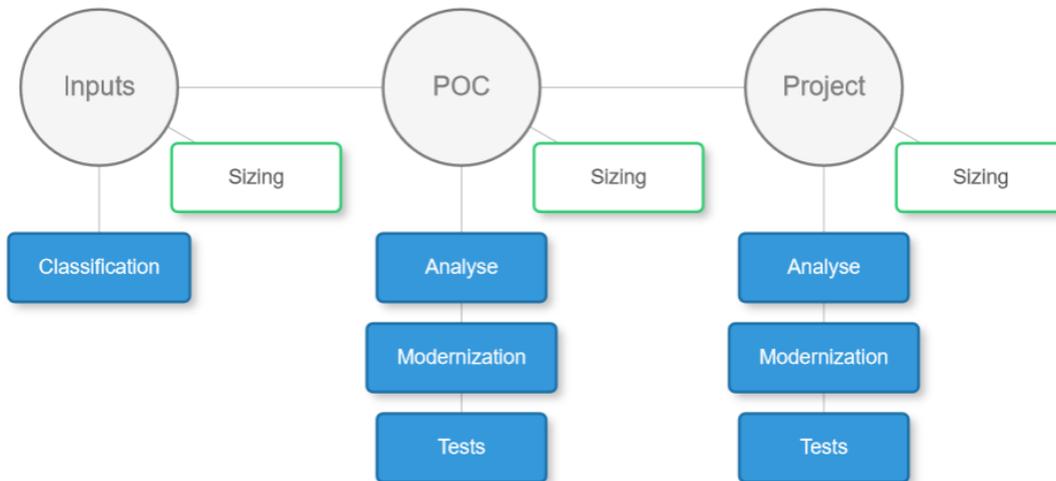
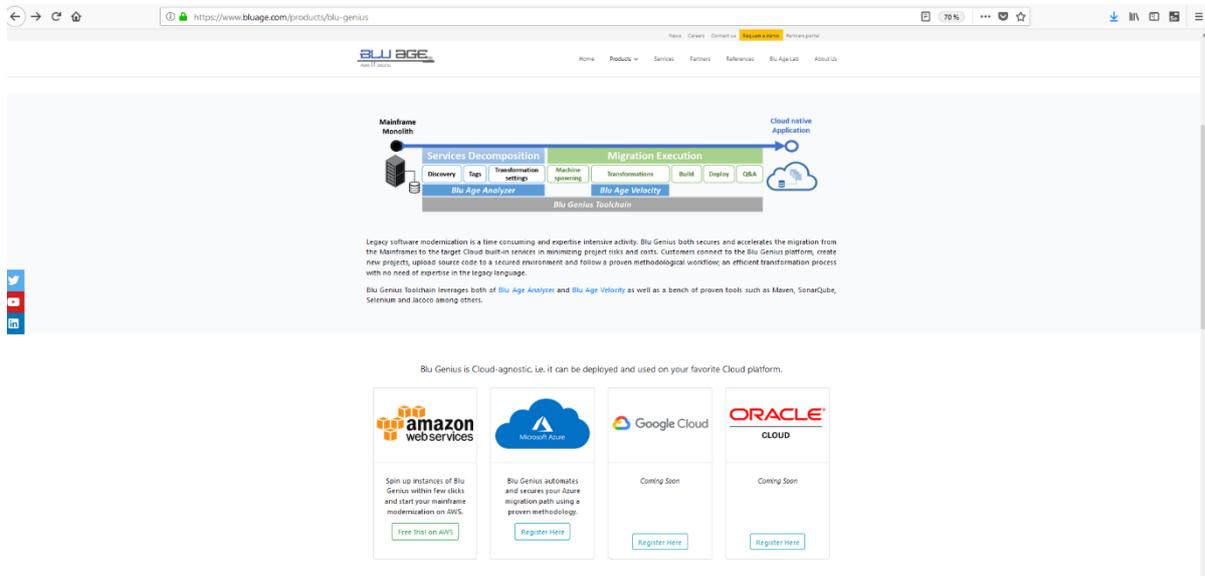


