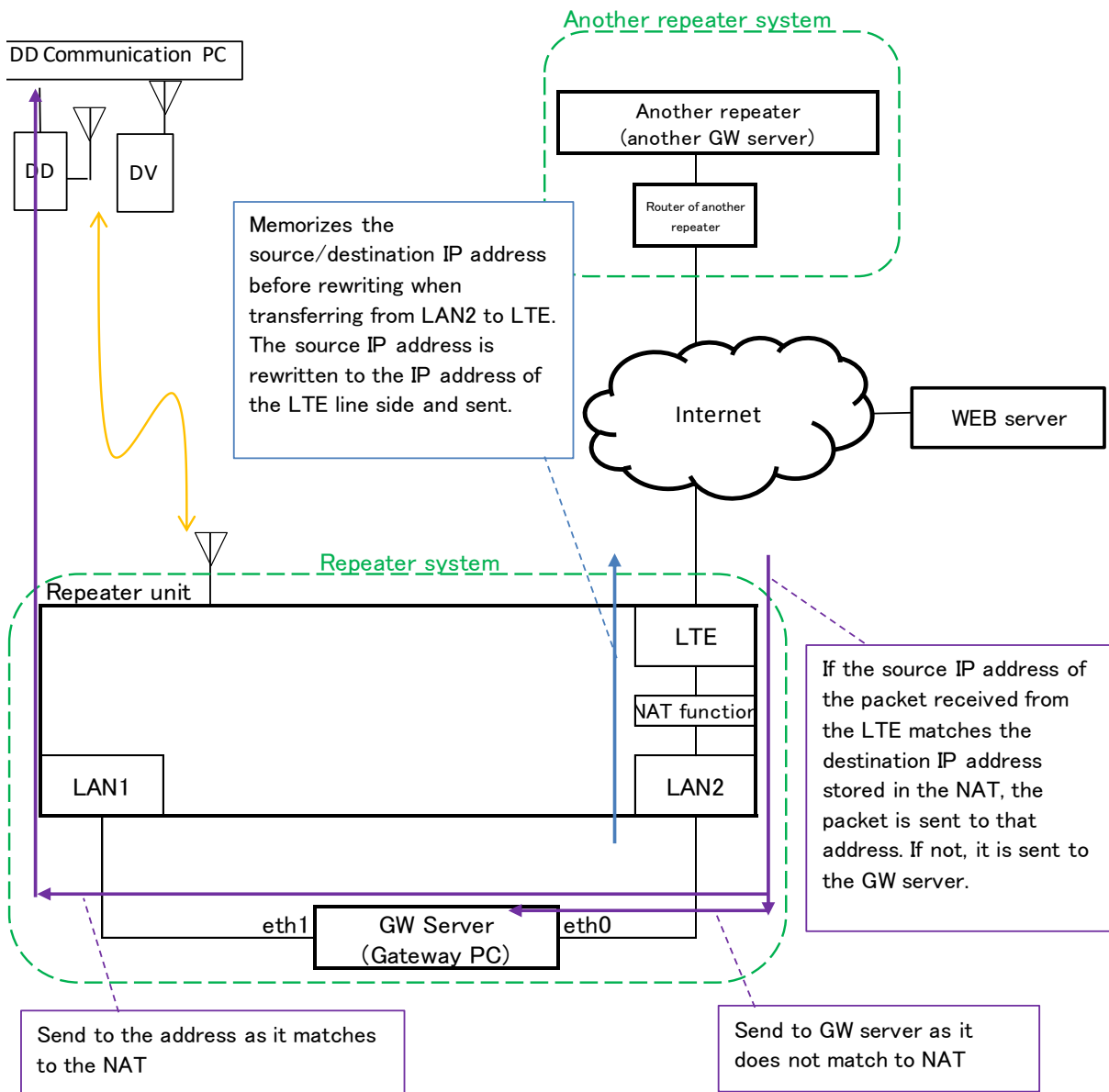


1. UX-262 connection configuration

The configuration for using a GW server with UX-262 on an LTE line is shown below.



