



RDP – Wrapped or Unwrapped???

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Today's RDP

- ▶ Today's Read Diagnostic Parameters command returns descriptors that contain counts of events detected at the port
 - ▶ Corrected and uncorrected blocks in the FEC Status Descriptor block
 - ▶ Number of times receive and transmit buffer-to-buffer credits reach 0
 - ▶ Number of times receive and transmit buffer-to-buffer credits remain at 0 for an entire delay interval
 - ▶ Number of times a frame has been discarded due to being unable to transmit
 - ▶ Number of times the interface has received or transmitted a Link Reset



The Problem

- ▶ These counters can be (are?) reset when the port transitions state (i.e. reset, light drops, transitions to Active state) or they can be administratively reset
- ▶ Knowing that a port transitioned state across polling intervals or an administrative reset of counters has occurred is a useful piece of information for the consumer of the RDP data to have
 - ▶ Can be used to determine how to interpret the newly reported values, especially in the case where the most recent value is lower than the previous value
 - ▶ Can the delta change between prior reported value and the newly reported value be done as a simple math calculation between the two, accounting for a possible wrap condition?
 - ▶ OR
 - ▶ Is the newly reported value a straight accumulation since the last port state transition or administrative counter reset?



Proposed Solution

- Addition of a token value (e.g. the equivalent of a random value...could be based on a timestamp) in the response data
- How does this work?
 - Token value is generated for first RDP response of a port
 - Token value changes only when the port state transitions resulting in port counters being reset or port counters are administratively reset
 - If token value has changed
 - Counters are interpreted from a basis of 0
 - If token value has not changed
 - Counters are interpreted as delta value from last sample value (accounting for wrap conditions)

Proposed Solution Details

- Utilize 24 bit reserved value in mandatory Link Error Status Block descriptor to host new Counter Reset Token value

Bits Word	31.....24	23.....16	15.....08	07.....00
0	Link Error Status Block Descriptor tag = 0001 0002h			
1	Link Error Status Block Descriptor Length (28 bytes)			
2	MSB			
3				
4				
5				
6				
7				
8	PN_Port Phy Type	Reserved	Counter Reset Token	



Proposed Solution Text

- ▶ **Counter Reset Token:** Bits 15 – 0 contain a random number value that is set each time the port transitions to the Active state or counters have been administratively reset.