Blugenius User Documentation

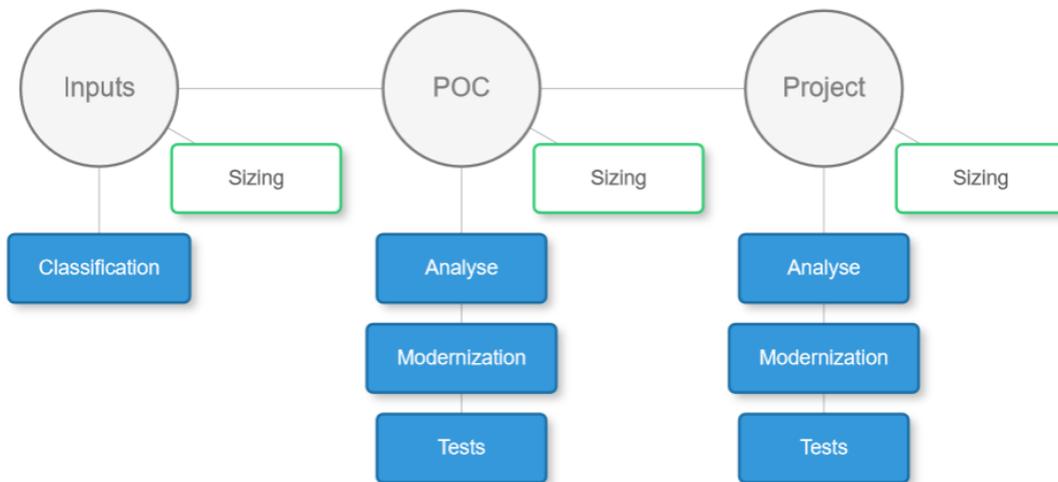


Contents

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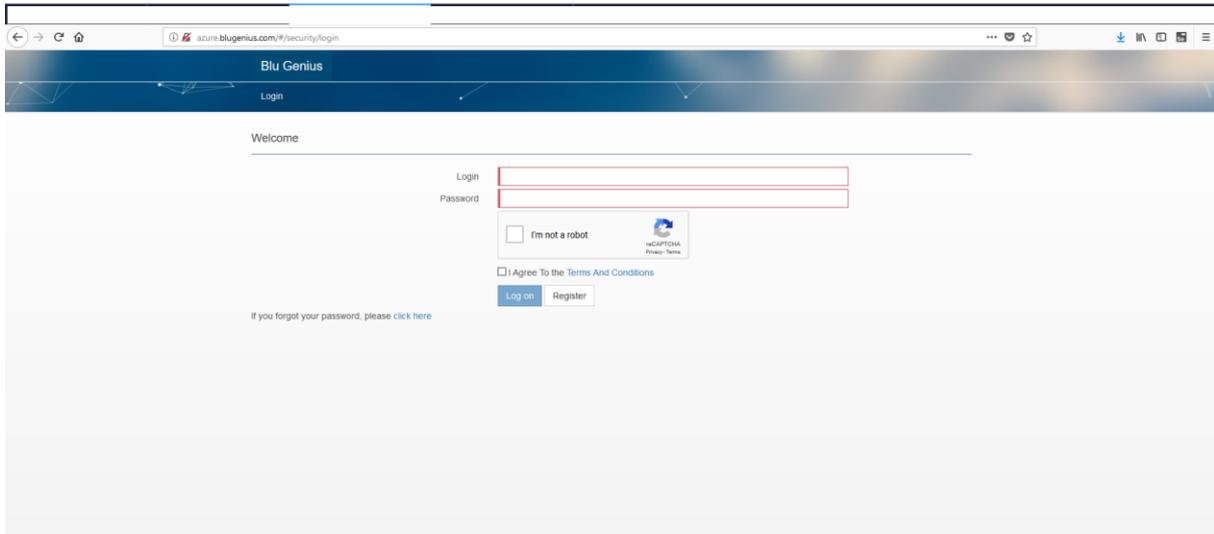
Blugenius processes the modernization of your legacy applications through different and easy to follow steps.



3. Blugenius modernization

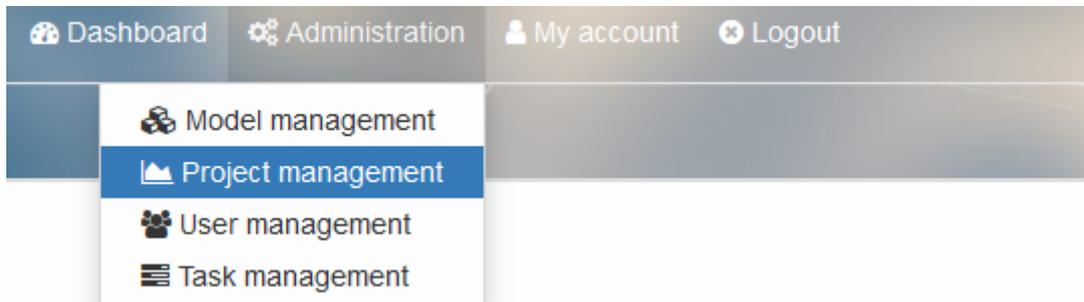
3.1 Log in the Blugenius application

From the Blugenius portal, the first step you have to do is choosing your Cloud provider (AWS, Azure). After that, you need to log in the application with the credentials given to you once you have registered in the portal for the first time.



3.2 Setup your project

To modernize via Blugenius, you first need to create a project and configure it. To do so, go under the "administration->project management" menu.



Then click on the "Create new project" button. In the displayed page, you need to enter different information.

The first section contains general parameters:

Edit project

Project name	<input type="text"/>	The name of your project
Velocity project name	blugenius-sandboxes	The velocity project name
Trigram	<input type="text"/>	The trigram of your project
Company	<input type="text"/>	One of the available companies
Active	<input type="checkbox"/> Either your project should be active or not	
Start date	<input type="text"/>	Start date of the project
Description	<input type="text"/>	Your project description
Max line number for poc inputs	10000	Maximum allowed line numbers for the POC step

Make sure you click "Active" so that your project will show up in the dashboard.

The next section contains information specific to your cloud provider:

AZURE Parameters

Subscription Id	<input type="text"/>	Your azure subscription id
Application Id	<input type="text"/>	An azure application id that will allow blugenius to create VM on your private cloud
Authentication Key	<input type="text"/>	A secret key associated to your application
Tenant Id	<input type="text"/>	Your azure active directory id
User Name	<input type="text"/>	The administrator username/password of the VM that will be created in your private cloud by Blugenius
Password	<input type="text"/>	
Region	<input type="text"/>	The cloud region where the VM will be created
Volume Size	<input type="text"/>	The volume size of the VM that will be created

The last section enables you to activate different steps of the process that you wish to perform. The first three steps are available in the sandbox now.

Steps

Check inputs	<input checked="" type="checkbox"/> Opened	In progress
POC - Analysis	<input checked="" type="checkbox"/> Opened	Validated
POC - Modernization	<input checked="" type="checkbox"/> Opened	Validated
POC - Testing	<input type="checkbox"/> Closed	To plan
Project - Analysis	<input type="checkbox"/> Closed	To plan
Project - Modernization	<input type="checkbox"/> Closed	To plan
Project - Testing	<input type="checkbox"/> Closed	To plan

Once the project is setup, click on the "Save" button at the right top of the page.

You can now go to the "Dashboard" where you will see your project listed on the left.

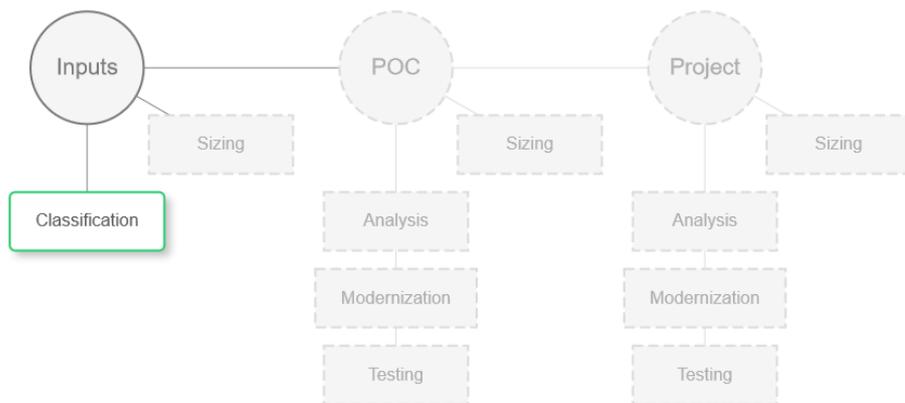
List of projects

-  [AzureProject](#)
-  [Demo](#)