Whats possible:

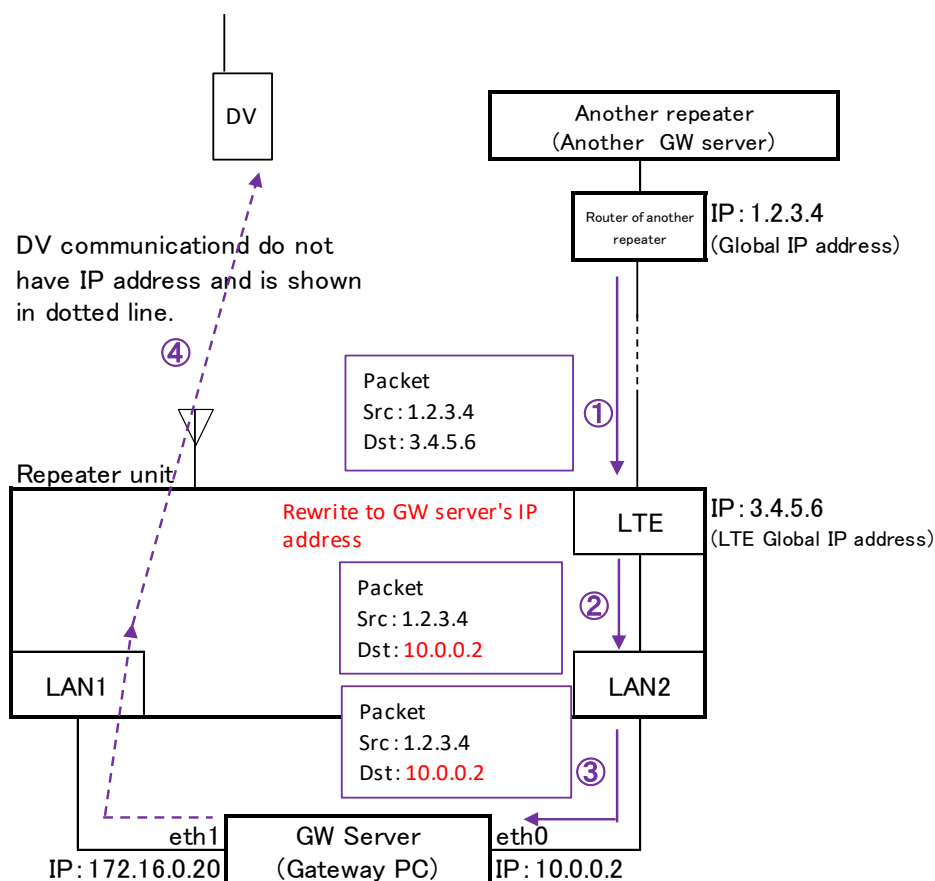
- NAT function allows packet forwarding of UDP, TCP, and ICMP (Ping only).
- No IP filter function. No static IP masquerade function. No port translation.
- The source IP address of packets received from LAN2 is rewritten to the IP address of the LTE line side and sent. At that time, the source/destination IP address and port before rewriting are stored and used as the return IP address and port when replying from the LTE line to the LAN2 connector side.
- If the source IP address of a packet received from the LTE line does not match any of the destination IP addresses stored by the NAT function, the packet is sent to the GW server.
- The IP address/port information stored by NAT will be discarded after 90 seconds for TCP and after 60 seconds for UDP/ICMP.

The following pages describe the flow of packets during DV and DD.

2. example of communication when not matched with NAT (when receiving voice communication in DV mode)

Here is an example of packet forwarding assuming each IP address is as follows

- IP address of eth1 of GW server : 172.16.0.20 (any local IP address)
- IP address of eth0 of GW server: 10.0.0.2 (In Japan, IP address assigned by JARL)
- IP address assigned to UX-262 from LTE network: 3.4.5.6 (temporary address for explanation)
- Global IP address assigned to the router of another repeater (another GW server): 1.2.3.4 (temporary address for explanation)
- The IP address of LAN2 is the default gateway for the GW server (gateway PC) and is omitted in the figure below because it does not affect the explanation of communication.
- The IP address of another repeater (another GW server) is omitted in the figure below because the address conversion is performed at the router of the destination repeater.



