Oracle SOA Suite 11g R2 B2B

Receiving a Stream of Multiple HL7 v2 Message Types

michael@czapski.id.au August 2010 Rev. 1.0.2

Table of Contents

| Introduction | 1 |
|---------------------------------|----|
| Pre-requisites | 1 |
| Prepare HL7 Data | 1 |
| HL7 v2 Solution | 1 |
| Develop HL7 v2 Inbound Solution | 2 |
| Extract HL7 Message Structures | 3 |
| Configure B2B Partnership | 7 |
| Exercise the Solution | 15 |
| Enable and explore Validation | 18 |

Introduction

In this article I discuss and illustrate a "SOA-less" solution in which the Oracle SOA Suite 11g R2 B2B receives a stream of different HL7 v2 delimited messages types (A01 and A03) using a single inbound adapter. The messages are converted into their "equivalent" HL7 v2 XML messages. I say "SOA-less" because all the work is done entirely within the B2B part of the SOA Suite – no OSB or SOA Composites are involved.

Pre-requisites

It is assumed that a Windows XP SP3 platform with the Oracle SOA Suite 11g, installed and configured as discussed in "Installing Oracle SOA Suite for HL7 Exploration", published at <u>http://blogs.czapski.id.au/wp-content/uploads/2010/06/01 Installing Oracle SOA Suite for HL7 exploration v1.</u> <u>1.pdf</u>, is available and will be used for the work discussed in this article.

Prepare HL7 Data

Unzip the archive, A01s_A03s_individual_files_5099_of_each.zip to C:\h17\adt\sources\. This archive is available from <u>http://blogs.czapski.id.au/wp-content/uploads/2010/08/A01s_A03s_individual_files_5099_of_each.zip</u>.

HL7 v2 Solution

Oracle uses the SOA Suite B2B component to provide HL7 v2 messaging support. It uses HL7 v2 message libraries and the B2B engine to provide message parsing and transformation between the native format (HL7 v2 delimited) and XML.

The solution we will be building will read v2 delimited ADT A01 and ADT A03 messages through a HL7 Listener and will write their XML equivalents to files in the file system. No SOA composite will be required. All work will be done entirely by the B2B runtime component.

Develop HL7 v2 Inbound Solution

To develop the HL7 v2 inbound solution we need to go through a number of steps. The steps are:

- 1. Extract HL7 message structures from the standard library
- 2. Configure Local side of the B2B Partnership
- 3. Configure Remote side of the B2B Partnership
- 4. Create and deploy a Partnership Agreement

We have two trading partners, Self, which will write documents to files in the file system and HL7v2A01A03In, which will receive documents arriving over the TCP ML7 MLLP connection and pass them to the B2B infrastructure.



To allow the B2B infrastructure to identify the parties involved in document exchange, and to allow it to find the appropriate Trading Partnership Agreement, we will set the "identify TP by delivery channel" flag for the remote trading partner – more on this later.

| Channel Details | | | |
|---|--------------------------|---------------------------------------|---|
| Transport Protocol TCP 💌 | | | |
| Transport Protocol Parameters Channel Attribu | utes Exchange Protocol I | Parameters Security | |
| MLLP Generic | | | |
| Immediate ACK Default 💌 | | End Block Character 0x10 | |
| Custom Immediate ACK File | Browse | Carriage Return Character 0x0D |) |
| Map ACK Control ID | | Identify TP by delivery channel 🗵 | |
| Map Trigger Event 🗖 | | 1 | |
| Discard HL7 ACK None | | | |
| Start Block Character 0x0B | V | | |
| | | · · · · · · · · · · · · · · · · · · · | |
| 1 | | | |
| 2 | | | |
| | | | |

Create a directory structure "c:\hl7\adt\from_Remote2", into which "received" files will be written. If you worked through the previous article, http://blogs.czapski.id.au/2010/08/oracle-soa-suite-11g-r2-b2b-quick-hl7-v2delimited-to-hl7-v2-xml-conversion, this directory should already exist

Extract HL7 Message Structures

As part of the B2B Document Editor installation we installed a number of standards libraries. One of these libraries was the HL7 v2 library.

Since we will be receiving ADT A01 and ADT A03 messages we must obtain the eternal representations of these from the Standards Library.

If you worked through the previous article, <u>http://blogs.czapski.id.au/2010/08/oracle-soa-suite-11g-r2-b2b-quick-hl7-v2-delimited-to-hl7-v2-xml-conversion</u>, A01 document definition should already be there. If not, follow on.

Start the B2B Document Editor, which should be accessible through Start menu \rightarrow Programs \rightarrow Oracle as Oracle B2B.



Click the "New Document" button, select HL7 from the list, expand 2.3.1, select Event A01and click Next.

| Oracle B2B | ORACLE' 828 Document Ed | Itor | |
|--|--|--------|----------------|
| Here Destament | New Document Warend New document creation Please select a guideline | | × |
| Dentementer Manator Manator Distri Gelmanator Distri Gelmanator Distri Gelmanator Distri Gelmanator Distri Gelmanator Distri Gelmanator Distri Gelmanator | Definited Plot File EXI HLTV3 HLTV3 HCPDP Paradischerea Postoral File RomiteNat XMLScherea | angles | |
| Standards Federation | | Curcel | <u> 140 </u> |

Leave the "Insert Envelope Segments" unchecked and click Finish.