3.3 Classification

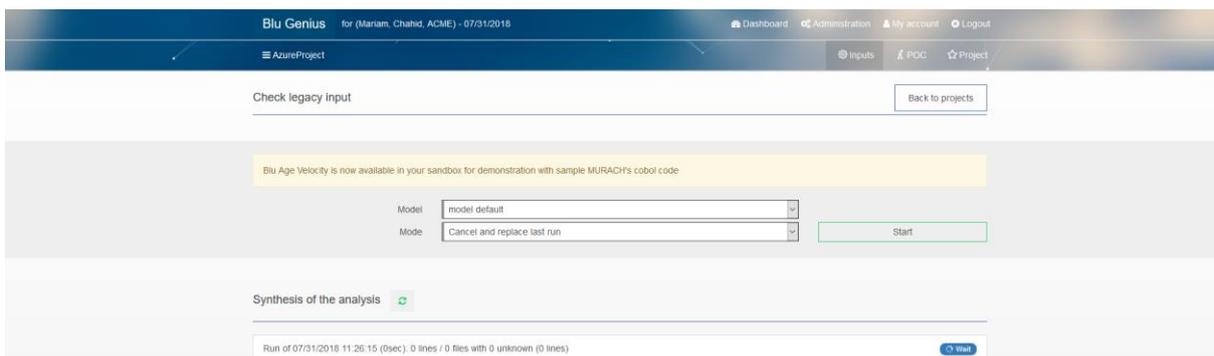
The first step is the classification.

-  [AzureProject](#)
-  [Demo](#)



This step checks the eligibility of the legacy inputs.

In the sandbox mode, the files of a demo project have already been uploaded, so you just need to start the classification. In normal mode, you will need to upload your own inputs in a ".zip" or ".7z" format.



This step uses a classification engine built on machine learning and Tensorflow library from Google. It will give you an accurate line of code count and you will receive a confirmation email once the process is over. In Blugenius, you can see the classification result and also download the classification report, which is an excel file containing the same information displayed.

Synthesis of the analysis ↻

Run of 07/31/2018 11:26:15 (1min 43sec): 4,169 lines / 32 files with 0 unknown (0 lines) Report Validated

List of 100 first loaded files

sandbox-murach.zip (07/31/2018 11:26:15) Stop analysis Validated

⏪ ⏩ 1 2 ⏪ ⏩

File name	Number of LOC	Language	Analysis Status
/bms\INQSET1.BMS	94 lines	Cobol	Validated
/bms\IMENSET1.BMS	78 lines	Cobol	Validated
/bms\IMntset2.bms	217 lines	Cobol	Validated
/bms\ORDSET1.BMS	517 lines	Cobol	Validated
/cics\CDLIST.TXT	328 lines	Cobol	Validated
/cobol\Custinq1.cbl	175 lines	Cobol	Validated
/cobol\Custmnt2.cbl	568 lines	Cobol	Validated
/cobol\Getinv.cbl	36 lines	Cobol	Validated
/cobol\INTEDIT.CBL	47 lines	Cobol	Validated
/cobol\Invmenu.cbl	162 lines	Cobol	Validated
/cobol\LD CUST.COB	82 lines	Cobol	Validated
/cobol\LDINV.COB	89 lines	Cobol	Validated
/cobol\LDPROD.COB	100 lines	Cobol	Validated
/cobol\NUMEDIT.CBL	105 lines	Cobol	Validated

3.4 Sizing

Once the classification is done when you go back to the dashboard, you will have access to more options.

List of projects

🔗 AzureProject
🔗 Demo

```

    graph TD
      subgraph Inputs
        In((Inputs)) --- Sizing1[Sizing]
        In --- Analysis1[Analysis]
        In --- Modernization1[Modernization]
        In --- Testing1[Testing]
        In --- Classification[Classification]
      end
      subgraph POC
        POC((POC)) --- Sizing2[Sizing]
        POC --- Analysis2[Analysis]
        POC --- Modernization2[Modernization]
        POC --- Testing2[Testing]
      end
      subgraph Project
        Proj((Project)) --- Sizing3[Sizing]
        Proj --- Analysis3[Analysis]
        Proj --- Modernization3[Modernization]
        Proj --- Testing3[Testing]
      end
      In --- POC
      POC --- Proj
  
```

First of the newly activated options is the sizing tool. It will help you build a basic budget. To have a more customizable version of the pricing tool, go to www.bluage.com/evaluate.

Inputs - Sizing Back to projects

Currency: EURO
Production site: Europe

Budget estimation with Blu Age Calculator

Total Budget (BT)

Full Budget	€10,200
Transformation & Verification	€7,800
Blu Age Licenses	€2,400
SIT/UAT Support	To defined

Key metrics

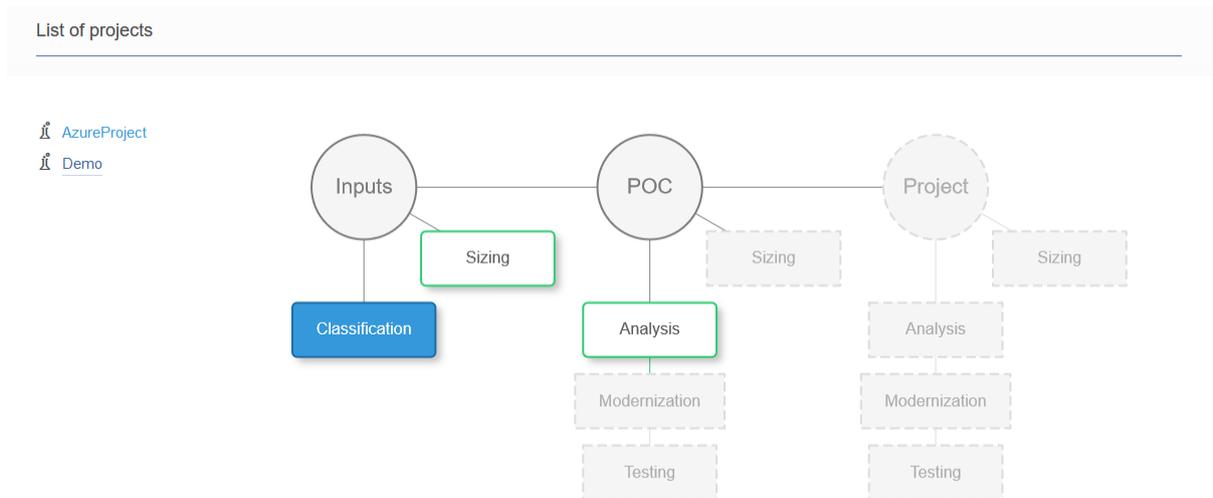
Number of lines of code for Cobol	4,147
Number of lines of code for JCL	22

