Week 1 Unit 5: **Working with Data in SAP HANA Cloud Integration**

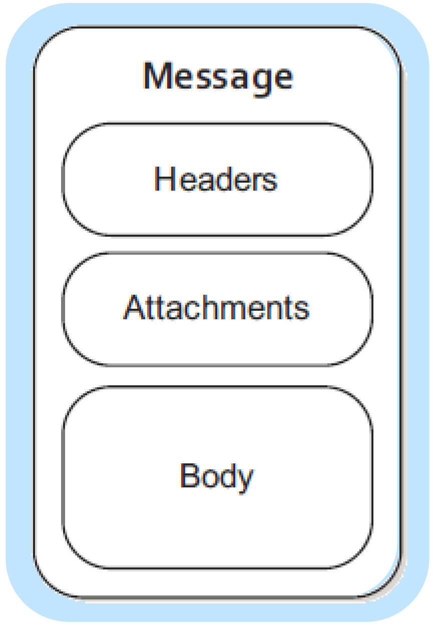
Working with Data in SAP HANA Cloud Integration

Camel's message model* (1)

Message

Fundamental entity **containing the data** being carried and routed in Camel

- Messages have a body (a payload), headers, and optional attachments
- Messages are uniquely identified with an identifier of type `java.lang.String`
- *Headers*
  - Headers are values associated with the message
    - ⇨ Sender identifier, hints about content encoding, authentication information,…
  - Headers are name-value-pairs
    - ⇨ Name is a unique, case-insensitive string
    - ⇨ Value is of type `java.lang.Object`
- *Attachments*
  - Optional – typically used for Web service and e-mail components
- *Body*
  - Type: `java.lang.Object` → any kind of content is allowed



* Taken from the book: "Camel in Action" (2011) by Claus Ibsen and Jonathan Anstey, Manning Publications Co., ISBN 978-1-935182-36-8

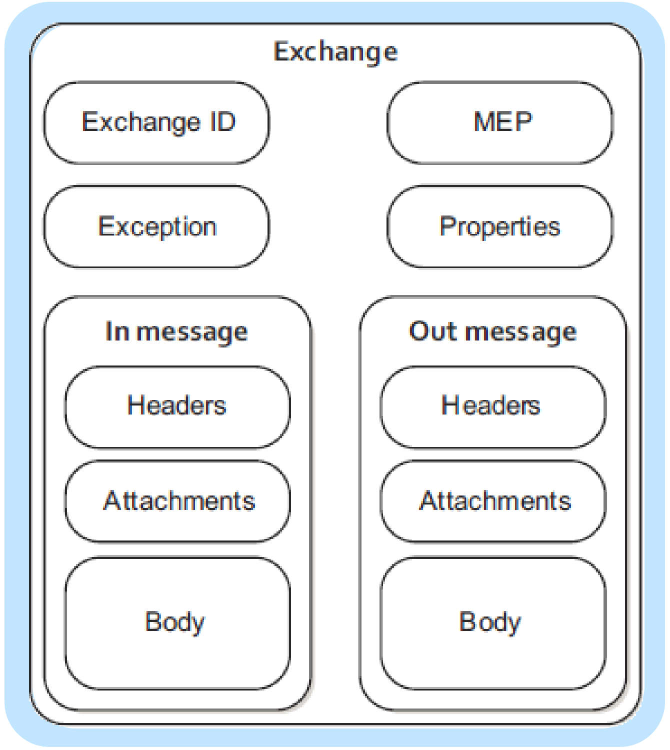
Working with Data in SAP HANA Cloud Integration

Camel's message model* (2)

Exchange

The **message's container** during routing

- Provides support for various interaction types between systems, known as Message Exchange Patterns (MEP)
  - `InOnly`: a one-way message (e.g. JMS messaging)
  - `InOut`: a request-response message (e.g. HTTP-based transports)
- *Exchange ID*: a unique ID that identifies the exchange
- *MEP*
  - `InOnly`: exchange contains an "in message" **only**
  - `InOut`: exchange contains an "in message" **and** an "out message" containing the reply message for the caller
- *Exception*: If an error occurs during runtime, the Exception field will be filled
- *Properties*: Similar to message headers, but they last for the duration of the entire exchange; they contain global-level information; you can store and retrieve properties at any point during the lifetime of an exchange



