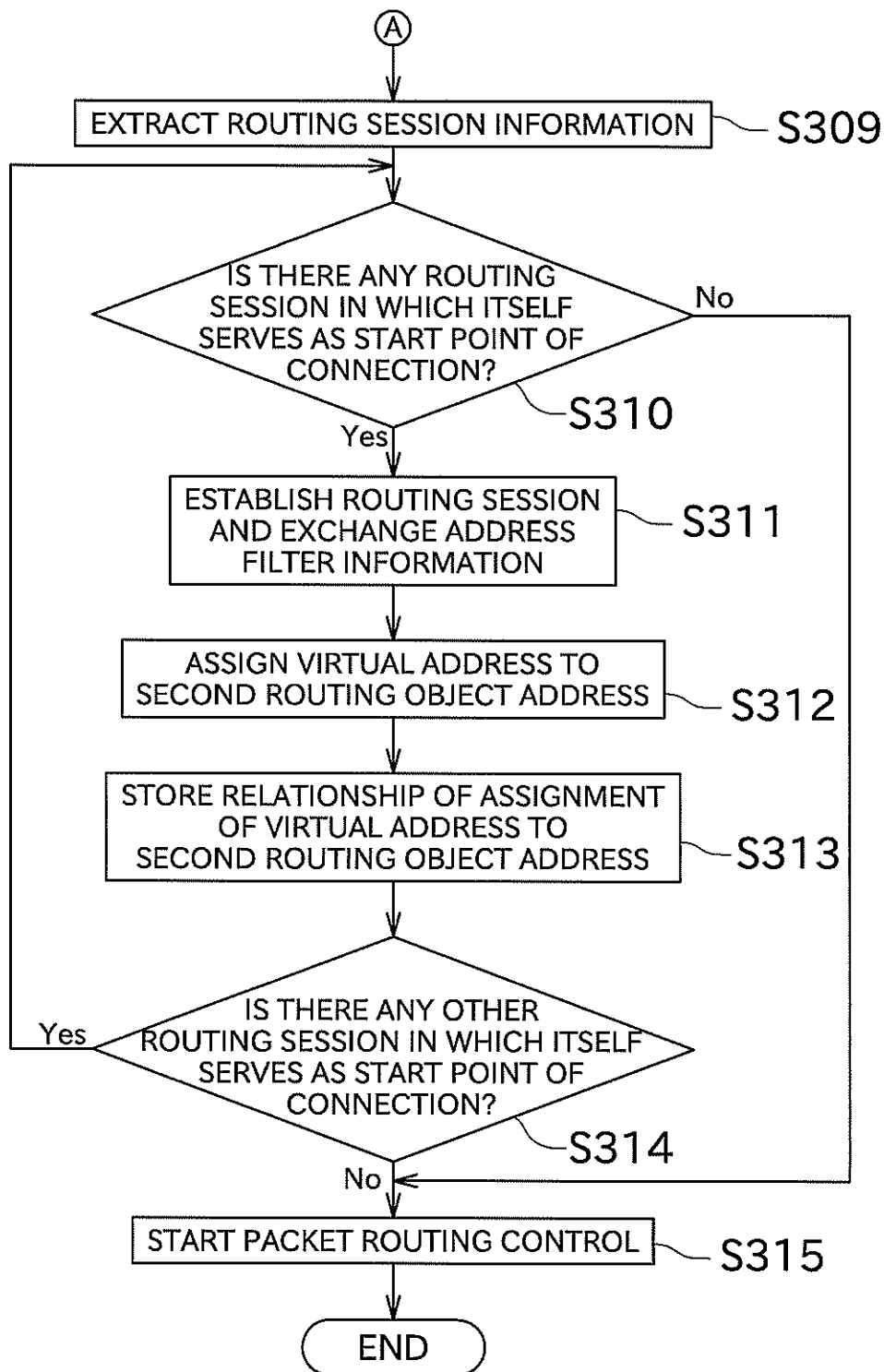


Fig.16