The messages with which we will be dealing are not quite valid. Our HL7 Spec will not accept them as valid unless it is modified to fit the data. In the new window click the "Launch Analyzer" button.

| - | | | | |
|---|--------------------------------|--|-----------|--|
| | <u>File E</u> dit <u>V</u> iew | <u>T</u> ools <u>W</u> indow <u>H</u> elp | | |
| | 6 台 🖬 🛛 | ₫ 🖨 🗍 % 🖻 🖻 🗸 🗙 🏠 | 🔒 🖊 😡 | 2 🔍 56 💣 🖹 🛛 🗟 🧟 😭 🖬 🖬 📾 🕰 🗍 🕈 |
| | Guideline | | Message | e Properties |
| Ш | 😫 HL7 Guideline | | | |
| Ш | 🗄 可 HL7 Data 🕯 | Types | 🗆 General | al |
| Π | 🗄 🔂 V2.3.1 AD | T - ADT message (event A01) | ID: | ADT |
| Ш | ⊕ 🖬 MSH | UU1 MSH - message header segment | | |
| ш | 🕀 💶 EVN | 002 EVN - event type segment | Name: | ADT message |
| Ш | 🕀 💼 PID | 003 PID - patient identification segment | Event: | A01 |
| ш | 🕀 💽 PD1 | 004 PD1 - patient additional demographic | | |
| Ш | 🗄 💼 NK1 | 005 NK1 - next of kin / associated partie | Event Na | lame: ADT/ACK - Admit / visit notification |
| | ⊕ 💼 PV1 | 006 PV1 - patient visit segment- | Standard | rd: HL7 Version: 2.3.1 |
| | 🗄 💼 PV2 | 007 PV2 - patient visit - additional informa | | |

Locate a sample file in c: $h17\$ adtsourcesA01s and choose HL7 as the data file type.

| 🗟 Analyzer Wizard | | | | | × |
|-------------------|--|---|--|---|---|
| | Welcome to | the Analyz | er Wizard | | |
| | This wizard helps you to | o validate data files | | | |
| | <u>S</u> elect data file to an | alyze: | | | |
| | C:\hl7\adt\sources\ | A01s\000000_CTL | D_2008090801529_ADTA01.hl7 | | |
| | - Specify data file <u>t</u> ype | : | | | |
| | HL7 | | | | • |
| | Open Data File | | | | 2 1 1 |
| | open baca nie | | | | |
| | Look in: | AU1s | 1 | ▼] ← Ŀ C* E | |
| Properties (Us | My Recent Documents Desktop My Documents My Computer | COUNTRY AND A COUNTRY AND | D_2008090801529_ADTA01.hl7 D_20080908014345_ADTA01.hl7 D_2008090801529_ADTA01.hl7 D_2008090802023_ADTA01.hl7 D_2008090802033_ADTA01.hl7 D_2008090802349_ADTA01.hl7 D_2008090802438_ADTA01.hl7 D_2008090802729_ADTA01.hl7 D_2008090802749_ADTA01.hl7 D_2008090802549_ADTA01.hl7 D_20080908023341_ADTA01.hl7 D_20080908023043_ADTA01.hl7 D_20080908023043_ADTA01.hl7 D_20080908023043_ADTA01.hl7 D_20080908023043_ADTA01.hl7 | 000009_CTLID_2 000010_CTLID_2 000011_CTLID_2 000012_CTLID_2 000013_CTLID_2 000014_CTLID_2 000015_CTLID_2 000016_CTLID_2 000017_CTLID_2 000019_CTLID_2 0000019_CTLID_2 0000020_CTLID_2 0000021_CTLID_2 0000021_CTLID_2 0000023_CTLID_2 0000023_CTLID_2 | 008090804203_AD 0080908044909_A(008090805041_AD 008090805041_AD 008090805849_AD 008090805849_AD 0080908054853_A(0080908065127_A(008090808123_AD 008090808123_AD 0080908084319_A(0080908084319_A(0080908084505_A(0080908084505_A(0080908094733_A(0080908094733_A(|
| | | | | | |
| | My Network Places | File name: | 000000_CTLID_200809080152 | 9_ADTA01.hl7 🔽 | Open |
| | | Files of type: | All Files (*.*) | • | Cancel |
| | | | | | |

Click Next, Next and OK. A new Analyzer window opens with data errors displayed in the bottom pane.



Follow the discussion in section "Data Analysis and Guideline Customization" in blog article "Oracle SOA Suite 11g HL7 Inbound – Customized HL7 Message Structure and Data Validation" at <u>http://blogs.czapski.id.au/2010/06/oracle-soa-suite-11g-hl7-inbound-customized-hl7-message-structure-and-data-validation</u>, to resolve data errors by modifying the guideline to fit the data. Once done, export the guideline in the ECS and XSD formats to c:\hl7\adt\guidelines as adt_a01_custom.ecs and adt_a01_custom.xsd.

Now go back to the beginning of this section, page 3, and repeat the steps using A03 instead of A01.

