

AWS vs Azure

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21 de mayo de 2019

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AWS

What is AWS?

Amazon Web Services (AWS), is a collection of public cloud computing web services launched by Amazon.

Features of AWS

- Launched 13 years ago.
- Cloud platform, offering over 165 fully featured services from data centers globally.
- Largest community of customers and partners.
- Fastest pace of innovation.
- Most proven operational expertise.
- Only pay for what you use.
- Redundancy and availability across the world.

Capacities of AWS

- Highly durable storage: Amazon Glacier, Amazon S3, Amazon EBS
- Low cost computing: Amazon EC2
- High performance data bases: A. Redshift, A. DynamoDB, A. ElastiCache, A. RDS
- Managing tools: A. CloudWatch, AWS IAM, AWS CloudFormation, AWS Beanstalk

Limits of AWS

- **Amazon EC2:** Has limits on both the type of instance (virtual machine) that can be used and the number of hours in a month (750 Linux/750 Windows).
- **Amazon S3:** You have a limit on the amount of storage that can be used and the frequency with which you can call certain operations each month.
- **Amazon RDS:** You have a limit of 750 hours per month during the first 12 months. Turning on an instance three hours is the same as turning on an instance three times in one hour.

Azure

What is Azure?

It is a collection of public cloud computing web services launched by Microsoft.

Features of Azure

- Launched in 2010.
- Collection of various cloud computing service.
- Integrated suite of tools, templates, and managed services.
- It provides software as a service (SaaS), platform as a service (PaaS) and infrastructure as a service (IaaS).
- Ideal for businesses that utilize Windows or Linux for their operations.
- Has over 100 services equipped with end-to-end features.

Azure

Capacities of Azure

- Build websites with ASP.NET, PHP or Node.js.
- Migrate applications and infrastructure.
- SQL Database.
- Caching.
- CDN.
- Virtual Network.
- Deploy and run Windows Server and Linux virtual machines.
- Mobile Services.
- Cloud Services.
- Business Analytics.
- Hadoop.
- Media Services.

Limits of Azure

In the student version, Azure has the following limits:

- 750 hours of virtual machines for both Linux and Windows.
- 128GB of SSD storage.
- 250GB of a standard S0 instance of SQL databases.
- 1500 hours of dynamic IP for virtual machines.

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Creación de máquinas virtuales en AWS

Actividades Google Chrome lun, 13 de may, 10:10

Launch Instance wizard | E x +

https://console.aws.amazon.com/ec2/v2/home?region=us-east-1#LaunchInstanceWizard:

aws Servicios Grupos de recursos

1. Choose AMI 2. Choose Instance Type 3. Configure Instance 4. Add Storage 5. Add Tags 6. Configure Security Group 7. Review

Step 1: Choose an Amazon Machine Image (AMI)

Cancel and Exit

An AMI is a template that contains the software configuration (operating system, application server, and applications) required to launch your instance. You can select an AMI provided by AWS, our user community, or the AWS Marketplace; or you can select one of your own AMIs.

Search for an AMI by entering a search term e.g. "Windows"

Quick Start

My AMIs

AWS Marketplace

Community AMIs

☐ Free tier only ⓘ

Amazon Linux Free tier eligible

Amazon Linux 2 AMI (HVM), SSD Volume Type - ami-0de53d8956e8dcf80 (64-bit x86) / ami-06b382aba6c5a4f2c (64-bit Arm)

Amazon Linux 2 comes with five years support. It provides Linux kernel 4.14 tuned for optimal performance on Amazon EC2, systemd 219, GCC 7.3, Glibc 2.26, Binutils 2.29.1, and the latest software packages through extras.

Root device type: ebs Virtualization type: hvm ENA Enabled: Yes

☒ 64-bit (x86)

☐ 64-bit (Arm)

Amazon Linux AMI 2018.03.0 (HVM), SSD Volume Type - ami-0080e4c5bc078760e

The Amazon Linux AMI is an EBS-backed, AWS-supported image. The default image includes AWS command line tools, Python, Ruby, Perl, and Java. The repositories include Docker, PHP, MySQL, PostgreSQL, and other packages.

