PHIN BATCH MESSAGE PROTOCOL PROFILE

HL7 Version 2.5

Final Version
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Centers for Disease Control and Prevention

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1 Introduction

The HL7 Batch Protocol may be employed by any implementation of HL7 messages to make messaging more efficient with PHIN-MS. There are no restrictions on the types of messages sent in a particular batch. Due to size limitations on PHIN-MS, the batch should not exceed 10 mb.

The HL7 file header and trailer and the batch header and trailer segments are defined in exactly the same manner as the HL7 message segments; hence, the same HL7 message construction rules used for individual messages can be used to encode and decode HL7 batch files.

Implementation details such as the use of acknowledgments and expected payloads must be negotiated between the sender and receiver systems.

1.1   Audience

This document is not intended as a tutorial for either HL7 or interfacing in general. The reader is expected to have a basic understanding of interface concepts and HL7.
This specification is designed for use by messaging analysts and technical implementers working to send or receive a specific PHIN notification. It must be used with the companion Message Mapping Guide to populate the specified structure with the content for the condition being passed.

1.2   Contacts

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2 HL7 Abstract Message

The structure of the batch file is constrained as follows:

Segment	Name
TABLE 2-1. BATCH FILE STRUCTURE	
Segment	**Name**
FHS	File Header Segment
	--- BATCH begin
BHS	Batch Header Segment
{	--- MESSAGE begin
MSH	(one or more HL7 messages)
....	
....	
....	
}	--- MESSAGE end
BTS	Batch Trailer Segment
	--- Batch end
FTS	File Trailer Segment

3 PHIN Batch Protocol Profile

Interface ID	PHIN Batch Protocol Profile
Organization	CDC/NCPHI
HL7 Version	2.5
Spec Version	1.0
Application Role	Sender
Conformance Type	Constrainable
Encodings	ER7
Event Description	The HL7 Batch Protocol may be employed by any implementation of HL7 messages to make messaging more efficient with PHIN-MS. There are no restrictions on the types of messages sent in a particular batch.
Message Type	NA
Event Type	NA
Order Control Code	NA
Message Structure	FHS,{(--- BATCH begin)BHS,{[(--- MESSAGE begin)MSH]}BTS}FTS
Structure Type	NA
Accept Ack	NE
Application Ack	AL
Ack Mode	Deferred
Static Profile ID	{ConfSig(1) CDC/NCPHI(1) null(0) static-profile(1) null(0) null(0) null(0) (1) 1.0(1) Sender(1)}
Dynamic Profile ID	{ConfSig(1) CDC/NCPHI(1) null(0) dynamic-profile(2) AccNE_AppAL(2) defer_mode_ack(1)}

3.1 Segment Key

Optionality Codes:

- R – required
- RE – required or empty
- C – conditional
- CE – conditional or empty
- O – optional
- NS – not supported
- U – unknown

Abbreviations:

- Seq – sequence
- DT – datatype
- Len – length
- Opt – optionality
- Rep – repeatable
- Min – quantity min
- Max – quantity max
- Tbl – table

Color codes:

- **Fields**
- Implementation Note
- Not Supported Element
- Description/Comments

3.2   FSH-File Header Segment

Segment	Description	Opt	Rep	Min	Max	Reference
FHS	File Header	R	False			
Description/Comments:						
This segment is used as the lead-in to a file (group of batches).						

Fields

Fields for FHS	Seq	DT	Len	Opt	Rep	Min	Max	Tbl	Predicate	Fixed Val	Ex Val	Reference
File Field Separator	1	ST	1	R	F	1	1					2.15.6.1
Description/Comments:												
Character to be used as the field separator for the rest of the message. The supported value is |, ASCII (124).												
File Encoding Characters	2	ST	4	R	F	1	1					2.15.6.2
Description/Comments:												
Four characters that always appear in the same order in this field: |^~\&|.												
File Sending Application	3	HD	227	RE	F	0	1					2.15.6.3
Description/Comments:												
Field used to uniquely identify the sending application for messaging purposes.												
namespace ID	3.1	IS	20	O		0	1					
universal ID	3.2	ST	199	R		1	1					
Description/Comments:												
OID for the sending application instance.												
universal ID type	3.3	ID	6	R		1	1			True	ISO	
Implementation Note:												
Must be the literal value 'ISO'												
File Sending Facility	4	HD	227	R	F	1	1					2.15.6.4
Description/Comments:												
Unique identifier of the facility that is sending the file.												
namespace ID	4.1	IS	20	O		0	1					
universal ID	4.2	ST	199	R		1	1					
Description/Comments:												

