

ENDL TEXAS

Date: 2 July 2007
 To: T10 Technical Committee
 From: Ralph O. Weber
 Subject: OSD-2 Task Management Function Catchup

Introduction

SAM-4 includes two task management functions that do not appear in SAM-3. These need to be added to the PERFORM TASK MANAGEMENT FUNCTION command. Also, the QUERY xxx Task Management Functions return valuable information in the Service Response and this information needs to be returned as parameter data by the PERFORM TASK MANAGEMENT FUNCTION command.

N.B. Since both new task management functions need to be addressed to the root object, there is no need to modify other OSD-2 clauses (e.g., no changes are needed in table 18 or any other aspects of capability definitions).

Since this proposal defines a fourth use for the ALLOCATION LENGTH field, its definition has been moved from the individual commands into a new 5.2 (fields commonly used in OSD commands) subclause.

Revision History

r0 Initial revision
 r1 Revised to address comments from Rob Elliott

Differences between r0 and r1 are identified by change bars.

Unless otherwise indicated additions are shown in blue, deletions in ~~red-strikethrough~~, and comments in green.

Proposed Changes in OSD-2 r01

5.2 Fields commonly used in OSD commands

5.2.1 Overview

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5.2.2 Allocation length

The ALLOCATION LENGTH field specifies the maximum number of bytes that an application client has allocated for the return of parameter data. An allocation length of zero indicates that no data shall be transferred. This condition shall not be considered as an error.

The allocation length is used to limit the maximum amount of the parameter data returned to an application client. The device server shall terminate transfers to the Data-In Buffer if the number of bytes specified by the ALLOCATION LENGTH field have been transferred or if all available data have been transferred, whichever is less. If the information being transferred is truncated, the contents of the parameter data ADDITIONAL LENGTH field shall not be altered to reflect the truncation.

6.14 LIST

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The ALLOCATION LENGTH field is defined in 5.2.2. specifies the maximum number of bytes that an application client has allocated for the returned list. An allocation length of zero indicates that no data shall be transferred. This condition shall not be considered as an error.

The allocation length is used to limit the maximum amount of the list returned to an application client. The device server shall terminate transfers to the Data-In Buffer if the number of bytes specified by the ALLOCATION LENGTH field have been transferred or if all available data have been transferred, whichever is less. If the information being transferred is truncated, the contents of the ADDITIONAL LENGTH field (see table 72) shall not be altered to reflect the truncation.

6.15 LIST COLLECTION

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The ALLOCATION LENGTH field is defined in 5.2.2. specifies the maximum number of bytes that an application client has allocated for the returned list. An allocation length of zero indicates that no data shall be transferred. This condition shall not be considered as an error.

The allocation length is used to limit the maximum amount of the list returned to an application client. The device server shall terminate transfers to the Data-In Buffer if the number of bytes specified by the ALLOCATION LENGTH field have been transferred or if all available data have been transferred, whichever is less. If the information being transferred is truncated, the contents of the ADDITIONAL LENGTH field (see table 83) shall not be altered to reflect the truncation.

6.18 QUERY

6.18.1 Introduction

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The ALLOCATION LENGTH field is defined in 5.2.2. specifies the maximum number of bytes that an application client has allocated for the returned list. An allocation length of zero indicates that no data shall be transferred. This condition shall not be considered as an error.

The allocation length is used to limit the maximum amount of the list returned to an application client. The device server shall terminate transfers to the Data-In Buffer if the number of bytes specified by the ALLOCATION LENGTH field have been transferred or if all available data have been transferred, whichever is less. If the information being transferred is truncated, the contents of the ADDITIONAL LENGTH field (see table 83) shall not be altered to reflect the truncation.

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6.18.3 Matches list parameter data format

The matches list parameter data (see table 93) contains the User_Object_ID for every user object that matched the query criteria.

Table 93 — Matches list parameter data format

{{No other changes in 6.18.3.}}

6.17 PERFORM TASK MANAGEMENT FUNCTION

The PERFORM TASK MANAGEMENT FUNCTION command (see table 87) allows a SAM-34 task management function (e.g., ABORT TASK) to be processed when the security method is not NOSEC (see 4.10.4). The PERFORM TASK MANAGEMENT FUNCTION command also allows a SAM-34 task management function to be processed concurrently with attributes retrieval and setting command functions.

