Groovy Development in SAP Cloud Platform Integration

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Who we are

- Int4 is an SAP Partner and a market leader in test automation of SAP systems integration.
- Our team is represented by 2 SAP Mentors, 10 SAP PRESS authors, and over 30 SAP integration professionals.
- We have proven experience in consulting and delivery of the biggest integration projects all over the world.
- Our goal is to make an impact through automation; and support the SAP community by sharing our knowledge on paper, in videos, and during events.

INT4 IFTT

We have a one-step solution for **testing all SAP integration scenarios** - Int4 IFTT.

“Integration is like a box of chocolates”

Challenges in integration
No two integrations are the same

Systems and applications with differing integration requirements

- content type
- connectivity

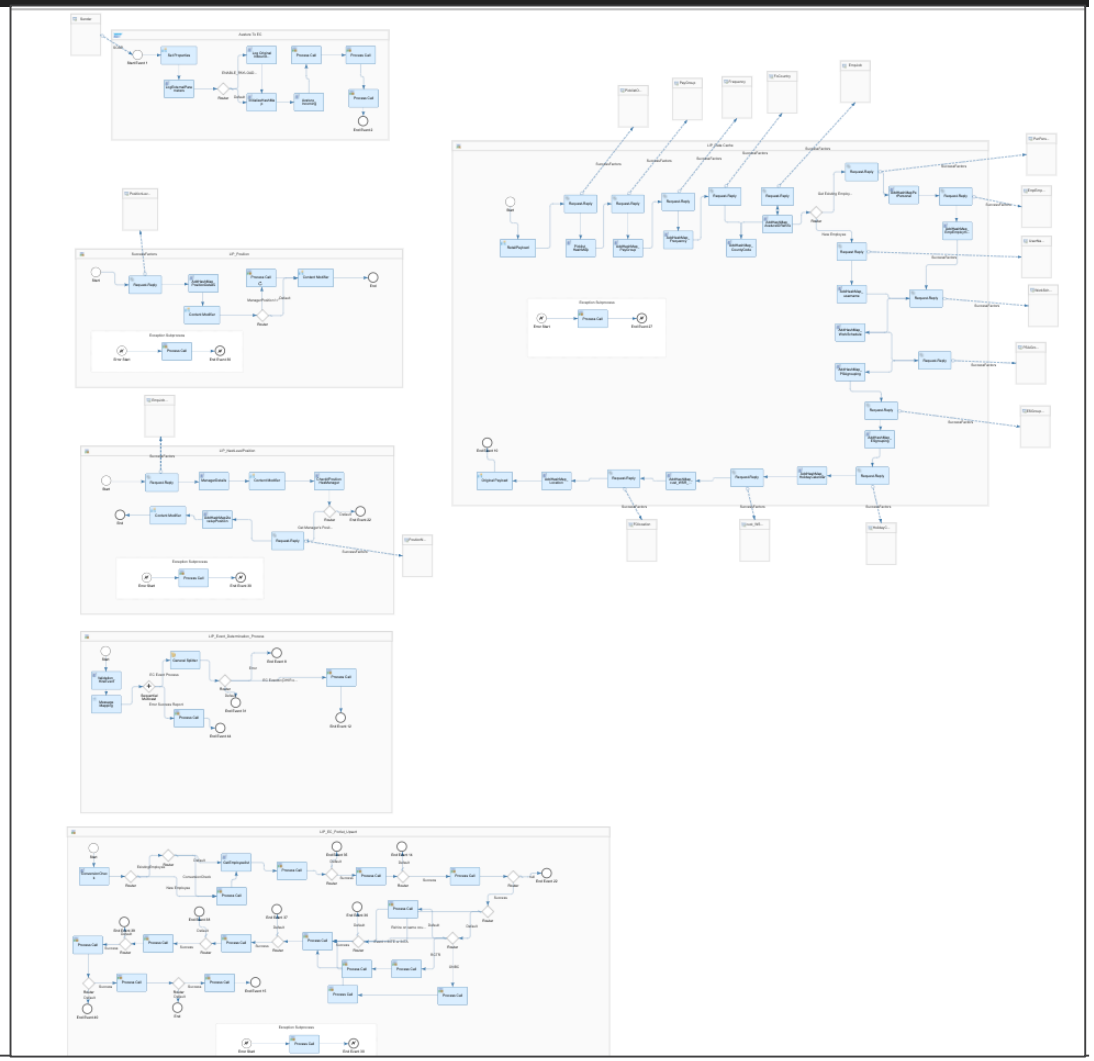
Not everything can be achieved by standard functionality – custom coding required

“You never know what you’re gonna get!”