Daily Rate

BA Consultant	€540 / day
Tests Consultant	€440 / day
Team Leader	€750 / day
Project Manager	€920 / day

3.5 POC Analysis

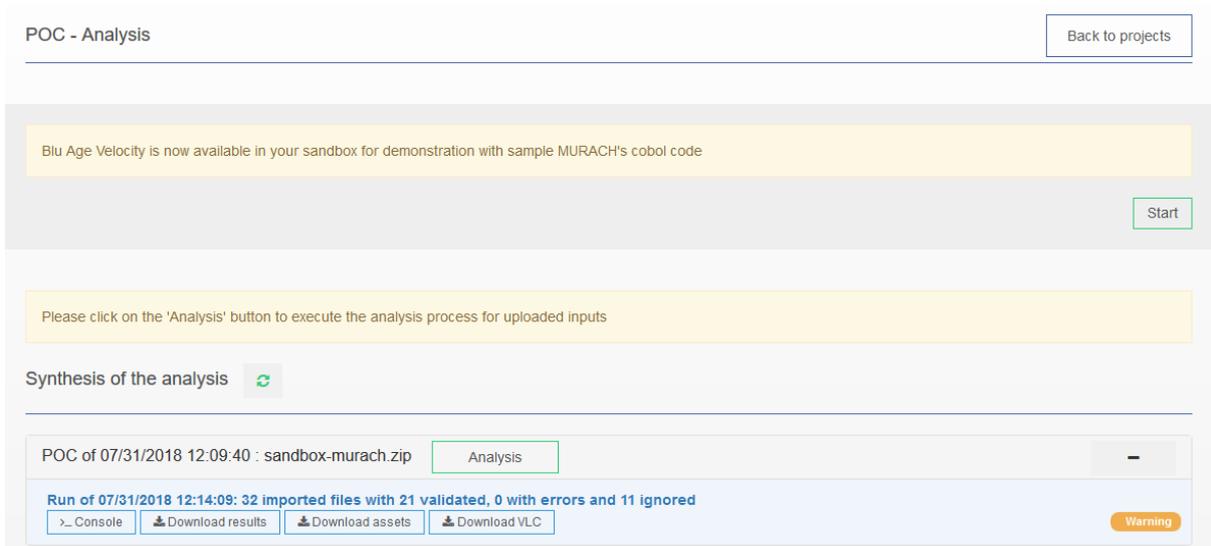
The analysis step is the first stage in the velocity modernization process.



This step launches the analyzer tool which will perform a detailed analysis of the inputs (dependencies, used programs, files categorization, cyclomatic complexity...).

In sandbox mode, the inputs are already uploaded. In normal mode, you will need to upload you POC inputs that will be parsed during the analysis phase.

You need to click on "Start" button and then "Analysis" button. A popup will appear where you have to choose one of the available analyzer versions to proceed with.



The new buttons available are for:

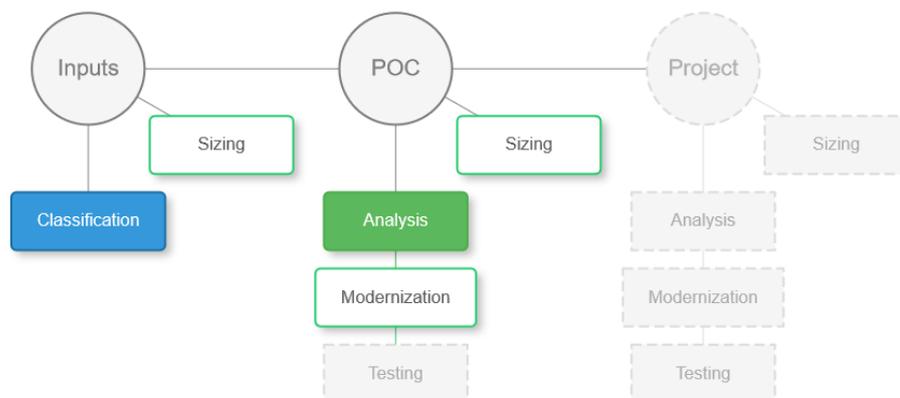
- Download results: enables you to download an excel file containing the issues if there are some, and also the ignored files. Under the ignored files section, you will find the copybooks because they are called upon when they are actually used in a program.
- Download assets: enables you to download an excel file containing the inputs classified by type. Available types are "Data", "Module" and "Program Fragment". It also contains different information on each file listed like the total line count, the file nature (Cobol Program, JCL Program...).
- Download VLC: enables you to download the VLC file that you will use to activate your velocity project under the license server so you can run the modernization.

3.6 POC modernization

Next step is the modernization itself.

[AzureProject](#)

[Demo](#)



During this phase, you are going to launch the velocity modernization process.

In sandbox mode, inputs are already uploaded. In normal mode, you will need to upload your POC inputs.

To launch the modernization, first click on the "Start" button, then "Modernize". A popup will be displayed, where you can configure your velocity modernization.

Blu Age Velocity configuration ✕

Application name No space or special characters
No spaces or special characters.

Velocity version Velocity build version

Encoding The encoding

Use MagicDraw If you want to use Magic Draw, check this option

Cache service The database cache service

Database engine The database engine

As it is running, you can keep track of the progress on the Blugenius portal.

POC - Modernization [Back to projects](#)

Blu Age Velocity is now available in your sandbox for demonstration with sample MURACH's cobol code

Synthesis of modernization

POC of 07/31/2018 12:42:36 : sandbox-murach.zip	<input type="button" value="Modernize"/>	-
Run of 07/31/2018 13:18:14 (BG-ACM-AZP-535 ✕)		<input type="button" value="Wait"/>
Progress		
Instantiating Virtual Machine		07/31/2018 13:18:16
Stating the VM creation process		07/31/2018 13:18:14

You will also receive an email confirming that your virtual machine is under construction.

Once the process is finished, you will receive another email, pretty different from the ones you have received before. This one will contain different links to access your application, the Sonar results, the Jacoco results, the Jenkins...