Root device type: ebs Virtualization type: hvm ENA Enabled: Yes

64-bit (x86)

Red Hat Enterprise Linux 8 (HVM), SSD Volume Type - ami-098bb5d92c8886ca1 (64-bit x86) / ami-07bd28c96286169fa (64-bit Arm)

Comentarios Español

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Figura: Selección de sistema operativo.

Creación de máquinas virtuales en AWS

Actividades Google Chrome lun, 13 de may, 10:10

Launch Instance wizard | E x +

https://console.aws.amazon.com/ec2/v2/home?region=us-east-1#LaunchInstanceWizard:

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1. Choose AMI 2. Choose Instance Type 3. Configure Instance 4. Add Storage 5. Add Tags 6. Configure Security Group 7. Review

Step 3: Configure Instance Details

Configure the instance to suit your requirements. You can launch multiple instances from the same AMI, request Spot instances to take advantage of the lower pricing, assign an access management role to the instance, and more.

Number of instances ⓘ 1 [Launch into Auto Scaling Group ⓘ](#)

Purchasing option ⓘ ☐ Request Spot instances

Network ⓘ vpc-b9dd55c3 (default) [Create new VPC](#)

Subnet ⓘ No preference (default subnet in any Availability Zone) [Create new subnet](#)

Auto-assign Public IP ⓘ Use subnet setting (Enable)

Placement group ⓘ ☐ Add instance to placement group

Capacity Reservation ⓘ Open [Create new Capacity Reservation](#)

IAM role ⓘ None [Create new IAM role](#)

Shutdown behavior ⓘ Stop

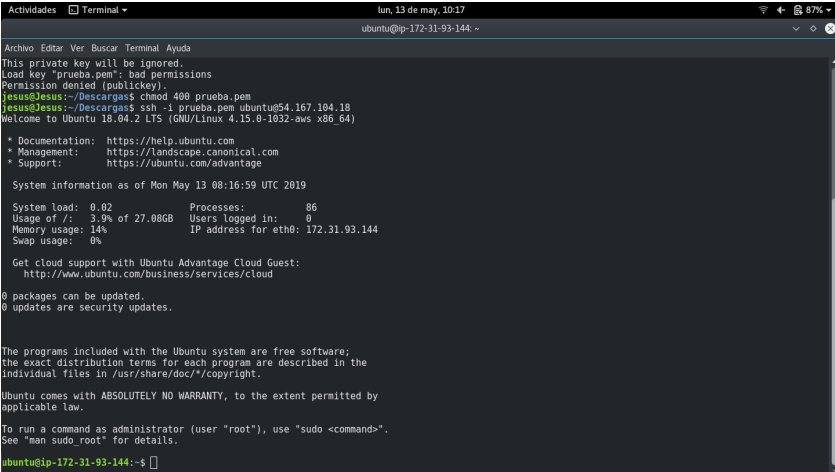
[Cancel](#) [Previous](#) [Review and Launch](#) [Next: Add Storage](#)

Comentarios Español

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Figura: Configurar detalles.

Creación de máquinas virtuales en AWS



```
Actividades Terminal lun, 13 de may, 10:17
ubuntu@ip-172-31-93-144: ~

Archivo Editar Ver Buscar Terminal Ayuda
This private key will be ignored.
Load key "prueba.pem": bad permissions
Permission denied (publickey).
jesus@Jesus:~/Descargas$ chmod 400 prueba.pem
jesus@Jesus:~/Descargas$ ssh -i prueba.pem ubuntu@54.167.104.18
Welcome to Ubuntu 18.04.2 LTS (GNU/Linux 4.15.0-1032-aws x86_64)

 * Documentation:  https://help.ubuntu.com
 * Management:    https://landscape.canonical.com
 * Support:       https://ubuntu.com/advantage

System information as of Mon May 13 08:16:59 UTC 2019

System load:  0.02          Processes:            86
Usage of /:   3.9% of 27.08GB Users logged in:          0
Memory usage: 14%          IP address for eth0: 172.31.93.144
Swap usage:   0%

Get cloud support with Ubuntu Advantage Cloud Guest:
http://www.ubuntu.com/business/services/cloud

0 packages can be updated.
0 updates are security updates.

The programs included with the Ubuntu system are free software;
the exact distribution terms for each program are described in the
individual files in /usr/share/doc/*/copyright.

Ubuntu comes with ABSOLUTELY NO WARRANTY, to the extent permitted by
applicable law.

To run a command as administrator (user "root"), use "sudo <command>".
See "man sudo_root" for details.

ubuntu@ip-172-31-93-144:~$
```

