ISO/IEC 14165-141:2001-06 (E)

Information technology_- Fibre Channel_- Part_141: Fabric Generic Requirements (FC-FG)

Contents

Page

FOREWORD v

INTRODUCTION vi

1 Scope 1

2 Normative references 1

3 Definitions and conventions 2

3.1 Definitions 2

3.2 Editorial conventions 5

3.3 Abbreviations and acronyms 5

4 Fabric concepts 6

4.1 Fabric and Fabric Elements 6

4.1.1 Sub-Fabric 6

4.1.2 Region 8

4.1.3 Translator 8

4.1.4 Extended Region 8

4.1.5 Zone 8

4.2 Typical Fabric topologies 8

4.2.1 Switch topology 9

4.2.1.1 Dedicated Connections 9

4.2.1.2 Connectionless service 9

4.2.1.3 Connection-oriented service 10

4.2.2 Distributed Fabric Element topology (DFE) 10

4.2.3 Other topologies 10

4.3 Fabric frame 10

4.4 Fabric_Ports 11

4.5 Fabric Service Parameters 11

4.6 Fabric addressing 11

4.6.1 Address identifiers 11

4.6.2 Address space partitioning 12

4.7 Fabric addressable service elements 12

4.7.1 Broadcast Alias_ID 12

4.7.2 Fabric F_Port/Login server 12

4.7.3 Fabric Controller 13

4.7.4 Directory server 13

4.7.5 Time server 13

4.7.6 Management server 13

Page

4.7.7 Quality of Service Facilitator - Class 4 (QoSF) 13
4.7.8 Alias Server 13
5 Fabric entity requirements and characteristics 13
5.1 General requirements 13
5.2 Link_Control response 14
5.3 Frame validity checking 14
5.4 Connection independence 14
5.5 Class 1 bandwidth & frame jitter 14
5.6 Fabric Controller 14
5.7 Login Server 14
5.8 Service Parameter extent 14
5.9 E_D_TOV, R_A_TOV enforcement 14
5.10 Non-duplication of frames 15
5.11 Phase discontinuities 15
6 Fabric_Port requirements and characteristics 15
6.1 General requirements 15
6.2 Class 1 service - Dedicated Connection 15
6.3 Buffered Class 1 service 16
6.4 Dedicated Simplex service 16
6.5 Class 2 service - Multiplex 16
6.6 Class 3 service - Datagram 17
6.7 Class 4 service - Fractional 17
6.8 Intermix service 17
6.9 Class F service - Fabric signaling 17
6.9.1 Class F Frame formats 17
6.9.2 Class F function 17
6.9.3 Class F rules 18
6.9.4 Class F delimiters 19
6.9.4.1 Class F frame size 19
6.9.4.2 Class F flow control 19
6.9.5 Link Control 19
6.10 Fabric Login 19
7 Initialization and configuration control 20
7.1 Initialization 20

7.1.1 Power On 20
7.1.2 Link Initialization Protocol 20
7.1.3 Link Attachment Protocol 20
7.1.4 Addressing and Configuration Determination 21
7.1.5 F_Port Activation 21
7.1.6 N_Port Login with Fabric 21
7.2 Configuration Changes 21
8 Fabric inter-operation 22

Annex

A Address Space Partitioning 23
A.1 Address partitioning 23
A.1.1 Port Identifier partition 23
A.1.2 Fabric-Assisted functions 23
A.1.3 Vendor Unique partitions 23

Table

1 Well-known Address Identifiers 12
2 Address Partitioning 24

Figures

1 Document relationship vii
2 Fabric model 6
3 Fabric with Sub-Fabric illustrations 7
4 Class 2 Sub-Fabrics and an extended region 8
5 Example of Switch topology 9
6 Example of Distributed Fabric Element topology 10
7 The Class F frame format 18