====> MODERNIZATION LINKS <====

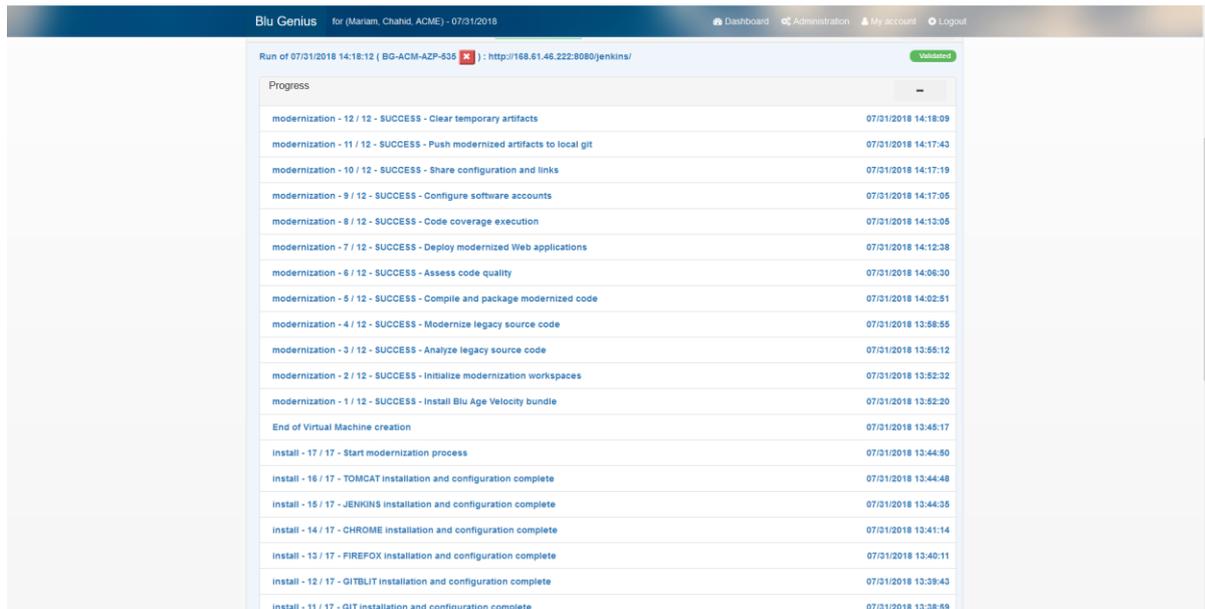
Element	Label	Links
Tools	Source code management	GitBlit 1.8.0
	Continuous integration	Jenkins 2.107.3
	Quality assurance	SonarQube 6.3.1
	Application server	Tomcat 8.5.9
	Code coverage	JaCoCo 0.7.9
Application	Front-End (if eligible)	front-end
	Back-end	back-end scripts programs transactions (for CICS)
	Consoles	BAC JAC (for CICS)
Job	Build	job link
		job stage view link
Build	# 1	build link
		build console link
		build steps link
Artifacts	modernized artifacts	artifacts AzureTest.zip

Under all those links in the email, you will find the Jenkins results for all the configured jobs from the installation of Blu Age velocity software, to the push of your code under GitBlit on your spawned machine.

====> MODERNIZATION RESULTS <====

Job	Build	Status	Duration
01 - Install	#1	SUCCESS	8 min 40 sec
02 - Initialize	#1	SUCCESS	5.7 sec
03 - Analyze	#1	SUCCESS	1 min 28 sec
04 - Modernize	#1	SUCCESS	3 min 27 sec
05 - Compile	#1	SUCCESS	3 min 47 sec
06 - Assess	#1	SUCCESS	3 min 26 sec
07 - Deploy	#1	SUCCESS	5 min 47 sec
08 - Coverage	#1	SUCCESS	23 sec
09 - Configure	#1	SUCCESS	3 min 51 sec
10 - Share	#1	SUCCESS	6.9 sec
11 - Push	#1	SUCCESS	12 sec
12 - Clear	#1	SUCCESS	24 sec

You can also see the same progress on Blugenius portal if click the refresh button.



The screenshot shows a Jenkins job progress page for a run on 07/31/2018 at 14:18:12. The job is titled 'Run of 07/31/2018 14:18:12 (BG-ACM-AZP-636)' and is located at 'http://168.81.46.222:8080/jenkins/'. The page displays a list of 17 jobs, each with a status of 'SUCCESS' and a completion time. The jobs are: install - 11 / 17 - GIT installation and configuration complete (13:38:59), install - 12 / 17 - GITBLIT installation and configuration complete (13:39:43), install - 13 / 17 - FIREFOX installation and configuration complete (13:40:11), install - 14 / 17 - CHROME installation and configuration complete (13:41:14), install - 15 / 17 - JENKINS installation and configuration complete (13:44:35), install - 16 / 17 - TOMCAT installation and configuration complete (13:44:48), install - 17 / 17 - Start modernization process (13:44:50), End of Virtual Machine creation (13:45:17), modernization - 1 / 12 - SUCCESS - Install Blu Age Velocity bundle (13:52:20), modernization - 2 / 12 - SUCCESS - Initialize modernization workspaces (13:52:32), modernization - 3 / 12 - SUCCESS - Analyze legacy source code (13:55:12), modernization - 4 / 12 - SUCCESS - Modernize legacy source code (13:58:55), modernization - 5 / 12 - SUCCESS - Compile and package modernized code (14:02:51), modernization - 6 / 12 - SUCCESS - Assess code quality (14:06:30), modernization - 7 / 12 - SUCCESS - Deploy modernized Web applications (14:12:38), modernization - 8 / 12 - SUCCESS - Code coverage execution (14:13:05), modernization - 9 / 12 - SUCCESS - Configure software accounts (14:17:05), modernization - 10 / 12 - SUCCESS - Share configuration and links (14:17:19), modernization - 11 / 12 - SUCCESS - Push modernized artifacts to local git (14:17:43), and modernization - 12 / 12 - SUCCESS - Clear temporary artifacts (14:18:09).