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Working with Data in SAP HANA Cloud Integration

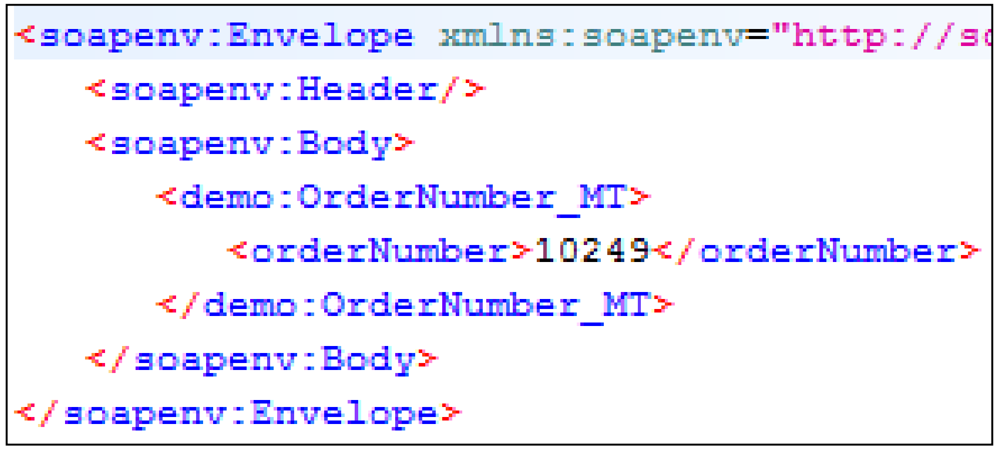
Understanding Camel’s message model (1)

Goals

Store data in the message header and in the properties of the exchange

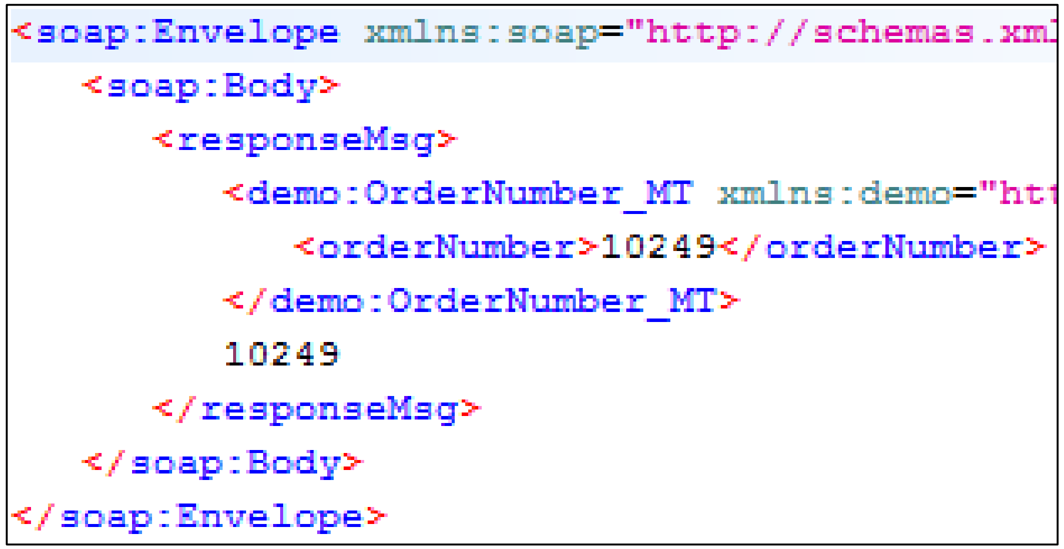
Retrieve data from header and properties to build the reply message

