

FC-NVMe

Admin Command or NVMe Command ?

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How to (easily) determine an Admin Command

BROCADE[®]



Admin Command (or Queue) bit – Brocade Use Case

- Provide proper command-level I/O statistics at the Switch (i.e., Analytics)
 - Admin and I/O commands share common Operation Codes
 - Snooping of Create Association LS(s) for Admin Queue(s) Connection_ID(s) is currently required to properly determine an Admin command (e.g., Get Log Page) vs an NVM command (e.g., Read command)
 - Future commands sets will add additional overlap
 - Admin Command bit allows for no snooping and Connection_ID(s) handling

Admin Queue Bit – Viavi Use Case

- Admin and I/O commands share common Operation Codes
- NVMe over FC Device Discovery snooping (Create Association) or administrative configuration is currently required to properly determine the correct decode
- Future commands sets will add additional overlap
- Admin Queue bit allows for immediate decoding and processing

Queue ID – Viavi Use Case

- The Queue ID allows for compilation of per-queue statistics
- Some existing implementations use Word 1, Bytes 0-1 of the Connection Identifier for the Queue ID, but it is not required
- NVMe over FC Device Discovery (Create Association) snooping or administrative configuration is currently required to correlate a Queue ID to a Connection Identifier

Option C

- Format the Connection Identifier to provide Admin Command bit, Connection Identifier, and Queue ID
 - Requires (more) SQE processing at NVMeoFC level
 - i.e., NVMe_CMND IU Read and Write bit(s) already need to be set properly based on command operation, along with proper Connection_ID

Table 42 – NVMeoFC Connection Identifier Format

Bit	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
Word	1	0	9	8	7	6	5	4	3	2	1	0	9	8	7	6	5	4	3	2	1	0	9	8	7	6	5	4	3	2	1	0
0	A	Reserved														(MSB)	Connection Identifier															
1		Connection Identifier														(LSB)	(MSB)	Queue ID														(LSB)

A (Admin Command): If the Admin Command bit set to one, then the command is an Admin command (see NVM Express). If the Admin Command bit set to zero, then the command is not an Admin command.

Connection Identifier:

Queue ID:

Option D

- Specify Admin Command bit in NVMe_CMND IU Flags field
 - Valid bit needed ?
 - Transport specific solution
 - Requires (more) SQE processing at NVMeoFC level

Thank you