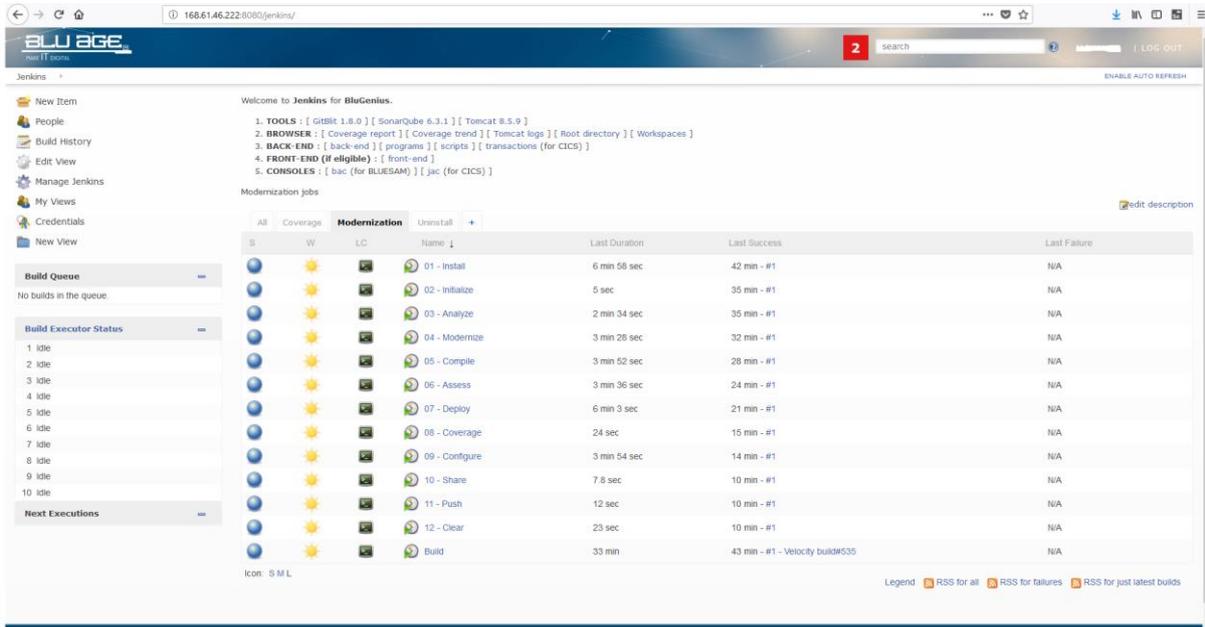
Job Name	Status	Time
install - 11 / 17 - GIT installation and configuration complete	SUCCESS	07/31/2018 13:38:59
install - 12 / 17 - GITBLIT installation and configuration complete	SUCCESS	07/31/2018 13:39:43
install - 13 / 17 - FIREFOX installation and configuration complete	SUCCESS	07/31/2018 13:40:11
install - 14 / 17 - CHROME installation and configuration complete	SUCCESS	07/31/2018 13:41:14
install - 15 / 17 - JENKINS installation and configuration complete	SUCCESS	07/31/2018 13:44:35
install - 16 / 17 - TOMCAT installation and configuration complete	SUCCESS	07/31/2018 13:44:48
install - 17 / 17 - Start modernization process	SUCCESS	07/31/2018 13:44:50
End of Virtual Machine creation	SUCCESS	07/31/2018 13:45:17
modernization - 1 / 12 - SUCCESS - Install Blu Age Velocity bundle	SUCCESS	07/31/2018 13:52:20
modernization - 2 / 12 - SUCCESS - Initialize modernization workspaces	SUCCESS	07/31/2018 13:52:32
modernization - 3 / 12 - SUCCESS - Analyze legacy source code	SUCCESS	07/31/2018 13:55:12
modernization - 4 / 12 - SUCCESS - Modernize legacy source code	SUCCESS	07/31/2018 13:58:55
modernization - 5 / 12 - SUCCESS - Compile and package modernized code	SUCCESS	07/31/2018 14:02:51
modernization - 6 / 12 - SUCCESS - Assess code quality	SUCCESS	07/31/2018 14:06:30
modernization - 7 / 12 - SUCCESS - Deploy modernized Web applications	SUCCESS	07/31/2018 14:12:38
modernization - 8 / 12 - SUCCESS - Code coverage execution	SUCCESS	07/31/2018 14:13:05
modernization - 9 / 12 - SUCCESS - Configure software accounts	SUCCESS	07/31/2018 14:17:05
modernization - 10 / 12 - SUCCESS - Share configuration and links	SUCCESS	07/31/2018 14:17:19
modernization - 11 / 12 - SUCCESS - Push modernized artifacts to local git	SUCCESS	07/31/2018 14:17:43
modernization - 12 / 12 - SUCCESS - Clear temporary artifacts	SUCCESS	07/31/2018 14:18:09

The different Jenkins jobs run are:

- Install: installs velocity software on the spawned virtual machine.
- Initialize: initializes the workspace.
- Analyze: analyzes the code to prepare it for modernization job.
- Modernize: reverse engineer the code into an UML model and uses it to modernize into a Java code.
- Compile: compiles the generated code.
- Assess: assesses the quality of the generated code using SonarQube.
- Deploy: deploys the generated code under Tomcat server.
- Coverage: checks the code coverage.
- Configure: configures software accounts.
- Share: shares the code into the root directory.
- Push: pushes the code under Gitblit.
- Clear: cleans all temporary information.

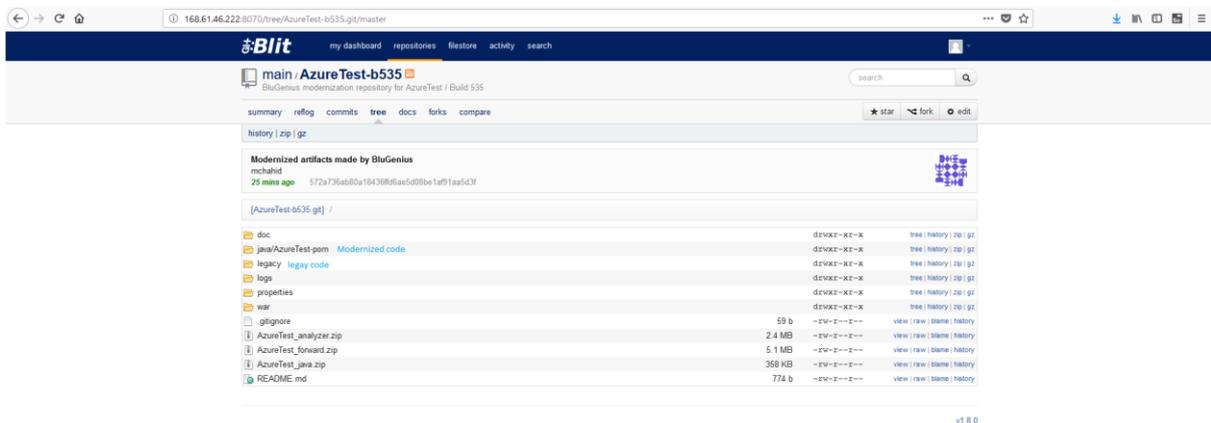
If you check the top of your email, you will see a password associated to your Blugenius user name. This password has been generated and will allow you to connect to the different links.

You can now go Jenkins via the link provided in the email. You can log in using the given password.

