Web Video Converter

SambaTech Assignment Solution

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1. Introduction

Hello there! I know that you have a LOT of these assignments to assess and that`s why I`ve put a lot of effort in this documentation trying to make your work easier. I hope I can accomplish that goal and that I can present something different so that it makes this assessment more enjoyable.

In addition to this document I during all development process I`ve created automated tests (using Test Driven Development approach), which I expect to be useful as an alternative kind of documentation. The automated tests were created using Spock framework, which have a very expressive syntax. I really I hope it can help, If it doesn`t, fell free to ignore them.

As requested, application was deployed in a cloud computing provider. In our case we choose Amazon Web Services (AWS).

2. Deployment at Amazon Web Services

You can check application running at:

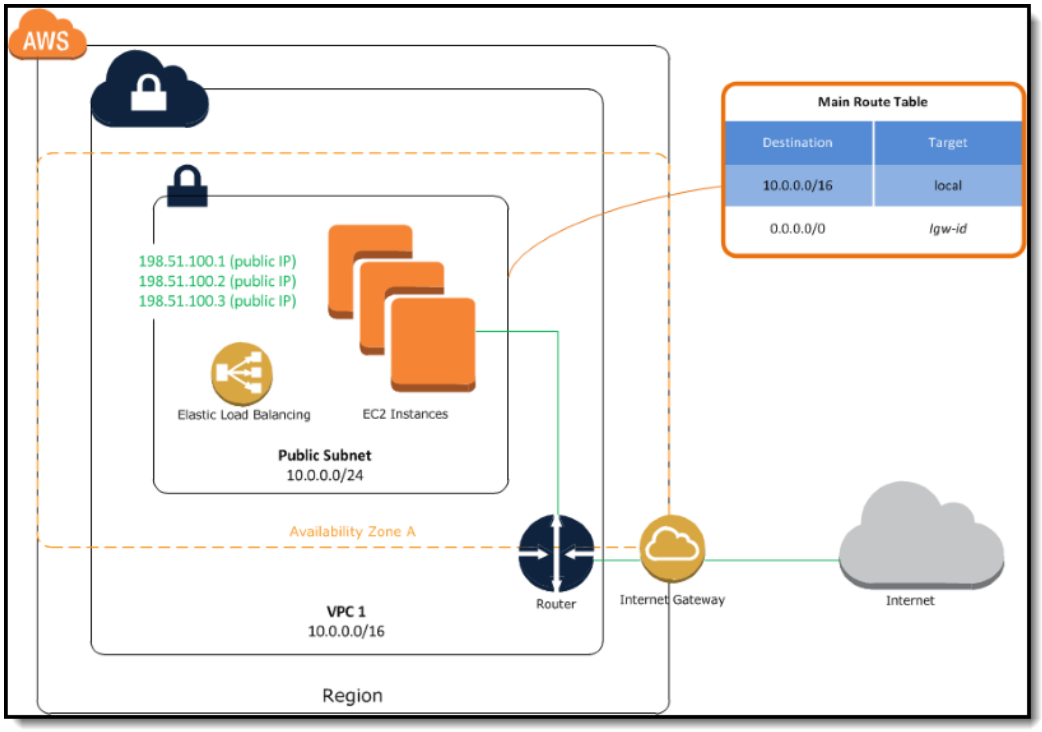
www.agileoperations.com.br

You will need the following credentials to access the web application:

User: admin

Password: admin

The DNS to resolve this domain name is the Route53 AWS service. The Web Video Converter application was deployed at this address using ElasticBeanstalk (PaaS from AWS). Elasticbeanstalk is a managed service that automatically instantiate scalable infrastructure for web applications or standalone programs (called workers). In our case, we choose an option from Elasticbeanstalk to deploy the web application following the architectural design depicted in following figure:



You can access the whole infrastructure and assess for yourself what was done through AWS console using the following ReadOnly IAM user:

User: <Username Sent to Thabata>

Password: <Password Sent to Thabata>

https://agileoperations.signin.aws.amazon.com/console

3. Code walkthrough

The project files, source code and other artifacts are in github repository as per requested:

https://github.com/loiatan/webVideoConverter.git

I`ll refer to the project root directory (where you can find this README document) as `{PROJECT-LOCATION}` during the rest of this document.

