

# Memoria Phoronix y JMeter

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## Ejercicio 1: Phoronix

### Instalación en Ubuntu

Descargamos el paquete que contiene a la aplicación con el comando:

```
 wget http://phoronix-test-suite.com/releases/repo/pts.debian/files/phoronix-test-suite_10.8.3_all.deb
```

Ahora tenemos dos opciones para instalar el programa. Con el comando `dpkg` y `apt install`, o con el instalador de paquetes gdebi. Si optamos por esta segunda opción, debemos instalar gdebi en primer lugar. Para ello:

```
 sudo apt update  
 sudo apt install gdebi  
 sudo gdebi phoronix-test-suite_10.8.3_all.deb  
 sudo apt install php-sqlite3  
 sudo apt-get install lib32z1-dev
```

Los dos últimos comandos son necesarios ya que sino nos dará error de dependencias al intentar ejecutar phoronix o algún test.

### Instalación en CentOS

Descargamos el paquete correspondiente con:

```
 sudo wget https://phoronix-test-suite.com/releases/phoronix-test-suite-10.8.3.tar.gz
```

Descomprimimos e instalamos:

```
 sudo tar xvfz phoronix-test-suite-10.8.3.tar.gz  
 cd phoronix-test-suite  
 sudo ./install-sh
```

Para que no ocurra ningún error de dependencias ejecutaremos:

```
 sudo yum install php-sqlite3
```

# Ejecución de Benchmarks

En primer lugar, tendremos que buscar dos tests en la página [https://openbenchmarking.org/test\\_S](https://openbenchmarking.org/test_S). Después de buscar y probar unos cuantos, me he quedado con dos que no ocupan mucho espacio y no tardan mucho en ejecutarse.

## Test 1: blake2

Blake2 es una función hash de encriptación más rápida que MD5, SHA-1, SHA-2 y SHA-3 (<http://www.blake2.net/>).

Para ejecutar el test, introducimos el comando `phoronix-test-suite benchmark blake2` en ambas máquinas.

Resultados en Ubuntu:

```
ise_ubuntu (Zabbix instalado) [Corriendo] - Oracle VM VirtualBox
- x
Archivo Máquina Ver Entrada Dispositivos Ayuda

Enter a unique name to describe this test run / configuration:
If desired, enter a new description below to better describe this result set / system configuration
under test.
Press ENTER to proceed without changes.

Current Description: Oracle VMware testing on Ubuntu 20.04 via the Phoronix Test Suite.

New Description:
Do you want to view the text results of the testing (Y/n): y
blake2-ubuntu
Oracle VMware testing on Ubuntu 20.04 via the Phoronix Test Suite.

Intel Core i5-8250U:
Processor: Intel Core i5-8250U (1 Core), Motherboard: Oracle VirtualBox v1.2, Chipset: Intel
440FX 82441FX PMC, Memory: 1024MB, Disk: 11GB VBOX HDD, Graphics: VMware SVGA II, Audio: Intel 8280
1AA AC 97 Audio, Network: 2 x Intel 82540EM
OS: Ubuntu 20.04, Kernel: 5.4.0-109-generic (x86_64), Vulkan: 1.1.182, Compiler: GCC 9.4.0,
File-System: ext4, Screen Resolution: 2048x2048, System Layer: Oracle VMware

BLAKE2 20170307
Cycles Per Byte < Lower Is Better
Intel Core i5-8250U . 3.19 |=====
Would you like to upload the results to OpenBenchmarking.org (y/n): y
Would you like to attach the system logs (lspci, dmesg, lsusb, etc) to the test result (y/n): y
Results Uploaded To: https://openbenchmarking.org/result/2205241-NE-BLAKE2UBU09
germanpp@germanpp:~$
```

Observamos que podemos ver el resultado en <https://openbenchmarking.org/result/2205241-NE-BLAKE2UBU09>

<https://openbenchmarking.org/result/2205241-NE-BLAKE2UBU09>

**blake2-ubuntu**

Oracle VMWare testing on Ubuntu 20.04 via the Phoronix Test Suite.

Compare your own system(s) to this result file with the [Phoronix Test Suite](#) by running the command: `phoronix-test-suite benchmark 2205241-NE-BLAKE2UBU09`

[Jump To Table - Results](#)

**Statistics**

Remove Outliers Before Calculating Averages  Prefer Vertical Bar Graphs  Show Detailed System Result Table

**Run Management**

RESULT IDENTIFIER	PERFORMANCE PER DOLLAR	DATE RUN	TEST DURATION
Intel Core i5-8250U		May 20	1 Minute

[Refresh Results](#)

**blake2-ubuntu**

[OpenBenchmarking.org](#) [Phoronix Test Suite 10.8.3](#)

<b>Intel Core i5-8250U (1 Core)</b>	Processor
<b>Oracle VirtualBox v1.2</b>	Motherboard
<b>Intel 440FX 82441FX PMC</b>	Chipset
<b>1024MB</b>	Memory
<b>11GB VBOX HDD</b>	Disk
<b>VMware SVGA II</b>	Graphics
<b>Intel 82801AA AC 97 Audio</b>	Audio
<b>2 x Intel 82540EM</b>	Network

[Privacy](#)

**Ubuntu 20.04**

<b>5.4.0-109-generic (x86_64)</b>	Kernel
<b>1.1.182</b>	Vulkan
<b>GCC 9.4.0</b>	Compiler
<b>ext4</b>	File-System
<b>2048x2048</b>	Screen Resolution

**Oracle VMware**

**Blake2-ubuntu Benchmarks**

- Transparent Huge Pages: madvise
- build=x86\_64-linux-gnu
- disable-vtable-verify --disable-werror
- enable-checking=release
- enable-clocale=gnu
- enable-default-pie
- enable-gnu-unique-object
- enable-languages=c,ada,c++,go,brig,d,fortran,objc,obj-c++
- enable-libstdcxx-debug
- enable-multiarch --enable-multilib
- enable-nls --enable-objc-gc=auto
- enable-offload-targets=nvptx-none=/build/gcc-9-Av3uE
- enable-plugin --enable-shared
- enable-threads=posix
- host=x86\_64-linux-gnu
- program-prefix=x86\_64-linux-gnu-
- target=x86\_64-linux-gnu --with-abi=m64
- with-arch-32=i686
- with-default-libstdcxx-abi=new
- with-gcc-major-version-only
- with-multilib-list=m32,m64,mx32
- with-target-system-zlib=auto
- with-tune=generic

--with-target-system-zlib=auto

--with-tune=generic

--without-cuda-driver -v

- intel\_multihit: KVM: Vulnerable + intel\_pvt: Mitigation of PTE Inversion + mds: Mitigation of Clear buffers; SMT Host state unknown + meltdown: Mitigation of PTI + spec\_store\_bypass: Vulnerable + spectre\_v1: Mitigation of usercopy/swapgs barriers and \_\_user pointer sanitization + spectre\_v2: System Logs

**BLAKE2**

This is a benchmark of BLAKE2 using the blake2s binary. BLAKE2 is a high-performance crypto alternative to MD5 and SHA-2/3. [Learn more via the OpenBenchmarking.org test page.](#)

**BLAKE2 20170307**

Cycles Per Byte, Fewer Is Better

Intel Core i5-8250U  
S2 = 0.52, N = 15

0.7178 1.4568 2.1534 2.8712 3.589

[OpenBenchmarking.org](#)

1. [CC] gcc option: -O3 -march=native -fno-omit-frame-pointer -fno-optimize-sibling-calls

[Privacy](#)

**Legal Disclaimer**  
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Powered by OpenBenchmarking.org Server using Phoronix Test Suite 10.8.3.  
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## Resultados en CentOS:

ISE CentOS LVM (P2^) [Corriendo] - Oracle VM VirtualBox

Archivo Máquina Ver Entrada Dispositivos Ayuda

```

Enter a unique name to describe this test run / configuration:
If desired, enter a new description below to better describe this result set / system configuration
under test.
Press ENTER to proceed without changes.

Current Description: Oracle VMware testing on CentOS Linux 8 via the Phoronix Test Suite.

New Description:

Do you want to view the text results of the testing (Y/n): y
blake2-centos
Oracle VMware testing on CentOS Linux 8 via the Phoronix Test Suite.

Intel Core i5-8250U:

Processor: Intel Core i5-8250U (1 Core), Motherboard: Oracle VirtualBox v1.2, Chipset: Intel
440FX 82441FX PMC, Memory: 818MB, Disk: 2 x 9GB VBOX HDD, Graphics: VMware SVGA II, Audio: Intel 82
801AA AC 97 Audio, Network: 2 x Intel 82540EM

OS: CentOS Linux 8, Kernel: 4.18.0-193.el8.x86_64 (x86_64), File-System: xfs, Screen Resolution: 2048x2048, System Layer: Oracle VMware

BLAKE2 20170307

Cycles Per Byte < Lower Is Better
Intel Core i5-8250U . 3.12 |=====

Would you like to upload the results to OpenBenchmarking.org (y/n): y
Would you like to attach the system logs (lspci, dmesg, lsusb, etc) to the test result (y/n): y

Results Uploaded To: https://openbenchmarking.org/result/2205246-NE-BLAKE2CEN20

[germanpadua@localhost ~]$ _

```

Alt Izquierdo

Observamos que podemos ver el resultado en <https://openbenchmarking.org/result/2205246-NE-BLAKE2CEN20>

The screenshot shows the OpenBenchmarking.org result page for the system 'blake2-centos'. The page includes a sidebar with popular and newest tests, and a main area with statistics, graphs, and detailed hardware specifications.

**blake2-centos**

Processor: Intel Core i5-8250U (1 Core)

RESULT	PERFORMANCE PER	DATE	TEST
IDENTIFIER	DOLLAR	RUN	DURATION
Intel Core i5-8250U	\$	May 20	1 Minute

**blake2-centos**

OpenBenchmarking.org Phoronix Test Suite 10.8.3

Processor	Intel Core i5-8250U (1 Core)
Motherboard	Oracle VirtualBox v1.2
Chipset	Intel 440FX 82441FX PMC
Memory	818MB
Disk	2 x 9GB VBOX HDD
Graphics	VMware SVGA II
Audio	Intel 82801AA AC 97 Audio
Network	2 x Intel 82540EM
OS	CentOS Linux 8

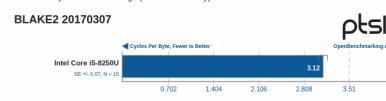
rx480common  
benchmarks-cayman-all  
NIR-to-TGSI vs native NIR on Cayman  
  
Component Benchmarks  
CPUs / Processors  
GPUs / Graphics  
OpenGL  
Disks / Storage  
Motherboards  
File Systems  
Operating Systems  
  
OpenBenchmarking.org  
Corporate / Organization Info  
Bug Reports / Feature Requests

CentOS Linux 8		OS
4.18.0-193.el8.x86_64 (x86_64)		Kernel
xfs		File-System
2048x2048		Screen Resolution
Oracle VMWare		System Layer
Blake2-centos Performance		
- Transparent Huge Pages: always		
- itlb_multithit: KVM: Vulnerable + l1tf: Mitigation of PTE Inversion + mds: Mitigation of Clean buffers; SMT Host state unknown + meltdown: Mitigation of PTI + spec_store_bypass: Vulnerable + spectre_v1: Mitigation of usercopy/swapsgs barriers and __user pointer sanitization + spectre_v2: Mitigation of Full generic retpoline STIBP; disabled RSB filling + tsx_async_abort: Not affected		

System Logs

## BLAKE2

This is a benchmark of BLAKE2 using the blake2s binary. BLAKE2 is a high-performance crypto alternative to MD5 and SHA-2/3. Learn more via the [OpenBenchmarking.org test page](#).



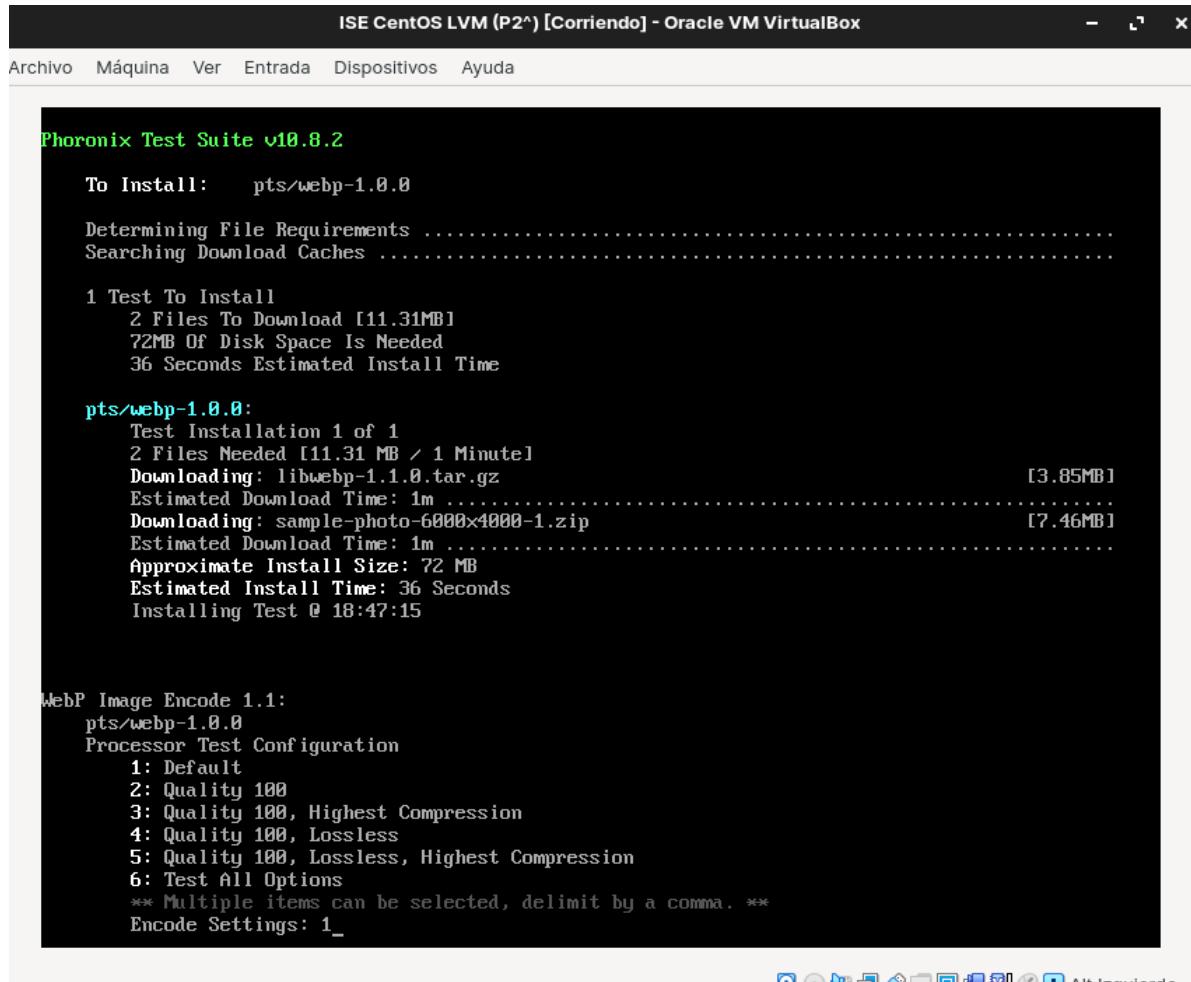
Notemos que en CentOS se obtiene un mejor resultado ya que el número de Ciclos por Byte es menor.