At the end of the process you should have ADT_A01_custom.ecs, ADT_A01_custom.xsd, ADT_A03_custom.ecs and ADT_A03_custom.xsd documents.

| Address C:\hl7\adt\guidelines | | | | |
|-------------------------------|---|----------------------|----------|----------------------|
| Folders | х | Name 🔺 | Size | Туре |
| 🞯 Desktop | | adt_a0X_custom.ecs | 733 KB | SpecBuilder Document |
| 🖂 📋 My Documents | | adt a0X custom.xsd | 1,335 KB | XSD File |
| 📥 My Music | | adt_a01_custom.ecs | 731 KB | SpecBuilder Document |
| My Pictures | | 🖬 adt_a01_custom.xsd | 1,335 KB | XSD File |
| E Cracle | | 🗐 adt_a03_custom.ecs | 564 KB | SpecBuilder Document |
| E 😼 My Computer | | 🔤 adt_a03_custom.xsd | 968 KB | XSD File |

Close B2B Document Editor windows. We are done with the B2B Document Editor for this exercise.

We exported the HL7 v2 ADT A01 and A03 definitions in both the XML Schema form and the format used by the EDIFECS engine. The former can be used in the SOA Composite and the later is required to configure the B2B document for the trading partnership we will create shortly.

Configure B2B Partnership

Start the B2B Trading Partner Manager console by pointing the web browser at <u>http://localhost:7001/b2b</u>. Log in as weblogic/welcome1.



Click the Administration link, select the Document Tab, select HL7 in the node tree and click the large Plus sign to add a new document. If you followed through the previous article the hierarchy HL7 \rightarrow 2.3.1 \rightarrow ADT_A01 \rightarrow ADT_A01_DocDef will already exist.

| ORACLE B2B | Administration Partners | Reports Metrics Help Logout 📿 |
|--|--|-------------------------------------|
| Import/Export Document Deploy Manage Deployment | nts Types Schedule Batch Manage Batch 3 | Logged in as weblogic |
| Documents Document Protocols Custom Custom Document Protocols Custom Document Protocols Document Protocol National Document Protoc | tocol, you can create multiple document versions. Then you cans. | Save New Version |

Enter 2.3.1 for Version Name and click Save. The screenshot shows the state after the Save button has been clicked.

| Cuton Cuton Cuton COLICIFACT | 2.3.1 has been a | aved. | | | | 7 |
|---|--------------------------------------|---|-------------------------|-------------------------------------|---------------|---------------|
| E 9 H27 TE 2005 O40 PostanaPlattie Rosstatiet UCOlet | HL7-2.3.1 Specify the version for | or The document protoco Version frame 2.3.1 Description | After the new vers | en is saved, you can create a new d | bouwent type. | Rest Paramete |
| | | partition in the | Contraction Contraction | | | |

With the new node, 2.3.1, selected, click the large Plus sign to create a new document under that node, name if ADT_A01 and click Save.

| Import/Export Document Deploy Manage | e Deployments Types Schedule Batch Manage Batch Callout Purge Listening Channel Configura |
|---|---|
| Documents Document Protocols Custom EDI_EDIFACT EDI_X12 HL7 AG OAG PositionalFlatFile RosettaNet UCCNet | |

With the new node, ADT_A01, selected click the large Plus sign to add a new document under that node. Provide the name of ADT_A01_DocDef, locate and choose C:\h17\adt\guidelines\ADT_A01_custom.xsd file for document definition and C:\h17\adt\guidelines\ADT_A01_custom.ecs file for Transaction Set ecs File. Click Save to save the changes.

| Custom | L7-2.3.1-ADT_A01-NewDefinition |
|---------------------------------|--|
| I NewDefinition | * Document Definition Name ADT_A01_DocDef Description |
| PositionaFlatFile RosettaNet | Definition adt_s01_custom.add Update, Root XSD Name |

A hierarchy like that shown below should be now defined.



Now repeat the steps, adding the ADT_A03 document and ADT_A03_DocDef document definition.

| ORACLE B2B | |
|------------------------|---------------------------------|
| Import/Export Document | Deploy Manage Deployments Types |
| Documents | + × |
| 🗉 🚞 Document Protocols | |
| Custom | |
| EDI_EDIFACT | |
| | |
| E = 2.3.1 | |
| E P ADT | |
| 🗆 🖳 ADT_A01 | |
| ADT_A01_D |)ocDef |
| 🕀 🖳 ADT_A03 | |
| 🔂 ADT_A03_D |)ocDef |

This defines documents to be used in setting up message exchanges.

Now we need to configure trading partners, the local partner "Self" and the remote partner "HL7v2A01A03In".

Click the Partners navigational link, select the default pre-defined MyCompany partner and click the Edit button (Pencil icon) – this should already have been done if you followed the previous article. If it is done follow the steps to confirm that all is defined as it should be.



