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First edition
2005-02

Information technology –
Small computer system interface (SCSI) –

Part 222:
Fibre Channel Protocol for SCSI,
Second Version (FCP-2)

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CONTENTS

Foreword	11
Introduction	12
1 Scope	14
2 Normative references.....	14
2.1 International standards	14
2.2 International standards under development	14
2.3 Other references	14
3 Definitions, abbreviations and conventions	15
3.1 Definitions	15
3.2 Abbreviations	20
3.3 Keywords	21
3.4 Editorial conventions	22
4 General	24
4.1 Structure and concepts.....	24
4.2 Device management.....	25
4.3 Precise delivery of SCSI commands	27
4.4 Confirmed completion of FCP I/O Operations	28
4.5 Retransmission of unsuccessfully transmitted data	29
4.6 Task retry identification.....	29
4.7 Discovery of FCP capabilities	30
4.8 Task management	30
4.9 Clearing effects of task management, FCP, FC-FS, and FC-AL-2 actions	31
4.10 I_T nexus loss notification events	33
4.11 Transport Reset notification events	34
4.12 Port login/logout.....	34
4.13 Process login/logout	34
4.14 Link management	34
5 Fibre Channel protocol overview	35
5.1 FCP addressing and Exchange identification.....	35
5.2 SCSI third-party device identifier for the Fibre Channel protocol	35
5.3 Use of World Wide Names	35
5.4 FCP Information Units (IUs)	36
5.5 Fibre Channel protocol standard formats	37
5.6 FC-FS mappings to SCSI-3 functionality.....	38
5.6.1 FC-FS frame header.....	38
5.6.2 Frame header fields.....	38
5.6.2.1 R_CTL	38
5.6.2.2 D_ID.....	38
5.6.2.3 CS_CTL	38
5.6.2.4 S_ID.....	38
5.6.2.5 TYPE	38
5.6.2.6 F_CTL.....	39
5.6.2.7 SEQ_ID.....	39
5.6.2.8 DF_CTL	39
5.6.2.9 SEQ_CNT.....	39
5.6.2.10 OX_ID.....	39
5.6.2.11 RX_ID.....	39
5.6.2.12 PARAMETER.....	40

6	FCP basic and extended link service definitions	40
6.1	Overview of link service requirements	40
6.2	Overview of Process Login/Logout	40
6.3	Process Login (PRLI)	41
6.3.1	Use of Process Login by the Fibre Channel protocol	41
6.3.2	Process_Associator requirements	41
6.3.3	New or repeated PRLI	41
6.3.4	Process Login request FCP Service Parameter page format	42
6.3.5	Process Login accept FCP Service Parameter page format	45
6.4	Process Logout (PRLO)	46
6.5	Read Exchange Concise (REC)	46
7	FC-4 specific name server objects	47
7.1	Overview of FC-4 specific objects for the Fibre Channel protocol	47
7.2	FC-4 Features object	47
7.3	FC-4 Descriptor object	47
8	FC-4 Link Service definitions	48
8.1	FC-4 Link Services for the Fibre Channel protocol	48
8.2	Sequence Retransmission Request (SRR)	48
8.3	FCP FC-4 Link Service Reject	50
9	FCP Information Unit (IU) formats	52
9.1	FCP_CMND IU	52
9.1.1	FCP_CMND IU format	52
9.1.2	FCP_CMND IU Field descriptions	52
9.1.2.1	FCP_LUN	52
9.1.2.2	COMMAND REFERENCE NUMBER	53
9.1.2.3	TASK ATTRIBUTE	53
9.1.2.4	TASK MANAGEMENT FLAGS	53
9.1.2.5	ADDITIONAL FCP_CDB LENGTH	56
9.1.2.6	RDDATA	56
9.1.2.7	WRDATA	56
9.1.2.8	FCP_CDB	56
9.1.2.9	ADDITIONAL_FCP_CDB	56
9.1.2.10	FCP_DL	56
9.1.3	Additional mechanisms for performing task management functions - ABORT TASK	57
9.2	FCP_XFER_RDY IU	57
9.2.1	Overview and format of FCP_XFER_RDY IU	57
9.2.2	FCP_DATA_RO	57
9.2.3	FCP_BURST_LEN	58
9.3	FCP_DATA IU	58
9.4	FCP_RSP IU	59
9.4.1	Overview and format of FCP_RSP IU	59
9.4.2	FCP_CONF_REQ	60
9.4.3	FCP_RESID_UNDER	60
9.4.4	FCP_RESID_OVER	60
9.4.5	FCP_SNS_LEN_VALID	61
9.4.6	FCP_RSP_LEN_VALID	61
9.4.7	SCSI STATUS CODE	61
9.4.8	FCP_RESID	61
9.4.9	FCP_SNS_LEN	62
9.4.10	FCP_RSP_LEN	62
9.4.11	FCP_RSP_INFO	62
9.4.12	FCP_SNS_INFO	63
9.5	FCP_CONF IU	63