## Test 2: Webp

Este es un test de libwebp de Google con el codificador de imágenes webp y usando una imagen JPEG de 6000x4000 píxeles como entrada.

Para ejecutarlo, introducimos el comando `phoronix-test-suite benchmark webp` en ambas máquinas.

Resultados en Ubuntu:



The screenshot shows a terminal window titled "ISE CentOS LVM (P2^) [Corriendo] - Oracle VM VirtualBox". The window contains the following text output from the Phoronix Test Suite:

```
Phoronix Test Suite v10.8.2

To Install: pts/webp-1.0.0

Determining File Requirements .....
Searching Download Caches .....

1 Test To Install
2 Files To Download [11.31MB]
72MB Of Disk Space Is Needed
36 Seconds Estimated Install Time

pts/webp-1.0.0:
Test Installation 1 of 1
2 Files Needed [11.31 MB / 1 Minute]
Downloading: libwebp-1.1.0.tar.gz [3.85MB]
Estimated Download Time: 1m .....
Downloading: sample-photo-6000x4000-1.zip [7.46MB]
Estimated Download Time: 1m .....
Approximate Install Size: 72 MB
Estimated Install Time: 36 Seconds
Installing Test @ 18:47:15

WebP Image Encode 1.1:
pts/webp-1.0.0
Processor Test Configuration
1: Default
2: Quality 100
3: Quality 100, Highest Compression
4: Quality 100, Lossless
5: Quality 100, Lossless, Highest Compression
6: Test All Options
** Multiple items can be selected, delimit by a comma. **
Encode Settings: 1_
```

Seleccionamos la configuración por defecto.

ise\_ubuntu (Zabbix instalado) [Corriendo] - Oracle VM VirtualBox

Archivo Máquina Ver Entrada Dispositivos Ayuda

```

Samples: 15

Comparison of 1,010 OpenBenchmarking.org samples since 22 September 2020; median result: 1.61 Encoder Time - Seconds. Box plot of samples:
[-----*-----*---*#!*|*]
This Result (7th Percentile): 2.979 ^ Intel Core i9-12900K: 1.065 ^
2 x AMD EPYC 7F72: 1.609 ^ Intel Xeon E5-2609 v4: 4.072 ^
ARMv8 Cortex-A72: 7.834

Do you want to view the text results of the testing (Y/n): y
webp-ubuntu
Oracle VMware testing on Ubuntu 20.04 via the Phoronix Test Suite.

Intel Core i5-8250U:

Processor: Intel Core i5-8250U (1 Core), Motherboard: Oracle VirtualBox v1.2, Chipset: Intel 440FX 82441FX PMC, Memory: 1024MB, Disk: 11GB VBOX HDD, Graphics: VMware SVGA II, Audio: Intel 82801AA AC 97 Audio, Network: 2 x Intel 82540EM

OS: Ubuntu 20.04, Kernel: 5.4.0-104-generic (x86_64), Vulkan: 1.1.182, Compiler: GCC 9.4.0, File-System: ext4, Screen Resolution: 2048x2048, System Layer: Oracle VMware

WebP Image Encode 1.1
Encode Settings: Default
Encode Time - Seconds < Lower Is Better
Intel Core i5-8250U . 2.979 |=====

Would you like to upload the results to OpenBenchmarking.org (y/n): y
Would you like to attach the system logs (lspci, dmesg, lsusb, etc) to the test result (y/n): y

Results Uploaded To: https://openbenchmarking.org/result/2205245-NE-WEBPUBUNT49

germanpp@germanpp:~$ _

```

Alt Izquierdo

Podemos ver el resultado en <https://openbenchmarking.org/result/2205245-NE-WEBPUBUNT49>

OpenBenchmarking.org Tests Suites Latest Results

Popular Tests

- Timed Linux Kernel Compilation
- Blender
- N-Queens
- SVTAV1
- 7-Zip Compression
- Hashcat

Newest Tests

- fast-cgi
- speedtest-cli
- OSPray Studio
- SPECViewPerf 2020
- F1 2021
- Timed Gem5 Compilation

Recently Updated Tests

- Glibc Benchmarks
- TensorFlow Lite
- GROMACS
- Renaissance
- Stress-NG
- Blender

New & Recently Updated Suites

- Internet Speed
- CPU / Processor Suite
- Raytracing

Currently Trending Results

- fio-performance
- DesktopGraphics2022
- fio-performance

Statistics

Graph Settings Table

Run Management

RESULT	PERFORMANCE PER	DATE	TEST
IDENTIFIER	DOLLAR	RUN	DURATION
Intel Core i5-8250U	b	May 24	1 Minute

[Refresh Results](#)

## webp-ubuntu

OpenBenchmarking.org Phoronix Test Suite 10.8.3

Intel Core i5-8250U (1 Core)	Processor
Oracle VirtualBox v1.2	Motherboard
Intel 440FX 82441FX PMC	Chipset
1024MB	Memory
11GB VBOX HDD	Disk
VMware SVGA II	Graphics
Intel 82801AA AC 97 Audio	Audio
2 x Intel 82540EM	Network

[Privacy](#)

benchmarks-cayman-all  
NIR-to-TGSI vs native NIR on Cayman

Component Benchmarks  
CPUs / Processors  
GPUs / Graphics  
OpenGL  
Disks / Storage  
Motherboards  
File-Systems  
Operating Systems

OpenBenchmarking.org  
Corporate / Organization Info  
Bug Reports / Feature Requests

Ubuntu 20.04		OS
5.4.0-104-generic (x86_64)	Kernel	
1.1.182	Vulkan	
GCC 9.4.0	Compiler	
ext4	File-System	
2048x2048	Screen Resolution	
Oracle VMware	System Layer	

#### Webp-ubuntu Benchmarks

```
- Transparent Huge Pages: madvise
- --build=x86_64-linux-gnu
--disable-vtable-verify --disable-werror
--enable-checking=release
--enable-clocale=gnu
--enable-default-pie
--enable-gnu-unique-object
--enable-languages=c,ada,c++,go,brig,d,fortran,objc,obj-c++
--enable-libstdcxx-debug
--enable-libstdcxx-time=yes
--enable-multiarch --enable-multilib
--enable-nls --enable-objc-gc=auto
--enable-offload-targets=nvptx-none=/build/gcc-9-Av3uE-
--enable-plugin -enable-shared
--enable-threads=posix
--host=x86_64-linux-gnu
--program-prefix=x86_64-linux-gnu-
--target=x86_64-linux-gnu --with-abi=m64
--with-arch-32=i686
--with-default-libstdcxx-abi=new
--with-gcc-major-version-only
--with-multilib-list=m32,m64,mx32
--with-target-system-zlib=auto
--with-tune=generic
```

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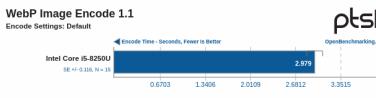
--without-cuda-driver -v

```
- intel_multithread: KVM: Vulnerable + l1tf:
Mitigation of PTE Inversion + mds:
Mitigation of Clear buffers; SMT Host
state unknown + meltdown: Mitigation of
PTI + spec_store_bypass: Vulnerable +
spectre_v1: Mitigation of
usercopy/swaps barriers and user
pointer sanitization + spectre_v2:
```

System Logs

#### WebP Image Encode

This is a test of Google's libwebp with the cwebp image encode utility and using a sample 6000x4000 pixel JPEG image as the input. [Learn more via the OpenBenchmarking.org test page.](#)



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## Resultados en CentOS:

ISE CentOS LVM (P2^) [Corriendo] - Oracle VM VirtualBox

Archivo Máquina Ver Entrada Dispositivos Ayuda

```
Samples: 15

Comparison of 1,010 OpenBenchmarking.org samples since 22 September 2020: median result: 1.61 Em
code Time - Seconds. Box plot of samples:
[-----*-----*!*|*-----]
This Result (7th Percentile): 3.897 ^
Intel Core i9-12900K: 1.065 ^
2 x AMD EPYC 7F72: 1.609 ^
Intel Core i5-2520M: 2.495 ^
ARMv8 Cortex-A72: 7.834 ^

Do you want to view the text results of the testing (Y/n): y
webp-centos
Oracle VMware testing on CentOS Linux 8 via the Phoronix Test Suite.

Intel Core i5-8250U:

Processor: Intel Core i5-8250U (1 Core), Motherboard: Oracle VirtualBox v1.2, Chipset: Intel 440FX 82441FX PMC, Memory: 818MB, Disk: 2 x 9GB VBOX HDD, Graphics: VMware SVGA II, Audio: Intel 82801AA AC 97 Audio, Network: 2 x Intel 82540EM

OS: CentOS Linux 8, Kernel: 4.18.0-193.el8.x86_64 (x86_64), File-System: xfs, Screen Resolution: 2048x2048, System Layer: Oracle VMware

WebP Image Encode 1.1
Encode Settings: Default
Encode Time - Seconds < Lower Is Better
Intel Core i5-8250U . 3.897 |=====

Would you like to upload the results to OpenBenchmarking.org (y/n): y
Would you like to attach the system logs (lspci, dmesg, lsusb, etc) to the test result (y/n): y

Results Uploaded To: https://openbenchmarking.org/result/2205241-NE-WEBPCENT062

[germanpadua@localhost ~]$ _
```

Alt Izquierdo

Benchmark Test Profiles Webp-centos Performance +

<https://openbenchmarking.org/result/2205241-NE-WEBPCENT062>

OpenBenchmarking.org Tests Suites Latest Results

Search Register Login Export Benchmark Data

Popular Tests

- Timed Linux Kernel Compilation
- Blender
- N-Queens
- SVTAVI
- 7-Zip Compression
- Hashcat

Newest Tests

- fast-cli
- speeedtest-cli
- OSPray Studio
- SPECviewPerf 2020
- F1 2021
- Timed Gem5 Compilation

Recently Updated Tests

- Glibc Benchmarks
- TensorFlow Lite
- GROMACS
- Renaissance
- Stress-NG
- Blender

New & Recently Updated Tests

- Internet Speed
- CPU / Processor Suite
- Raytracing

Recently Updated Suites

- DesktopGraphics2022
- fio-performance

Currently Trending Results

- fio-performance
- DesktopGraphics2022
- fio-performance

webp-centos

Oracle VMware testing on CentOS Linux 8 via the Phoronix Test Suite.

Compare your own system(s) to this result file with the Phoronix Test Suite by running the command: phoronix-test-suite benchmark 2205241-NE-WEBPCENT062

Jump To Table - Results

Statistics Graph Settings Table

Remove Outliers Before Calculating Averages  Prefer Vertical Bar Graphs  Show Detailed System Result Table

Run Management

RESULT	PERFORMANCE PER	DATE	TEST
IDENTIFIER	DOLLAR	RUN	DURATION
Intel Core i5-8250U	\$	May 24	2 Minutes

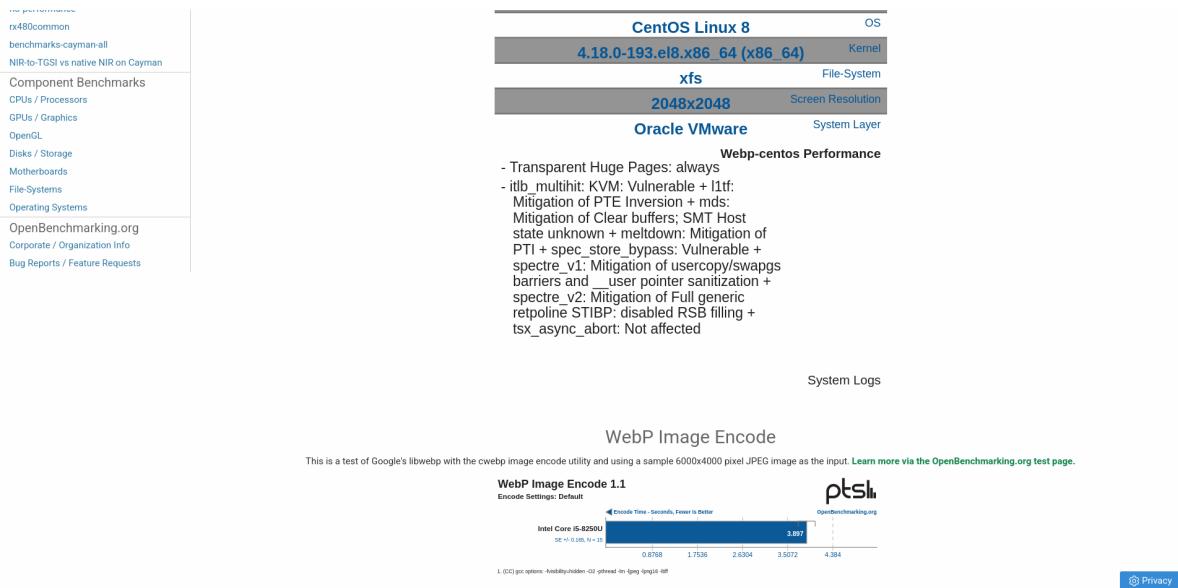
[Refresh Results](#)

## webp-centos

OpenBenchmarking.org Phoronix Test Suite 10.8.3

Intel Core i5-8250U (1 Core)	Processor
Oracle VirtualBox v1.2	Motherboard
Intel 440FX 82441FX PMC	Chipset
818MB	Memory
2 x 9GB VBOX HDD	Disk
VMware SVGA II	Graphics
Intel 82801AA AC 97 Audio	Audio
2 x Intel 82540EM	Network
CentOS Linux 8	OS

[Privacy](#)



Vemos que en este test Ubuntu tiene un mejor resultado ya que el tiempo de codificación es menor.

## Ejercicio Opcional

Una vez instalado docker (veremos en el segundo ejercicio cómo) en nuestra máquina, ejecutamos `sudo docker run -it phoronix/pts` tal y como se indica en <https://www.phoronix.com/scan.php?page=article&item=docker-phoronix-pts&num=1>.

Pero nos encontramos un problema al intentar ejecutar los test con `benchmark blake2` y `benchmark webp`, ya que debemos instalar dependencias en ubuntu.

Otra forma de realizar el ejercicio será instalar un contenedor de ubuntu y en él instalaremos phoronix.