Table 87 — PERFORM TASK MANAGEMENT FUNCTION command

Bit Byte	7	6	5	4	3	2	1	0
	⋮ {{no changes above the USER_OBJECT_ID field}}							
24	(MSB)							
31	USER_OBJECT_ID							(LSB)
32	Reserved							
38								
32	(MSB)							
33	ALLOCATION LENGTH							(LSB)
34	Reserved							
38								
39	TASK MANAGEMENT FUNCTION							
	⋮ {{no changes below the TASK MANAGEMENT FUNCTION field}}							

The GET/SET CDBFMT field specifies the format of the get and set attributes parameters as described in 5.2.2.

The contents of the TIMESTAMPS CONTROL field are defined in 5.2.8.

The contents of the PARTITION_ID field are defined in 5.2.5.

The contents of the USER_OBJECT_ID field are defined in 5.2.9.

The ALLOCATION LENGTH field is defined in 5.2.2.

The TASK MANAGEMENT FUNCTION field (see table 88) specifies the SAM-34 task management function to be processed.

Table 88 — Task-management-function-values TASK MANAGEMENT FUNCTION field

Value Code	SAM-34 Task Management Function	Addressed OSD Object	Task Tag Specified	ADDITIONAL RESPONSE INFORMATION parameter data field reserved
01h	ABORT TASK	Any	Yes	Yes
02h	ABORT TASK SET	Root	No	Yes
04h	CLEAR TASK SET	Root	No	Yes
08h	LOGICAL UNIT RESET	Root	No	Yes
40h	CLEAR ACA	Any	No	Yes
80h	QUERY TASK	Any	Yes	Yes
81h	QUERY TASK SET	Root	No	Yes
82h	QUERY UNIT ATTENTION	Root	No	No
All values codes not listed in this table are reserved.				

If the TASK MANAGEMENT FUNCTION field contains a value that table 88 lists as being addressed to the root object and either the PARTITION_ID field or the USER_OBJECT_ID field contains a value other than zero, the command shall be terminated with a 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 TASK TAG field contains the task tag that identifies the task to be managed if the TASK MANAGEMENT FUNCTION field contains a value listed as specifying a task tag in table 88. If table 88 lists a task management function as not specifying a task tag, then the contents of the task tag field shall be ignored.

The format of the task tag is specified in the applicable SCSI transport protocol standard and the length of the task tag may be less than eight bytes. Any bytes between the end of the task tag and the end of the TASK TAG field shall be ignored (e.g., a two-byte task tag occupies the first two bytes of the TASK TAG field and the remaining six bytes are ignored).

The get and set attributes parameters are defined in 5.2.2. The format of the Data-In Buffer and Data-Out Buffer when attributes are being retrieved or set is described in 4.12.

The capability is defined in 4.9.2.2.

The security parameters are defined in 5.2.6.

The PERFORM TASK MANAGEMENT FUNCTION parameter data (see table x1) indicates the results of the task management function specified by the TASK MANAGEMENT FUNCTION field. The parameter data shall be returned in the command data or parameter data segment of the Data-In Buffer (see 4.12.3).

Table x1 — PERFORM TASK MANAGEMENT FUNCTION parameter data format

Bit Byte	7	6	5	4	3	2	1	0
0	(MSB)							
1	ADDITIONAL LENGTH (0006h)							(LSB)
2	Reserved							
3								
4	SERVICE RESPONSE							
5	ADDITIONAL RESPONSE INFORMATION							
7								

The ADDITIONAL LENGTH field indicates the number of bytes that follow. The ADDITIONAL LENGTH field shall contain six.

The SERVICE RESPONSE field (see table x2) indicates the service response (see SAM-4) returned by the task management function specified by the TASK MANAGEMENT FUNCTION field.

Table x2 — SERVICE RESPONSE field

Code	Service response (see SAM-4)
00h	FUNCTION COMPLETE
05h	FUNCTION SUCCEEDED
08h	FUNCTION REJECTED
09h	INCORRECT LOGICAL UNIT NUMBER
All codes not listed in this table are reserved.	

If the TASK MANAGEMENT FUNCTION field in the CDB specifies a task management function for which the contents of the ADDITIONAL RESPONSE INFORMATION field are not reserved (see table 88), then the ADDITIONAL RESPONSE INFORMATION field shall contain the data defined by SAM-4 for the Additional Response Information argument for the specified task management function.