10	SCSI mode parameters for the Fibre Channel protocol	64
10.1	Overview of mode page codes for the Fibre Channel protocol	64
10.2	Disconnect-Reconnect mode page	64
10.2.1	Overview and format of Disconnect-Reconnect mode page for FCP	64
10.2.2	BUFFER FULL RATIO	65
10.2.3	BUFFER EMPTY RATIO	66
10.2.4	BUS INACTIVITY LIMIT	66
10.2.5	DISCONNECT TIME LIMIT	66
10.2.6	CONNECT TIME LIMIT	66
10.2.7	MAXIMUM BURST SIZE FIELD	66
10.2.8	ENABLE MODIFY DATA POINTERS (EMDP)	67
10.2.9	FAA, FAB, FAC	67
10.2.10	FIRST BURST SIZE	67
10.3	Fibre Channel Logical Unit Control mode page	68
10.4	Fibre Channel Port Control mode page	68
10.4.1	Overview and format of Fibre Channel Port Control mode page	68
10.4.2	DISABLE TARGET ORIGINATED LOOP INITIALIZATION (DTOLI)	69
10.4.3	DISABLE TARGET INITIATED PORT ENABLE (DTIPE)	69
10.4.4	ALLOW LOGIN WITHOUT LOOP INITIALIZATION (ALWLI)	69
10.4.5	REQUIRE HARD ADDRESS (RHA)	69
10.4.6	DISABLE LOOP MASTER (DLM)	69
10.4.7	DISABLE DISCOVERY (DDIS)	70
10.4.8	PREVENT LOOP PORT BYPASS (PLPB)	70
10.4.9	DISABLE TARGET FABRIC DISCOVERY (DTFD)	70
10.4.10	RESOURCE RECOVERY TIME-OUT VALUE (RR_TOV)	70
11	Timers for FCP operation and recovery	72
11.1	Summary of timers for the Fibre Channel protocol	72
11.2	Error_Detect Time-out (E_D_TOV)	72
11.3	Resource Allocation Time-out (R_A_TOV)	73
11.4	Resource Recovery Timer (RR_TOV)	73
11.5	Read Exchange Concise Time-out Value (REC_TOV)	74
11.6	Upper Level Protocol Time-out (ULP_TOV)	74
12	Link error recovery procedure	75
12.1	Overview	75
12.1.1	Exchange level error recovery	75
12.1.2	Sequence level error recovery	75
12.2	FCP Error Detection	75
12.2.1	Overview of FCP-2 Error Detection	75
12.2.2	FCP-2 Error Detection using protocol errors for all classes of service	75
12.2.3	Error Detection mechanisms for acknowledged classes of Service	76
12.3	Exchange level recovery using recovery abort	77
12.3.1	Recovery abort requirements	77
12.3.2	Initiator invocation of recovery abort	77
12.3.3	Target response to recovery abort	77
12.3.4	Additional error recovery by initiator	78
12.3.5	Additional error recovery by target	78