Para ello, en nuestra máquina ejecutamos:

```
sudo docker pull ubuntu
docker run -it ubuntu /bin/bash
```

```
germanpadua@germanpadua:~$ sudo docker pull ubuntu
Using default tag: latest
latest: Pulling from library/ubuntu
125a6e411906: Pull complete
Digest: sha256:26c68d57ccce2cb0a31b330cb0be2b5e108d467f641c62e13ab40cbec258c68d
Status: Downloaded newer image for ubuntu:latest
docker.io/library/ubuntu:latest
germanpadua@germanpadua:~$ sudo docker run -it ubuntu /bin/bash
root@9255beb4323a2:~# ls
bin boot dev etc home lib lib32 lib64 libx32 media mnt opt proc root run sbin srv sys tmp usr var
root@9255beb4323a2:~# cd home
root@9255beb4323a2:~/home# ls
root@9255beb4323a2:~/home# sudo wget https://phoronix-test-suite.com/releases/phoronix-test-suite-10.8.3.tar.gz
bash: sudo: command not found
root@9255beb4323a2:~/home# wget https://phoronix-test-suite.com/releases/phoronix-test-suite-10.8.3.tar.gz
bash: wget: command not found
root@9255beb4323a2:~/home# apt-update
bash: apt-update: command not found
root@9255beb4323a2:~/home# apt update
Get:1 http://security.ubuntu.com/ubuntu jammy-security InRelease [110 kB]
Get:2 http://archive.ubuntu.com/ubuntu jammy InRelease [270 kB]
Get:3 http://security.ubuntu.com/ubuntu jammy-security/main amd64 Packages [151 kB]
Get:4 http://security.ubuntu.com/ubuntu jammy-security/multiverse amd64 Packages [4653 B]
Get:5 http://security.ubuntu.com/ubuntu jammy-security/restricted amd64 Packages [155 kB]
Get:6 http://security.ubuntu.com/ubuntu jammy-security/universe amd64 Packages [68.8 kB]
Get:7 http://archive.ubuntu.com/ubuntu jammy-updates InRelease [109 kB]
Get:8 http://archive.ubuntu.com/ubuntu jammy-backports InRelease [99.8 kB]
Get:9 http://archive.ubuntu.com/ubuntu jammy/restricted amd64 Packages [104 kB]
Get:10 http://archive.ubuntu.com/ubuntu jammy/universe amd64 Packages [17.5 MB]
Get:11 http://archive.ubuntu.com/ubuntu jammy/main amd64 Packages [1792 kB]
Get:12 http://archive.ubuntu.com/ubuntu jammy/multiverse amd64 Packages [266 kB]
Get:13 http://archive.ubuntu.com/ubuntu jammy-updates/multiverse amd64 Packages [4653 B]
Get:14 http://archive.ubuntu.com/ubuntu jammy-updates/restricted amd64 Packages [153 kB]
Get:15 http://archive.ubuntu.com/ubuntu jammy-updates/main amd64 Packages [263 kB]
Get:16 http://archive.ubuntu.com/ubuntu jammy-updates/universe amd64 Packages [122 kB]
Get:17 http://archive.ubuntu.com/ubuntu jammy-backports/universe amd64 Packages [1202 B]
Fetched 21.2 MB in 3s (6877 kB/s)
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
```

E instalamos phoronix como en ubuntu:

```
wget http://phoronix-test-suite.com/releases/repo/pts.debian/files/phoronix-test-suite_10.8.3_all.deb  
sudo apt update  
sudo apt install gdebi  
sudo gdebi phoronix-test-suite_10.8.3_all.deb  
sudo apt install php-sqlite3  
sudo apt-get install lib32z1-dev
```

Ejecutarmos el test blake2 con `phoronix-test-suite benchmark blake2` y obtenemos:

```
Started Run 3 @ 11:24:19

Test Results:
 3.05
 3.05
 3.05
 3.05

Average: 3.05 Cycles Per Byte
Deviation: 0.00%

Comparison of 1,407 OpenBenchmarking.org samples since 7 February 2018; median result: 5.02 Cycles Per Byte. Box plot of samples:
[-----*-----#####
          This Result (94th Percentile): 3.05 ^
          AMD Ryzen 5 2400G: 9.55 ^
          Intel Pentium Gold G6400: 5.83 ^
          Intel Core i7-8565U: 2.73 ^
          2 x Intel Xeon Platinum 8280: 3.9 ^
          2 x Intel Xeon Platinum 8380: 4.12 ^
          Intel Core i7-3630QM: 4.48 ^

Do you want to view the text results of the testing (Y/n): y
blake2-docker
docker testing on Ubuntu 22.04 via the Phoronix Test Suite.

Intel Core i5-8250U:

Processor: Intel Core i5-8250U @ 3.40GHz (4 Cores / 8 Threads), Motherboard: Timi TM1703 (XMAXB3MOP1B13 BIOS), Memory: 8GB, Disk: 256GB SAMSUNG MZVLB2
56HAHQ-00000 + 512GB SPCC M.2 SSD, Graphics: i915drmfb, Audio: Realtek ALC255, Monitor: HP 27W

OS: Ubuntu 22.04, Kernel: 5.13.0-27-generic (x86_64), Display Driver: NVIDIA, Vulkan: 1.2.204, Compiler: GCC 11.2.0, File-System: overlayfs, Screen Resolution: 1920x1080, System Layer: docker

BLAKE2 20170307

Cycles Per Byte < Lower Is Better
Intel Core i5-8250U . 3.05 |=====

Would you like to upload the results to OpenBenchmarking.org (y/n): y
Would you like to attach the system logs (lspci, dmesg, lsusb, etc) to the test result (y/n): y
```

Visitando la página <https://openbenchmarking.org/result/2205256-NE-BLAKE2DOC27>

Blake2-docker Benchmark | + https://openbenchmarking.org/result/2205256-NE-BLAKE2DOC27

OpenBenchmarking.org Tests Suites Latest Results

**blake2-docker**

docker testing on Ubuntu 22.04 via the Phoronix Test Suite.

Compare your own system(s) to this result file with the [Phoronix Test Suite](#) by running the command: `phoronix-test-suite benchmark 2205256-NE-BLAKE2DOC27`

[Jump To Table - Results](#)

**Statistics** **Graph Settings** **Table**

Remove Outliers Before Calculating Averages  Prefer Vertical Bar Graphs  Show Detailed System Result Table

**Run Management**

RESULT IDENTIFIER	PERFORMANCE PER DOLLAR	DATE RUN	TEST DURATION
Intel Core i5-8250U	1	May 25	1 Minute

[Refresh Results](#)

**blake2-docker**

**OpenBenchmarking.org Phoronix Test Suite 10.8.3**

Processor	Intel Core i5-8250U @ 3.40GHz (4 Cores / 8 Threads)
Motherboard	Tami TM1703 (XMAXB3MOP1B13 BIOS)
Memory	8GB
Disk	256GB SAMSUNG MZVLB256GAHQ-00000 + 512GB SPCC M.2 SSD
Graphics	i915drmfb
Audio	Realtek ALC255
Monitor	HP 27w
OS	Ubuntu 22.04
Kernel	5.13.0-27-generic (x86_64)
Display Driver	NVIDIA
Vulkan	1.2.204
Compiler	GCC 11.2.0
File-System	overlays
Screen Resolution	1920x1080
System Layer	docker

- Transparent Huge Pages: madvise

[Blake2-docker Benchmarks](#)

[Privacy](#)

Blake2-docker Benchmark | + https://openbenchmarking.org/result/2205256-NE-BLAKE2DOC27

Intel / AMD Large Ubuntu Linux CPU Benchmark Comparison

fio-performance

TrueNAScore51922

performance-linx-software

LXC-UBUNTU-2204

**Component Benchmarks**

CPU / Processors

GPUs / Graphics

OpenGL

Disks / Storage

Motherboards

File-Systems

Operating Systems

**OpenBenchmarking.org**

Corporate / Organization Info

Bug Reports / Feature Requests

**docker** **System Layer** **Blake2-docker Benchmarks**

```

Transparent Huge Pages: madvise
- -auditns=64 -fno-gnu - disable-stable-verifier - disable-werror
- enable-bootstrap - enable-cet - enable-checking-release
- enable-clocale=gnu - enable-default-pie - enable-fpmc-select
- enable-hardened-interpreter - enable-hardened-memcmp - -m64
- enable-httpsrle-checking-release - enable-libstdcxx-debug
- enable-libstdcxx-thinleyes - enable-link-serialization=2 - enable-multilib
- enable-nptl - enable-parallel-prefix - enable-parallel-prefix=2
- enable-offload-targets=nvpx-none - buildgcc-11-pfGDProg-11-11.2.0/debian/tmp-nvpx/usr.amdgcn-
- enable-plugin - enable-shared - enable-thread-local
- hostcpu=generic - hostos=generic - libstdcxx=gnu
- targets=x86_64-linux-gnu - with-abi=m64 - with-arch=32-i86
- with-build-config=bootstrap-its-lean - with-default-libstdcxx-alignnew
- with-fPIC - with-fPIC-only - with-multilib-list=m32,m64,m32
- with-target-system=elbrus64 - with-tune=generic - without-cuda-driver - v

```

**System Logs**

**BLAKE2**

This is a benchmark of BLAKE2 using the blake2s binary. BLAKE2 is a high-performance crypto alternative to MD5 and SHA-2/3. [Learn more via the OpenBenchmarking.org test page.](#)

**BLAKE2 20170307**

**Cycles Per Byte, Fewer is Better**

Intel Core i5-8250U

SE 4.1.0.0, N 3

0.6863 1.3726 2.0599 3.4315

[OpenBenchmarking.org](#)

[Privacy](#)

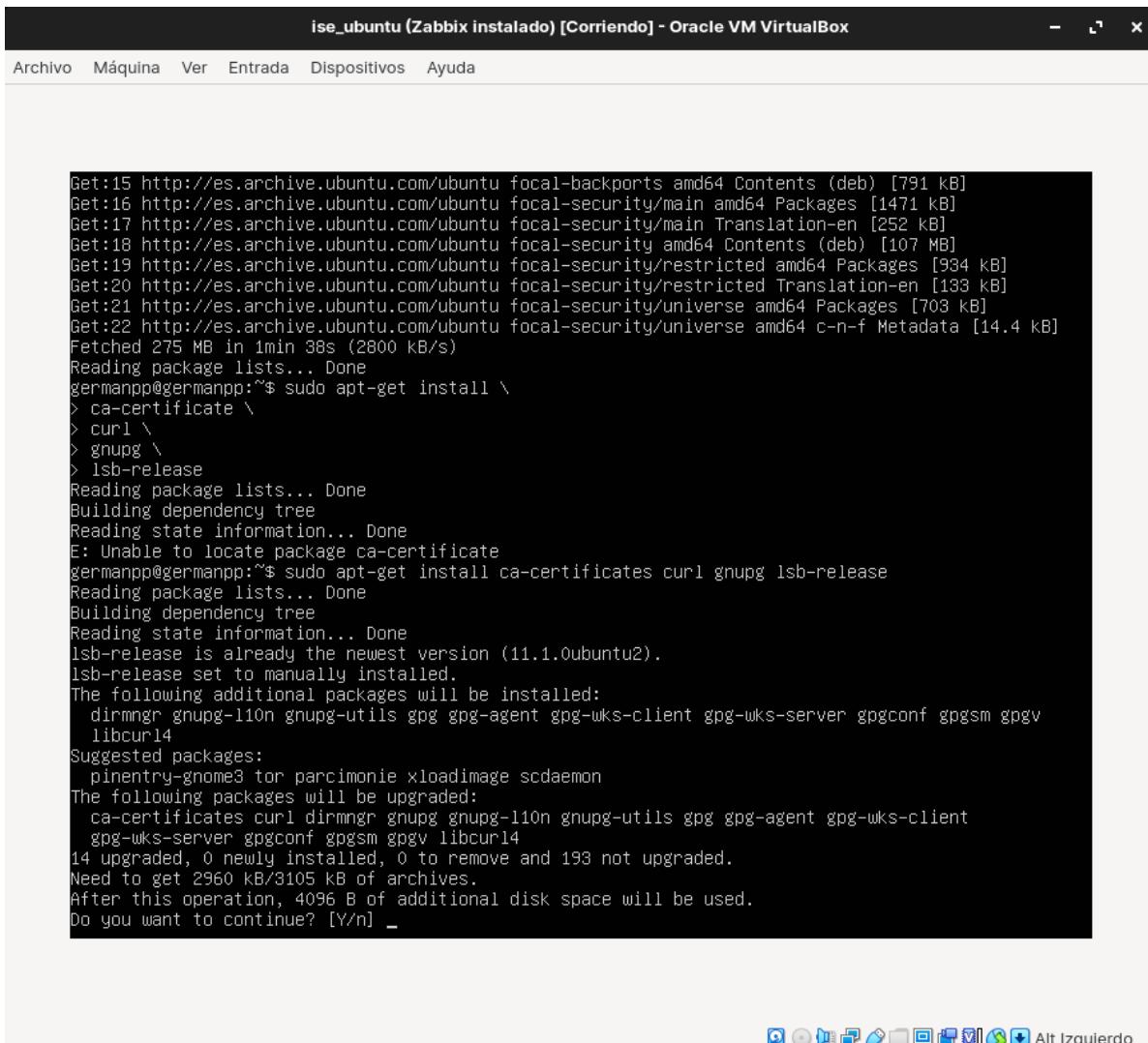
Legal Disclaimer  
Copyright © 2019 - 2022 by Phoronix Media.  
Powered by OpenBenchmarking.org Server using Phoronix Test Suite 10.8.3.  
All trademarks used are properties of their respective owners. All rights reserved.

Y vemos que el resultado es mejor a los obtenidos con las máquinas virtuales.

# Ejercicio 2

## Instalación de Docker

Seguimos las instrucciones de la documentación oficial para instalar docker, <https://docs.docker.com/engine/install/ubuntu/#set-up-the-repository>



```
Get:15 http://es.archive.ubuntu.com/ubuntu focal-backports amd64 Contents (deb) [791 kB]
Get:16 http://es.archive.ubuntu.com/ubuntu focal-security/main amd64 Packages [1471 kB]
Get:17 http://es.archive.ubuntu.com/ubuntu focal-security/main Translation-en [252 kB]
Get:18 http://es.archive.ubuntu.com/ubuntu focal-security/amd64 Contents (deb) [107 MB]
Get:19 http://es.archive.ubuntu.com/ubuntu focal-security/restricted amd64 Packages [934 kB]
Get:20 http://es.archive.ubuntu.com/ubuntu focal-security/restricted Translation-en [133 kB]
Get:21 http://es.archive.ubuntu.com/ubuntu focal-security/universe amd64 Packages [703 kB]
Get:22 http://es.archive.ubuntu.com/ubuntu focal-security/universe amd64 c-n-f Metadata [14.4 kB]
Fetched 275 MB in 1min 38s (2800 kB/s)
Reading package lists... Done
germanpp@germanpp:~$ sudo apt-get install \
> ca-certificates \
> curl \
> gnupg \
> lsb-release
Reading package lists... Done
Building dependency tree
Reading state information... Done
E: Unable to locate package ca-certificates
germanpp@germanpp:~$ sudo apt-get install ca-certificates curl gnupg lsb-release
Reading package lists... Done
Building dependency tree
Reading state information... Done
lsb-release is already the newest version (11.1.0ubuntu2).
lsb-release set to manually installed.
The following additional packages will be installed:
  dirmngr gnupg-l10n gnupg-utils gpg gpg-agent gpg-wks-client gpg-wks-server gpgconf gpgsm gpgv
  libcurl4
Suggested packages:
  pinentry-gnome3 tor parcmimonie xloadimage scdaemon
The following packages will be upgraded:
  ca-certificates curl dirmngr gnupg gnupg-l10n gnupg-utils gpg gpg-agent gpg-wks-client
  gpg-wks-server gpgconf gpgsm gpgv libcurl4
14 upgraded, 0 newly installed, 0 to remove and 193 not upgraded.
Need to get 2960 kB/3105 kB of archives.
After this operation, 4096 B of additional disk space will be used.
Do you want to continue? [Y/n] _
```