Figura: Conexión por SSH.

Creación de máquinas virtuales en Azure

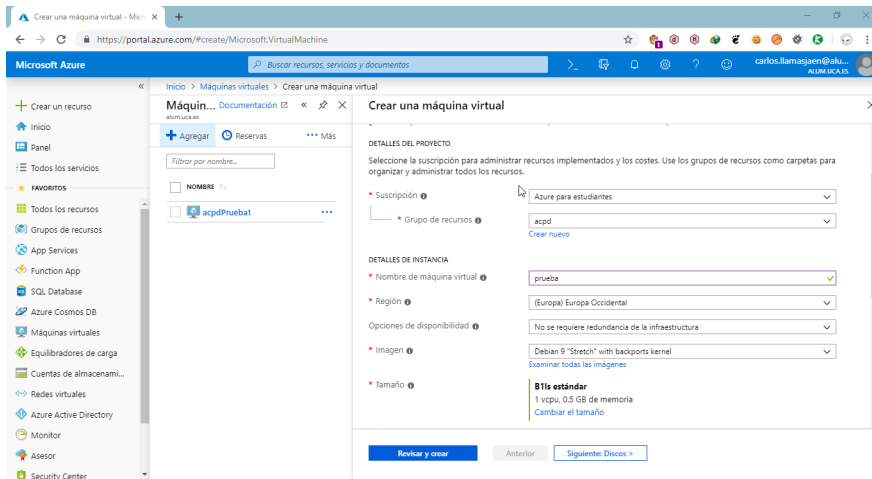


Figura: Selección de sistema operativo.

Creación de máquinas virtuales en Azure

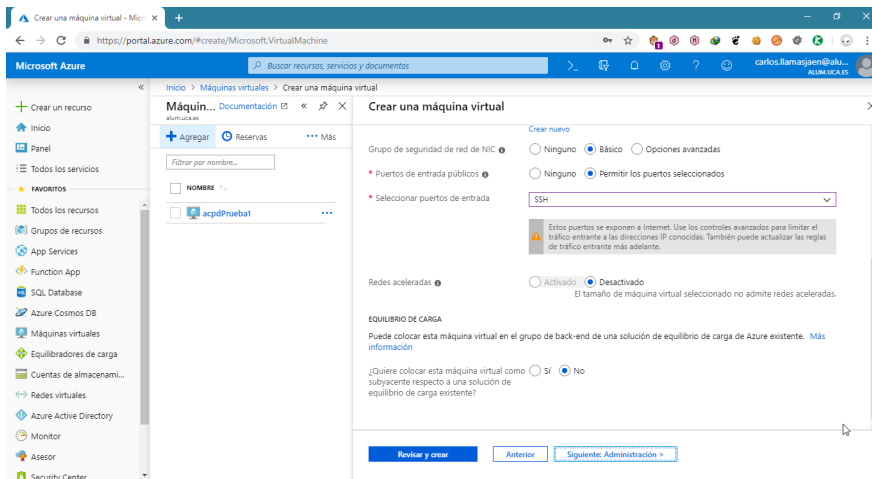
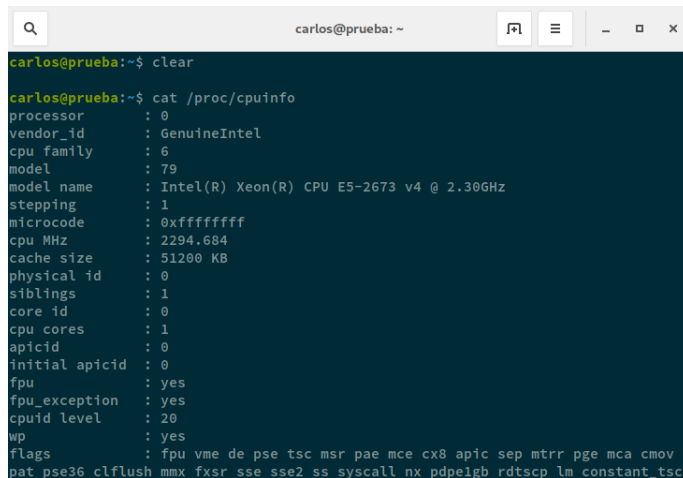