12.4	Sequence level error detection and recovery	78
12.4.1	Using information from REC to perform Sequence level recovery.....	78
12.4.1.1	Polling Exchange state with REC.....	78
12.4.1.2	Detection of errors while polling with REC	79
12.4.1.3	FCP_CMND IU Recovery using information from REC	79
12.4.1.4	FCP_XFER_RDY IU Recovery	79
12.4.1.5	FCP_RSP IU Recovery	79
12.4.1.6	FCP_DATA IU Recovery – Write	81
12.4.1.7	FCP_DATA IU Recovery – Read	81
12.4.1.8	FCP_CONF IU Recovery	81
12.4.2	Additional error recovery requirements	82
12.4.2.1	Error indicated in ACK.....	82
12.4.2.2	Missing ACK.....	82
12.4.2.3	Distinguishing exchange to be aborted.....	82
12.5	Second-level error recovery	83
12.5.1	ABTS	83
12.5.2	REC	83
12.5.3	SRR	83
12.6	Responses to FCP type frames before PLOGI or PRLI.....	83

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Annex A (normative) FCP mapping to SAM-2 (Fibre Channel Protocol Service mapping to SCSI Architectural Model (SAM-2)).....	84
A.1 Definition of procedure terms	84
A.2 Notation for procedures and functions	85
A.3 Application client SCSI command services	86
A.4 Send SCSI command service.....	86
A.5 Data Transfer Protocol Services	87
A.5.1 Overview of data buffer movement services	87
A.5.2 Data-in delivery service	87
A.5.3 Data-out delivery service	87
A.6 Task management services.....	87
Annex B (informative) FCP examples	88
B.1 Examples of the use of FCP Information Units (IUs)	88
B.1.1 Overview of examples	88
B.1.2 SCSI FCP read operation.....	88
B.1.3 SCSI FCP write operation	89
B.1.4 SCSI FCP operation with no data transfer or with check condition.....	89
B.1.5 SCSI FCP read operation with multiple FCP_DATA IUs	90
B.1.6 SCSI FCP write operation with FCP_XFR_RDY disabled	90
B.1.7 SCSI linked commands	91
B.1.8 SCSI WRITE command with confirmed completion.....	91
B.1.9 SCSI FCP task management function	92
B.2 FCP write example, frame level	93
B.3 FCP read example, frame level.....	95
Annex C (informative) Error detection and recovery action examples.....	97
Annex D (informative) FCP-2 examples of link service usage.....	131
D.1 Formats for recovery link services.....	131
D.2 Abort Sequence (ABTS) Request.....	131
D.2.1 Abort Sequence (ABTS) Request fields.....	131
D.2.2 Basic Accept (BA_ACC) Frame to ABTS.....	132
D.2.3 Basic Reject (BA_RJT) Frame to ABTS.....	132
D.3 Reinstate Recovery Qualifier (RRQ)	133
Annex E (informative) Bidirectional operation support.....	134
E.1 Introduction.....	134
E.2 Changes in the FCP device management model.....	134
E.2.1 Support of bidirectional operation.....	134
E.2.2 Relationship between bidirectional and unidirectional operation	134
E.3 FCP_CMND IU changes	135
E.3.1 FCP_CMND IU payload	135
E.3.2 TASK MANAGEMENT FLAGS	135
E.3.3 RDDATA and WRDATA	136
E.3.4 FCP_DL.....	136
E.3.5 FCP_BIDIRECTIONAL_READ_DL	136
E.4 FCP_DATA IU changes.....	136
E.5 FCP_RSP IU changes.....	137
E.5.1 FCP_RSP IU payload.....	137
E.5.2 FCP_BIDI_RSP.....	137
E.5.3 FCP_BIDI_READ_RESID_UNDER	137
E.5.4 FCP_BIDI_READ_RESID_OVER.....	138
E.5.5 FCP_RESID	138
E.5.6 FCP_BIDIRECTIONAL_READ_RESID.....	138

