



How will hosts use SCSI Hints?

- READ (10) and WRITE (10)

Byte	Bit	7	6	5	4	3	2	1	0
0		OPERATION CODE (28h)							
1		RDPROTECT			DPO	FUA	Reserved	FUA_NV	Obsolete
2	(MSB)	LOGICAL BLOCK ADDRESS							
...									
5									
6		Reserved			GROUP NUMBER				
7	(MSB)	TRANSFER LENGTH							
8									
9		CONTROL							


- GROUP NUMBER field
 - Index into Dynamic Hints Grouping Mode page



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- Dynamic Hints Grouping Mode page

Byte	Bit	7	6	5	4	3	2	1	0
0	PS	SPF (1b)	PAGE CODE (xxh)						
1		SUBPAGE CODE (yyh)							
2	(MSB)	PAGE LENGTH (50Ch)							(LSB)
3									
4		Reserved							
...									
15									
<u>LBA access hints for group descriptor list</u>									
16		<u>LBA access hints for group descriptor (group number zero) (see 4.x.5)</u>							
...									
35		⋮							
1276		<u>LBA access hints for group descriptor (group number 63) (see 4.x.5)</u>							
...									
1295									





How will hosts use SCSI Hints?

- Access Hints Descriptors

<u>Byte</u>	<u>Bit</u>	<u>7</u>	<u>6</u>	<u>5</u>	<u>4</u>	<u>3</u>	<u>2</u>	<u>1</u>	<u>0</u>
<u>0</u>		<u>Reserved</u>							
<u>...</u>									
<u>3</u>									
<u>4</u>		<u>WSEQ</u>				<u>RSEQ</u>			
<u>5</u>		<u>WFEQ</u>				<u>RFEQ</u>			
<u>6</u>		<u>WLATENCY</u>				<u>RLATENCY</u>			
<u>7</u>		<u>Reserved</u>				<u>POWER CYCLE PROXIMITY</u>			
<u>8</u>		<u>Reserved</u>							
<u>9</u>									
<u>...</u>									
<u>15</u>									

- Write Sequential / Read Sequential (vs. Random)
- Write Frequency / Read Frequency
- Write Latency / Read Latency
- [Host] Power Cycle Proximity – needed at boot of host



How will hosts use SCSI Hints?

- Allows up to 64 different combinations of hints
 - Each hint descriptor is 16 bytes
 - Not all combinations possible
 - Not all combinations even make sense
 - Hint may be per IO (the group number field)
 - Hint may be added after the fact
 - New SCSI command to attach a hint to LBAs
 - MODIFY DYNAMIC HINTS command
 - More complex in reality
 - Dynamic Hints vs. Static Hints
 - T10/11-436r5 - details at:
 - <http://www.t10.org/cgi-bin/ac.pl?t=d&f=11-436r5.pdf>
 - Still changing in the T10 committee
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