Añadimos el repositorio:

```
sudo apt-get update
sudo apt-get install \
  ca-certificates \
  curl \
  gnupg \
  lsb-release
curl -fsSL https://download.docker.com/linux/ubuntu/gpg | sudo apt-key add -
sudo add-apt-repository "deb [arch=amd64]
https://download.docker.com/linux/ubuntu $(lsb_release -cs) stable"
```

Instalamos docker y docker compose:

```
sudo apt update
sudo apt install docker-ce docker-compose
```

Añadimos el usuario al grupo docker, para así no tener que usar sudo más tarde:

```
sudo usermod -aG docker germanpp
```

Y como vemos que está inactivo deberemos ejecutar `sudo systemctl start docker`

```
ise_ubuntu (Zabbix instalado) [Corriendo] - Oracle VM VirtualBox
Archivo Máquina Ver Entrada Dispositivos Ayuda
Setting up pigz (2.4-1) ...
Setting up docker-ce-rootless-extras (5:20.10.16~3-0~ubuntu-focal) ...
Setting up python3-websocket (0.53.0-2ubuntu1) ...
Update-alternatives: using /usr/bin/python3-wsdump to provide /usr/bin/wsdump (wsdump) in auto mode
Setting up python3-dockerpty (0.4.1-2) ...
Setting up python3-docker (4.1.0-1) ...
Setting up docker-ce (5:20.10.16~3-0~ubuntu-focal) ...
Created symlink /etc/systemd/system/multi-user.target.wants/docker.service → /lib/systemd/system/docker.service.
Created symlink /etc/systemd/system/sockets.target.wants/docker.socket → /lib/systemd/system/docker.socket.
invoke-rc.d: policy-rc.d denied execution of start.
Setting up docker-compose (1.25.0-1) ...
Processing triggers for man-db (2.9.1-1) ...
Processing triggers for systemd (245.4-4ubuntu3.15) ...
germanpp@germanpp:~$ sudo usermod -aG docker germanpp
germanpp@germanpp:~$ bash
germanpp@germanpp:~$ docker info
Client:
  Context:    default
  Debug Mode: false
  Plugins:
    app: Docker App (Docker Inc., v0.9.1-beta3)
    buildx: Docker Buildx (Docker Inc., v0.8.2-docker)
    scan: Docker Scan (Docker Inc., v0.17.0)

Server:
ERROR: Cannot connect to the Docker daemon at unix:///var/run/docker.sock. Is the docker daemon running?
errors pretty printing info
germanpp@germanpp:~$ sudo systemctl status docker
● docker.service - Docker Application Container Engine
  Loaded: loaded (/lib/systemd/system/docker.service; enabled; vendor preset: enabled)
  Active: inactive (dead)
TriggeredBy: ● docker.socket
  Docs: https://docs.docker.com
germanpp@germanpp:~$ _
```

Reiniciamos la máquina para hacer efectivos los cambios de añadir el usuario.

Si ejecutamos `docker run hello-world` observamos que funciona correctamente:

```

germanpp@germanpp:~$ docker run hello-world
Unable to find image 'hello-world:latest' locally
latest: Pulling from library/hello-world
2db29710123e: Pull complete
Digest: sha256:80f31da1ac7b312ba29d65080fdd797dd76acfb870e677f390d5acba9741b17
Status: Downloaded newer image for hello-world:latest

Hello from Docker!
This message shows that your installation appears to be working correctly.

To generate this message, Docker took the following steps:
 1. The Docker client contacted the Docker daemon.
 2. The Docker daemon pulled the "hello-world" image from the Docker Hub.
    (amd64)
 3. The Docker daemon created a new container from that image which runs the
    executable that produces the output you are currently reading.
 4. The Docker daemon streamed that output to the Docker client, which sent it
    to your terminal.

To try something more ambitious, you can run an Ubuntu container with:
$ docker run -it ubuntu bash

Share images, automate workflows, and more with a free Docker ID:
https://hub.docker.com/

For more examples and ideas, visit:
https://docs.docker.com/get-started/
germanpp@germanpp:~$
```

## Instalación de JMeter en nuestra máquina

Descargamos la versión correspondiente de la página oficial [https://jmeter.apache.org/download\\_jmeter.cgi](https://jmeter.apache.org/download_jmeter.cgi). Lo descomprimimos y en la carpeta bin ejecutamos jmeter.

```

germanpadua@germanpadua:~/Desktop/apache-jmeter-5.4.3/bin$ cd bin
germanpadua@germanpadua:~/Desktop/apache-jmeter-5.4.3/bin$ ls
ApacheJMeter.jar          jmeter-n.cmd           report-template
BeanShellAssertion.bshrc   jmeter-n-r.cmd       saveservice.properties
BeanShellFunction.bshrc    jmeter.properties     shutdown.cmd
BeanShellListeners.bshrc   jmeter-server        shutdown.sh
BeanShellSampler.bshrc    jmeter-server.bat    stoptest.cmd
create-rmi-keystore.bat   jmeter.sh            stoptest.sh
create-rmi-keystore.sh    jmeter-t.cmd       system.properties
examples                  jmeterw.cmd         templates
hc.parameters             krb5.conf          threaddump.cmd
heapdump.cmd              log4j2.xml        threaddump.sh
heapdump.sh               mirror-server      upgrade.properties
jaas.conf                 mirror-server.cmd  user.properties
jmeter                   mirror-server.sh   utility.groovy
jmeter.bat                reportgenerator.properties
germanpadua@germanpadua:~/Desktop/apache-jmeter-5.4.3/bin$ ./jmeter
=====
Don't use GUI mode for load testing !, only for Test creation and Test debugging.
For load testing, use CLI Mode (was NOM GUI):
  jmeter -n -t [jmx file] -l [results file] -e -o [Path to web report folder]
& increase Java Heap to meet your test requirements:
  Modify current env variable HEAP="-Xms1g -Xmx1g -XX:MaxMetaspaceSize=256m" in the jmeter batch file
Check : https://jmeter.apache.org/usermanual/best-practices.html
=====
An error occurred: Can't load library: /usr/lib/jvm/java-11-openjdk-amd64/lib/libawt_xawt.so
germanpadua@germanpadua:~/Desktop/apache-jmeter-5.4.3/bin$ java -v
Unrecognized option: -v
Error: Could not create the Java Virtual Machine.
Error: A fatal exception has occurred. Program will exit.
germanpadua@germanpadua:~/Desktop/apache-jmeter-5.4.3/bin$ jdk -v
```

Nos encontramos con un error ya que no tengo instalado java 11. Lo instalaremos con:

```
sudo apt update  
sudo apt install openjdk-11-jdk
```

Y ya podemos ejecutar jmeter.

## Realización del ejercicio

Clonamos el repositorio en Ubuntu con

```
git clone https://github.com/davidPalomar-ugr/iseP4JMeter.git
```

The screenshot shows a terminal window with the title "ise\_ubuntu (Zabbix instalado) [Corriendo] - Oracle VM VirtualBox". The window contains the following text:

```
germanpp@germanpp:~$ git clone https://github.com/davidPalomar-ugr/iseP4JMeter.git  
Cloning into 'iseP4JMeter'...  
remote: Enumerating objects: 3801, done.  
remote: Counting objects: 100% (27/27), done.  
remote: Compressing objects: 100% (18/18), done.  
remote: Total 3801 (delta 12), reused 15 (delta 7), pack-reused 3774  
Receiving objects: 100% (3801/3801), 7.80 MiB | 2.79 MiB/s, done.  
Resolving deltas: 100% (718/718), done.  
germanpp@germanpp:~$ ls  
iseP4JMeter  mon-raid.py  zabbix-release_5.0-1+focal_all.deb  zabbix-release_5.0-1+focal_all.deb.1  
germanpp@germanpp:~$ cd iseP4JMeter/  
germanpp@germanpp:~/iseP4JMeter$ ls  
README.md  docker-compose.yml  images  jMeter  mongodb  nodejs  pruebaEntorno.sh  
germanpp@germanpp:~/iseP4JMeter$ docker-compose up
```

Nos dirigimos al directorio principal y ejecutamos `docker-compose up` :

```
ise_ubuntu (Zabbix instalado) [Corriendo] - Oracle VM VirtualBox  
Archivo Máquina Ver Entrada Dispositivos Ayuda  
  
nodejs_1 | address: 'mongodb:27017',  
nodejs_1 | type: 'Unknown',  
nodejs_1 | hosts: [],  
nodejs_1 | passives: [],  
nodejs_1 | arbiters: [],  
nodejs_1 | tags: {},  
nodejs_1 | minWireVersion: 0,  
nodejs_1 | maxWireVersion: 0,  
nodejs_1 | roundTripTime: -1,  
nodejs_1 | lastUpdateTime: 1409402,  
nodejs_1 | lastWriteDate: 0,  
nodejs_1 | error: MongoNetworkError: getaddrinfo ENOTFOUND mongodb  
onnect.js:293:20) at connectionFailureError (/usr/src/app/node_modules/mongodb/lib/cmap/conne  
ct.js:267:22)  
nodejs_1 | at Socket.<anonymous> (/usr/src/app/node_modules/mongodb/lib/cmap/conne  
ct.js:267:22)  
nodejs_1 | at Object.onceWrapper (node:events:510:26)  
nodejs_1 | at Socket.emit (node:events:390:28)  
nodejs_1 | at emitErrorNT (node:internal/streams/destroy:157:8)  
nodejs_1 | at emitErrorCloseNT (node:internal/streams/destroy:122:3)  
nodejs_1 | at processTicksAndRejections (node:internal/process/task_queues:83:21)  
nodejs_1 | }  
nodejs_1 | stale: false,  
nodejs_1 | compatible: true,  
nodejs_1 | heartbeatFrequencyMS: 10000,  
nodejs_1 | localThresholdMS: 15,  
nodejs_1 | logicalSessionTimeoutMinutes: undefined  
nodejs_1 | }  
nodejs_1 | }  
isep4jmeter_nodejs_1 exited with code 1  
mongodinit_1 | 2022-05-26T09:52:56.602+0000  error connecting to host: could not connect to serve  
r: server selection error: server selection timeout, current topology: { Type: Single, Servers: [ { A  
ddr: mongodb:27017, Type: Unknown, Last error: connection() error occurred during connection handshak  
e: dial tcp: lookup mongodb: Temporary failure in name resolution }, ] }  
isep4jmeter_mongodinit_1 exited with code 1  
germanpp@germanpp:~/iseP4JMeter$ docker-compose down
```

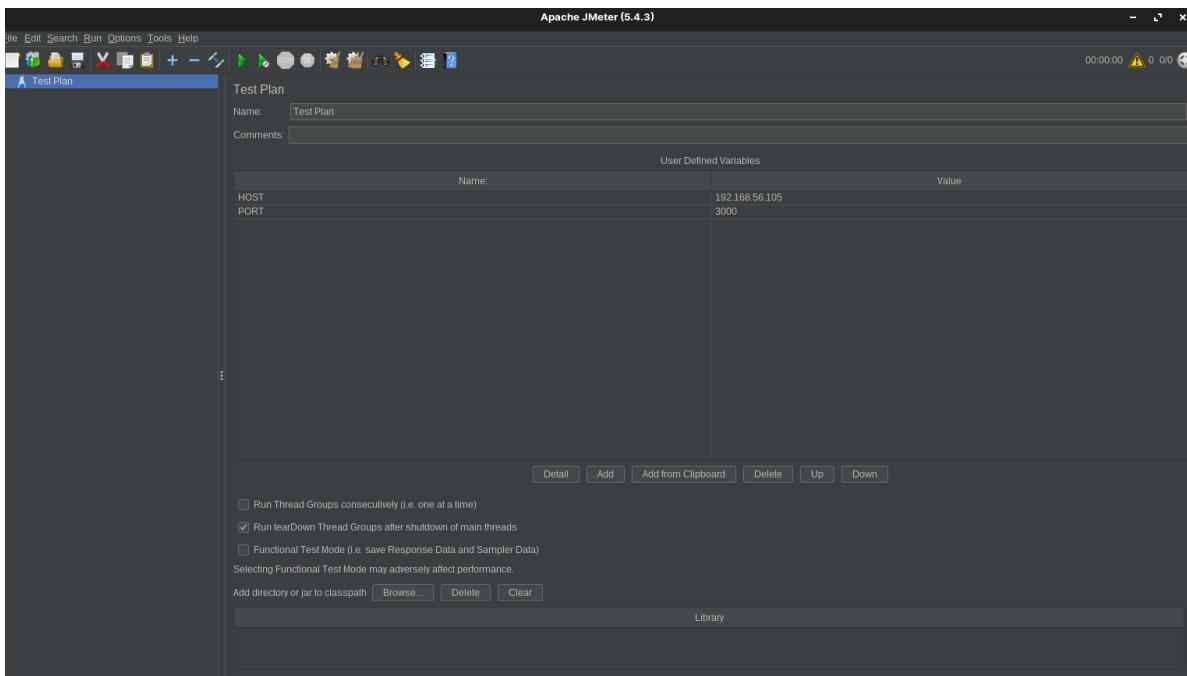
Alt Izquierdo

Es posible que nos de un error si no tenemos espacio suficiente. Así que tuve que volver a hacer todos estos pasos en una instantánea anterior en la que tenía más memoria libre.

Una vez completado, si habilitamos el puerto 3000 con `sudo ufw allow 3000/tcp` tal y como pone en la documentación del git. Nos dirigimos a nuestro navegador <http://192.168.56.105:3000/> donde se presenta la descripción básica de la api.

