Consultas - Projects : NacaTrans Transcoder

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1. Introduction

The NacaTrans implements a Cobol to Java transcoder engine.
It's designed as a compiler, that takes Cobol BMS source files and output is java or XML files.
As a compiler, it uses a traditional compiler architecture: lexer, syntax analyser, semantic analyser, generator.
All these compilations steps are implemented in the single Naca's Nacatrans module.

1.1 Document purpose

This document won't explain internal architecture of NacaTrans, but only explains the configuration possibilities.

2. Configuration

Convention used here: Naca trans can be installed anywhere. However, for example reason it's supposed to be installed in a Windows development computer at D:\Dev\Naca\NacaTrans directory.
All the paths provided in this document will refer to this directory.

2.1 File location

The configuration of the NacaTrans is done through the NacaTrans.cfg file. It must be located at the projet's root.
For example, if the standard path is used (D:\Dev\Naca\NacaTrans), then the configuration file is then D:\Dev\Naca\NacaTrans\NacaTrans.cfg.

It's an XML file.

2.2 NacaTrans execution command line

NacaTrans doesn't need any command line argument. This easiest way to run it is to launch Eclispe, and import the NacaTrans projet in the workspace. You will also need to import the JLib projet. They are both in the zip file of the Naca Open Source package.
JLib is a library used internally by the transcoder.

Then, create a new Debug/Run configuration with:
Projet set to "NacaTrans"
and Main class set to "NacaTrans".
That's it !

However, before running it, the configuration file NacaTrans.cfg must be filled.

3. Sample Cobol source project to transcode: NacaSample

A sample Cobol project is provided by the NacaSample projet. In this document, the projet is supposed to be installed in the D:\Dev\Naca\NacaSample directory. Ths project contains some sample source Cobol and BMS files.

The cobol directory contains source Cobol files:

- Batch: D:\Dev\naca\NacaSamples\cobol\BATCH1.CBL
- Online: D:\Dev\naca\NacaSamples\cobol\ONLINE1.CBL
- Copy files in D:\Dev\naca\NacaSamples\cobol\include
- Call program is in D:\Dev\naca\NacaSamples\cobol\CALLMSG.CBL

The trans directory contains tempororay files generated during transcode pahses, and the NacaTransRules.xml. This is a special configuration file for online programs.

The src directory will be created during transcode. It will contain generated java files.

4. NacaTrans.cfg details

There is a custom NacaTrans.cfg for a given source projet to transcode. Thus, there is a special NacaTrans.cfg for the NacaSample projet.

It's main purpose is to describe the source data to transcode.

It's content is given below:

```xml
<?xml version="1.0" encoding="ISO-8859-1"?>
<NacaTrans Log4jConf="d:\dev\naca\NacaSamples\trans\Log4JConfiguration.txt">
        <SingleFile Name="ONLINE1" Application="online" Group="Online"/>
        <SingleFile Name="BATCH1" Application="batch" Group="Batch"/>
        <SingleFile Name="CALLMSG" Application="commons" Group="Commons"/>

        <Engines>
                <Transcoder
 Name="CobolTranscoder" Class="utils.CobolTranscoder.CobolTranscoderEngine"
                        ReferenceGroupName="Commons"
                        ResourceGroupName="Resources"
                        IncludeGroupName="Includes"
                >
                        <CSD File="d:\dev\naca\NacaSamples\cobol\CICSCSD.txt" Output="d:\dev\naca
\NacaSamples\src\online\TransIDMapping.xml"/>
                </Transcoder>
                <Transcoder Name="BMSTranscoder" Class="utils.CobolTranscoder.BMSTranscoderEngine"
                        ResourceGroupName="Resources"
                >
                        <BMSSpec
                                FormTransformPath="d:\dev\naca\NacaSamples\trans\transforms\"
                                GlobalFormTransform="d:\dev\naca\NacaSamples\trans\transforms
\global.fet"
                        />
                </Transcoder>
                <Transcoder
 Name="IncludeTranscoder" Class="utils.CobolTranscoder.CobolIncludeTranscoderEngine"
                        ReferenceGroupName="Commons"
                />
        </Engines>

        <Groups>
                <Group
                        Name="Online"
                        InputPath="d:\dev\naca\NacaSamples\cobol\"
                        OutputPath="d:\dev\naca\NacaSamples\src\"
                        InterPath="d:\dev\naca\NacaSamples\trans\stat\"
                        Type="Online"
                        Engine="CobolTranscoder"
                />
                <Group
                        Name="Batch"
                        InputPath="d:\dev\naca\NacaSamples\cobol\"
                        OutputPath="d:\dev\naca\NacaSamples\src\"
                        InterPath="d:\dev\naca\NacaSamples\trans\stat\"
                        Type="Batch"
                        Engine="CobolTranscoder"
                />
                <Group
                        Name="Commons"
                        InputPath="d:\dev\naca\NacaSamples\cobol\"
                        OutputPath="d:\dev\naca\NacaSamples\src\"
                        InterPath="d:\dev\naca\NacaSamples\trans\stat\"
                        Type="Called"
                        Engine="CobolTranscoder"
                />
                <Group
                        Name="Includes"
                        InputPath="d:\dev\naca\NacaSamples\cobol\include\"
                        OutputPath="d:\dev\naca\NacaSamples\src\commons\include\"
                        InterPath="d:\dev\naca\NacaSamples\trans\stat\"
```

```
                                    Type="Included"
                                    Engine="IncludeTranscoder"
                    />
                    <Group
                                    Name="Resources"
                                    InputPath="d:\dev\naca\NacaSamples\cobol\"
                                    OutputPath="d:\dev\naca\NacaSamples\src\online\resources\"
                                    InterPath="d:\dev\naca\NacaSamples\trans\stat\"
                                    Type="Map"
                                    Engine="BMSTranscoder"
                    />
        </Groups>
        <GlobalPaths
                    RuleFilePath="d:\dev\naca\NacaSamples\trans\NacaTransRules.xml"
                    InfoPath="d:\dev\naca\NacaSamples\trans\info\"
        />
</NacaTrans>
```