Input Message



```
<soapenv:Envelope xmlns:soapenv="http://s
   <soapenv:Header/>
   <soapenv:Body>
      <demo:OrderNumber_MT>
         <orderNumber>10249</orderNumber>
      </demo:OrderNumber_MT>
   </soapenv:Body>
</soapenv:Envelope>
```

Output Message



```
<soap:Envelope xmlns:soap="http://schemas.xml
   <soap:Body>
      <responseMsg>
         <demo:OrderNumber_MT xmlns:demo="htt
            <orderNumber>10249</orderNumber>
         </demo:OrderNumber_MT>
         10249
      </responseMsg>
   </soap:Body>
</soap:Envelope>
```

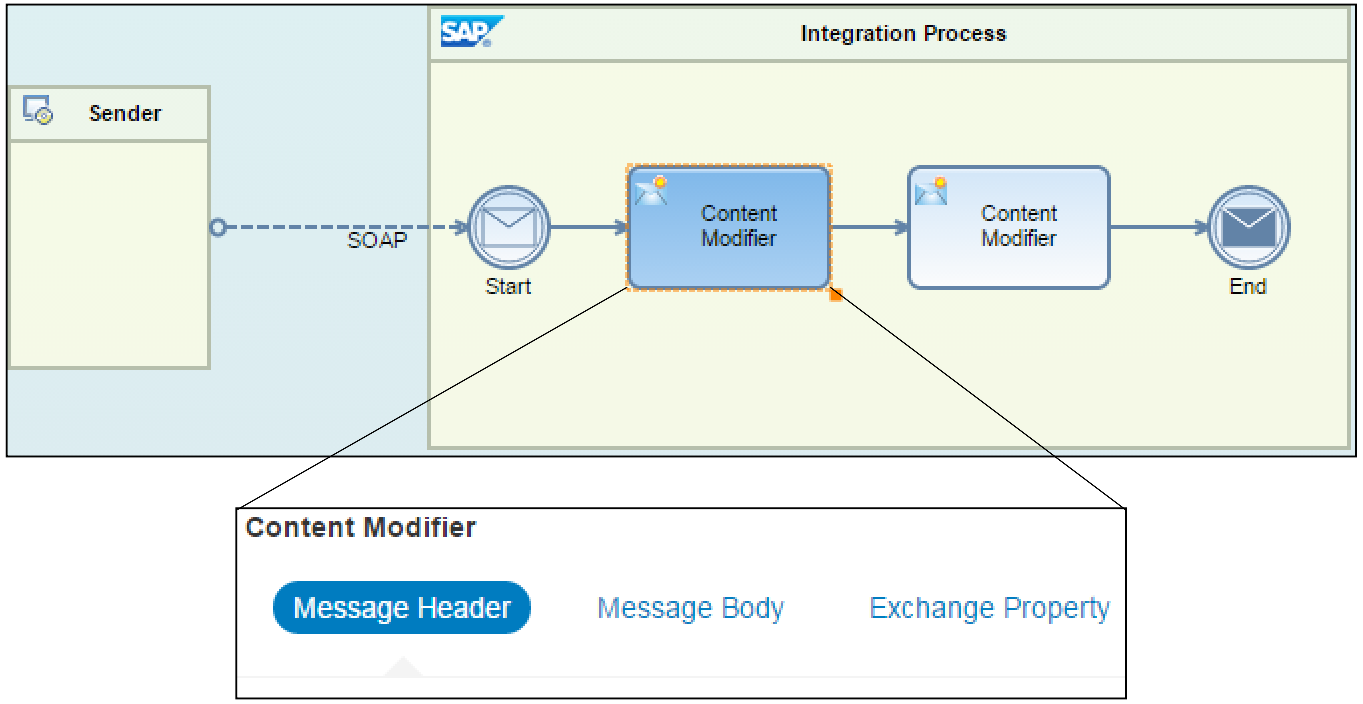
Working with Data in SAP HANA Cloud Integration

Understanding Camel's message model (2)