Automated tests

```
{PROJECT-LOCATION}/test/unit/com/agileoperations/webvideoconverter
{PROJECT-LOCATION}/test/integration/com/agileoperations/webvideoconverter
```

Java Classes

The java classes are located at:

```
{PROJECT-LOCATION}/src/java/com/agileoperations/webvideoconverter
```

Grails Groovy Classes

The grails groovy classes are located at:

```
{PROJECT-LOCATION}/webVideoConverter/grails-
app/controllers/com/agileoperations/webvideoconverter
{PROJECT-LOCATION}/webVideoConverter/grails-
app/services/com/agileoperations/webvideoconverter
{PROJECT-LOCATION}/webVideoConverter/grails-app/views/videoConversion
```

Five classes were created to solve the problem of this assignment:

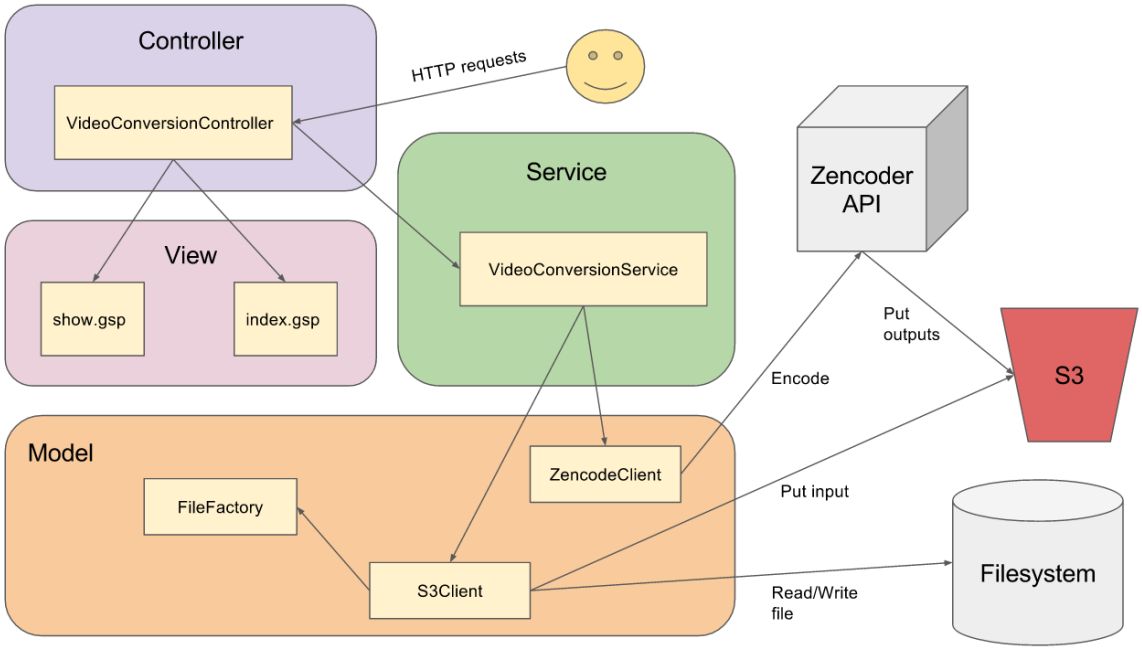
- **S3Client**
- **ZencoderClient**
- **FileFactory**
- **VideoConversionService**
- **VideoConversionController**

Besides those file classes, two views were created:

- **VideoConversion/show.gsp**
- **VideoConversion/index.gsp**

4. Web Video Converter Design

The design of this solution followed a MVC approach, following framework guidelines, separating responsibilities in the familiar Model, View and Controller layers with the bonus Service layer here. This idea, linking with the classes built for the solution, is depicted in the figure below:



The Web application uses **Grails framework** that enforces MVC approach.

This design also helps to write automated tests for the code, which helps on maintainability. Having the code extensively tested makes easier to make a change in the code and know if you break something.

During next steps I`ll guide you on how to build and run the program if you are interested to do so.