The tags are described here:

`NacaTrans`: Root tag

`NacaTrans/codeNacaTrans/Log4jConf`: arguement that gives the path of the Log4J configuration file.

`NacaTrans/SingleFile` Tag that give a source file to transcode, with properties. Multiple tags `NacaTrans/SingleFile` can be specified.

`NacaTrans/SingleFile/Name`: Argument that gives the name of the program to transcode

`NacaTrans/SingleFile/Application`: Argument that gives the application whose program Name belongs to. The Application notion is defined below.

`NacaTrans/SingleFile/Group`: Argument that gives the group whose program Name belongs to. The Group notion is defined below.

`NacaTrans/Engine`: Tag that describes the various transcoder engines to use. NacaTrans is made of multiple engines.

`NacaTrans/Engine/Transcoder`: Tag that describe a transcoder engine. Multiple tags can be specified.

`NacaTrans/Engine/Transcoder/Name`: Argument name of the transcoder engine to use. It can be either CobolTranscoder, BMSTranscoder, IncludeTranscoder, FPacTranscoder, ResTranscoder. The two last engines are special cases.

`NacaTrans/Engine/Transcoder/Class`: Argument that gives the class path of the selected transcoder engine. Use the provide values.

`NacaTrans/Engine/Transcoder/ReferenceGroupName`: Argument that defines the Reference group that this engine will process. A Reference group defines all path settings of the source files to transcode.

`NacaTrans/Engine/Transcoder/ResourceGroupName`: Argument that defines the Resource group that this engine will process. A Resource group defines the BMS source file to transcode.

`NacaTrans/Engine/Transcoder/IncludeGroupName`: Argument that defines the Resource group that this engine will process. An IncludeGroup defines the Copy files to transcode.

`NacaTrans/Engine/Transcoder/CSD`: This tag is optional. It's used to define CICS transaction settings

`NacaTrans/Engine/Transcoder/CSD/File`: Gives the path of a CICS transaction definition file.

`NacaTrans/Engine/Transcoder/CSD/Output`: Gives the path of a XML file that maps transcoded programs into CICS transaction name.

`NacaTrans/Groups`: This tag defines the various groups.

`NacaTrans/Groups/Group`: This tag define a group. A Group gives the various paths. Multiple paths can be defined.

`NacaTrans/Groups/Group/Name`: Name of the group. It refers to the group name defined in `NacaTrans/Engine/Transcoder/ReferenceGroupName` or `NacaTrans/Engine/Transcoder/ResourceGroupName` or `NacaTrans/Engine/Transcoder/IncludeGroupName`

`NacaTrans/Engine/Transcoder/InputPath`: Path where input files are located

`NacaTrans/Engine/Transcoder/OutputPath`: Path where generated files will be written

`NacaTrans/Engine/Transcoder/InterPath`: Path where temporyry files will bw stored

`NacaTrans/Engine/Transcoder/Type`: Group's type. It can be either :

- "Online": the group contains online programs
- "Batch": the group contains online programs
- "Called": the group contains call programs
- "Map": the group contains BMS maps

- "Included": the group contains copy programs

`NacaTrans/Engine/Transcoder/Engine`: Name of the engine to use. It can be either

- "CobolTranscoder": identifies the transcoder used to convert source online and batch Cobol to Java output
- "IncludeTranscoder": identifies the transcoder used to convert source copy Cobol to Java output
- BMSTranscoder: identifies the transcoder used to convert BMS maps to java and XML description

`NacaTrans/GlobalPaths`: This tag gives contains reference to definitions. It won't be described here.

5. Running the NacaTrans

In Eclispe, run the NacaTrans project. The ouptuts are:

- Generated files:
    - The batch source files in D:\Dev\naca\NacaSamples\src\batch
    - The online source files in D:\Dev\naca\NacaSamples\src\online
    - The call source files in D:\Dev\naca\NacaSamples\src\commons
    - The copy source files in D:\Dev\naca\NacaSamples\src\commons\include
    - Resource file generated from BMS file in D:\Dev\naca\NacaSamples\src\online\resources

- A log file in D:\Dev\naca\NacaSamples\trans\log\LogJava.Log

- Statistics file in
    - D:\Dev\naca\NacaSamples\trans\info\ItemCount.html produced from D:\Dev\naca\NacaSamples\trans\info\ItemCount.xml

- Intermediate files:
    - Lexer outputs files in D:\Dev\naca\NacaSamples\trans\stat*.lex
    - XML description of the source file in D:\Dev\naca\NacaSamples\trans\stat*.xml

The project can then be compiled