- **Hybrid landscapes**
  - On-premise and cloud
  - Multiple vendors
- **Lack of customization options in SaaS - pushing application logic to integration platform**
- **Shift towards Agile and/or DevOps methodology**

Complexity of Integration Scenarios

- **SuccessFactors and Marketing Cloud**
- **Heavy usage of OData APIs**
  - Multiple calls
  - Correlation and orchestration
- **Application logic in integration platform**
  - Avoid where possible
  - If not, then modularize Integration Flow design so that it is manageable

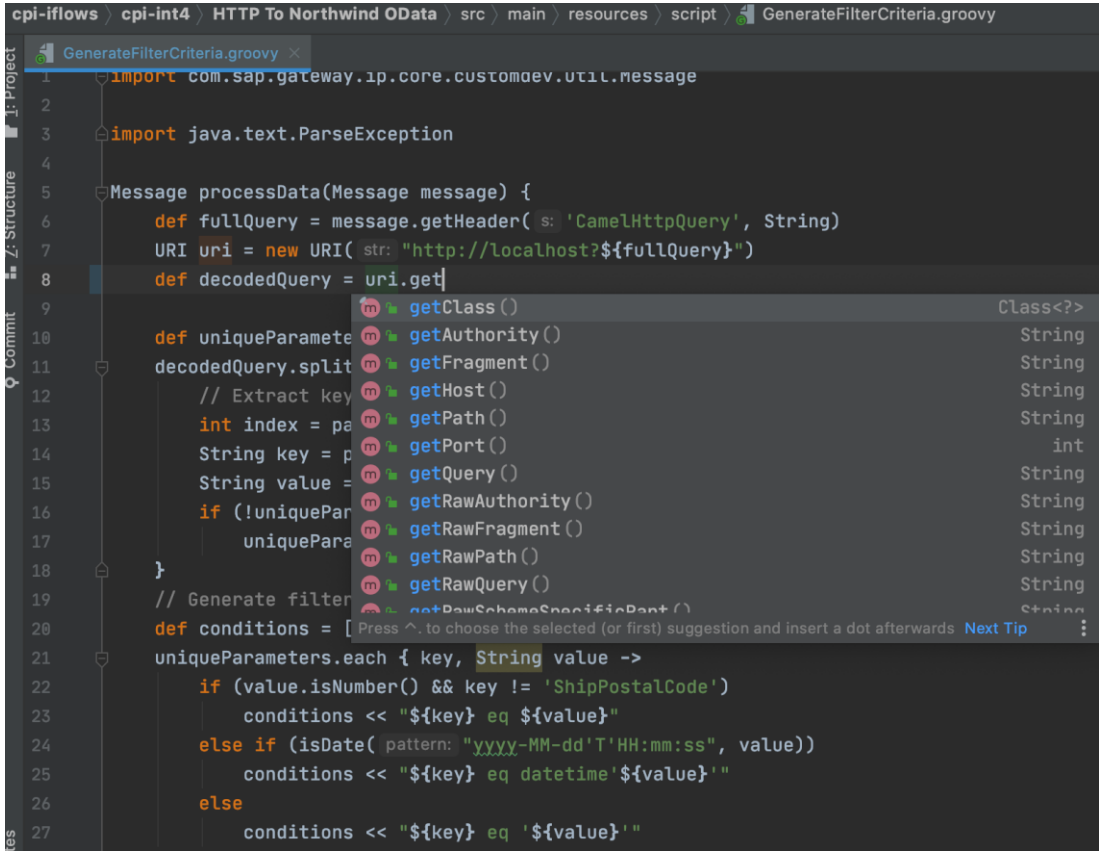


Groovy to the Rescue!