Change the name to Self and click OK.

| a Partner 🛛 💠 🔏 🚳 | Profile Users Do |
|---|---|
| Search Name Search Advanced | MyCompany The trading partner pro |
| Trading Partner Name and Icon * Partner Name Self Icon File | Browke |

With the "Self" node selected click the Documents Tab, uncheck the Sender checkbox for both the ADT_A01 and ADT_A03 documents and click Save. We are configuring the HL7 inbound so the local role is that of a receiver of messages. The receiver will be receiving both the ADT A01 and ADT A03 documents.

| 🗄 Partner | 4/886 | Profin Users Documents Overeit | | |
|---------------|----------------|---|---|----------------|
| Search Name 9 | earth Advanced | & Self | | Saur |
| Self | _ | Add the documents that are specific but is trading partner. Al doc partner's profile. Documents | uments that the host creates are available to add | to the trading |
| | | Definitions | Sender | Receiver |
| | | H.7-2.3.1-ADT_A01-ADT_A01_DocDef | | R |
| | | HA 7.3.3.4 ADT 103.4DT 103.DerDef | | 17 |

Click the large Plus sign to create a new trading partner, named HL7v2A01A03In, enter the name and click OK.

| Partner | + / × & B | Profile Users Documents Channels |
|-----------------------|-----------|---|
| Search Name Search | Auranced | A colf |
| 👌 Self | | Add the documents that are specific to this tra |
| 8 Partner Name | | arther's profile. |
| | 100 | ocuments |
| * Partner Name HL7v2A | 01A03In | Definitions |
| | | HL7-2.3.1-ADT-ADT_Generic_DocType |
| | OK Cano | HL7-2.3.1-ADT_A01-ADT_A01_DocDef |
| | | HL7-2.3.1-ADT_A03-ADT_A03_DocDef |

With the HL7v2A01A03In selected, click the Documents Tab, click the large Plus sign to add a document, select HL7 \rightarrow 2.3.1 \rightarrow ADT_A01 \rightarrow ADT_A01_DocDef, and click Add.

| 🗆 Partiler | 4/850 | Documents Opened | | | |
|------------|--|---|--|---------------------|--------------|
| A Self | b Advanced | A HL7V2A01A03In Add the doorners that are specific this trading parts server's profile. | er. All documents that the host create | s are available the | Sant. |
| 3 HL74010h | Select Document | Definition | (8) | | * + × |
| A Renate2 | Custon EDI_DDIPACT EDI_DDIPACT EDI_V12 E 23 PL7 E 23 PL7 E 23 PL7 E 23 ADT_AC E 20 ADT_AC E 23 ADT_AC E 24 ADT_A | A01_DocDef | | Sender | Receiver |

Uncheck the Receiver checkbox and click Save.

Repeat with HL7 \rightarrow 2.3.1 \rightarrow ADT_A03 \rightarrow ADT_A03_DocDef. Uncheck Receiver checkbox and click Save.

| HL7v2A01A03In Add the documents that are specific to this trading partner. All documents that the host create partner's profile. | s are available t | Save states to add to the trading |
|--|-------------------|-----------------------------------|
| Documents | | →+ × |
| Definitions | Sender | Receiver |
| HL7-2.3.1-ADT_A01-ADT_A01_DocDef | ~ | Responder 🗌 🗌 |
| HL7-2.3.1-ADT_A03-ADT_A03_DocDef | V | |
| | | |

We defined document types the remote partner will be sending.

Select the Self partner and create a File channel to use for writing converted files. Name the Channel Self_FileChannel. Choose Generic File-1.0 protocol. If you followed through the previous article this will already have been done. If this is the case just follow through to confirm that things are configured as they should be.

| Partner | + / 2 3 6 | Frolie Liers Documents Channels | |
|----------------|------------------|---|--|
| Sell Karrola 1 | Search Advanced | Self Charcels Seffre how a message is delivered. Channel | |
| | | Self-FletChannel | Protocol Generic Pile-1.0 |
| Agreement | += | Ohannel Details | |
| Inest Alene | Search, Advanced | Transport Protocol File 💌 | |
| - | 5 | Transport Protocol Farameters Charvel Attributer | ter all to |
| | | Foling Intervel 1 *Folioe rame: crVi7/adt/data/from_Remote2 Remote funcal | Preserve Flerrere C Tradic Marker C |

Set Folder name to c:\hl7\adt\data\from_Remote2

Leave Filename format blank. We asked the Listening Channel to preserve file names so we will have files named as they were.

Click Save.

Select the HL7v2A01A03In partner and click the Channels Tab.

| Partner | + / 🗙 🕉 🐼 | Profile Users Documents Channels |
|-------------------|---------------|--|
| Search Name Sea | arch Advanced | & HL7v2A01A03In Channels define how a message is delivered. |
| HL7A0XIn HL7ADTIn | - | Channel |
| A HL7v2A01A03In | | Name |

Click the Plus sign to add channel to the trading partner. Choose MLLP-1.0 from the Protocol drop-down. Change Connection Mode to server. Provide localhost for Host Name and port 3333 for Port (use what port you have free to use). Check the Permanent Connection checkbox. Click Save.

| A HL7v2A01A03In Channels define how a message is delivered. | | Save |
|--|--------------------------------------|----------|
| Channel | | →+ × |
| Name | | Protocol |
| HL7v2A01A03In_Channel | | MLLP-1.0 |
| Channel Details | | 1 |
| Transport Protocol TCP 💌 | | |
| Transport Protocol Parameters Channel Attribu | Ites Exchange Protocol Parameters Se | ecurity |
| Connection Mode Server 💌 | Timeout | 300 |
| Host Name localhost | | |
| Port 3333 | | |
| Permanent Connection | | |
| Sequence | | |