E.6	Error recovery changes	139
E.6.1	Overview	139
E.6.2	Sequence level error recovery.....	139
E.6.3	FCP-2 Error Detection using protocol errors for all classes of service.....	139
E.7	FCP Example	139
E.7.1	Overview.....	139
E.7.2	SCSI FCP bidirectional command with write before read	141
E.7.3	SCSI FCP bidirectional command with read before write	141
E.7.4	SCSI FCP bidirectional command, write first, write FCP_XFER_RDY disabled.....	142
E.7.5	SCSI FCP bidirectional command with intermixed writes and reads	143
Annex F	(informative) FCP Device Discovery Procedure	144
F.1	FCP Device Discovery Procedure	144
F.1.1	Initiator discovery of Fabric-attached targets	144
F.1.2	Initiator discovery of loop-attached targets.....	144
F.2	Fabric and Device Authentication.....	145
F.3	Logical unit authentication	145
Bibliography	146

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[ISO/IEC 14776-222:2005](https://standards.iteh.ai/catalog/standards/sist/c84caedd-06df-4bb6-99e8-42d5ac1438b1/iso-iec-14776-222-2005)

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Table 1 – SCSI and Fibre Channel protocol functions	25
Table 2 – Discovery of FCP–2 capabilities	30
Table 3 – Task management functions, SAM–2 to FCP	31
Table 4 – Clearing effects of link related functions	32
Table 5 – Clearing effects of initiator actions	33
Table 6 – FCP third–party device id format	35
Table 7 – FCP Information Units (IUs) sent to targets	36
Table 8 – FCP Information Units (IUs) sent to initiators	37
Table 9 – FCP frame header	38
Table 10 – FCP Service Parameter page, PRLI request	42
Table 11 – FCP Service Parameter page, PRLI accept	45
Table 12 – FCP definition of FC–4 Feature bits	47
Table 13 – FCP FC–4 Link Service Requests and Responses for FCP–2	48
Table 14 – SRR Payload	49
Table 15 – SRR Accept Payload	49
Table 16 – FCP FC–4 Link Service Reject (FCP_RJT) Payload	50
Table 17 – FCP FC–4 Link Service Reject reason codes	50
Table 18 – FCP FC–4 Link Service Reject reason code explanation	51
Table 19 – FCP_CMND IU Payload	52
Table 20 – TASK ATTRIBUTE field values	53
Table 21 – task management Flags	54
Table 22 – FCP_XFER_RDY IU payload	57
Table 23 – FCP_RSP IU Payload	60
Table 24 – FCP_RSP_INFO field format	62
Table 25 – RSP_CODE definitions	63
Table 26 – Mode page codes for FCP	64
Table 27 – Disconnect–reconnect page (02h)	65
Table 28 – Fibre Channel Logical Unit Control page (18h)	68
Table 29 – Fibre Channel Port Control page (19h)	69
Table 30 – Values for RR_TOV UNITS	71
Table 31 – Timer summary	72
Table 32 – Initiator REC_TOV Usage	74
Table 33 – Target REC_TOV usage	74
Table A.1 – FCP procedure terms mapped to terms from SAM–2 standard	84
Table A.2 – Procedure Terms	85
Table A.3 – Processing of send SCSI command service procedure	86
Table A.4 – Processing of data–in delivery service procedure	87
Table A.5 – Processing of data–out delivery service procedure	87
Table B.1 – FCP read operation, example	88
Table B.2 – FCP write operation, example	89
Table B.3 – FCP operation without data transfer, example	89
Table B.4 – FCP read operation, example	90
Table B.5 – FCP write operation with FCP_XFER_RDY disabled, example	90
Table B.6 – FCP linked commands, example	91
Table B.7 – FCP write command with confirmed completion	91
Table B.8 – FCP task management function, example	93
Table C.1 – Diagram Drawing conventions	97
Table D.1 – ABTS Frame	131
Table D.2 – BA_ACC Frame to ABTS	132
Table D.3 – BA_RJT Frame to ABTS	132
Table D.4 – Reinstate Recovery Qualifier	133
Table E.1 – FCP_CMND payload for a bidirectional command	135
Table E.2 – FCP_RSP IU Payload	137
Table E.3 – FCP bidirectional command with write before read, example	140
Table E.4 – FCP bidirectional command with read before write, example	141
Table E.5 – FCP bidirectional command, write FCP_XFER_RDY disabled, example	142
Table E.6 – FCP bidirectional command with intermixed writes and reads, example	143