- Script step in Integration Flow
- Implementation of custom logic
- Powerful, dynamic language, yet easy to use
- Flat learning curve for Java developers

#1 - Use an Integrated Development Environment (IDE)

- For simple logic, Web UI built-in editor is fine
  - Basic syntax check and other features on SAP's roadmap
- For more complicated logic, switch to an IDE
- Recommendation - IntelliJ IDEA Community Edition
  - Native Groovy support
  - Syntax check
  - Auto completion
  - Debug without using messageLog statements



#2 - Write “Groovier” code

- Groovy Style Guide
  - Omit semicolons (;) for end of statement

```
Message processData(Message message) {
    Reader reader = message.getBody(Reader)
    Map headers = message.getHeaders()
    Map properties = message.getProperties()
```

  - Combine usage of static and dynamic typing

```
def Contract = new XmlSlurper().parse(reader)
def writer = new StringWriter()
def builder = new MarkupBuilder(writer)
```

- Use Groovy String
  - Interpolated string with embedded placeholders
  - Simplifies creation of String with dynamic values

```
message.setBody("Groovy version is ${GroovySystem.version}")
```

#2 - Write “Groovier” code

- Use Groovy shortcuts for Collections
  - Define and populate during initialization

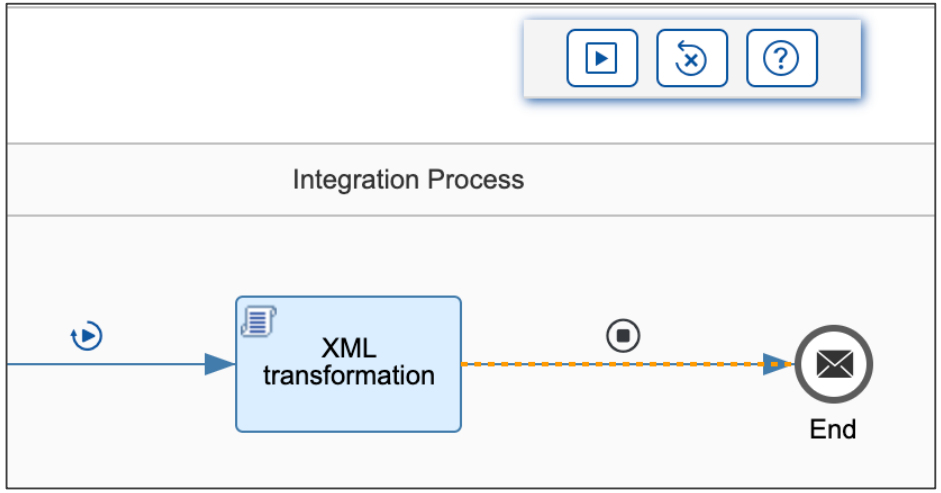
```
def newList = [1, 7, 15, 200]
def newMap = [ firstName: 'John', lastName: 'Doe']
```

  - Iterate using each()

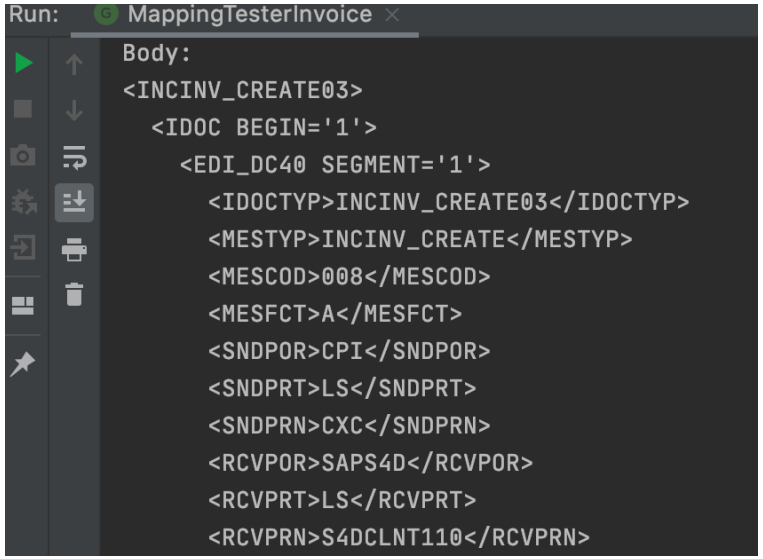
```
newList.each { item ->
    println "${item}"
}

newMap.each { k, v ->
    println "key = ${k}, value = ${v}"
}
```