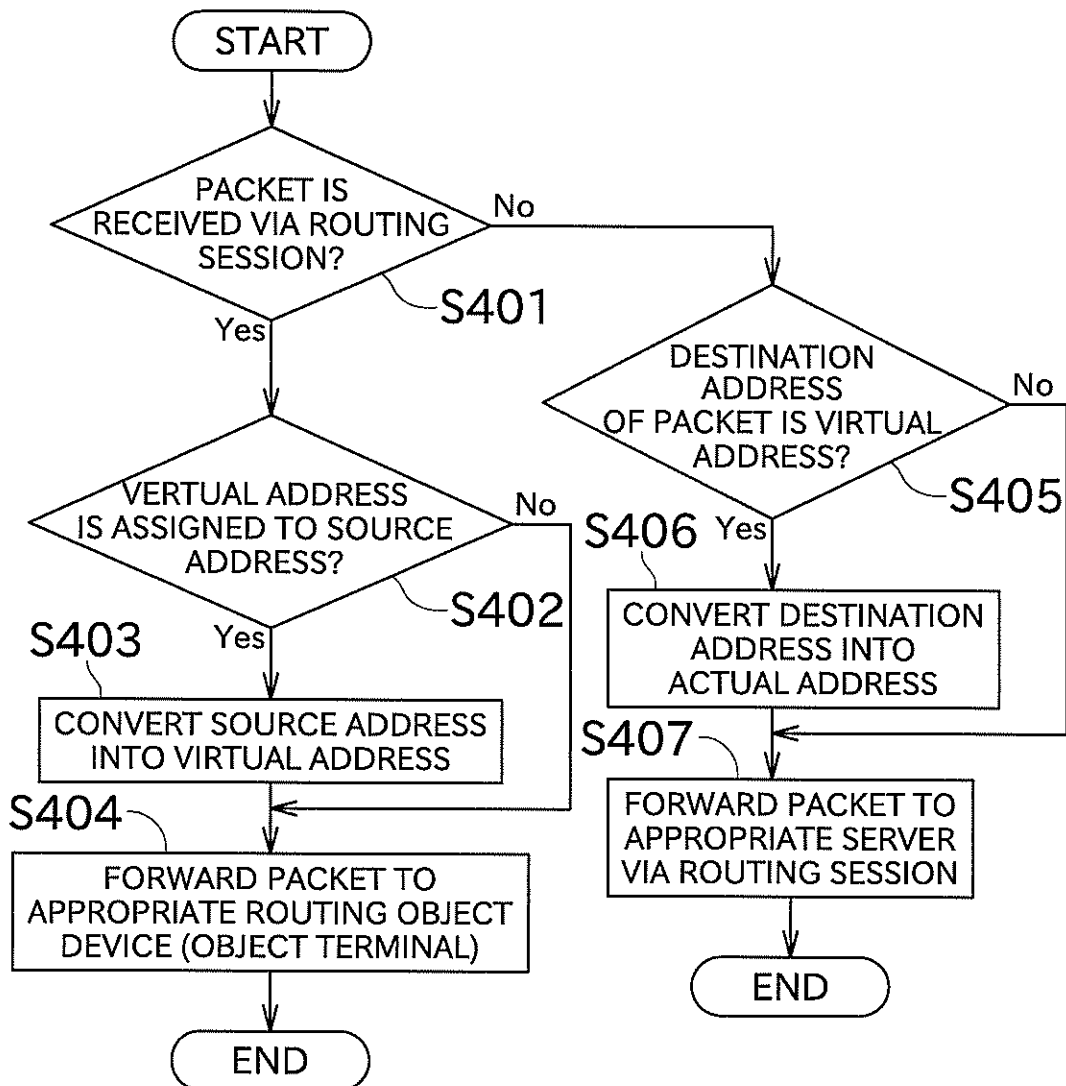
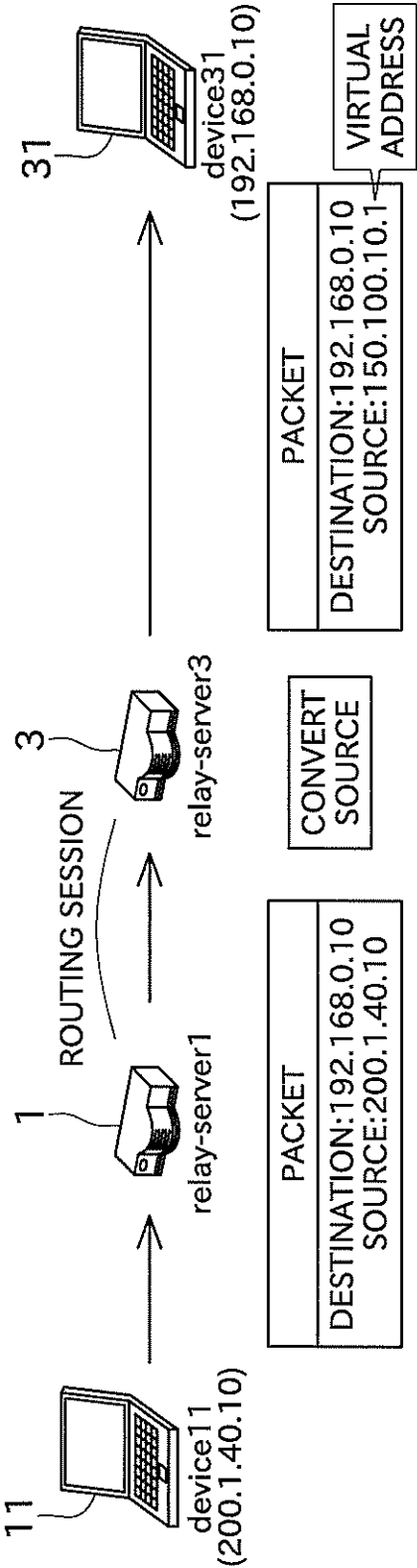