5. Environment to run locally

The debian package viewer was crafted using Java 7 Update 75 and Grails 2.4.3 as the framework. To install and build the application you must have installed in your system:

- Java runtime environment 7 Update 75 or newer
- Grails 2.4.x (there are cases that even minor versions are incompatible, so it is suggested that it

To install the JRE:

1. Go to http://www.oracle.com/technetwork/java/javase/downloads/index.html
2. Download the JRE 8 for your system;
3. Execute the installation and follow the instructions given at the screen;

To run the application:

For example, to run the application you just need to execute:

```
$ grailsw run-app
```

You should see an output like this:

```
-------------------------------------------------------------
Downloading http://dist.springframework.org.s3.amazonaws.com/release/GRAILS/grails-2.4.3.zip to
C:\Users\Rodrigo\.grails\wrapper\grails-2.4.3
.....................................................................................................
.................................................
| Running Grails application
Configuring Spring Security Core ...
... finished configuring Spring Security Core
| Server running. Browse to http://localhost:8080/webVideoConverter
```

Accessing the link above. You can find additional information about Grails at:

http://grails.org

6. Running automated tests

To run automated tests you can execute:

$ grailsw test-app

It is important you have /tmp/ directory created and with permissions to read and write.
If you want to run unit and integration tests separately you can execute:

$ grailsw test-app unit:
$ grailsw test-app integration:

7. War file deployed at AWS

The war file deployed at Elasticbeanstalk was generated with the following command:

```
{PROJECT-LOCATION}$ grails war
```

The war file is generated inside `{PROJECT-LOCATION}/target`.

8. **The end!**

Hope you had some fun like I did doing this assignment! I really appreciate your time on evaluating my solution and I hope that I can be part of your SambaTech team soon! :)

Big Thank You!

Apendix I - Samba Tech - Processo de Seleção Arquiteto de Soluções Cloud

Atividade Prática

O desafio consiste em construir e colocar no ar uma aplicação web que possibilita a conversão de arquivos de vídeo de um formato específico, não compatível com padrões da web, para um formato que seja compatível com os padrões da web. A aplicação deve ter uma interface web que permita a inclusão de um novo arquivo de entrada e, após finalizado o processo, permita o usuário assistir o vídeo no navegador. Considere o uso de testes unitários. Atente-se também para o desenho/arquitetura da solução, de modo que a mesma possa ser facilmente escalável, sob padrões de cloud computing. Adicionalmente, a demonstração de habilidades com práticas/ferramentas DevOps também são bem vindas (porém

Itens entregáveis:

1) O endereço web (URL) da aplicação funcionando;

2) O endereço web do repositório github com o código da aplicação e demais artefatos do projeto disponíveis para análise;

Os entregáveis devem ser submetidos para rh@sambatech.com.br.

Regras e orientações importantes

1) Para o arquivo de entrada, utilize o exemplo sample.dv disponível em

http://dinamica-sambatech.s3.amazonaws.com/sample.dv

2) Gestão de Código Fonte: Os fonte devem ser disponibilizados em um repositório publico do GitHub (http://github.com). E será avaliado o histórico dos commits para verificar se você fez commits frequentes e com boa separação temática entre eles. Caso ainda não tenha, você deve criar uma conta e um repositório lá

3) Você deve rodar sua aplicação em algum provedor de Cloud Computing dentre os oferecidos na lista abaixo. Todos eles oferecem versões gratuitas que são suficientes para esta atividade;

4) Para realizar a conversão do arquivo de entrada no arquivo de saída, utilize também algum dos serviços de encoding oferecidos na lista abaixo. Igualmente estes serviços oferecem opções gratuitas que são suficiente para esta atividade;

5) Os arquivos de entrada e de saída devem ficar armazenados no serviço de storage Amazon S3 (também oferecido na lista abaixo).

6) Linguagens: a aplicação deve ser desenvolvida em Java (preferencialmente) ou Python. Qualquer framework disponível para estas linguagens é permitido.

7) Não utilize bibliotecas específicas para acesso ao serviço de encoding. O uso de biblioteca específica para acesso ao serviço de armazenamento da Amazon (S3) é permitido. Lista de Serviços Cloud Computing com Endereços

Para para rodar sua aplicação:

Amazon Web Services - http://aws.amazon.com

Microsoft Azure - http://azure.microsoft.com

Alternativas:

Heroku: https://heroku.com

Google App Engine (Somente Java e Python):

https://developers.google.com/appengine/

Serviços de Storage:

Amazon Simple Storage Service (Amazon S3)

http://aws.amazon.com/s3/

Microsoft Azure Blob Storage

http://azure.microsoft.com

Serviços de Encoding:

Zencoder:

http://zencoder.com

http://zencoder.com/pricing/ (Use o profile "Test" para não pagar)