The ISO Development Environment: User's Manual

Volume 3: Applications

Marshall T. Rose
Performance Systems International, Inc.

Julian P. Onions
X-Tel Services Ltd

Colin J. Robbins
X-Tel Services Ltd

July 18, 1991
(Version 7.0)

Contents

I Introduction **1**

1 Overview **3**
1.1 Fanatics Need Not Read Further 4
1.2 The Name of the Game 5
1.3 Operating Environments 5
1.4 Organisation of the Release 7
1.5 A Note on This Implementation 9
1.6 Changes Since the Last Release 10

II File Transfer, Access and Management **13**

2 User Library **15**
2.1 Warning 16
2.2 Constants 16
2.2.1 FTAM Quality-of-Service 16
2.2.2 Service Classes 16
2.2.3 Functional Units 17
2.2.4 Attribute Groups 17
2.2.5 State Results 17
2.2.6 Action Results 17
2.3 Data-Structures 18
2.3.1 Contents Type 18
2.3.2 Diagnostics 19
2.3.3 Charging 20
2.3.4 Passwords 21
2.3.5 Access Control 22

2.3.6 Attributes 24
2.3.7 Concurrency 26
2.3.8 FADU Identity 28
2.4 Association Establishment 30
2.4.1 Responder 31
2.4.2 Initiator 37
2.5 Event Handling 41
2.5.1 Asynchronous Event Handling 59
2.5.2 Synchronous Event Multiplexing 60
2.5.3 Tracing 61
2.6 Grouped Operations: File Transfer 62
2.7 File Access 65
2.8 Data Transfer 67
2.8.1 Read/Write 67
2.8.2 Sending Data 68
2.8.3 Canceling Transfer 69
2.8.4 Terminating Transfer 70
2.9 Grouped Operations: File Management 72
2.10 Association Release 73
2.11 Association Abort 75
2.12 Error Conventions 76
2.13 Compiling and Loading 76
2.14 An Example 76
2.15 For Further Reading 76

3 The ISO Documents Database 77
3.1 Accessing the Database 77

4 UNIX Implementation 80
4.1 Implementation 80
4.1.1 The Initiator 80
4.1.2 The Responder 84

5 FTAM-FTP gateway 88
5.1 Implementation 88
5.1.1 The FTAM/FTP side 88
5.1.2 The FTP/FTAM side 89

III Virtual Terminal **91**

6 UNIX Implementation **93**
6.1 Implementation 93
6.1.1 The Initiator 93
6.1.2 The Responder 95

IV Miscellaneous Applications **97**

7 The ISODE Little Services **99**
7.1 Implementation 100
7.1.1 The Initiator 100
7.1.2 The Responder 100

This document (version #6.18) was LaTeXset July 18, 1991 with lplain v2.09-10/29/85.

List of Tables

2.1 FTAM Requested Access Values 23
2.2 FTAM Attribute Values 27
2.3 FTAM Access Operations 54
2.4 FTAM Data Operations 56
2.5 FTAM Access Contexts 56

List of Figures

7.1 ROS definition of ISODE Little Services 104

Preface

The software described herein has been developed as a research tool and represents an effort to promote the use of the International Organisation for Standardisation (ISO) interpretation of open systems interconnection (OSI), particularly in the Internet and RARE research communities.

Notice, Disclaimer, and Conditions of Use

The ISODE is openly available but is **NOT** in the public domain. You are allowed and encouraged to take this software and build commercial products. However, as a condition of use, you are required to "hold harmless" all contributors.
Permission to use, copy, modify, and distribute this software and its documentation for any purpose and without fee is hereby granted, provided that this notice and the reference to this notice appearing in each software module be retained unaltered, and that the name of any contributors shall not be used in advertising or publicity pertaining to distribution of the software without specific written prior permission. No contributor makes any representations about the suitability of this software for any purpose. It is provided "as is" without express or implied warranty.

All contributors disclaim all warranties with regard to this software, including all implied warranties of mechantibility and fitness. In no event shall any contributor be liable for any special, indirect or consequential damages or any damages whatsoever resulting from loss of use, data or profits, whether in action of contract, negligence or other tortuous action, arising out of or in connection with, the use or performance of this software.

As used above, "contributor" includes, but is not limited to:

The MITRE Corporation
The Northrop Corporation
NYSERNet, Inc.
Performance Systems International, Inc.
University College London
The University of Nottingham
X-Tel Services Ltd
The Wollongong Group, Inc.
Marshall T. Rose

In particular, the Northrop Corporation provided the initial sponsorship for the ISODE and the Wollongong Group, Inc., also supported this effort. The ISODE received partial support from the U.S. Defense Advanced Research

Projects Agency and the Rome Air Development Center of the U.S. Air Force Systems Command under contract number F30602–88–C–0016 to NYSER-Net Inc.