Fig.17

(a) WHEN RELAY SERVER 3 RECEIVES PACKET FROM WAN SIDE (ROUTING SESSION)



(b) WHEN RELAY SERVER 3 RECEIVES PACKET FROM LAN SIDE

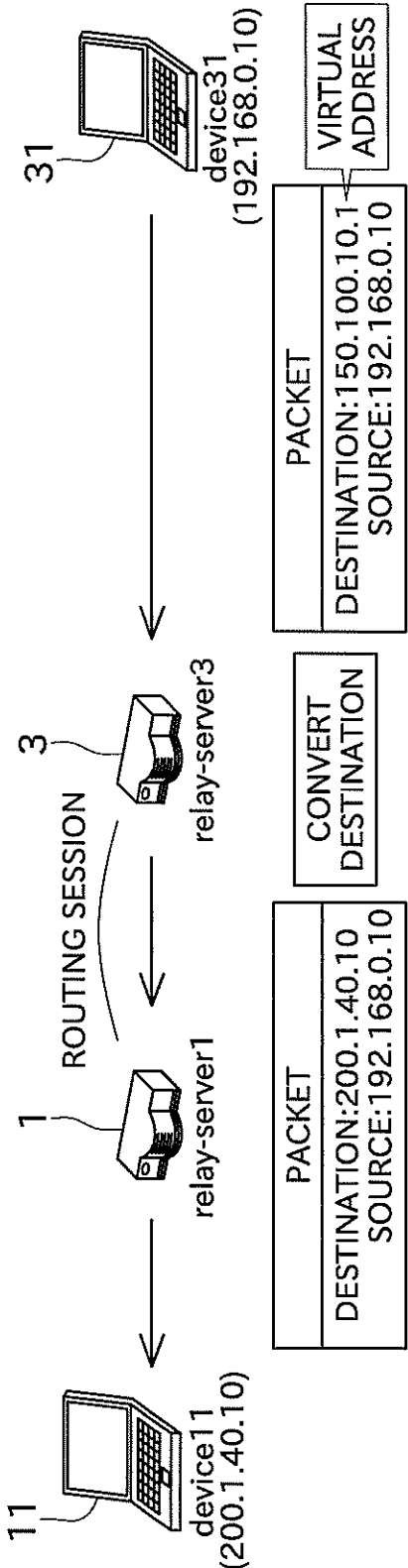


Fig.18

| VIRTUAL ADDRESS MANAGEMENT INFORMATION |                 |                                                                   |
|----------------------------------------|-----------------|-------------------------------------------------------------------|
| NAME                                   | ADDRESS USED    | VIRTUAL ADDRESS<br>ASSIGNMENT IN CASE OF<br>SESSION DISCONNECTION |
| RELAY SERVER 1                         | VIRTUAL ADDRESS | DE-ASSIGN                                                         |
| RELAY SERVER 2                         | VIRTUAL ADDRESS | MAINTAIN                                                          |
| RELAY SERVER 4                         | ACTUAL ADDRESS  | —                                                                 |