ISO/IEC 20970:2002-07 (E)

Information technology - Programming languages, their environments and system software interfaces - JEFF file format

Contents

Page

Foreword v

0 Introduction vi
0.1 What is JEFF vi
0.1.1 Benefits vi

1 Scope and normative references 1
1.1 Scope 1
1.2 Normative references 1
1.3 Definitions 2

2 Data Types 3
2.1 Basic Types 3
2.2 Language Types 3
2.3 Strings 3
2.3.1 Definition 3
2.3.2 Comparison 3
2.3.3 Representation 3
2.4 Specific Types 4
2.4.1 Access Flags 4
2.4.2 Type Descriptor 5
2.4.3 Offsets 7

3 File Structure 8
3.1 Definitions 8
3.1.1 Fully Qualified Names 8
3.1.2 Internal Classes and External Classes 8
3.1.3 Fields and Methods 8
3.1.4 Field Position 9
3.2 Conventions 10
3.2.1 Notations 10
3.2.2 Byte Order 10
3.2.3 Alignment and Padding 10
3.3 Definition of the File Structures 11
3.3.1 File Header 11
3.3.2 Class Section 14
3.3.2.1 Class Header 14
3.3.2.2 Interface Table 16
3.3.2.3 Referenced Class Table 16
3.3.2.4 Internal Field Table 17
3.3.2.5 Internal Method Table 17
3.3.2.6 Referenced Field Table 19
3.3.2.7 Referenced Method Table 19
3.3.2.8 Bytecode Block Structure 20
3.3.2.9 Exception Table List 21
3.3.2.10 Constant Data Section 21
3.3.3 Attributes Section 23
3.3.3.1 Attribute Type 24
3.3.3.2 Class Attributes 24
3.3.3.3 Attribute Table 25
3.3.4 Symbolic Data Section 25

3.3.5 Constant Data Pool 27
3.3.5.1 Constant Data Pool Structure 27
3.3.5.2 Descriptor 27
3.3.5.3 Method Descriptor 28
3.3.6 Digital Signature 28

4 Bytecodes 29
4.1 Principles 29
4.2 Translations 29
4.2.1 The tableswitch Opcode 30
4.2.2 The lookupswitch Opcode 30
4.2.3 The new Opcode 31
4.2.4 Opcodes With a Class Operand 31
4.2.5 The newarray Opcode 32
4.2.6 The multianewarray Opcode 32
4.2.7 Field Opcodes 32
4.2.8 Method Opcodes 33
4.2.9 The ldc Opcodes 34
4.2.10 The wide <opcode> Opcodes 34
4.2.11 The wide iinc Opcode 35
4.2.12 Jump Opcodes 35
4.2.13 Long Jump Opcodes 36
4.2.14 The sipush Opcode 36
4.2.15 The newconstarray Opcode 37
4.3 Unchanged Instructions 37
4.3.1 One-Byte Instructions 37
4.3.2 Two-bytes Instructions 39
4.4 Complete Opcode Mnemonics by Opcode 39

5 Restrictions 41