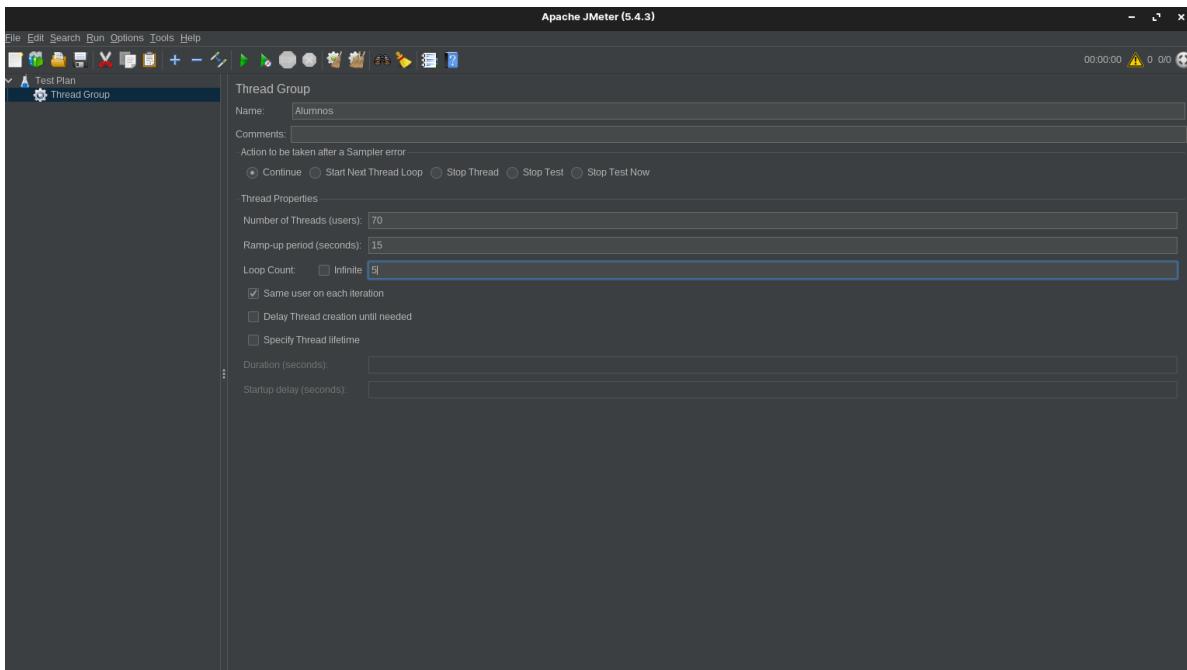
Ya tenemos todo listo para seguir con el ejercicio. Volvemos a JMeter y creamos el test con las correspondientes condiciones:

En primer lugar, vamos a parametrizar el host y el puerto. Podemos añadir las variables con el botón Add y cambiamos los campos dejándolos así:

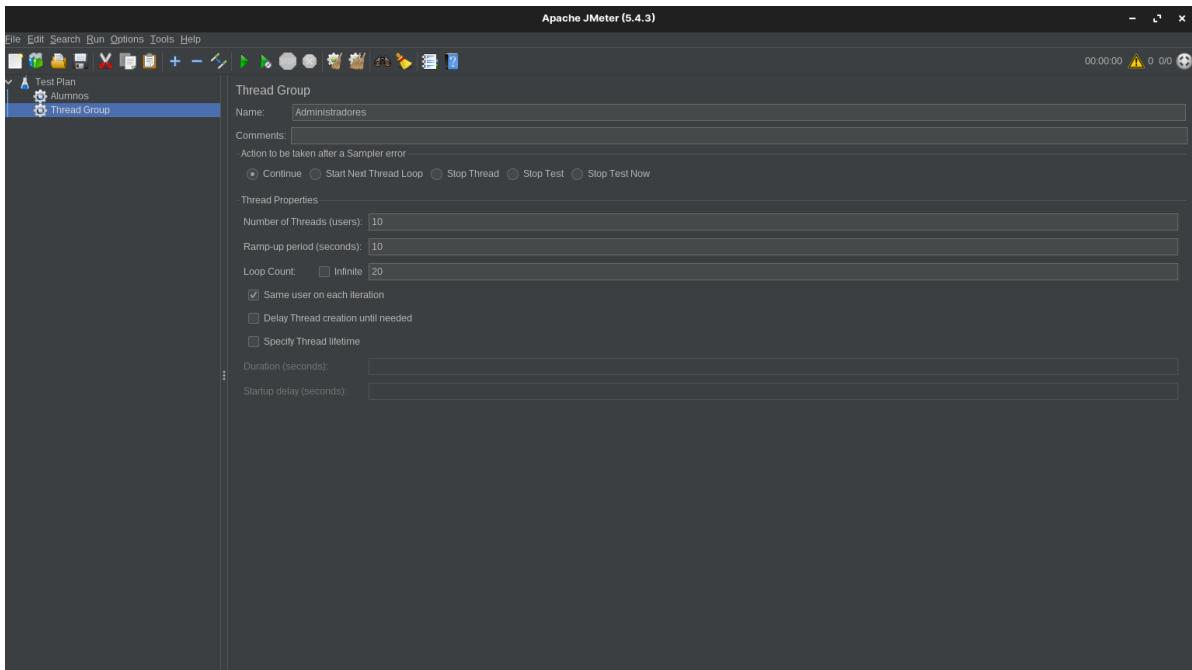


A continuación, debemos crear los dos grupos de hebras que nos pide el ejercicio.

Pulsamos en Edit -> Add -> Threads -> Thread Group . Y modificamos los campos ( como valores he puesto los que aparecen en el ejemplo de la documentación oficial <https://jmeter.apache.org/usermanual/build-web-test-plan.html> ):

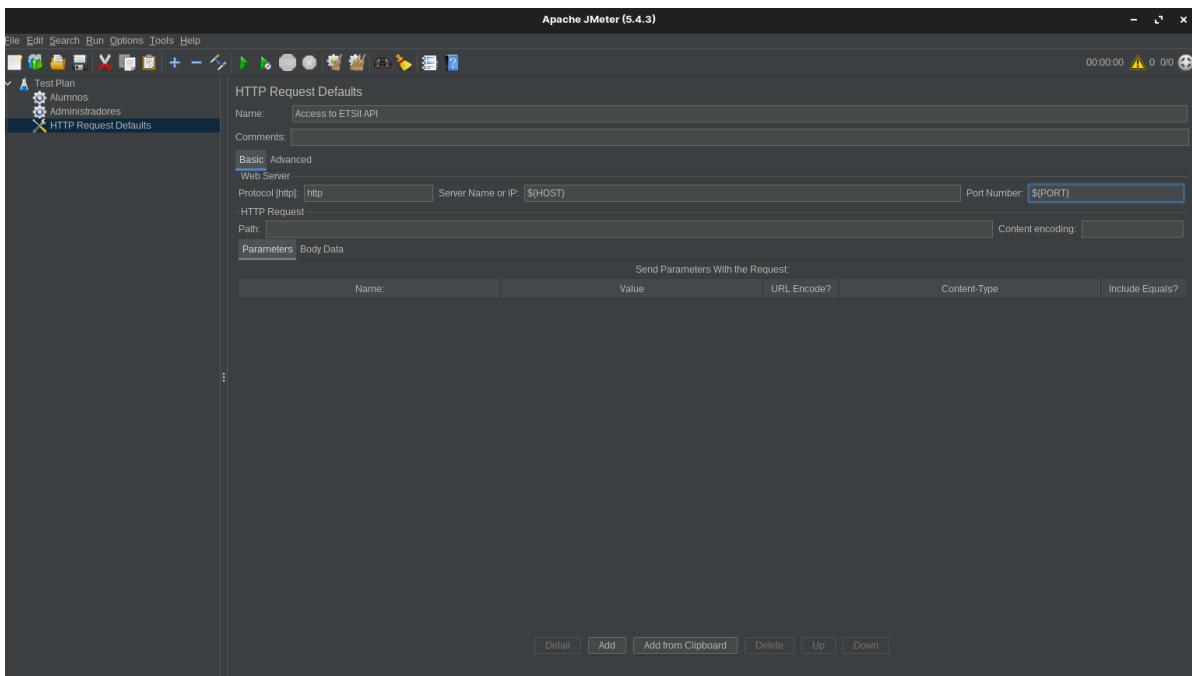


Volvemos a hacerlo pero para Administradores:



Como son peticiones http, nos dirigimos desde ETSII Alumnos API a

Edit -> Add -> Config Element -> HTTP Request Defaults. Lo rellenamos tal que así:



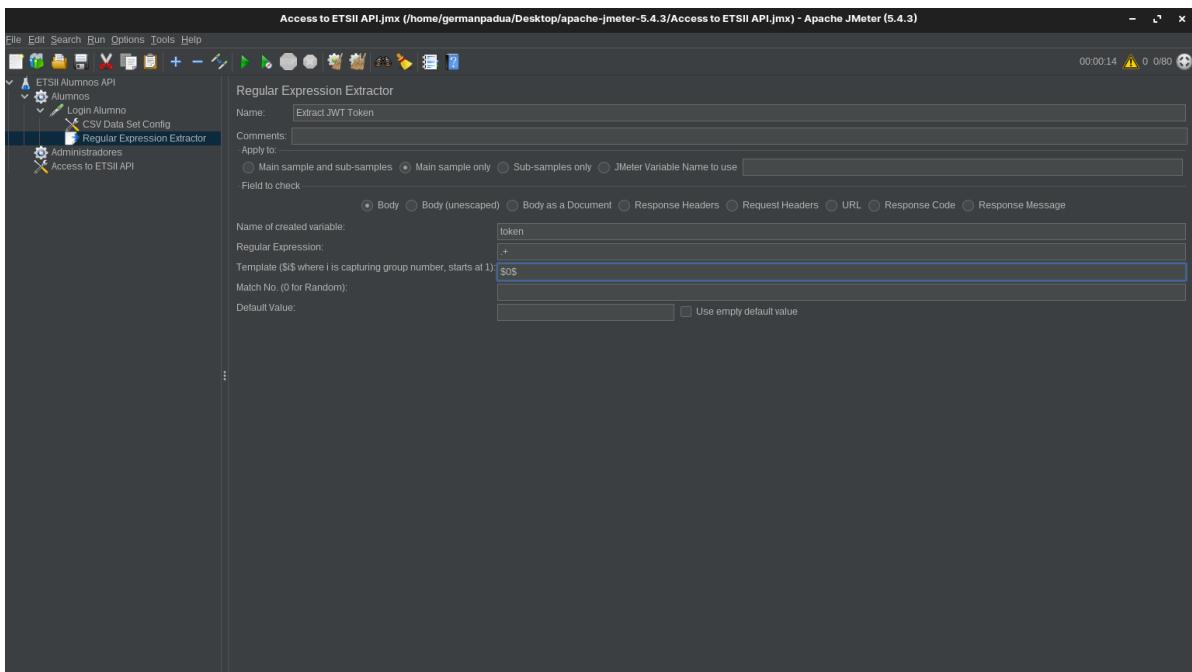
Lo siguiente es crear una petición http para hacer el Login del Alumno. Desde Alumnos hacemos Edit -> Add -> Sampler -> HTTP Request. Viendo la descripción de la api, es una petición POST a la dirección /api/v1/auth/login :

The screenshot shows the Apache JMeter interface with a test plan titled "Access to ETSII API.jmx". On the left, under the "Alumnos" folder, there is a "HTTP Request" element named "Login Alumno". The main panel displays the "HTTP Request" configuration. The "Protocol [http]" dropdown is set to "http". The "Path" field contains "/api/v1/auth/login". Under the "Parameters" tab, two parameters are defined: "login" with value "\${login}" and "password" with value "\${password}". Both parameters have "Content-Type" set to "text/plain" and "Include Equals?" checked.

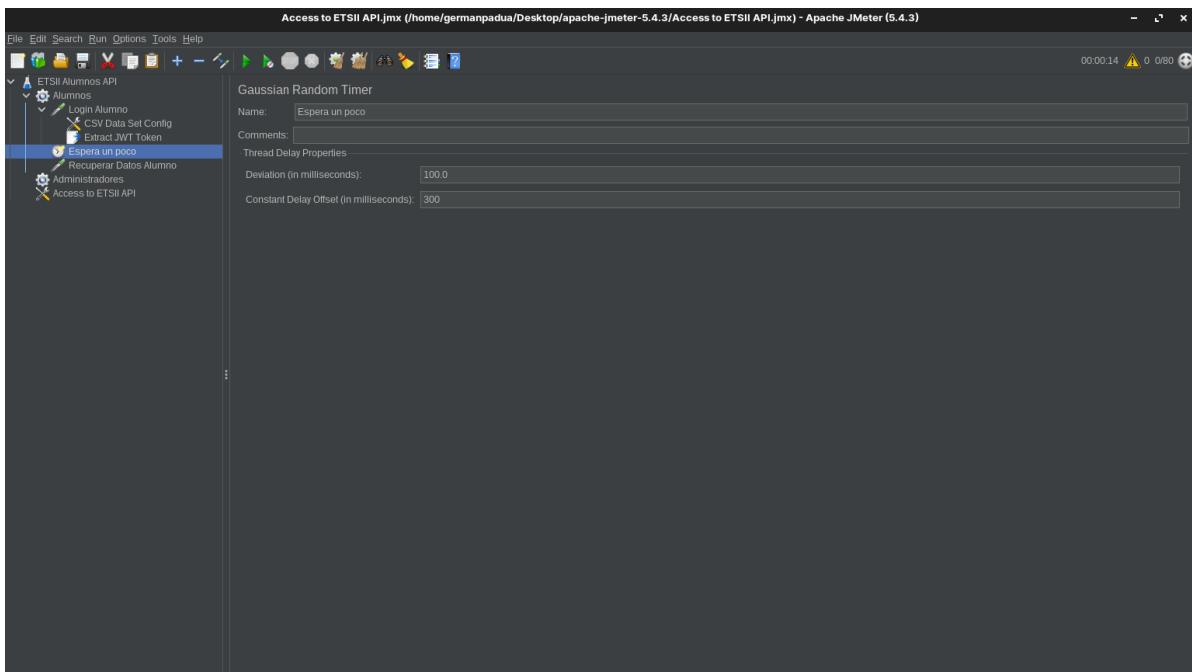
Necesitamos ahora los credenciales de los alumnos que se encuentran en el archivo alumnos.csv . Así que lo tendremos que descargar del git. Hacemos click derecho sobre Login Alumno -> Add -> Config Element -> CSV Data Set Config . Indicamos la ruta del archivo alumnos.csv y modificamos los parámetros dejándolos así (como nombre pondremos Credenciales Alumnos, más tarde lo cambio para que se quede como en la foto del git) :

The screenshot shows the Apache JMeter interface with the same test plan. The "CSV Data Set Config" element under "Login Alumno" is selected. The "Name" field is set to "CSV Data Set Config". In the "Configure the CSV Data Source" section, the "Filename" is specified as "/home/germanpadua/Desktop/pseP4JMeter-master/JMeter/alumnos.csv". Other settings include "File encoding: UTF-8", "Variable Names (comma-delimited):", "Ignore first line (only used if Variable Names is not empty): True", "Delimiter (use 't' for tab): ,", "Allow quoted data?: False", "Recycle on EOF ?: True", "Stop thread on EOF ?: False", and "Sharing mode: Current thread group".

Ahora necesitamos añadir el token JWT que devolverá el usuario que hizo la petición. Este token tendremos que almacenarlo para realizar las peticiones GET futuras. Desde Login Alumno, pulsamo en Edit -> Add -> Post Processor -> Regular Expression Extractor. Lo modificaremos hasta quedar así:



Añadimos ahora la pausa aleatoria Gaussiana con click derecho en Alumnos -> Add -> Timer -> Gaussian Random Timer.



El siguiente paso es realizar una petición GET para recuperar los datos del alumno. Haremos como con la petición POST. Click derecho sobre Alumnos -> Add -> Sampler -> HTTP Request. Cambiamos el tipo y elegimos GET. El parámetro path depende del usuario, buscando encontré en <https://stackoverflow.com/questions/14593183/url-encode-variable-in-jmeter> la siguiente solución:

The screenshot shows the Apache JMeter interface. On the left, there's a tree view of the test plan with nodes like 'Alumnos API', 'Alumnos', 'Login Alumno', 'CSV Data Set Config', 'Extract JWT Token', 'Espera un poco', 'HTTP Request', and 'Administradores'. The 'HTTP Request' node is selected. The main panel shows the configuration for this sampler. The 'Name' field is 'Recuperar Datos Alumno'. Under 'Web Server', 'Protocol [http]' is selected, 'Path' is '/api/v1/alumnos/alumno/\${\_urlenconde(\${login})}', and 'Port Number' is 0. The 'Content encoding' is set to 'Content-Type'. Below these settings, there are tabs for 'Parameters', 'Body Data', and 'Files Upload'. The 'Parameters' tab is active, showing a table with 'Name' and 'Value' columns. Buttons at the bottom of the table include 'Detail', 'Add', 'Add from Clipboard', 'Delete', 'Up', and 'Down'.