Click the Exchange Protocol Parameters tab in the bottom pane. Check the Identify TP by delivery channel checkbox. Choose Default for Immediate ACK. Click Save.

| Channel Details | | | | |
|------------------------------|----------------------------|--------------|---------------------------------|------|
| Transport Protocol TCP 💌 | | | | |
| Transport Protocol Parameter | rs Channel A Immediate ACK | nge Protocol | Parameters Security | |
| Immediate ACK | Default 🔽 | | End Block Character | 0x1C |
| Custom Immediate ACK File | | Browse | Carriage Return Character | 0x0D |
| Map ACK Control ID | | | Identify TP by delivery channel | |
| Map Trigger Event | | | Start Block | |
| Discard HL7 ACK | None 💌 | | End Block | |
| Start Block Character | 0x0B | V | Header Length | |

Delivery channel in now configured to receive HL7 messages over MLLP on port 3333.

Select the HL7v2A01A03In partner. Click the large Plus sign in the Agreements section to add a new trading partnership agreement.



Provide the Agreement ID of HL7v2A01___InTPA and the Name of HL7v2A01___InTPA_Agr. Click Select Document Definition.



Choose ADT_A01_DocDef and click OK.

| | Select Document Definition | | | | | |
|---|----------------------------|--|----------|--|--|--|
| | å ≓å Select | Document Definition | | | | |
| L | Partner | Document Definition | | | | |
| L | Self — HL7v2A01A03In | HL7 - 2.3.1 - ADT_A01 - ADT_A01_DocDef 🚽 | <u> </u> | | | |
| | Self 🖛 HL7v2A01A03In | HL7 - 2.3.1 - ADT_A03 - ADT_A03_DocDef | _ | | | |
| | | | | | | |

Choose the Self_FileChannel from the Channel drop-down on the Self panel in the bottom left portion of the display. Choose HL7v2A01A03In_Channel from the Channel drop-down in the bottom right portion of the display.

| 🔏 Self | | | 3In | |
|--------|-----------------------|-----------------|---------------------------|--|
| | 4 % | Channel HL7V2A0 | A03In Channel | _ |
| Value | | Type | Value | |
| Self | | Name | HL7v2A01A03In | _ |
| | el 🔽 Value Self | el 🔽 🔶 | el Value Value Self | el HL/V2A01A03In channel HL/V2A01A03In Channel HL/V2A01A03In Channel HL/V2A01A03In Value Type Value Name HL/V2A01A03In |

Check the Translate checkbox.

| Agreement | | | | | |
|--------------------------|-------------------|----------------|------------------------|-------------------|------------|
| aza New Agreemer | nt_0831_0942 | | | Save Validate Dep | loy Export |
| | Self | ADT_A01_DocDef | HL7v2A01A03In | 1 ' | 1 |
| Details | | | | | |
| * Agreement Id | HL7v2A01InTPA | | Start Date | | |
| *Name | HL7v2A01InTPA_Agr | | End Date | 12 |) |
| Description | | | Callout 💽 Callout | Details | |
| | | | | | |
| | | | | | |
| | | | | | |
| Agroomont Paramotors | | | | | |
| Agreement Parameters | Validata | | | | |
| | | | | | |
| | Functional Ack | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| 🍐 Self | | 👗 HI | L7v2A01A03In | | |
| | | | | | |
| Channel Self_FileChannel | • | Chann | el HL7v2A01A03In Chann | | |
| | | | | | |

Click Save to save the new trading partnership agreement. Click Deploy to deploy the agreement.

Repeat the process, creating a partnership agreement with ID of HL7v2___A03InTPA and name HL7v2___A03InTPA_Agr

Select document definition of ADT_A03_DocDef and choose the same channels on the local and the remote sides. Save and Deploy.

| Search Advanced Self HL74090n HL74090n | Arta HL7v2A03InTPA_Agr | Save Validate Declar/ |
|---|---|--|
| Renote2 | Agreement Parameters Vaidate Yamala k | Start Dole End Dole Calcul Calcul |
| Agreement Search Advanced K27/2A01_briPA_Agr H27/2A01_briPA_Agr H37/2_A05briPA_Agr | Solf Channel Self_HeChannel Identifiers Maxe Name Solf | HIL7v2A01A03In Channel HL7v2A01A03In_Channel Identifiers Type Value HL7v2A01A030n |

We are finished with the trading partner management console. The partnerships have been defined and deployed.

Exercise the Solution

Use your favorite HL7 sender tool to submit A01 and A03 messages to the listening channel on localhost on port 3333. Perhaps a free tool, HL7 Browser, discussed on Page 2 in <u>http://blogs.czapski.id.au/2010/06/oracle-soa-suite-11g-hl7-inbound-example</u>. This is the tool I am using here.