Figura: Selección como equilibrio de carga.

Creación de máquinas virtuales en Azure

A terminal window titled 'carlos@prueba: ~' with standard window controls. The user has entered 'clear' and then 'cat /proc/cpuinfo'. The output displays detailed CPU specifications for an Intel Xeon E5-2673 v4.

```
carlos@prueba:~$ clear

carlos@prueba:~$ cat /proc/cpuinfo
processor       : 0
vendor_id      : GenuineIntel
cpu family     : 6
model          : 79
model name     : Intel(R) Xeon(R) CPU E5-2673 v4 @ 2.30GHz
stepping       : 1
microcode      : 0xffffffff
cpu MHz        : 2294.684
cache size     : 51200 KB
physical id    : 0
siblings       : 1
core id        : 0
cpu cores      : 1
apicid         : 0
initial apicid : 0
fpu            : yes
fpu_exception  : yes
cpuid level    : 20
wp             : yes
flags          : fpu vme de pse tsc msr pae mce cx8 apic sep mtrr pge mca cmov
pat pse36 clflush mmx fxsr sse sse2 ss syscall nx pdpe1gb rdtscp lm constant_tsc
```

Figura: Conexión por SSH.

Web Services

What are web services?

- Piece of software that makes itself available over the internet.
- Uses a standardized XML messaging system.
- Are not tied to any OS, so they work independently and concurrently.
- Are built on top of open standards such as TCP/IP, HTTP, Java, HTML, and XML.

Components

- SOAP (Simple Object Protocol).
- UDDI (Universal Description, Discovery and Integration).
- WSDL (Web Services Description Language).

Creación de webs en AWS

contenidos...

Creación de webs en Azure

contenidos...

Creación de servicios IoT en AWS

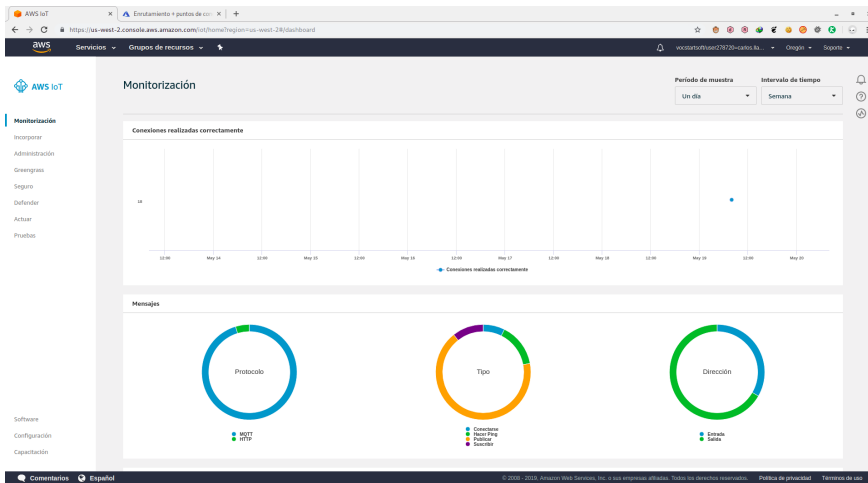


Figura: Centro de control de IoT de AWS.