Fields for FHS	Seq	DT	Len	Opt	Rep	Min	Max	Tbl	Predicate	Fixed Val	Ex Val	Reference
OID for Data Source.												
universal ID type	4.3	ID	6	R		1	1			True	ISO	
Implementation Note:												
Must be the literal value 'ISO'												
File Receiving Application	5	HD	227	RE	F	0	1					2.15.6.5
Description/Comments:												
Unique identifier of the receiving application for messaging purposes. This field has the same definition as the corresponding field in the MSH segment.												
namespace ID	5.1	IS	20	O		0	1					
universal ID	5.2	ST	199	R		1	1					
Description/Comments:												
OID for the CDC Broker Instance.												
universal ID type	5.3	ID	6	R		1	1			True	ISO	
Implementation Note:												
Must be the literal value 'ISO'												
File Receiving Facility	6	HD	227	R	F	1	1					2.15.6.6
Description/Comments:												
Unique identifier of the facility that is to receive the message. This field has the same definition as the corresponding field in the MSH segment.												
namespace ID	6.1	IS	20	O		0	1					
universal ID	6.2	ST	199	R		1	1					
Description/Comments:												
OID for the CDC as the receiving facility (same for every feed).												
universal ID type	6.3	ID	6	R		1	1			True	ISO	
Implementation Note:												
Must be the literal value 'ISO'												
File Creation Date/Time	7	TS	24	R	F	1	1					2.15.6.7
Description/Comments:												
Date/time the message was created by the sending system.												
time	7.1	DTM	24	R		1	1					
Implementation Note:												
YYYY[MM[DD[HH[MM[SS[.S[S[S[S]]]]]]]]][+/-ZZZZ], where at least the first fourteen are used to specify to a precision of "second."												

Fields for FHS	Seq	DT	Len	Opt	Rep	Min	Max	Tbl	Predicate	Fixed Val	Ex Val	Reference
The time zone (+/-ZZZZ) is represented as +/-HHMM offset from Coordinated Universal Time (UTC) (formerly Greenwich Mean Time [GMT]), where +0000 or -0000 both represent UTC (without offset).												
Note that if the time zone is not included, the time zone is understood to be the local time zone of the sender. It is strongly recommended that the time zone be used in PHIN messaging.												
degree of precision	7.2	ST	0	NS		0	0					
File Security	8	ST	40	O	F	0	1					2.15.6.8
File Name/ID	9	ST	20	O	F	0	1					2.15.6.9
Description/Comments:												
Field that may be used by the application processing file. Its use is not further specified.												
File Header Comment	10	ST	80	O	T	0	*					2.15.6.10
Description/Comments:												
Field that may contain free text, the use of which is not further specified.												
File Control ID	11	ST	50	O	T	0	*					2.15.6.11
Description/Comments:												
Unique identifier of a particular file. It can be echoed back in FHS-12-reference file control ID. This field has the same definition as the corresponding field in the MSH segment, but it is optional.												
Reference File Control ID	12	ST	50	O	T	0	*					2.15.6.12
Description/Comments:												
Field that may contain the value of FHS-11-file control ID when this file was originally transmitted. Not present if this file is being transmitted for the first time. This field has the same definition as the corresponding field in the MSH segment, but it is optional.												

3.3   FTS-File Trailer Segment

Segment	Description	Opt	Rep	Min	Max	Reference
FTS	File Trailer	R	False			
Description/Comments:						
The FTS segment defines the end of a file (group of batches).						

Fields

Fields for FTS	Seq	DT	Len	Opt	Rep	Min	Max	Tbl	Predicate	Fixed Val	Ex Val	Reference

Fields for FTS	Seq	DT	Len	Opt	Rep	Min	Max	Tbl	Predicate	Fixed Val	Ex Val	Reference
File Batch Count	1	NM	10	R	F	1	1					2.15.7.1
Description/Comments:												
The number of batches contained in this file. Since this interface is constrained to one batch per file, this number should be '1,' even with empty batches.												
File Trailer Comment	2	ST	80	O	F	0	1					2.15.7.2
Description/Comments:												
The use of this free text field is not further specified.												

3.4 BHS – Batch Header Segment

Segment	Description	Opt	Rep	Min	Max	Reference
BHS	**Batch Header**	R	False			
Description/Comments:						
The BHS segment is used to head a group of messages that comprise a batch.						

Fields

Fields for BHS	Seq	DT	Len	Opt	Rep	Min	Max	Tbl	Predicate	Fixed Val	Ex Val	Reference
Batch Field Separator	1	ST	1	R	F	1	1					2.15.2.1
Description/Comments:												
Character used as the field separator for the rest of the message. The supported value is |, ASCII (124).												
Batch Encoding Characters	2	ST	4	R	F	1	1					2.15.2.2
Description/Comments:												
Four characters that always appear in the same order in this field: |^~\&|.												
Batch Sending Application	3	HD	227	RE	F	0	1					2.15.2.3
Description/Comments:												
Unique identifier of the sending application for messaging purposes. This field has the same definition as the corresponding field in the MSH												