Goals

Store data in the message header and in the properties of the exchange

Retrieve data from header and properties to build the reply message



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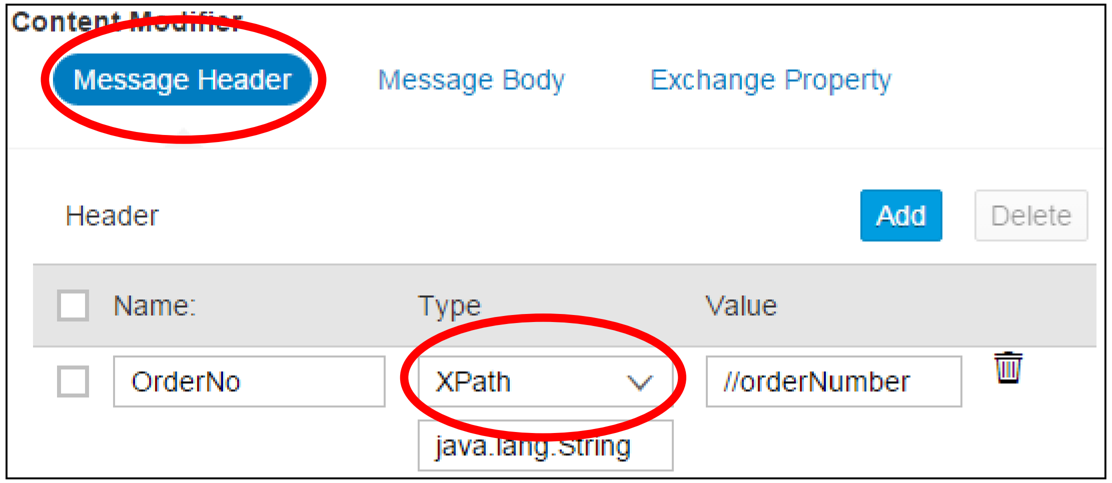
Understanding Camel's message model (3)

Goals

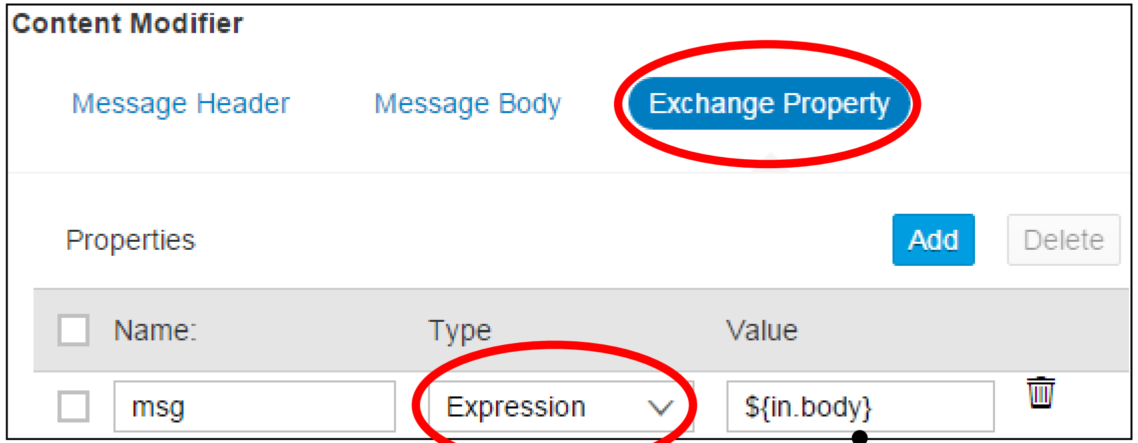
Store data in the message header and in the properties of the exchange