○ When receiving voice communication in DV mode

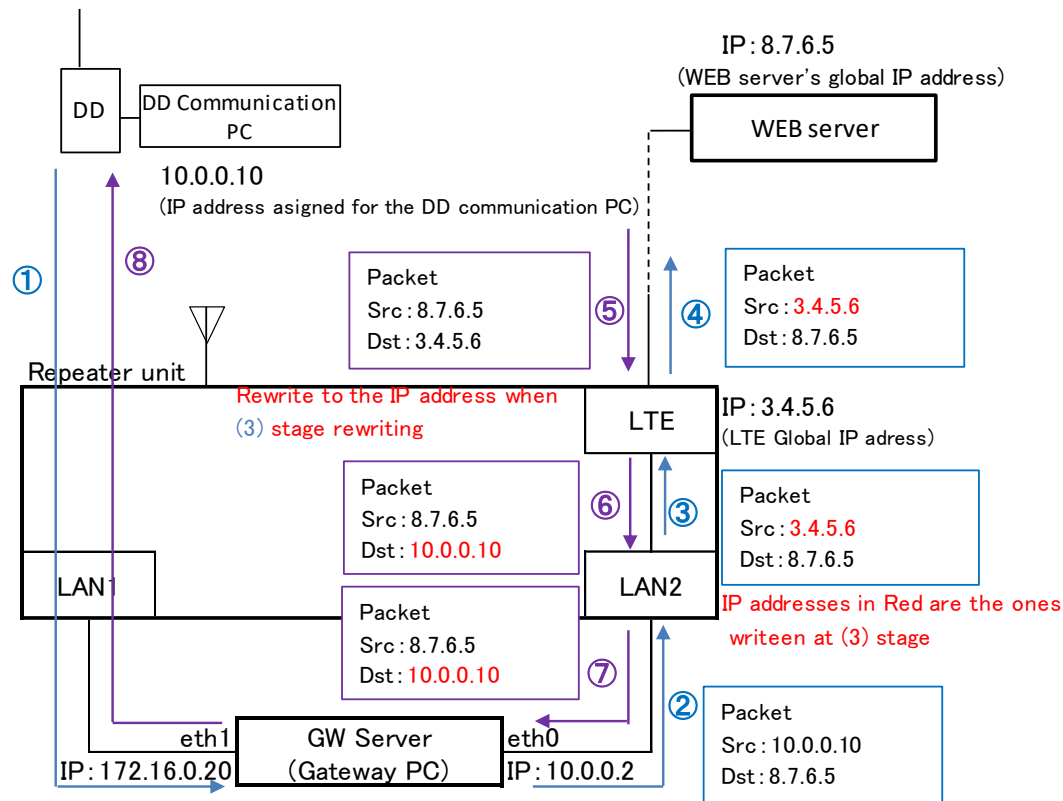
- (1) DV packets are sent from another repeater to the IP address of this repeater's LTE network.
- (2) Because the source IP address of the packet received from the LTE line is mismatched with the IP address stored in the NAT, the destination IP address is rewritten to the IP address of the GW server.
- (3) Packets with rewritten destination IP addresses are sent from LAN2.
- (4) Transmit DV audio RF from the repeater via the GW server LAN1

Note: When communicating with DV/DD, packets are sent to the GW server either when the other station calls first (mismatch with the IP address stored in the NAT) or when the other station calls first and receives a reply (match with the IP address stored in the NAT), so that communication is established since packets are sent against GW server.

3. Example of communication when matched with NAT (web server browsing in DD mode)

Here is an example of packet forwarding assuming each IP address is as follows

- IP address assigned to the PC for DD communication: 10.0.0.10
- IP address of eth1 of GW server : 172.16.0.20 (any local IP address)
- IP address of eth0 of GW server: 10.0.0.2 (In Japan, IP address assigned by JARL)
- IP address assigned to UX-262 from LTE network: 3.4.5.6 (Temporary address for explanation)
- Global IP address of the Internet WEB server: 8.7.6.5 (Temporary address for explanation)
- The IP address of LAN2 is the default gateway for the GW server (gateway PC) and is omitted in the figure below because it does not affect the explanation of communication.



- When sending packets from a PC for DD communication to a web server via DD
 - (1) A repeater receives DD data in RF from a DD radio and sends packets from LAN1 to the GW server.
 - (2) GW server sends packets addressed to the WEB server.
 - (3) Rewrite the source IP address of packets addressed to the WEB server received from the LAN2 to the IP address of the LTE network, and store the rewritten source IP address at this time. (To be used for the IP address of the return packet)
 - (4) Packets with the source IP address rewritten to the LTE global IP address are output to the LTE line and sent to the original destination (web server).
- When a reply from the WEB server is sent to a PC for DD communication via DD
 - (5) A packet is sent from the WEB server to the IP address of this repeater's LTE network.
 - (6) Rewrite the destination IP address of packets received from the LTE line to the IP address stored in (2).
 - (7) Packets with the destination IP address rewritten to be addressed to the PC for DD communication are sent from LAN2.
 - (8) Transmit DD data by RF from the GW server via LAN1 from the repeater.