Fields for BHS	Seq	DT	Len	Opt	Rep	Min	Max	Tbl	Predicate	Fixed Val	Ex Val	Reference
segment.												
namespace ID	3.1	IS	20	O		0	1					
universal ID	3.2	ST	199	R		1	1					
Description/Comments:												
OID for the sending application.												
universal ID type	3.3	ID	6	R		1	1			True	ISO	
Implementation Note:												
Must be the literal value 'ISO'												
Batch Sending Facility	4	HD	227	R	F	1	1					2.15.2.4
Description/Comments:												
Unique identifier of the facility that sends the message.												
namespace ID	4.1	IS	20	O		0	1					
universal ID	4.2	ST	199	R		1	1					
Implementation Note:												
Must be an OID												
Description/Comments:												
OID for main data source facility.												
universal ID type	4.3	ID	6	R		1	1			True	ISO	
Implementation Note:												
Must be the literal value 'ISO'												
Batch Receiving Application	5	HD	227	RE	F	0	1					2.15.2.5
Description/Comments:												
Unique identifier of the receiving application for messaging purposes. This field has the same definition as the corresponding field in the MSH segment.												
namespace ID	5.1	IS	20	O		0	1					
universal ID	5.2	ST	199	R		1	1					
Description/Comments:												
OID for the CDC Broker Instance.												
universal ID type	5.3	ID	6	R		1	1			True	ISO	
Implementation Note:												
Must be the literal value 'ISO'												
Batch Receiving Facility	6	HD	227	R	F	1	1					2.15.2.6
Description/Comments:												

Fields for BHS	Seq	DT	Len	Opt	Rep	Min	Max	Tbl	Predicate	Fixed Val	Ex Val	Reference
Unique identifier of the facility that is to receive the message. This field has the same definition as the corresponding field in the MSH segment.												
namespace ID	6.1	IS	20	O		0	1					
universal ID	6.2	ST	199	R		1	1					
Description/Comments:												
OID for the CDC as the receiving facility (same for every feed).												
universal ID type	6.3	ID	6	R		1	1			True	ISO	
Implementation Note:												
Must be the literal value 'ISO'												
Batch Creation Date/Time	7	TS	24	R	F	1	1					2.15.2.7
Description/Comments:												
Date/time the message was created by the sending system.												
time	7.1	DTM	24	R		1	1					
Implementation Note:												
YYYY[MM[DD[HH[MM[SS[.S[S[S[S]]]]]]]]][+/-ZZZZ], where at least the first fourteen are used to specify to a precision of "second."												
The time zone (+/-ZZZZ) is represented as +/-HHMM offset from Coordinated Universal Time (UTC) (formerly Greenwich Mean Time [GMT]), where +0000 or -0000 both represent UTC (without offset).												
Note that if the time zone is not included, the time zone is understood to be the local time zone of the sender. It is strongly recommended that the time zone be used in PHIN messaging.												
degree of precision	7.2	ST	0	NS		0	0					
Batch Security	8	ST	40	O	F	0	1					2.15.2.8
Batch Name/ID/Type	9	ST	20	O	F	0	1					2.15.2.9
Description/Comments:												
Field that may be used by the application processing file. Its use is not further specified.												
Batch Comment	10	ST	80	O	F	0	1					2.15.2.10
Description/Comments:												
Free text field, the use of which is not further specified.												
Batch Control ID	11	ST	50	O	F	0	1					2.15.2.11
Description/Comments:												
Field that may be used to uniquely identify a particular batch. It can be echoed back in BHS-12-reference batch control ID if an answering batch is needed.												
Reference Batch Control ID	12	ST	50	O	F	0	1					2.15.2.12
Description/Comments:												
Value of BHS-11-batch control ID when this batch was originally transmitted. Not present if this batch is being sent for the first time. See definition for BHS-11-batch control ID.												

3.5 BTS – Batch Trailer Segment

Segment	Description	Opt	Rep	Min	Max	Reference
BTS		R	False			
Description/Comments:						
The BTS segment defines the end of a batch of messages.						

Fields

Fields for BTS	Seq	DT	Len	Opt	Rep	Min	Max	Tbl	Predicate	Fixed Val	Ex Val	Reference
Batch Message Count	1	ST	10	R	F	1	1					2.15.3.1
Description/Comments:												
This is the total number of messages contained in the batch. Zero (0) is allowed for empty batches.												
Batch Comment	2	ST	80	O	F	0	1					2.15.2.10
Description/Comments:												
Comment field that is not further defined in the HL7 protocol.												
Batch Totals	3	NM	0	NS	F	0	0					2.15.3.3

4 References

- *o* *Health Level Seven*, Version 2.5, 2003, Chapter 2 – Control.

- *o* *Health Level Seven*, Version 2.5, 2003, Chapter 2a – Data Types.

- *o* *Transmit Batch Message Use Case* captures the requirements and message interactions that apply for any HL7 2x payload.

- *o* *Messaging Workbench version 1.6.7.15* produced by Peter Rontey, VHA Office of Information Messaging and Interface Services, in coordination with the HL7 Conformance Special Interest Group.