Por último creamos un gestor de cabeceras HTTP que usa el JWT anterior. Click derecho en Alumnos -> Add -> Config Element -> HTTP Header Manager y lo ponemos debajo de Recuperar Datos Alumno. Añadimos el parámetro tal y como se indica en la descripción de la api:

This screenshot shows the configuration of an 'HTTP Header Manager'. The tree view on the left includes 'Alumnos API', 'Alumnos', 'Login Alumno', 'CSV Data Set Config', 'Extract JWT Token', 'Espera un poco', 'HTTP Request', and 'Administradores'. The 'HTTP Request' node is selected. The main panel shows the 'HTTP Header Manager' configuration. The 'Name' field is 'JWT Token'. Under 'Headers Stored in the Header Manager', there is a table with 'Name' and 'Value' columns. One entry is shown: 'Authorization' with 'Value' 'Bearer \${token}'. Buttons at the bottom include 'Add', 'Add from Clipboard', 'Delete', 'Load', and 'Save'.

Ahora mismo tenemos:



Y buscamos:

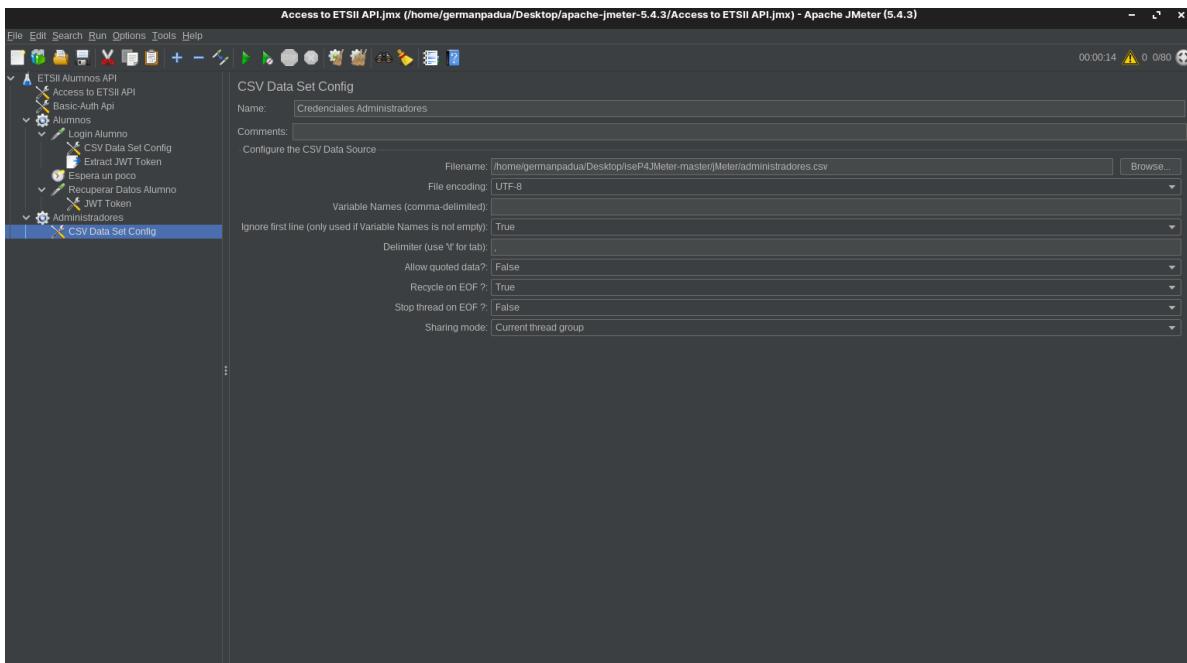


Así que movemos Credenciales Alumnos a la posición correcta y seguimos con Administradores.

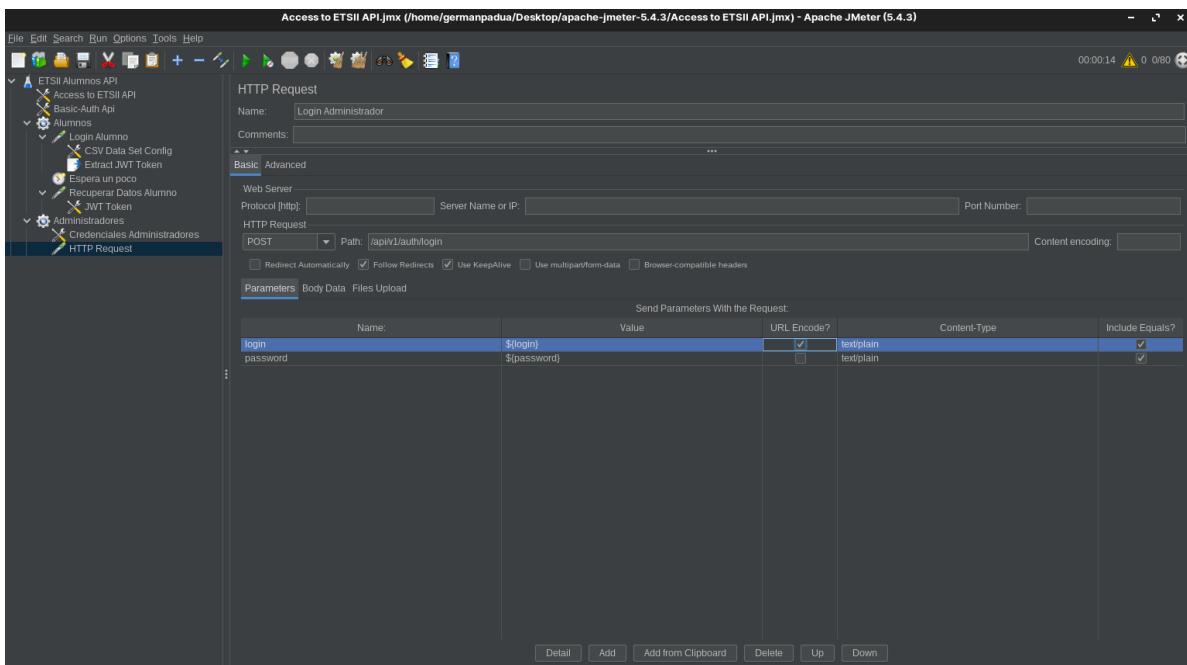
Pero antes, vamos a añadir la autorización para la API (Basic-Auth Api) con click derecho en ETSII Alumnos API -> Add -> Config Element -> HTTP Authorization Manager y lo movemos debajo de Access to ETSII API. Los datos los sacamos de la descripción básica de la api en <http://192.168.56.105:3000/>

Base URL	Username	Password	Domain	Realm	Mechanisms
http://\$HOST:\$PORT/api/v1/auth/login	laApiDeLaETSIIDaLache	laApiDeLaETSIIDaLache		BASIC	

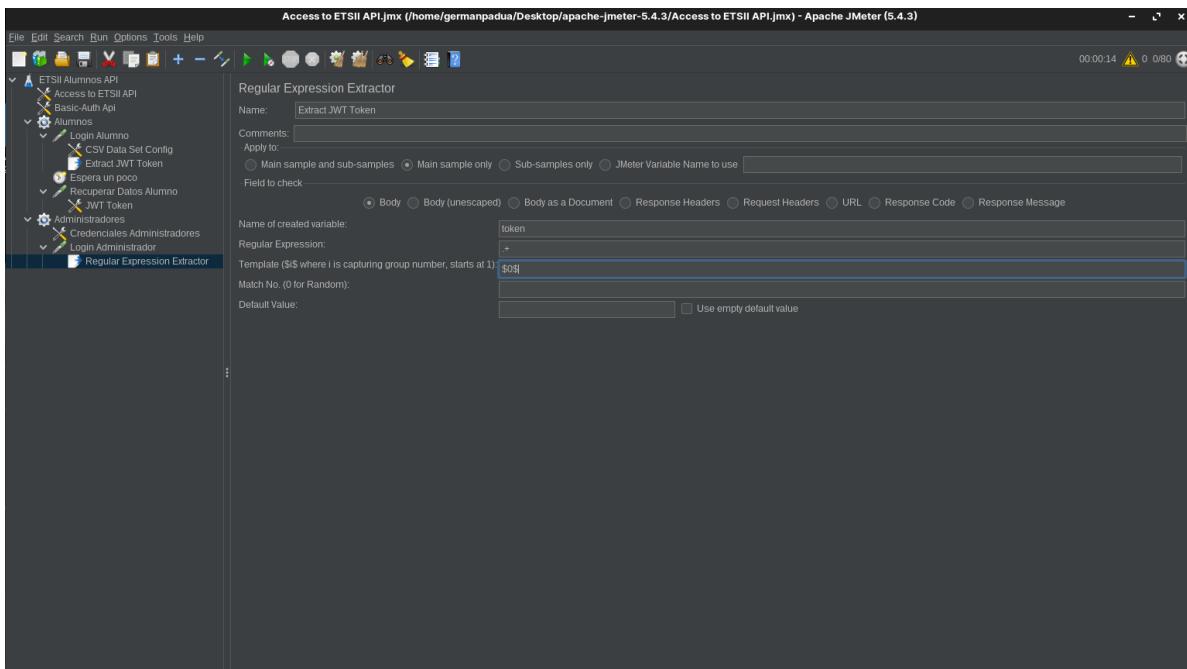
Terminemos los Administradores. Comenzamos con click derecho sobre Administradores -> Add -> Config Element -> CSV Data Set Config y hacemos igual que con Alumnos pero con el fichero administradores.csv :



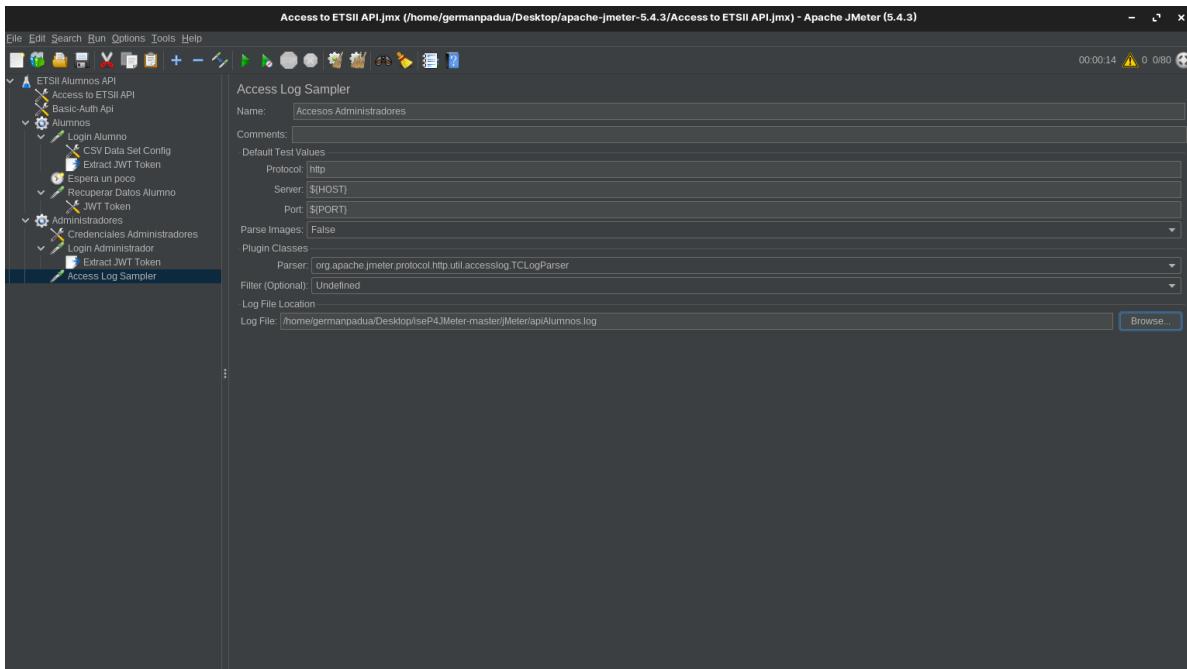
Realizamos el login de los administradores:



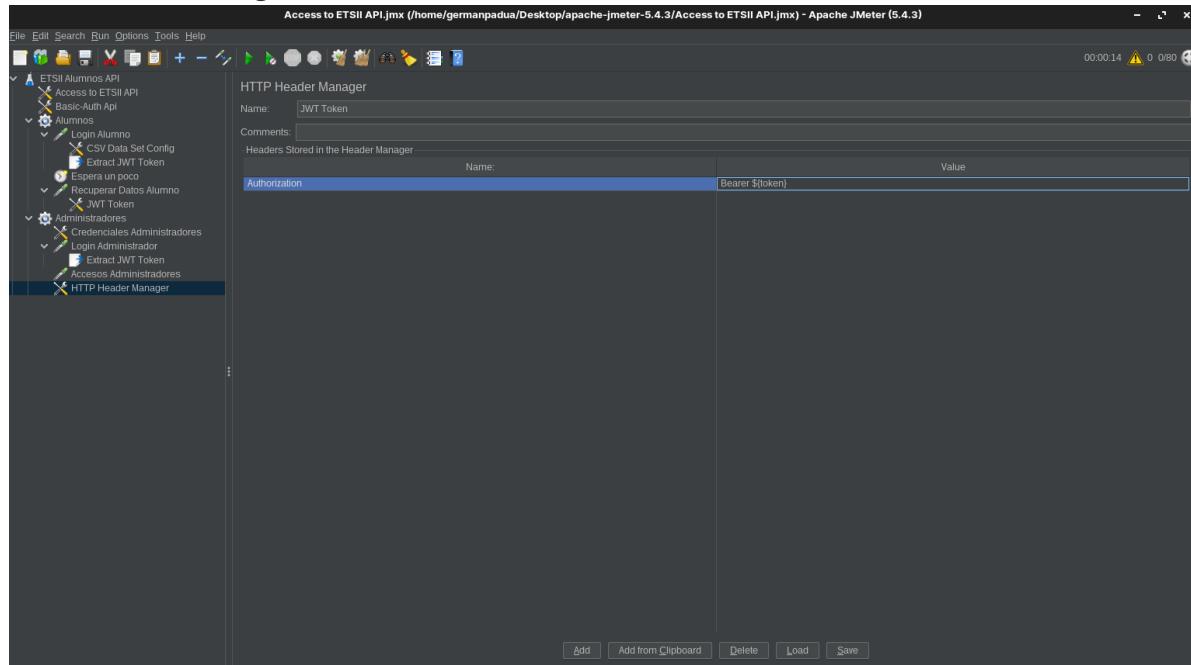
Obtenemos y almacenamos el JWT:



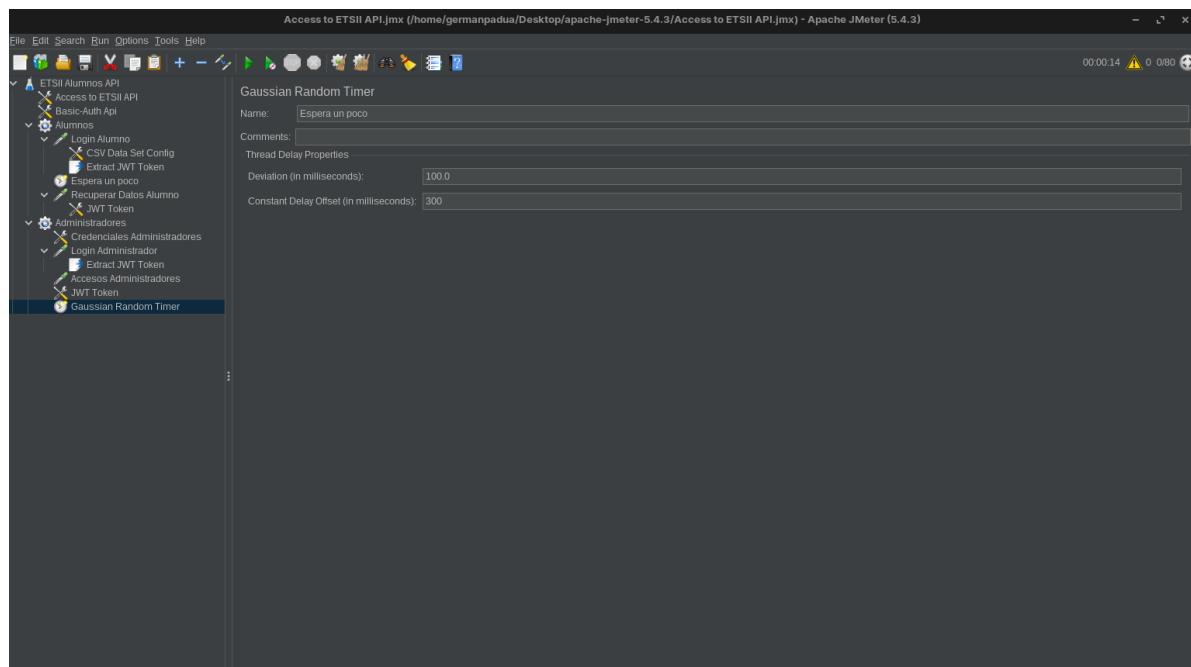
Para obtener los datos de diversos alumnos añadimos un Access Log Sampler con click derecho sobre Administradores -> Add -> Sampler -> Access Log Sampler. En Log File indicamos el fichero apiAlumnos.log



Añadimos ahora un gestor de cabecera como en Alumnos:



Y por último nos queda añadir la otra espera aleatoria.