Figure B.1 – Example of class 2 FCP write I/O operation.....	93
Figure B.2 – Example of class 2 FCP_DATA write	94
Figure B.3 – Example of class 2 FCP read I/O operation	95
Figure B.4 – Example of class 2 FCP_DATA read	96
Figure C.1 – Lengthy FCP_CMND or Lost ACK	98
Figure C.2 – FCP_CMND Lost, Unacknowledged Classes	99
Figure C.3 – FCP_CMND Lost, Acknowledged Classes	100
Figure C.4 – FCP_CMND Acknowledgement Lost, Acknowledged Classes.....	101
Figure C.5 – FCP_XFER_RDY Lost, Unacknowledged Classes.....	102
Figure C.6 – FCP_XFER_RDY Lost, Acknowledged Classes.....	103
Figure C.7 – FCP_XFER_RDY Received, ACK Lost, Acknowledged Classes	104
Figure C.8 – FCP_RSP Lost, FCP_CONF not requested, Unacknowledged Classes.....	105
Figure C.9 – FCP_RSP Lost, FCP_CONF not requested, Acknowledged Classes	106
Figure C.10 – FCP_RSP Lost Read Command, no FCP_CONF, Acknowledged Classes.....	107
Figure C.11 – FCP_RSP Received, ACK Lost, Acknowledged Classes, Example 1	108
Figure C.12 – FCP_RSP Received, ACK Lost, Acknowledged Classes, Example 2.....	109
Figure C.13 – Lost Write Data, Last Frame of Sequence, Unacknowledged Classes	110
Figure C.14 – Lost Write Data, Last Frame of Sequence, Acknowledged Classes.....	111
Figure C.15 – Lost Write Data, Not Last Frame of Sequence, Unacknowledged Classes.....	112
Figure C.16 – Lost Write Data, Not Last Frame of Sequence, Acknowledged Classes	113
Figure C.17 – Lost Read Data, Last Frame of Sequence, Unacknowledged Classes	114
Figure C.18 – Lost Read Data, Last Frame of Sequence, Acknowledged Classes	115
Figure C.19 – Lost Read Data, Not Last Frame of Sequence, Unacknowledged Classes	116
Figure C.20 – Lost Read Data, Not Last Frame of Sequence, Acknowledged Classes.....	117
Figure C.21 – ACK Lost on Read (Acknowledged Classes).....	118
Figure C.22 – ACK Lost on Write (Acknowledged Classes).....	119
Figure C.23 – FCP_CONF Lost, Unacknowledged Classes.....	120
Figure C.24 – FCP_CONF Lost, Acknowledged Classes.....	121
Figure C.25 – ACK lost on FCP_CONF, Acknowledged Classes.....	122
Figure C.26 – REC or REC Response Lost, Unacknowledged Classes	123
Figure C.27 – REC Lost, Acknowledged Classes.....	124
Figure C.28 – REC Response Lost, Acknowledged Classes	125
Figure C.29 – Two RECs Lost, Unacknowledged Classes, Abort the original Exchange	126
Figure C.30 – SRR Lost, Unacknowledged Classes, Abort original Exchange	127
Figure C.31 – SRR Response Lost, Unacknowledged Classes	128
Figure C.32 – SRR Lost, Acknowledged Classes.....	129
Figure C.33 – SRR Response Lost, Acknowledged Classes	130