Creación de servicios IoT en AWS

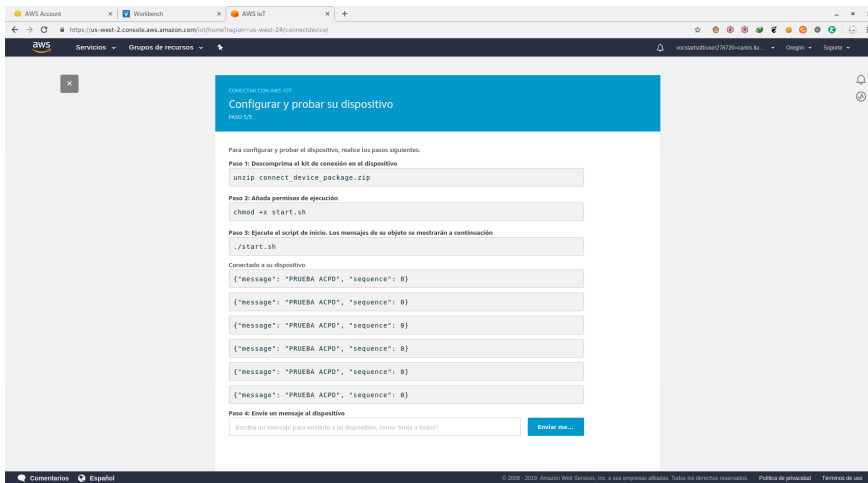


Figura: Dispositivos IoT de AWS.

Creación de servicios IoT en Azure

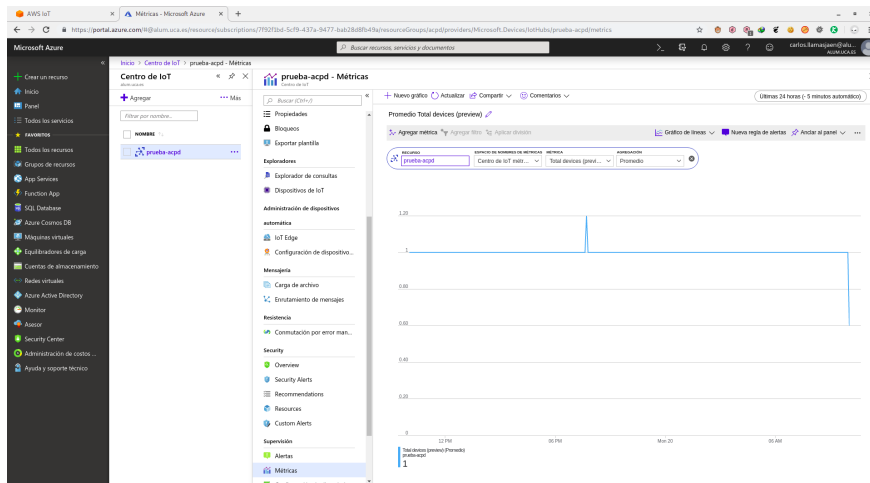
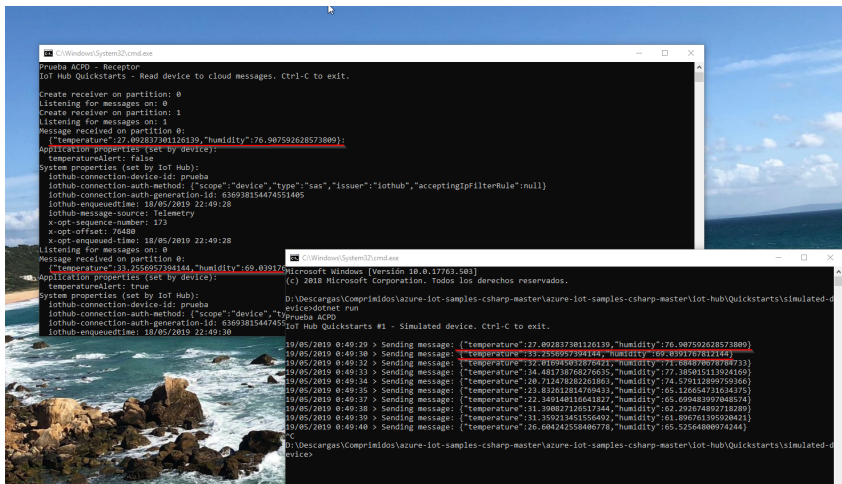


Figura: Centro de control de IoT de Azure.

