Encoding FIX using Google Protocol Buffers

Version 1.0 Draft Standard

Technical Proposal

April 18, 2019

V1.0

Proposal Status: Draft

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Table of Contents

Document History

Revision	Date	Author(s)	Revision Comments
1	April 15, 2019	Greg Malatestinic, Jordan & Jordan Sara Rosen, CME	Initial draft

1 Introduction

The Google Protocol Buffer encoding utilizes existing industry standard encodings and applies them to the FIX domain. Google Protocol Buffers is a mature binary encoding which can be applied "out of the box" to support FIX language semantics.

The richness of this technology supports multiple solutions to mapping the existent FIX data types to a binary protocol. In the interest of standardization, a specification of a normative encoding of the FIX data types in protocol buffers for interoperable exchange of financial data over FIX has been developed.

Release Candidate 3 of this mapping was made available to the public for review in January 2019. Since there has been no response to the public review, we recommend that it be promoted to Draft Standard.

1.1 Authors

Name	Affiliation	Contact	Role
Greg Malatestinic	Jordan & Jordan	greg.malatestinic@jandj.com	GPB co-lead
Sara Rosen	CME	sara.rosen@nex.com	GPB co-lead

2 Requirements

2.1 Business Requirements

No additional requirements were identified during the public review period of Release Candidate 3.

2.2 Technical Requirements

No additional requirements were identified during the public review period of Release Candidate 3. Changes to the specification and user guide were limited to updates of references to other documents. No changes to the mapping or the binary encoding have been introduced.

2.3 User Guide

In addition to providing guidance on how to code FIX components, messages and types in the Google Protocol Buffers schema language, the User Guide also provides an overview of the changes between proto2 and proto3, and their implications for FIX mapping. Primary focus is on the changes for default field handling and detection of field presence. Guidelines for writing proto2 specifications which will be compatible with proto3 implementations have also been provided.

3 Issues and Discussion Points

None.

4 References

Reference	Version	Relevance	Normative
Encoding FIX using GPB - RC3 - Specification	rev 8	Release candidate 3 full specification as approved for public review in January 2019 by the GTC	
Encoding FIX using GPB - RC3 - User Guide	rev 1.8	Release candidate 3 user guide as approved for pubic review in January 2019 by the GTC	
Encoding FIX using GPB - Draft Standard - Specification		Full specification	
Encoding FIX using GPB – Draft Standard - User Guide		User guide	

5 Relevant and Related Standards

Standard	Version	Reference Location
Protocol Buffers v2 Language Specification	2	https://developers.google.com/protocol-buffers/docs/reference/proto2-spec
Protocol Buffers v3 Language Specification	3	https://developers.google.com/protocol-buffers/docs/reference/proto3-spec

6 Intellectual Property Disclosure

Related Intellection Property	Type of IP (copyright, patent)	IP Owner	Relationship to proposed standard
None			

7 Definitions

Term	Definition

8 Encoding FIX using GPB

The full specification for the Google Protocol Buffers encoding of FIX is available as "Encoding FIX using GPB - Draft Standard - Specification.docx".

The user guide for the Google Protocol Buffers encoding of FIX is available as "Encoding FIX using GPB – Draft standard - User Guide.docx".

Appendix A - Usage Examples

Examples are provided in the specification document and the user guide.

Appendix B – Compliance Strategy

None.