Start the HL7 Browser and load one A01 and one A03 transaction from the transaction set we acquired earlier in this article.

| C.H. TOrower - 1.0 | In carbon a monomentary and samples and some monomentary | s a la l |
|--|--|--|
| | | 0 |
| HL7 Records • H3H1^-\4(System • HSH1^-\4(System) | AlBorA(PI(NDM)2008090801529(ADT*A01)000000_CTLID_20 AlBorA(PI(NDM)20080910112956(ADT*A03)0000000_CTLID_20 | 080908015291912.3.1111ALINEEVNIA0112008090801529 00809101129561912.3.1111ALINEEVNIA03120080910112 |
| 4 | | 2 |
| | | |
| N7)adhucurcas)A036/0000 HL7Browser = 1.0 Se | 0_CTUD_20080910112956_407403.H7 - 2 | |
| iend Mode Receive Mode Host: | Port. 3333 | Correc |
| 🕜 9.at. | Stop 2 | 🕫 (Bend All) 🍑 Send Message |
| | | |
| | | |
| | | |
| • | | |

"Run the network utility" to open a sender window (bottom part of the picture above), enter 3333 (or whatever port you configured) for a port and click Connect.

Click Send Messages and observe messages being submitted and acknowledgments being returned.

| - HL 7Browser - 1.0 | | |
|------------------------|---|---|
| File | | Help |
| Send Mode Receive Mode | | |
| Host | Port: 3333 | Statement Statement |
| 🕜 Sati | Stop: | Send All Send Messages |
| | MR-HosA [Kestel-Ab_dil[LiseG0101122045[M][7 Souh 34 Chd | Ie^^Downham Market*England - Norfolk*30828~UK A2008 [|
| In send mode | | |

If all was configured correctly you will see two files deposited in directory "C:\h17\adt\data\from_Remote2".



Since we did not configure a file name for the files to be written the default file name was constructed using the remote partner name (HL7v2A01A01In), document type (ADT_A01), document version (2.3.1) and message id which was generated by the B2B infrastructure.

Open one of the files with a XML formatting capable editor, for example Notepad++ or XMLCooktop, to see the content of the file.

| 226 | Ę | <pid></pid> |
|-----|---|--------------------------------|
| 227 | | <pid.1>1</pid.1> |
| 228 | | <pid.2 xsi:nil="true"></pid.2> |
| 229 | þ | <pid.3></pid.3> |
| 230 | | <cx.1>A000010</cx.1> |
| 231 | | <cx.2 xsi:nil="true"></cx.2> |
| 232 | | <cx.3 xsi:nil="true"></cx.3> |
| 233 | þ | <cx.4></cx.4> |
| 234 | | <hd.1>HosA</hd.1> |
| 235 | - | |
| 236 | | <cx.5>MR</cx.5> |
| 237 | þ | <cx.6></cx.6> |
| 238 | | <hd.1>HosA</hd.1> |
| 239 | - | |
| 240 | - | |
| 241 | | <pid.4 xsi:nil="true"></pid.4> |
| 242 | 白 | <pid.5></pid.5> |
| 243 | þ | <xpn.1></xpn.1> |
| 244 | | <fn.1>Kessel</fn.1> |
| 245 | - | |
| 246 | | <xpn.2>Abigail</xpn.2> |
| | | |

Start the B2B Web Console and choose Reports Tab. Search for messages submitted "today".

| Advanced Devel Search Default 2 Receive Time Stamp Deaster Than 2 (LTC+10-00) Sydney, C Date Equals 2 Hercage Di Centere 2 12-00-00 AND (LTC+10-00) Sydney, Carborna |
|--|
| Ramove Tine Stamp Director Than Current Content Content |
| Responde Time Stamp Greater Than E BUTC + 30400 Sydney, C Ustre Eouels E Hessage St Centere E 12:00:00 ANG (JTC + 10:00) Sydney, Carberra |
| State: Ecuals: Image: |
| Hennage Izi Conterne |
| 12200:00 AN (2) (J/TC + 10:00) Sydney, Carberna |
| |
| Search Reset Saveur |
| |
| Search Reset |

Expand one of the document "Details" and inspect information collected and provided.

| 🛅 Βι | isiness M | essage | | | | |
|------|------------|--------------|-----------|--------------------------|--|--|
| | | | | Business Message | | |
| ES | earch | | | Id Message Id | C0A83C0712AC582CD83000007846C1D3 C0A83C0712AC582CD73000007846C1D2-1 | |
| Mate | h O All 💿 | Any | | Refer To Message | Refer To Message | |
| | Sender | Contains 💌 | | Sender Type | Name | |
| | Receiver | Contains 💌 | | Sender Value | HL7v2A01A03In | |
| | | | | Receiver Type | Name | |
| | Agreement | Contains 💌 | | Receiver Value | Self | |
| Send | Time Stamp | Greater Than | • 08/31/2 | Sender | HL7v2A01A03In | |
| | | | | Receiver | Self | |
| | | | | Agreement Id | HL7v2A03InTPA | |
| | | | | Agreement | HL7v2A03InTPA_Agr | |
| Docu | lt (Mosca | ae Count: 4) | | Document Type | ADT_A03 | |
| Resu | Detaile | State | Decument | Document Protocol | HL7 | |
| 1 | E | MSG COMPI | ADT A03 | Document Version | 2.3.1 | |
| - | | MSG_COMPL | ADT_A01 | Message Type | REQ | |
| 2 | | MSG_COMPL | ADI_AUI | Direction | INBOUND | |
| 3 | <u>"ם</u> | MSG_COMPL | ADT_A03 | State | MSG_COMPLETE | |
| 4 | | MSG_COMPL | ADT_A01 | Acknowledgement Mode | NONE | |
| | | | | Response Mode | ASYNC | |
| | | | | Send Time Stamp | Tuesday, August 31, 2010 10:18:57 AM GMT+10:00 | |
| | | | | Receive Time Stamp | Tuesday, August 31, 2010 10:18:57 AM GMT+10:00 | |
| | | | | Document Retry Interval | 0 | |
| | | | | Document Remaining Retry | 0 | |
| | | | | Native Message Size | 110.41 | |
| | | | | Translated Message Size | 11041 | |

Explore Reports functionality.

