

## How do we calculate the Windows Transmission Policy of the Myricom Drivers?

### Model:

ARC Series C, D & E Adapter (10G-PCIE2-8C-2S, 10G-PCIE3-8D-2S & 10G-PCIE3-8E-2S)

### Software:

Myri10GE Drivers

### Operating System:

Windows (Windows 8.1)

### Question(s):

In the "Teaming/VLAN Driver for Myricom Myri-10G Ethernet Adapter" Readme file the following calculation is shown. What does "N = (the sum of port bytes) % the number of adapters." Actually mean?

What bytes get summed together?

### Answer/Explanation:

In the Myricom documentation we show the Transmission Policies as follows:

#### With One Adapter:

Among the physical adapters, only one adapter is used for transmission. While that adapter remains usable, all packets are sent through that adapter. When the adapter becomes unusable (either link down, or determined to be unusable by LACP), a new usable adapter, if it exists, becomes the transmit adapter.

**Pro:** Simple to understand with or without LACP. Fault-tolerant.

**Cons:** utilizes only one adapter.

#### Multiple Adapters, Round-robin:

Packets are sent through the physical adapters in a round-robin fashion.

**Pro:** Utilize all adapters. Fault-tolerant.

**Cons:** Possible out-of-order delivery of packets. Should not use LACP because LACP requires that any "conversation" such as a TCP connection maintain ordering of all packets within the conversation.

#### Hash Destination MAC:

The transmit adapter is selected based on the packet's destination MAC address. Given the packet, the teaming driver computes  $N = (\text{the sum of address bytes}) \% \text{the number of adapters}$ . Then, the Nth adapter is used for transmission.

**Pro:** Can utilize all adapters. Fault-tolerant.

#### Hash IP/TCP/UDP:

The transmit adapter is selected based on the packet's destination IP address or TCP/UDP port. Given the packet, the teaming driver computes as follows. If the packet is UDP or TCP,  $N = (\text{the sum of port bytes}) \% \text{the}$



number of adapters. If the packet is IP but not UDP/TCP,  $N = (\text{the sum of destination IP address bytes}) \% \text{the number of adapters}$ . Then, the Nth adapter is used for transmission.

**Here is a detailed example:**

Let's say the source port used by the transmitter is 7242 (0x1c4a) , and the destination port is 49704 (0xc228). The text says that the adapter chosen, N, will be chosen by the formula " $N = (\text{the sum of port bytes}) \% \text{the number of adapters}$ ."

Example of customers questions are; what bytes are used to create the "sum of the port bytes"?

The choices seem to be:

- a) Add the two bytes of the Source Port i.e.  $1c+4a=0x66 = 102$
- b) Add the two bytes of the Destination Port i.e  $c2+28=0xea = 234$
- c) **Add all four bytes i.e.  $1c+4a+c2+28 = 0x150 = 336$**

**The answer is c) Add all four bytes.**

<b>Revision:</b>	<b>Date:</b>	<b>Change:</b>
1	6/23/2016	Initial Draft (SF 2386)
2	7/20/2016	Feedback