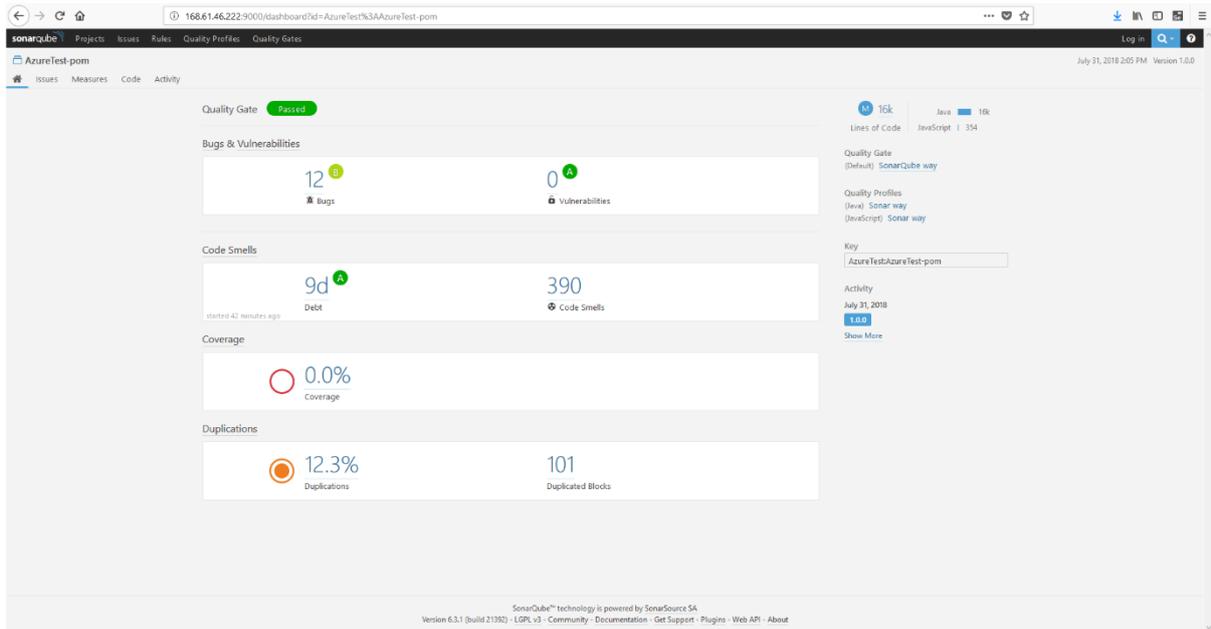


From Jenkins you have access to different tools and links like:

- GitBlit: your Git repository containing the legacy code and the modernized code.



- SonarQube: you can visit SonarQube to check your code quality.



- Coverage report: you can use this link to check your code coverage report. To have the results, you need to run your code first.

Back to 00 - Coverage | HTML report | CSV report | Execution file

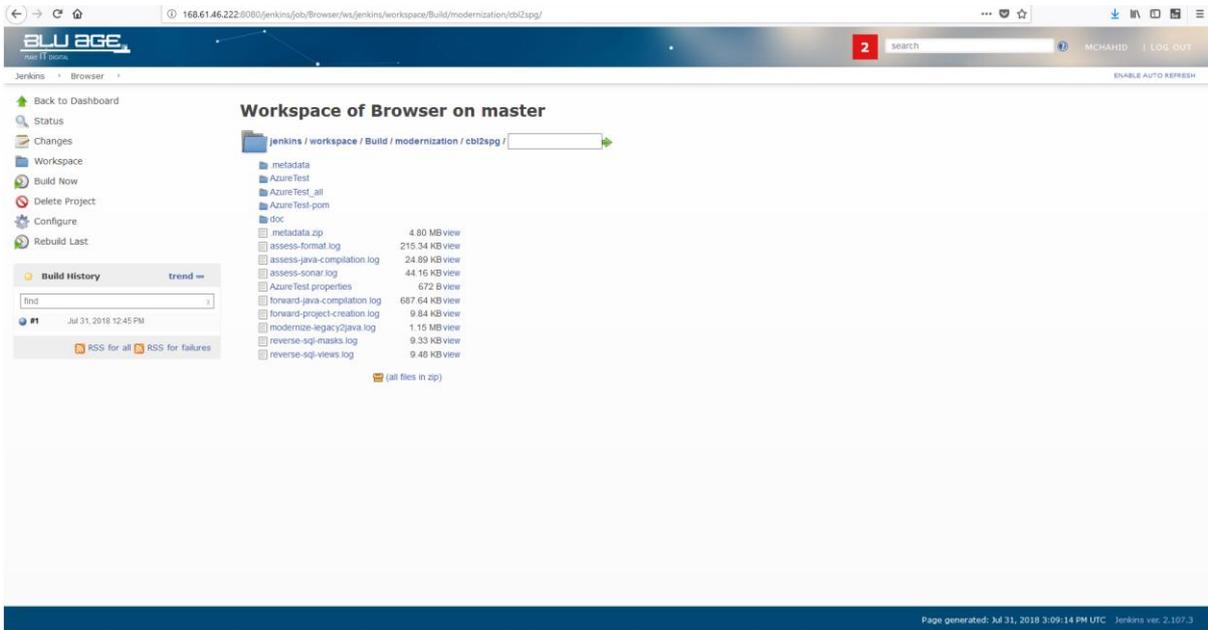
Coverage report for AzureTest - Build Tue 2018/07/31 at 13:12:44

Coverage report for AzureTest - Build Tue 2018/07/31 at 13:12:44

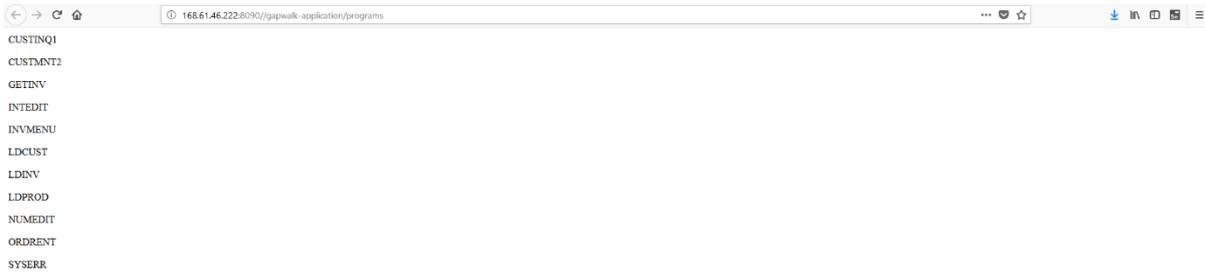
Element	Missed Instructions	Cov.	Missed Branches	Cov.	Missed	Qty	Missed	Lines	Missed	Methods	Missed	Classes
Persistence Layer	0%	0%	1	0%	2,378	2,378	5,064	5,064	2,370	2,370	116	116
Service Layer	4%	2%	388	445	1,678	1,784	169	222	34	52		
Tools Layer	4%	2%	388	445	1,678	1,784	169	222	34	52		
Total	55,406 of 56,310	1%	884 of 908	2%	3,154	3,268	8,420	8,632	2,708	2,814	184	220