Click the Metrics Tab. Explore information collected and provided. Explore Metrics functionality.

| Business Message | | | |
|--------------------------------------|--------------------------|--|--|
| | Business Message | | |
| ⊡Search | Id | C0A83C0712AC582CD83000007846C1D3 | |
| | Message Id | C0A83C0712AC582CD73000007846C1D2-1 | |
| Match C All © Any | Refer To Message | Refer To Message | |
| Sender Contains | Sender Type | Name | |
| Receiver Contains | Sender Value | HL7v2A01A03In | |
| | Receiver Type | Name | |
| Agreement Contains | Receiver Value | Self | |
| Send Time Stamp Greater Than 💽 08/31 | /2 Sender | HL7v2A01A03In | |
| | Receiver | Self | |
| | Agreement Id | HL7v2A03InTPA | |
| <u> </u> | Agreement | HL7v2A03InTPA_Agr | |
| acult (Massaga County A) | Document Type | ADT_A03 | |
| esuit (Message Count: 4) | - Document Protocol | HL7 | |
| Details State Document Typ | e Document Version | 2.3.1 | |
| MSG_COMPL ADT_A03 | Message Type | REQ | |
| MSG_COMPL ADT_A01 | Direction | INBOUND | |
| MSG_COMPL ADT_A03 | State | MSG_COMPLETE | |
| MSG_COMPL ADT_A01 | Acknowledgement Mode | NONE | |
| | Response Mode | ASYNC | |
| | Send Time Stamp | Tuesday, August 31, 2010 10:18:57 AM GMT+10:00 | |
| | Receive Time Stamp | Tuesday, August 31, 2010 10:18:57 AM GMT+10:00 | |
| | Document Retry Interval | 0 | |
| | Document Remaining Retry | 0 | |
| | Native Message Size | 448 | |
| | Translated Message Size | 11041 | |

Enable and explore Validation

Switch back to Partners Tab. Select the HL7v2A01A03In partner. Select the HL7v2A01___TPA_Agr agreement and check the Validate agreement parameter. Save and Deploy the agreement.

| 🗆 Partner 🛛 💠 🧪 💥 🔯 | Agreement | | | |
|-----------------------------|--------------------------|------------------|--------|---------------|
| Search Name Search Advanced | & ₽₽ HL7v2A01 | InTPA_Agr | | |
| Self | | 8 | 1 | = |
| | | Self | ADT AO | 역 1 DocDef |
| | | | | |
| A HL/V2A01A03IN | Details | | | |
| Remote2 | * Agreement Id | HL7v2A01InTPA | | |
| | Name | HL7v2A01InTPA_Ag | r | |
| | Description | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | Agreement Parameters | | | |
| | | Validate | | |
| | | Translate | V | |
| | | Functional Ack | | |
| | | | | |
| | | | | |
| 🗆 Agreement 🛛 🕂 💥 🚽 | | | | |
| Search Name Search Advanced | | | | 0. |
| | Self | | | Å F |
| HL7v2A01InTPA_Agr | | | | |
| HL7v2A03InTPA_Agr | Channel Self_FileChannel | | | Char |

Submit a single A01 message to the listener on port 3333.

Note that no new output file appears in the output directory.

| | | Business Hessage | |
|---|---------------------|--------------------------------|--|
| El Busianss Message | | Correlation Prom XPwth | |
| ≘Sourth | | Correlation To XPath Name | |
| marth P. at P. and | | Correlation To XPath Value | |
| Course Courses and | | Wro Meissoe | Wive Message |
| Service Landers The | | Application Message | Application Message |
| Réceiver Contante 🕑 | | Payload Storage | Payload Storage |
| Agreement Contains | | Attachment | Attachment |
| Send Time Starty Greater Them I 06/31/2010 12:00:00 | AND ATC+UNCONSYSTE | Label | 508_020Tue Aug 31 12/56/29 E51 20:00 |
| | | Collaboration 10 | C1463C07124C5260750600046853406 |
| 240 | | Collaboration Version | |
| | | Businetis Action Name | |
| lesuit (Message Count: 5) | 50 | Exchange Protocol Name | MLP |
| Details State Destaventi Ture | Agreeneral | Exchange Protocol Version | 1.0 |
| ADD BRACK ADT ADD | HERVIARI MITHA AS | 1/terchange-Cantrol Number | |
| MED COMPL AND ALL | HEINI AUGUNTPA AU | Group Cantrol Number | and a second second second second |
| MED_COMPL_ADT_ADT | HE NOALL DITTA AP | Transaction Set Control Humber | 000010_CTLD_20080908044909 |
| HE MEG_COMPL ADT_ADT | HE TADTO AND THA AN | Errir Code | 640-51312 Machine Tofoi (ner 110) Validator of Macrossa bandar oprassiter |
| UL MED COMPL ADT ALL | HETADTOL ADE THA AD | zinur beici ptan | faled. Please verify all the Message header parameters in the B2 |
| | | | configuration match the Message header parameters in the |
| | | | configured parameters in 825, key = [MessageReceivingPacity] |
| | | | value = [MDH] param = jnul] key = [MessageSendingPacity] va |
| | | | [NosA] paran = [nul] key = [MessageSendingApp] value = [Systemal] naran = [nul] key = [MessageSecelutingApp] value = |
| | | | (PI) parav = [nul] |
| | | Doror Level | ERROR_LEVEL_COLLABORATION |
| | | Error Seventy | ERROR |
| | | Error Text | validation of Message header parameters fizied. |