#3 - Test Groovy script before deployment

- Integration Flow Simulation Mode in Web UI



- Local testing in IDE



#4 - Handle message body efficiently

- Accessing the message body using getBody() is one of the most commonly used statement
- Avoid getting the body as a String, as it consumes additional resources
- Use a Reader to stream the content of the body

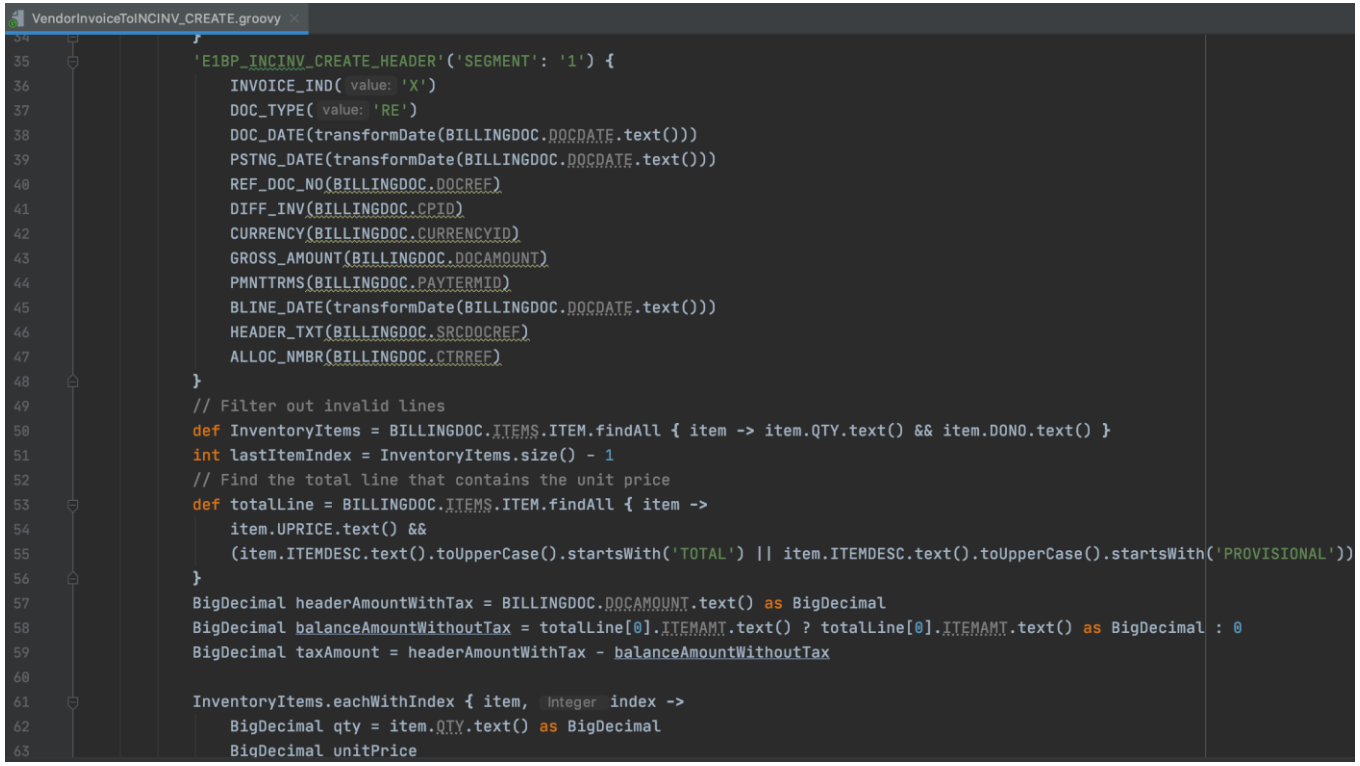
```
Message processData(Message message) {
    def body = message.getBody(java.lang.String)
```

