

Introduce a new optional command

To: X3T9-2 SCSI Committee X3T9-2/89-L7  
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Issue:

To format the medium requires use the MODE SELECT command. Use of this command for the purpose of formatting a tape runs contrary to the intent that the command is to select the operating mode of the peripheral. Use of this command to partition medium also introduces the risk that the medium may be accidentally re-partitioned and data lost as a result of attempting to alter the operating characteristics of the drive. It also imposes an added overhead on those peripherals which may wish to limit MODE SELECT/SENSE page support. It would be far cleaner and safer if the peripheral could use a single PARTITION command with which to partition the tape.

Proposal:

To introduce into the SCSI command set for Sequential Access Devices a PARTITION command could be used as an alternative method of partitioning the media instead of the MODE SELECT/SENSE command Medium Parameters page.

Command Description for Sequential-Access Devices

n.n.n. PARTITION Command

Peripheral Device Type: Sequential Access  
Operation Code Type: Optional

Table n-n: PARTITION Command

Bit Byte	7	6	5	4	3	2	1	0
0	Operation Code (54h)							
1	LUN			Reserved			FDP	SDP
2	Partition Count							
3	Reserved							
4	Reserved							
5	(MSB)							
6	Partition Field							
7	Reserved							
8	(LSB)							
9	Control Byte							

The PARTITION command allows the initiator to partition the medium and to allocate the capacity of those partitions. It will also allow the initiator to reallocate the capacity of previously initialised tapes.

A Fixed Data Partitions (FDP) bit, when set to one, indicates that

the logical unit is to partition the medium into the number and size of data partitions as specified by the Partition Count and the Partition Field value based on its format definition of partitions. Partition Count is one and the Partition Field is set to zero then the logical unit shall partition the medium into a single partition based on its fixed definition of partitions. Use of the FDP bit is mutually exclusive with that of the VDP bit.

A Variable Data Partitions (VDP) bit, when set to one, indicates that the device is to partition the medium into the number and size of the data partitions as specified by the Partition Count and the Partition Size Descriptor Pair bytes in the format of the device. Use of this bit is mutually exclusive with that the FDP bit.

If the target does not support the operation of either the FDP bit or the VDP bit, then the command shall be terminated with CHECK CONDITION status. The sense key shall be set to ILLEGAL REQUEST, and the additional sense code shall be set to INVALID FIELD IN CDB.

The Partition Count specifies the number of data partitions into which the media shall be divided.

If the FDP bit is set, the Partition Field shall a value which defines the size of the partitions. If the VDP bit is set, the Partition Field shall contain a count of the number of Partition Size Descriptor Pair bytes that shall be transferred from the initiator to the target during the DATA OUT phase.

If either of Partition Count or Partition Fields are set to a value which is not supported by the target then the command shall be terminated with CHECK CONDITION status. The sense key shall be set to ILLEGAL REQUEST, and the additional sense code shall be set to INVALID FIELD IN CDB.

The Partition Size Descriptor Pair bytes define the size of the respective partitions in units which may either be the default value of the target or may be configured via the MODE SELECT Medium Partition Parameters page.