Switch to Reports Tab and look for the most recent message exchange and its status.

Expand details and note the error message, which for me says:

Machine Info: (oss11g) Validation of Message header parameters failed. Please verify all the Message header parameters in the B2B configuration match the Message header parameters in the message. Following parameters are not matching with the configured parameters in B2B. key = [MessageReceivingFacility] value = [MDM] param = [null] key = [MessageSendingFacility] value = [HosA] param = [null] key = [MessageSendingApp] value = [SystemA] param = [null] key = [MessageReceivingApp] value = [PI] param = [null]

Basically, the message fails validation because the trading partner HL7v2A01___InTPA_Agr has no identifiers configured to verify whether the message is intended for this partner (MSH-5 and MSH-6).

Switch back to Partners Tab. Select the HL7v2A01A03In partner. Select the General Tab and add two identifiers – HL7 Message Application ID with the value SystemA and HL7 Message Facility ID with the value of HosA.

| ORACLE' B2B | | Administration Partners Roports Metrics Help Lopical |
|--|--|---|
| = Partner 🛛 🔸 🦯 🗙 🗿 😥 | Prolife Users Documents Charmels | Lagged in as web |
| Berth Anne Seech Advanced Self H.7Adub B H.7Adub B H.7Adub | HL7v2A01A03In The trading partner profile unsparing identifies each permer Identifiers Identifiers | r, Set up identifiers, contact information, and customated parameters for each parimer. |
| A Renote2 | Type EVENNessong Faceling III +1 Hu.7 Menange Application ID +1 Name | Value HopA SystemA R. 7-240 (400)x |

Save the modified partner definition.

Select partnership agreement HL7v2A01___InTPA_Agr. Add the identifiers to the local and remote channels.

| - Accounter | Validate P Translate P Runctional Act. | |
|---|--|---|
| Inerrith Comments Search: Advanced Interrith Comments Search: Advanced Interrity: Comments Search: Advanc | Seal | terrel (€2/240140000) |
| | Idestifiers value Tope value HL7 Massage Application 3D 21 HL7 Massage Pacifity 3D WDH Name Self | Identifiers Value Value |

Save and deploy the modified partnership.

Repeat the process for the HL7v2___A03InTPA_Agr. Save and deploy.

Submit an A01 message and observe the outcome in the Reports Tab. In my case I have another error:

Machine Info: (oss11g) Component PID16-1 (identifier) does not contain a valid identification code: 'married' is not allowed. Segment PID is defined in the guideline at position 003.{br}{br}This error was detected at:{br}{tab}Segment Count: 3{br}{tab}Field Count: 16{br}{tab}Component Count: 1{br}{tab}Characters: 255 through 262

This error requires modification to the message (remove married or replace it with one of the recognized marital status codes) or modification of the guideline (add married to the list of allowed values for the field in question).

Let's assume we can remove the code. Let's remove it and re-submit the message.

This time the message was processed successfully.

| Rest | lesult (Message Count: 7) Sortby: | | | | Created Date | Order: Descending | Purge ReSubmit App Message | |
|------|-----------------------------------|-----------|---------------|-------------------|---------------|-------------------|---------------------------------|--|
| | Oetais | State | Document Type | Agreement | Sender | Receiver | Receive Time Stamp | |
| 1 | 1 | MSG_COMPL | ADT_A01 | HL7v2A01InTPA_Agr | HL7v2401A038n | Self | Tuesday, August 31, 2030 1:24: | |
| 2 | 唱 | MSG_ERROR | ADT_A01 | HL7v2A01IHTPA_Agr | HL7v2A01A03In | Self | Tuesday, August 31, 2010 1:19: | |
| 3 | Pa | MSG_ERROR | ADT_A01 | HL7v2A01InTPA_Agr | HL7v2401A03In | Self | Tuesday, August 31, 2010 12:59 | |
| 4 | 14 | MSG_COMPL | ADT_A03 | HL7v2A03InTPA_Agr | HL7v2A01A031n | Self | Tuesday, August 31, 2010 10:18 | |
| 5 | B | MSG_COMPL | ADT_A01 | HL7v2A01InTPA_Agr | HL7v24014031n | Self | Tuesday, August 31, 2010 10;18. | |

Enabling Validation in the trading partnership agreement imposes restrictions on message content and structure. Messages must be valid according to the spec and must be identifiably intended for the nominated partner.

This concludes the exercise. Submit as many HL7 v2.3.1 delimited ADT A01's and A03's as you like and see them converted to XML.