VendorInvoiceToINCINV_CREATE.groovy

```
1  import com.sap.gateway.ip.core.customdev.util.Message
2  import groovy.xml.MarkupBuilder
3
4  Message processData(Message message) {
5      Reader reader = message.getBody(Reader)
6
7      def BILLINGDOC = new XmlSlurper().parse(reader)
```

#5 - Process XML and JSON

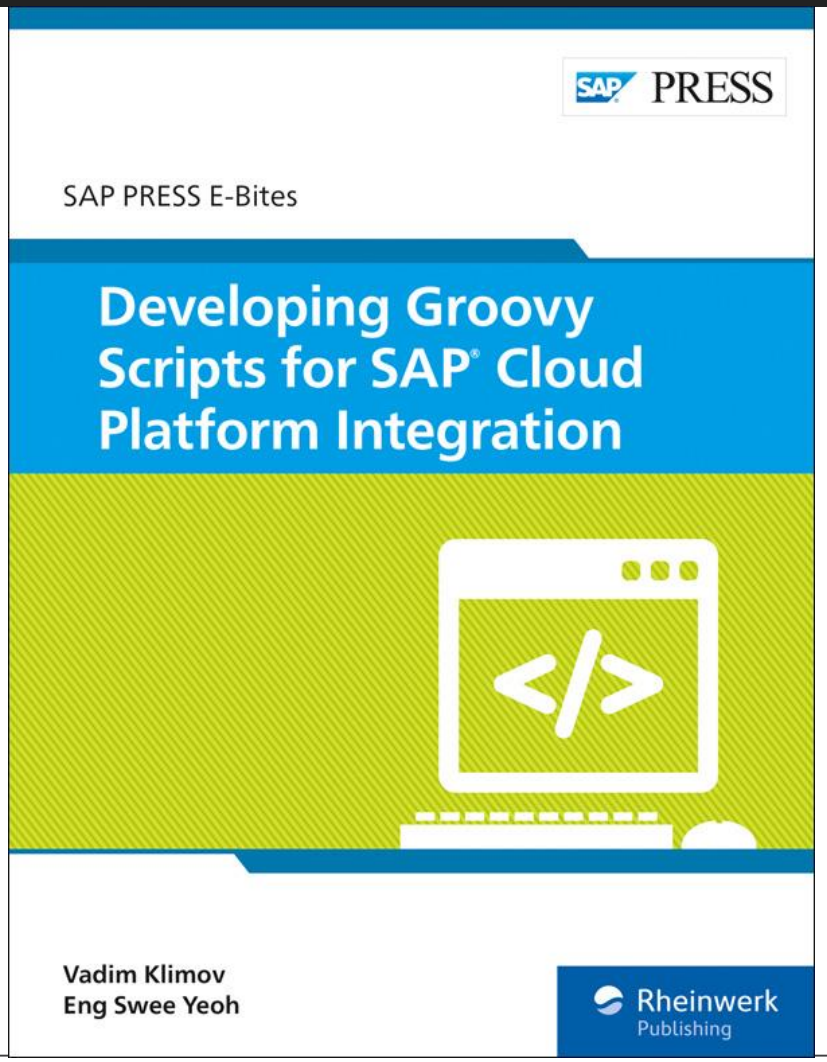
- Graphical message mapping suitable for simple transformation
- For more complicated transformation, consider using Groovy script
- Native support for XML and JSON
- Accessing nodes using dot notation (GPath)
- WYSIWYG builder for generating XML/JSON output



Developing Groovy Scripts for SAP Cloud Platform Integration

- **Authors**
  - Vadim Klimov and Eng Swee Yeoh
  - Working with SAP CPI (a.k.a. HCI) since 2015
- **Available since 18 June 2020**
- **Easy-to-read E-Bite format (126 pages)**
- **In-depth explanation of above tips with examples**

https://bit.ly/37BSL9R



A lot more to be found in the E-Bite!

- Regular expressions
- Handling other formats like CSV and PDF
- Dependency management
- Sneak peek into the underlying frameworks of CPI

Join Our Meme Contest

- Post a meme as a comment on the LinkedIn announcement
- Get as many likes on the meme by end of **Tuesday, 4th of August**
- Meme with highest number of likes win a copy of our E-Bite

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