Created with jsc2j 0.7.9.20170202195

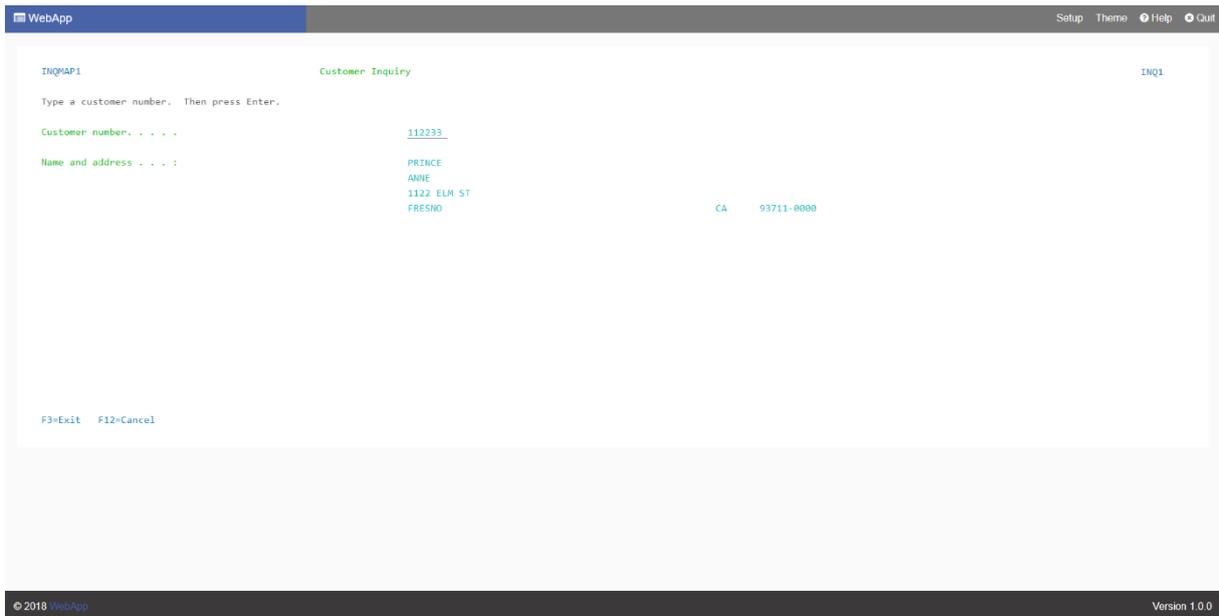
- Root directory: you can access your different elements like UML model, logs files, installed software files, workspaces...



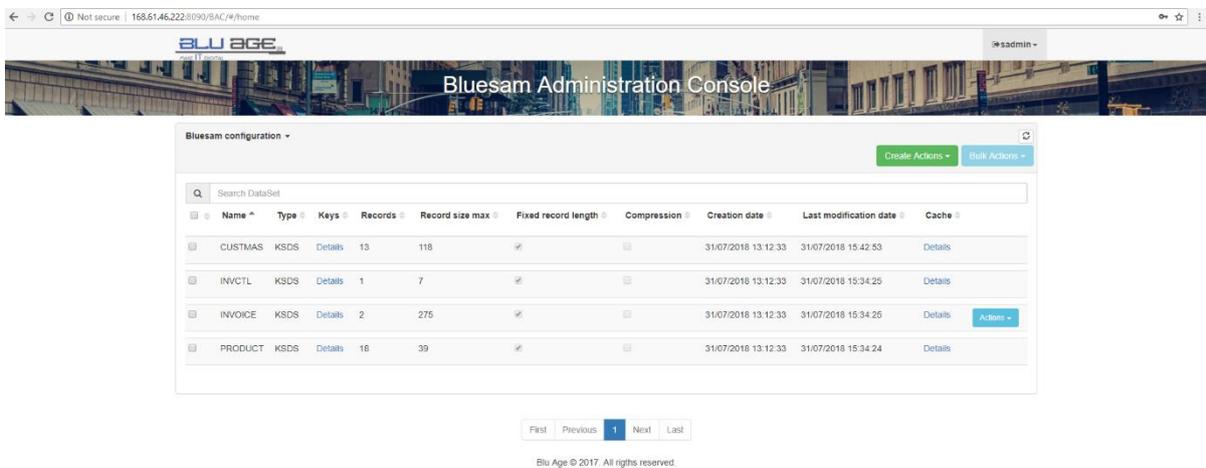
- Programs, scripts, transactions: list of the programs, JCL scripts and CICS transactions.



- Front-end: this is the actual modernized application.



- **BAC:** this is the Bluesam administration console, which is the Blu Age VSAM console. This console can be used to check data and modify the database. You can also go into any dataset and read what is in it. You can filter data using different masks.



- **JAC:** it is the Java CICS administration console. It lists all the CICS transactions. You can also perform many operations on the transactions via this console.

The screenshot shows a web browser window with the URL `166.61.46.222:8090/JACI/#/home/JACIFile/MURACHS/CUSTMAS`. The page title is "JICS Administration Console". The interface includes a navigation tree on the left under "Resources" with "MURACHS" expanded to show "CUSTMAS". The main area displays configuration details for "CUSTMAS" under the "MURACHS" group. The details include:

- Group: MURACHS
- Name: CUSTMAS
- Is Active:
- Description: Customer master file
- Change Agent: [Empty field]
- Change Agent: [Empty field]
- Change Agent: [Empty field]
- Change User ID: [Empty field]
- Change Time: [Empty field]
- Define Time: [Empty field]
- Key Length: 6
- Record Size: 118

At the bottom of the configuration panel, there are buttons for "Edit groups test", "Export", "Create +", "Edit", and "Delete". A "Show Details" button is also present.

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