

RE: Transfer a sending packet to upper TCP/IP protocol layer in IM

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As I told you already, you should NOT indicate outgoing packet to TCPIP. Instead, you should just prepend UDP and IPv4 IP headers to IPv6 packet without removing MAC header, then prepend MAC header to it (if we assume that TCPIP has chosen the appropriate adapter, then source and destination MAC addresses in the original MAC header are still valid), and then forward the packet to miniport with NdisSend(). This is how you should deal with sends

When it comes to receives, you should detect IPv4 packet of interest, and remove its MAC, IPv4 and UDP headers. As a result, you will get exactly the same IPv6 packet (i.e. with its MAC, IPv4 and UDP headers) that was passed to your NDIS IM on the sender machine, so that you just indicate this packet to NDIS

Anton Bassov

"Seong Moon" wrote:

Hi Anton!

I'm the one who posted the question about IPv6 over IPv4 UDP tunnel driver.

I'm now thinking the IM driver for my objective.

In the process of packet transmission, I have a following scenario.

1. IPv6 application sends a IPv6 packet.
2. The packet can be captured on my IM driver. The captured packet will be as following

| L2 header| IPv6 header | Payload |

3. My IM driver has a mapping table which consists of

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- o. destination IPv6 address
 - o. local IPv4 address
 - o. remote IPv4 address
 - o. local UDP Port number
 - o. remote UDP Port number
- the above information should set correctly via the other control application.

4. If the captured IPv6 packet on my IM driver has a destination IPv6 address which has already configured on the above mapping table, the packet should be processed as follows :

- o. The IPv4 header and UDP header are prepended on the original IPv6 packet.
- o. Of course, L2 header(e.g. MAC header) should be ignored.
- o. So, the final packet will be the following format.

| IPv4 header | UDP header | IPv6 header | Payload |

5. Now, I can indicate the encapsulated packet to the upper TCP/IP layer. As result, I'd like to have the IP layer forward the IPv4 packet correctly.

6. As you mentioned, the MAC header should be processed correctly. I'm not sure how I can process the MAC header. Any idea ?

Until here is my idea about the transmission of the tunneled packet.

I'll appreciate any comment.

regards seong

"Anton Bassov" wrote:

Can the TCP/IP driver forward the packet correctly ?

Forward to whom???? MiniportSendPackets() deals only with outgoing packets, which means that packet's source IP and MAC addresses are local and destination ones are remote, i.e. the packet is outgoing one and TCPIP already made its routing decision to send a packet via either underlying adapter (if you speak about filter), or via your virtual miniport (if you speak about MUX). If you want to change the adapter the packet gets sent through, you have to call NdisSend() and, specify NDIS_HANDLE that corresponds to that adapter (apparently, it is a good idea to replace MAC addresses in a packet's ARP header as well), rather than indicating it to TCPIP as incoming one. Apparently, TCPIP is going to silently discard your packet if you indicate it, and that's it.....

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If you want TCPIP to treat you packet as incoming one, you have to modify both physical and logical transport addresses in the packet's headers.

However, if TCPIP

takes it for incoming one, why should it send it to any remote address(unless logical IP address in the packet's header is remote and the system is configured as a router)???

In other words, no matter what you do, you have to modify packet's headers in such way that it conforms to the logic of the bound protocol...

Another option (at least in MUX) could be taking the whole packet simply as data, and resubmitting it to TCPIP via its TDI interface, i.e. to act simply as TCPIP's client

If you tell us a bit more about your objectives, probably, we will be able to give you the most appropriate advice....

Anton Bassov

"Seong Moon" wrote:

Hi ! There !

I'm now designing Intermediate Driver for my project.

I'd like to transfer sending packet to the upper TCP/IP protocol layer on my MiniportSendPackets function as if the packet is received from the NIC.

And I'd like to have IP protocol layer forward the transferred packet to the adequate adaptor.

Is it possible ?

That is, Can I call NdisMIndicateReceivePacket() in my MiniportSendPacket() ?

If that possible, Can the TCP/IP driver forward the packet correctly ?

Thanks in advance.
regards seong