Retrieve data from header and properties to build the reply message



Header

Name:	Type	Value
OrderNo	XPath (java.lang.String)	//orderNumber



Properties

Name:	Type	Value
msg	Expression	${in.body}

Using Camel's
Simple Expression Language

http://camel.apache.org/simple.html

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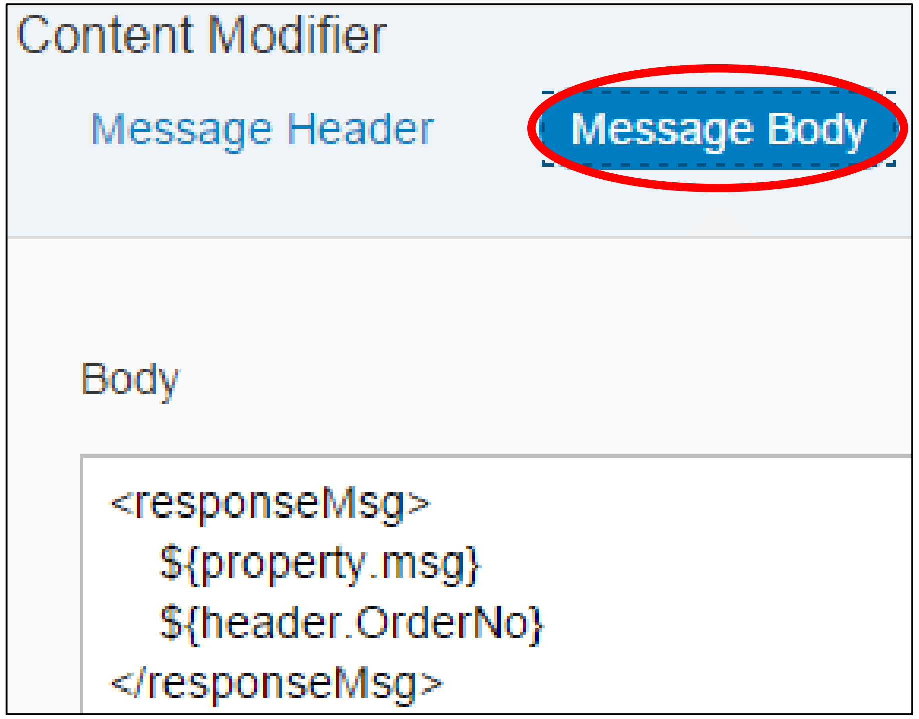
Understanding Camel’s message model (4)

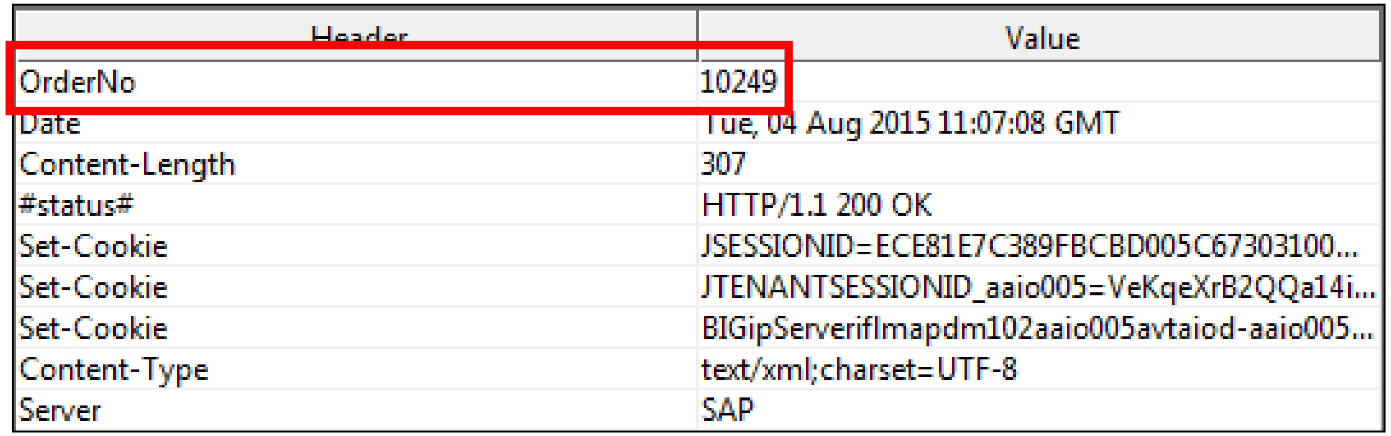
Goals

Store data in the message header and in the properties of the exchange

Retrieve data from header and properties to build the reply message



```
<responseMsg>
   ${property.msg}
   ${header.OrderNo}
</responseMsg>
```