Añadimos los Listeners para visualizar los resultados con click derecho en ETSII Alumnos API -> Add -> Listener -> Summary Report / View Results in Table / Aggregate Report. Y ejecutamos el test con el botón de Start.

**Access to ETSII API.jmx ( /home/germanpadua/Desktop/apache-jmeter-5.4.3/Access to ETSII API.jmx ) - Apache JMeter ( 5.4.3 )**

File Edit Search Run Options Tools Help

Summary Report

Name: Summary Report

Comments:

Write results to file / Read from file

Filename

Browse... Log/Display Only:  Errors  Successes  Configure

Label	# Samples	Average	Min	Max	Std. Dev.	Error %	Throughput	Received KB/sec	Sent KB/sec	Avg. Bytes
Login Administrador	200	6	2	173	12.29	100.00%	9.7/sec	4.05	2.88	429.0
Login Alumno	350	7	2	187	12.54	100.00%	20.2/sec	8.45	6.37	429.0
Recuperar Datos	350	0	0	0	0.00	100.00%	20.1/sec	23.73	0.00	1209.0
http://192.168.56...	10	12	3	58	15.54	100.00%	1.2/sec	0.54	0.00	475.0
http://192.168.56...	10	7	3	14	3.38	100.00%	1.2/sec	0.55	0.00	475.0
http://192.168.56...	10	9	3	18	6.01	100.00%	1.2/sec	0.56	0.00	475.0
http://192.168.56...	10	5	3	12	2.89	100.00%	1.3/sec	0.58	0.00	475.0
http://192.168.56...	10	7	3	16	4.43	100.00%	1.3/sec	0.59	0.00	475.0
http://192.168.56...	10	8	2	22	6.75	100.00%	1.2/sec	0.57	0.00	475.0
http://192.168.56...	10	7	3	18	5.17	100.00%	1.2/sec	0.57	0.00	475.0
http://192.168.56...	10	8	3	27	7.05	100.00%	1.3/sec	0.59	0.00	475.0
http://192.168.56...	10	5	3	8	1.79	100.00%	1.3/sec	0.59	0.00	475.0
http://192.168.56...	10	6	2	23	6.10	100.00%	1.3/sec	0.59	0.00	475.0
http://192.168.56...	10	7	3	14	3.85	100.00%	1.3/sec	0.58	0.00	475.0
http://192.168.56...	10	6	3	14	3.16	100.00%	1.2/sec	0.57	0.00	475.0
http://192.168.56...	10	7	2	17	4.52	100.00%	1.2/sec	0.55	0.00	475.0
http://192.168.56...	10	5	2	17	4.21	100.00%	1.2/sec	0.57	0.00	475.0
http://192.168.56...	10	8	2	27	8.65	100.00%	1.2/sec	0.58	0.00	475.0
http://192.168.56...	10	8	2	21	6.74	100.00%	1.2/sec	0.56	0.00	475.0
http://192.168.56...	10	5	3	10	2.33	100.00%	1.2/sec	0.56	0.00	475.0
http://192.168.56...	10	6	3	19	4.82	100.00%	1.2/sec	0.55	0.00	475.0
http://192.168.56...	10	5	3	11	2.62	100.00%	1.2/sec	0.55	0.00	475.0
http://192.168.56...	10	4	3	8	1.90	100.00%	1.2/sec	0.55	0.00	475.0
TOTAL	1100	4	0	187	9.76	100.00%	52.2/sec	34.92	8.06	685.5

Include group name in label?  Save Table Data  Save Table Header

**Access to ETSII API.jmx ( /home/germanpadua/Desktop/apache-jmeter-5.4.3/Access to ETSII API.jmx ) - Apache JMeter ( 5.4.3 )**

File Edit Search Run Options Tools Help

View Results in Table

Name: View Results in Table

Comments:

Write results to file / Read from file

Filename

Browse... Log/Display Only:  Errors  Successes  Configure

Sample #	Start Time	Thread Name	Label	Sample Time(ms)	Status	Bytes	Sent Bytes	Latency	Connect Time(ms)
1	00:49:34.255	Administradores 2-1	Login Administrador	173	OK	429	304	173	56
2	00:49:34.301	Alumnos 1-2	Login Alumno	136	OK	429	319	136	9
3	00:49:34.254	Alumnos 1-1	Login Alumno	187	OK	429	332	187	56
4	00:49:34.531	Alumnos 1-3	Login Alumno	12	OK	429	322	12	4
5	00:49:34.697	Alumnos 1-2	Recuperar Datos ...	0	OK	1209	0	0	0
6	00:49:34.713	Alumnos 1-3	Recuperar Datos ...	0	OK	1209	0	0	0
7	00:49:34.858	Administradores 2-1	http://192.168.56.1...	58	OK	475	0	58	0
8	00:49:34.927	Alumnos 1-5	Login Alumno	5	OK	429	324	5	2
9	00:49:34.931	Alumnos 1-3	Login Alumno	5	OK	429	318	5	0
10	00:49:34.944	Alumnos 1-1	Recuperar Datos ...	0	OK	1209	0	0	0
11	00:49:34.945	Alumnos 1-4	Login Alumno	6	OK	429	322	6	3
12	00:49:35.038	Alumnos 1-2	Login Alumno	13	OK	429	322	13	0
13	00:49:35.100	Alumnos 1-6	Login Alumno	14	OK	429	321	14	4
14	00:49:35.138	Alumnos 1-6	Recuperar Datos ...	0	OK	1209	0	0	0
15	00:49:35.157	Alumnos 1-5	Recuperar Datos ...	0	OK	1209	0	0	0
16	00:49:35.240	Administradores 2-1	Login Administrador	10	OK	429	306	10	0
17	00:49:35.266	Alumnos 1-2	Recuperar Datos ...	0	OK	1209	0	0	0
18	00:49:35.312	Alumnos 1-1	Login Alumno	16	OK	429	323	16	0
19	00:49:35.355	Administradores 2-2	Login Administrador	8	OK	429	305	8	2
20	00:49:35.402	Alumnos 1-4	Recuperar Datos ...	0	OK	1209	0	0	0
21	00:49:35.414	Alumnos 1-3	Recuperar Datos ...	0	OK	1209	0	0	0
22	00:49:35.429	Administradores 2-1	http://192.168.56.1...	14	OK	475	0	14	0
23	00:49:35.438	Alumnos 1-7	Login Alumno	19	OK	429	322	19	7
24	00:49:35.489	Alumnos 1-6	Login Alumno	5	OK	429	318	5	0
25	00:49:35.494	Alumnos 1-5	Login Alumno	4	OK	429	325	4	0
26	00:49:35.510	Alumnos 1-2	Login Alumno	6	OK	429	328	6	0
27	00:49:35.538	Alumnos 1-1	Recuperar Datos ...	0	OK	1209	0	0	0
28	00:49:35.609	Alumnos 1-7	Recuperar Datos ...	0	OK	1209	0	0	0
29	00:49:35.641	Alumnos 1-8	Login Alumno	12	OK	429	325	12	4
30	00:49:35.694	Administradores 2-2	http://192.168.56.1...	11	OK	475	0	11	0

Scroll automatically?  Child samples? No of Samples: 1100 Latest Sample: 3 Average: A Duration: 0

**Access to ETSII API.jmx ( /home/germanpadua/Desktop/apache-jmeter-5.4.3/Access to ETSII API.jmx ) - Apache JMeter ( 5.4.3 )**

File Edit Search Run Options Tools Help

Aggregate Report

Name: Aggregate Report

Comments:

Write results to file / Read from file

Filename

Browse... Log/Display Only:  Errors  Successes  Configure

Label	# Samples	Average	Median	90% Line	95% Line	99% Line	Min	Maximum	Error %	Throughput	Received KB/sec	Sent KB/sec
Login Administrador	200	6	4	10	12	17	2	173	100.00%	9.7/sec	4.05	2.88
Login Alumno	350	7	6	12	15	26	2	187	100.00%	20.2/sec	8.45	6.37
Recuperar Datos	350	0	0	0	0	0	0	0	100.00%	20.1/sec	23.73	0.00
http://192.168...	10	12	8	17	17	58	3	58	100.00%	1.2/sec	0.54	0.00
http://192.168...	10	7	6	11	11	14	3	14	100.00%	1.2/sec	0.55	0.00
http://192.168...	10	9	5	18	18	18	3	18	100.00%	1.2/sec	0.56	0.00
http://192.168...	10	5	4	10	10	12	3	12	100.00%	1.3/sec	0.58	0.00
http://192.168...	10	7	5	15	15	16	3	16	100.00%	1.3/sec	0.59	0.00
http://192.168...	10	8	4	18	18	22	2	22	100.00%	1.2/sec	0.57	0.00
http://192.168...	10	7	5	17	17	18	3	18	100.00%	1.2/sec	0.57	0.00
http://192.168...	10	8	4	12	12	27	3	27	100.00%	1.3/sec	0.59	0.00
http://192.168...	10	5	4	8	8	8	3	8	100.00%	1.3/sec	0.59	0.00
http://192.168...	10	6	3	10	10	23	2	23	100.00%	1.3/sec	0.59	0.00
http://192.168...	10	7	5	12	12	14	3	14	100.00%	1.3/sec	0.58	0.00
http://192.168...	10	6	5	8	8	14	3	14	100.00%	1.2/sec	0.57	0.00
http://192.168...	10	7	5	11	11	17	2	17	100.00%	1.2/sec	0.55	0.00
http://192.168...	10	5	4	9	9	17	2	17	100.00%	1.2/sec	0.57	0.00
http://192.168...	10	8	3	22	22	27	2	27	100.00%	1.2/sec	0.58	0.00
http://192.168...	10	5	4	19	19	21	2	21	100.00%	1.2/sec	0.56	0.00
http://192.168...	10	5	4	8	8	10	3	10	100.00%	1.2/sec	0.56	0.00
http://192.168...	10	6	3	10	10	19	3	19	100.00%	1.2/sec	0.55	0.00
http://192.168...	10	5	7	8	8	11	3	11	100.00%	1.2/sec	0.55	0.00
http://192.168...	10	4	3	7	7	8	3	8	100.00%	1.2/sec	0.55	0.00
TOTAL	1100	4	3	10	14	22	0	187	100.00%	52.2/sec	34.92	8.06

Include group name in label?  Save Table Data  Save Table Header

En Ubuntu:

ise\_ubuntu (P3) [Corriendo] - Oracle VM VirtualBox

Archivo Máquina Ver Entrada Dispositivos Ayuda

```

nodejs_1 | GET /api/v1/alumnos/alumno/kristinearnold%40tropoli.com 500 2.287 ms - 63
nodejs_1 | POST /api/v1/auth/login 401 1.607 ms - 0
nodejs_1 | POST /api/v1/auth/login 401 0.894 ms - 0
nodejs_1 | GET /api/v1/alumnos/alumno/blankenshipchapman%40tropoli.com 500 0.762 ms - 63
nodejs_1 | GET /api/v1/alumnos/alumno/janiekings%40tropoli.com 500 0.605 ms - 63
nodejs_1 | GET /api/v1/alumnos/alumno/blankenshipchapman%40tropoli.com 500 0.748 ms - 63
nodejs_1 | GET /api/v1/alumnos/alumno/margaritamunoz%40tropoli.com 500 1.833 ms - 63
nodejs_1 | POST /api/v1/auth/login 401 1.438 ms - 0
nodejs_1 | POST /api/v1/auth/login 401 1.264 ms - 0
nodejs_1 | POST /api/v1/auth/login 401 1.376 ms - 0
nodejs_1 | POST /api/v1/auth/login 401 2.821 ms - 0
nodejs_1 | GET /api/v1/alumnos/alumno/bentleysharpe%40tropoli.com 500 1.918 ms - 63
nodejs_1 | GET /api/v1/alumnos/alumno/janiekings%40tropoli.com 500 1.898 ms - 63
nodejs_1 | POST /api/v1/auth/login 401 0.794 ms - 0
nodejs_1 | POST /api/v1/auth/login 401 1.526 ms - 0
nodejs_1 | GET /api/v1/alumnos/alumno/woodardoneill%40tropoli.com 500 0.732 ms - 63
nodejs_1 | POST /api/v1/auth/login 401 1.696 ms - 0
nodejs_1 | GET /api/v1/alumnos/alumno/woodardoneill%40tropoli.com 500 2.185 ms - 63
nodejs_1 | GET /api/v1/alumnos/alumno/staceytownsend%40tropoli.com 500 1.947 ms - 63
nodejs_1 | POST /api/v1/auth/login 401 0.494 ms - 0
nodejs_1 | POST /api/v1/auth/login 401 0.482 ms - 0
nodejs_1 | GET /api/v1/alumnos/alumno/kristinearnold%40tropoli.com 500 0.820 ms - 63
nodejs_1 | GET /api/v1/alumnos/alumno/kristinearnold%40tropoli.com 500 1.912 ms - 63
nodejs_1 | GET /api/v1/alumnos/alumno/blankenshipchapman%40tropoli.com 500 1.875 ms - 63
nodejs_1 | POST /api/v1/auth/login 401 1.526 ms - 0
nodejs_1 | POST /api/v1/auth/login 401 1.329 ms - 0
nodejs_1 | GET /api/v1/alumnos/alumno/bentleysharpe%40tropoli.com 500 0.586 ms - 63
nodejs_1 | GET /api/v1/alumnos/alumno/bentleysharpe%40tropoli.com 500 3.654 ms - 63
nodejs_1 | POST /api/v1/auth/login 401 0.772 ms - 0
nodejs_1 | GET /api/v1/alumnos/alumno/staceytownsend%40tropoli.com 500 0.791 ms - 63
nodejs_1 | POST /api/v1/auth/login 401 0.696 ms - 0
nodejs_1 | POST /api/v1/auth/login 401 0.625 ms - 0
nodejs_1 | GET /api/v1/alumnos/alumno/blankenshipchapman%40tropoli.com 500 0.849 ms - 63
nodejs_1 | GET /api/v1/alumnos/alumno/staceytownsend%40tropoli.com 500 0.810 ms - 63
nodejs_1 | POST /api/v1/auth/login 401 0.498 ms - 0
nodejs_1 | GET /api/v1/alumnos/alumno/blankenshipchapman%40tropoli.com 500 0.894 ms - 63

```

Alt Izquierdo

Obtenemos un error y si nos fijamos es por no haber movido correctamente algunas cosas. Si colocamos correctamente Credenciales Alumnos y JWT Token de Accesos Administradores vemos que ya funciona correctamente.

