Read Diagnostic Parameters – Port Congestion Visibility

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Read Diagnostic Parameters

Port Congestion Descriptor

Word	31 24	23 16	15 08	07 00
0	Port Congestion Information Data Descriptor Tag = 0001 000X			
1	Port Congestion Information Data Descriptor Length (76 Bytes)			
2	Counter Validity Mask (16 Bits Used)			
3	Transmit Buffer to Buffer Credit Transitions to Zero			
4	Receiver Buffer to Buffer Credit Transitions to Zero			
5	Transmit Buffer to Buffer Credit at 0 for Interval			
6	Receive Buffer to Buffer Credit at 0 for Interval			
7	Interval (in Microseconds) used for Transmit / Receive Buffer Credit at 0			
8	Timeout Discards			
9	Interval (in Microseconds) for Timeout Discard			
10	Reserved			
11	Reserved			

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  Command for one port to be able to determine port configuration and status information about another port in the fabric.

  1. Add the ability for a port to be able to gather information related to port congestion for other ports so that this information can be used for understanding and resolving performance issues.
  2. Define an extendable descriptor to pass supported information to the requestor – specifically leaving room for future types of data to be passed.
  3. Masking ability to allow different platforms to be able to indicate which field are supported in the reply.
  4. Vision is that this information can be gathered both periodically as well as at the time of suspected issues to enable first failure issue determination.

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Counter Validity Mask: 16 bit masking for each of the 16 possible counters (including future reserved fields). A value of 1 indicates that a valid value is present, 0 indicates no value. When a 0 is marked for any counter, the contents of that counter shall be ignored.

Transmit Buffer to Buffer Credit Transitions to Zero: Number of times that transmit B2B has transitioned to zero. Validity of this counter is indicated with bit[0] in Counter Validity Mask.

Receive Buffer to Buffer Credit Transitions to Zero: Number of times that receive B2B has transitioned to zero. Validity of this counter is indicated with bit[1] in Counter Validity Mask.

Transmit Buffer to Buffer Credit at 0 for Interval Events: Number of times that transmit B2B credits have been at zero for a given interval. Validity of this counter is indicated with bit[3,5] in Counter Validity Mask.

Receive Buffer to Buffer Credit at 0 for Interval Events: Number of times that receive B2B credits have been at zero for a given interval. Validity of this counter is indicated with bit[4,5] in Counter Validity Mask.

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Interval Used for Transmit and Receive Buffer to Buffer Credit at 0 for Interval: The value in microseconds used for the previous two counters. Validity of this field is indicated with bit[5] in Counter Validity Mask.

Number of Timeout Discards: Number of times that a frame has been dropped from the interface due to being ”stuck” too long in the interface. Validity of this counter is indicated with bit[6,7] in Counter Validity Mask.

Interval for Timeout Discards: Length of time in microseconds that a frame can sit in the interface before it is dropped. Validity of this counter is indicated with bit[7] in Counter Validity Mask.

Reserved: Fields reserved for future counter or information related port congestion of this port. Validity of these future fields will be learned by successive bits in the Counter Validity Mask.

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Notes / Comments for Descriptor

When are Counters Reset ? – All of the counters are persistent across link events. Counters can be reset with reload of the port. (should this be specified or is it left as implementation specific) ? This should be consistent with other existing descriptors.

Other counters that should be added ?


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