Header	Value
OrderNo	10249
Date	Tue, 04 Aug 2015 11:07:08 GMT
Content-Length	307
#status#	HTTP/1.1 200 OK
Set-Cookie	JSESSIONID=ECE81E7C389FBCBD005C67303100...
Set-Cookie	JTENANTSESSIONID_aaio005=VeKqeXrB2QQa14i...
Set-Cookie	BIGipServeriflmapdm102aaio005avtaiod-aaio005...
Content-Type	text/xml;charset=UTF-8
Server	SAP

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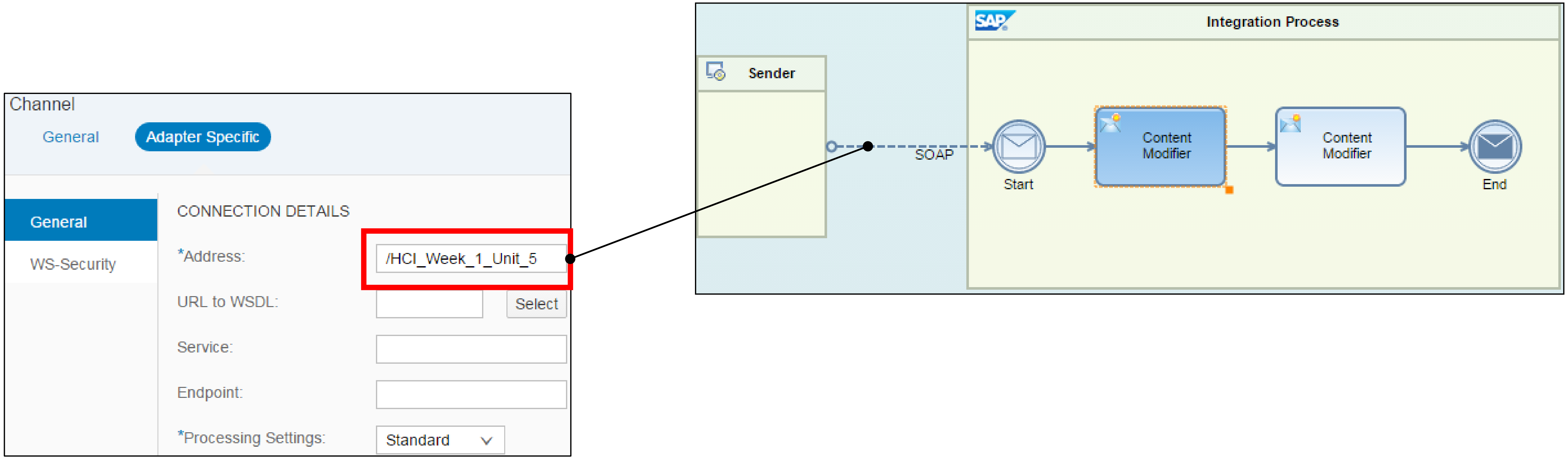
Understanding Camel's message model (5)

Goals

Store data in the message header and in the properties of the exchange

Retrieve data from header and properties to build the reply message



CONNECTION DETAILS

*Address:	/HCI_Week_1_Unit_5
URL to WSDL:	
Service:	
Endpoint:	
*Processing Settings:	Standard

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Demo

DEMO

Working with Data in SAP HANA Cloud Integration

Working with Data in SAP HANA Cloud Integration

What you've learned in this unit

- SAP HANA Cloud Integration relies on the Apache Camel integration framework and because of this inherits its data model
- Camel's data model differentiates between a message and an exchange
- How to store data in the header area of a message and in the properties area of an exchange
- How to retrieve data from the different locations and create a response message in the message body
- How to configure a SOAP channel

Thank you

Contact information:

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