Access to ETSS API.jmx /home/germanpadua/Desktop/apache-jmeter-5.4.3/Access to ETSS API.jmx - Apache JMeter (5.4.3)

File Edit Run Options Tools Help

View Results In Table

Name: View Results in Table

Comments:

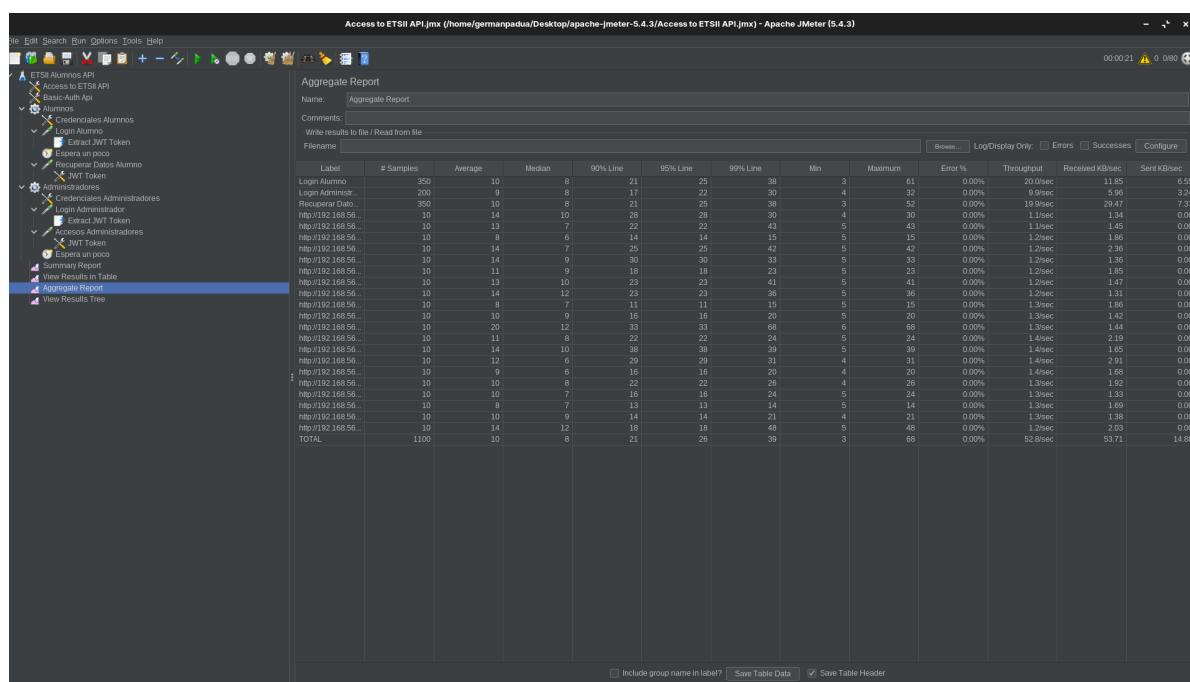
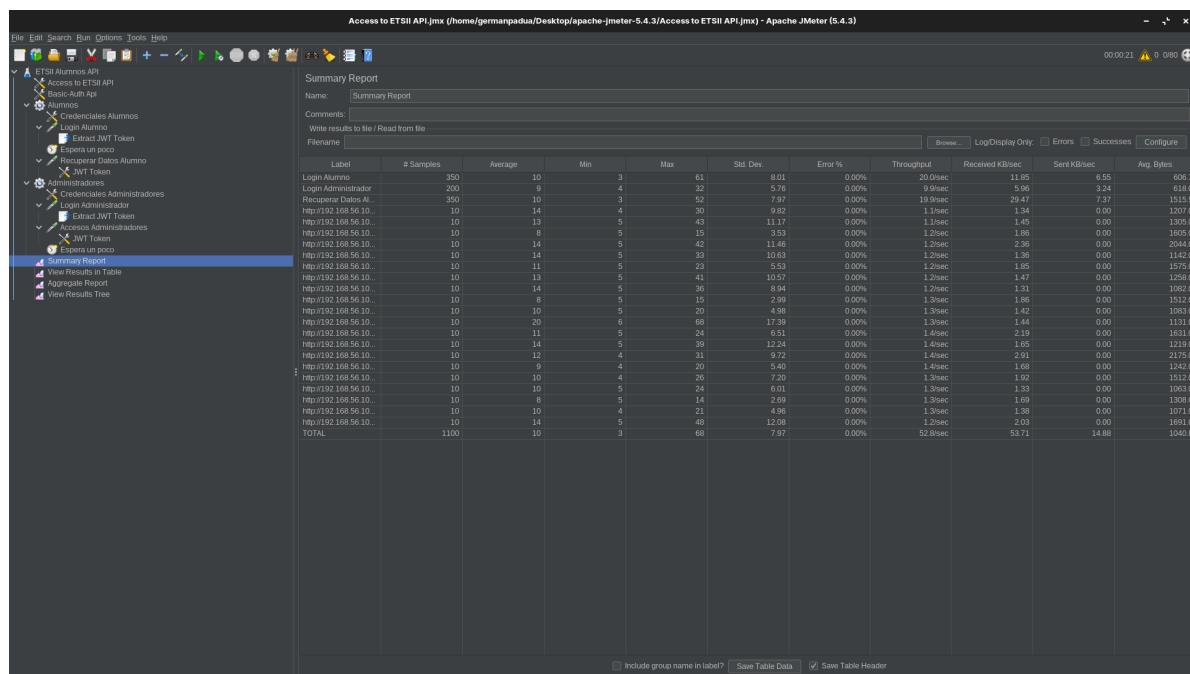
Write results to file / Read from file

Filename:

Browse... Log/Display Only: Errors Successes Configure

Sample #	Start Time	Thread Name	Label	Sample Time(ms)	Status	Bytes	Sent Bytes	Latency	Conned Time(ms)
1	12:18:39.741	Alumnos-1	Login Alumno	17	✓	605	344	17	4
2	12:18:39.877	Administradores-2.1	Login Administrador	16	✓	618	335	16	3
3	12:18:39.988	Alumnos-1	Recuperar Datos Alu...	18	✓	1170	380	18	0
4	12:18:40.090	Alumnos-1-2	Login Alumno	18	✓	605	331	16	3
5	12:18:40.148	Alumnos-1-3	Login Alumno	17	✓	605	334	17	3
6	12:18:40.188	Alumnos-1-4	Login Alumno	14	✓	605	324	14	2
7	12:18:40.272	Administradores-2.1	http://192.168.56.105...	28	✓	1207	0	28	0
8	12:18:40.278	Alumnos-1-1	Login Alumno	27	✓	605	334	27	0
9	12:18:40.494	Alumnos-1-2	Recuperar Datos Alu...	14	✓	1603	375	14	0
10	12:18:40.500	Alumnos-1-3	Recuperar Datos Alu...	18	✓	1286	375	18	0
11	12:18:40.566	Alumnos-1-3	Recuperar Datos Alu...	5	✓	2073	377	6	0
12	12:18:40.610	Alumnos-1-6	Login Alumno	19	✓	606	336	19	1
13	12:18:40.610	Administradores-2-2	Login Administrador	29	✓	618	336	29	1
14	12:18:40.619	Administradores-2.1	Login Administrador	23	✓	618	337	23	0
15	12:18:40.745	Alumnos-1-2	Recuperar Datos Alu...	24	✓	1111	377	24	0
16	12:18:40.755	Alumnos-1-3	Login Alumno	25	✓	606	330	25	0
17	12:18:40.765	Alumnos-1-2	Login Alumno	17	✓	606	335	17	0
18	12:18:40.809	Alumnos-1-5	Login Alumno	5	✓	606	330	5	1
19	12:18:40.866	Alumnos-1-4	Login Alumno	12	✓	606	333	12	0
20	12:18:40.866	Alumnos-1-6	Recuperar Datos Alu...	13	✓	1500	370	13	0
21	12:18:40.874	Administradores-2.2	http://192.168.56.105...	21	✓	1207	0	21	0
22	12:18:40.930	Alumnos-1-5	Recuperar Datos Alu...	16	✓	1659	375	16	0
23	12:18:40.940	Administradores-2-2	http://192.168.56.105...	22	✓	1305	0	22	0
24	12:18:40.974	Alumnos-1-3	Login Alumno	8	✓	606	337	8	1
25	12:18:41.000	Alumnos-1-2	Recuperar Datos Alu...	19	✓	1099	380	19	0
26	12:18:41.052	Administradores-2-2	Login Administrador	10	✓	618	337	10	0
27	12:18:41.100	Alumnos-1-1	Login Alumno	15	✓	606	334	15	0
28	12:18:41.186	Alumnos-1-6	Login Alumno	17	✓	606	340	17	0
29	12:18:41.202	Alumnos-1-3	Login Alumno	21	✓	606	338	21	0
30	12:18:41.232	Alumnos-1-8	Recuperar Datos Alu...	38	✓	1055	337	38	3
31	12:18:41.199	Alumnos-1-7	Recuperar Datos Alu...	32	✓	1333	380	32	0
32	12:18:41.227	Alumnos-1-3	Recuperar Datos Alu...	9	✓	1154	375	9	0
33	12:18:41.253	Alumnos-1-4	Recuperar Datos Alu...	5	✓	1633	378	5	0
34	12:18:41.253	Administradores-2-2	http://192.168.56.105...	7	✓	1338	0	7	0
35	12:18:41.370	Alumnos-1-2	Login Alumno	23	✓	605	339	23	0
36	12:18:41.378	Administradores-2.1	Login Administrador	22	✓	618	337	22	0
37	12:18:41.389	Alumnos-1-7	Login Alumno	20	✓	605	331	20	0
38	12:18:41.481	Alumnos-1-9	Login Alumno	15	✓	606	331	15	2
39	12:18:41.510	Alumnos-1-5	Login Alumno	16	✓	606	336	16	0
40	12:18:41.510	Alumnos-1-5	Recuperar Datos Alu...	18	✓	1031	330	16	0
41	12:18:41.520	Alumnos-1-10	Login Alumno	12	✓	606	337	12	2
42	12:18:41.546	Alumnos-1-6	Recuperar Datos Alu...	6	✗	1338	379	6	0

Scroll automatically: No of Samples: 100 Latest Sample: 13 Message: 10 Duration: 7



ise\_ubuntu (P3) [Corriendo] - Oracle VM VirtualBox

Archivo Máquina Ver Entrada Dispositivos Ayuda

```
nodejs_1 | GET /api/v1/alumnos/alumno/kristinearnold%40tropoli.com 200 3.456 ms - 661
nodejs_1 | POST /api/v1/auth/login 200 7.914 ms - 196
nodejs_1 | GET /api/v1/alumnos/alumno/suttonkennedy%40tropoli.com 200 7.618 ms - 1644
nodejs_1 | POST /api/v1/auth/login 200 7.452 ms - 196
nodejs_1 | GET /api/v1/alumnos/alumno/janieking%40tropoli.com 200 11.592 ms - 840
nodejs_1 | POST /api/v1/auth/login 200 9.395 ms - 196
nodejs_1 | POST /api/v1/auth/login 200 8.748 ms - 185
nodejs_1 | GET /api/v1/alumnos/alumno/kristinearnold%40tropoli.com 200 3.344 ms - 661
nodejs_1 | GET /api/v1/alumnos/alumno/blankenshipchapman%40tropoli.com 200 7.731 ms - 1288
nodejs_1 | GET /api/v1/alumnos/alumno/bentleysharpe%40tropoli.com 200 7.612 ms - 906
nodejs_1 | POST /api/v1/auth/login 200 12.150 ms - 196
nodejs_1 | GET /api/v1/alumnos/alumno/parrishhouse%40tropoli.com 200 21.630 ms - 697
nodejs_1 | POST /api/v1/auth/login 200 8.301 ms - 196
nodejs_1 | POST /api/v1/auth/login 200 7.551 ms - 196
nodejs_1 | GET /api/v1/alumnos/alumno/bentleysharpe%40tropoli.com 200 2.676 ms - 906
nodejs_1 | GET /api/v1/alumnos/alumno/staceytownsend%40tropoli.com 200 5.501 ms - 669
nodejs_1 | GET /api/v1/alumnos/alumno/woodardoneill%40tropoli.com 200 7.076 ms - 1109
nodejs_1 | POST /api/v1/auth/login 200 7.624 ms - 196
nodejs_1 | POST /api/v1/auth/login 200 2.914 ms - 196
nodejs_1 | POST /api/v1/auth/login 200 7.615 ms - 196
nodejs_1 | GET /api/v1/alumnos/alumno/staceytownsend%40tropoli.com 200 8.906 ms - 669
nodejs_1 | GET /api/v1/alumnos/alumno/kristinearnold%40tropoli.com 200 4.519 ms - 661
nodejs_1 | POST /api/v1/auth/login 200 10.606 ms - 196
nodejs_1 | POST /api/v1/auth/login 200 9.437 ms - 196
nodejs_1 | GET /api/v1/alumnos/alumno/blankenshipchapman%40tropoli.com 200 8.728 ms - 1288
nodejs_1 | GET /api/v1/alumnos/alumno/blankenshipchapman%40tropoli.com 200 3.446 ms - 1288
nodejs_1 | GET /api/v1/alumnos/alumno/bentleysharpe%40tropoli.com 200 5.218 ms - 906
nodejs_1 | POST /api/v1/auth/login 200 5.937 ms - 196
nodejs_1 | GET /api/v1/alumnos/alumno/staceytownsend%40tropoli.com 200 7.611 ms - 669
nodejs_1 | POST /api/v1/auth/login 200 10.119 ms - 196
nodejs_1 | GET /api/v1/alumnos/alumno/blankenshipchapman%40tropoli.com 200 8.261 ms - 1288
mongodb_1 | {"t": {"$date": "2022-05-31T10:17:20.974+00:00"}, "s": "1", "c": "STORAGE", "id": 22430, "ctx": "Checkpointer", "msg": "WiredTiger message", "attr": {"message": "[WT_SESSION.checkpoint: [WT_VERB_CHECKPOINT_PROGRESS] saving checkpoint snapshot min: 2097, snapshot max: 2097 snapshot count: 0, oldest timestamp: (0, 0), meta checkpoint timestamp: (0, 0) base write gen: 374"]"}}
-
```