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**INFORMATION TECHNOLOGY –
SMALL COMPUTER SYSTEM INTERFACE –
PART 222: Fibre Channel Protocol for SCSI,
Second Version (FCP-2)**

FOREWORD

- 1) ISO (International Organization for Standardization) and IEC (International Electrotechnical Commission) form the specialized system for worldwide standardization. National bodies that are members of ISO or IEC participate in the development of International Standards through technical committees established by the respective organization to deal with particular fields of technical activity. ISO and IEC technical committees collaborate in fields of mutual interest. Other international organizations, governmental and non-governmental, in liaison with ISO and IEC, also take part in the work.
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International Standard ISO/IEC 14776-222 was prepared by subcommittee 25: Inter-connection of information technology equipment, of ISO/IEC joint technical committee 1: Information technology.

INTRODUCTION

This International Standard defines a Fibre Channel mapping layer (FC-4) that uses the services defined by NCITS Project 1311D, Fibre Channel Framing and Signaling Interface (FC-FS) to transmit SCSI command, data and status information between a SCSI initiator and a SCSI target. The use of this standard enables the transmission of standard SCSI command formats, the transmission of standard SCSI data and parameter strings, and the receipt of SCSI status and sense information across the Fibre Channel using only the standard Fibre Channel frame and sequence formats. The Fibre Channel protocol operates with Fibre Channel Classes of Service 1, 2 and 3 and operates across Fibre Channel fabrics and arbitrated loops.

The Small Computer System Interface (SCSI) command set is widely used and applicable to a wide variety of device types. The transmission of SCSI command set information across Fibre Channel links allows the large body of SCSI application and driver software to be successfully used in the high performance Fibre Channel environment.

This standard describes the protocol for transmitting SCSI commands, data, and status using Fibre Channel FC-FS Exchanges and Information Units. Fibre Channel is a high speed serial architecture that allows either optical or electrical connections at data rates from 265 Mbits up to 4 Gbits per second. The topologies supported by Fibre Channel include point-to-point, fabric switched and arbitrated loop. All Fibre Channel connections use the same standard frame format and standard hierarchy of transmission units to transmit the Information Units that carry SCSI information.

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This standard is divided into 12 clauses and comprises 6 Annexes:

Clause	Subject
1	Scope
2	Normative references
3	Definitions, abbreviations and conventions
4	Overview of the protocol for transmitting SCSI information over Fibre Channel
5	Information Units used to transfer SCSI commands, data and status across a Fibre Channel connection
6	Basic Link Services and Extended Link Services used by the protocol for transmitting SCSI information over Fibre Channel
7	FC-GS-3 Name Server objects defined for FCP-2
8	FCP FC-4 Link Service definitions for the protocol for transmitting SCSI information over Fibre Channel
9	Details of the Information Unit formats
10	SCSI management features for Fibre Channel, including the SCSI mode pages used by the protocol for transmitting SCSI information over Fibre Channel
11	Timers used for FCP-2 error recovery algorithms
12	Error recovery algorithms for FCP-2
Annex A	Relationship between the services defined by SAM-2 and the corresponding functions defined by this standard
Annex B	Examples of the protocol for transmitting SCSI information over Fibre Channel
Annex C	Examples of the FCP-2 error recovery mechanisms
Annex D	Techniques for discovering SCSI device capabilities over Fibre Channel
Annex E	Examples of the content of ELSS used during FCP-2 recovery operations
Annex F	Mechanism to support bidirectional SCSI data transfer using SCSI commands

Fibre channel Protocol-2 (FCP-2) is part of the SCSI family of standards developed by T10 to facilitate the use of the SCSI command sets for many different types of devices across many different types of physical interconnects. The architectural model for the family of standards is ISO/IEC 14776-412, Information technology – SCSI Architecture Model–2 (SAM-2).

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