Creación de servicios IoT en Azure



The image shows two overlapping command prompt windows. The background window displays the output of the 'IoT Hub Quickstarts - Read device to cloud messages' command, showing a simulated device sending a message with temperature and humidity data. The foreground window shows the output of the 'IoT Hub Quickstarts #1 - Simulated device' command, showing a simulated device sending multiple messages with temperature and humidity data.

```
C:\Windows\System32\cmd.exe
Prueba ACPO - Receptor
IoT Hub Quickstarts - Read device to cloud messages. Ctrl-C to exit.

Create receiver on partition: 0
Listening for messages on: 0
Create receiver on partition: 1
Listening for messages on: 1
Message received on partition 0:
{"temperature":27.092837301126139,"humidity":76.907592628573809};
Application properties (set by device):
  temperatureAlert: false
System properties (set by IoT Hub):
  iotHub-connection-device-id: prueba
  iotHub-connection-auth-method: {"scope":"device","type":"sas","issuer":"iothub","acceptingIpFilterRule":null}
  iotHub-connection-auth-generation-id: 636938154474551405
  iotHub-enqueuedtime: 18/05/2019 22:49:28
  iotHub-message-source: Telemetry
  x-opt-sequence-number: 173
  x-opt-offset: 76480
  x-opt-enqueued-time: 18/05/2019 22:49:28
Listening for messages on: 0
Message received on partition 0:
{"temperature":33.2556957394144,"humidity":69.0391767812144};
Application properties (set by device):
  temperatureAlert: true
System properties (set by IoT Hub):
  iotHub-connection-device-id: prueba
  iotHub-connection-auth-method: {"scope":"device","type":"sas","issuer":"iothub","acceptingIpFilterRule":null}
  iotHub-connection-auth-generation-id: 636938154474551405
  iotHub-enqueuedtime: 18/05/2019 22:49:30

C:\Windows\System32\cmd.exe
Microsoft Windows [Versión 10.0.17763.503]
(c) 2018 Microsoft Corporation. Todos los derechos reservados.

D:\Descargas\Comprimidos\azure-iot-samples-csharp-master\azure-iot-samples-csharp-master\iot-hub\Quickstarts\simulated-device>dotnet run
IoT Hub Quickstarts #1 - Simulated device. Ctrl-C to exit.

19/05/2019 0:40:20 > Sending message: {"temperature":27.092837301126139,"humidity":76.907592628573809}
19/05/2019 0:40:30 > Sending message: {"temperature":33.2556957394144,"humidity":69.0391767812144}
19/05/2019 0:40:32 > Sending message: {"temperature":32.016945032876821,"humidity":71.684876678784733}
19/05/2019 0:40:33 > Sending message: {"temperature":34.481738768276635,"humidity":77.385015113924169}
19/05/2019 0:40:34 > Sending message: {"temperature":20.712478282261863,"humidity":74.579112899759366}
19/05/2019 0:40:35 > Sending message: {"temperature":23.832612814769433,"humidity":65.126654731634375}
19/05/2019 0:40:37 > Sending message: {"temperature":22.349148116641827,"humidity":65.699483997948574}
19/05/2019 0:40:38 > Sending message: {"temperature":31.390827126517344,"humidity":62.292474897718280}
19/05/2019 0:40:39 > Sending message: {"temperature":31.359213451556492,"humidity":61.896761395920421}
19/05/2019 0:40:40 > Sending message: {"temperature":26.604242558406778,"humidity":65.52564806974244}
^C
D:\Descargas\Comprimidos\azure-iot-samples-csharp-master\azure-iot-samples-csharp-master\iot-hub\Quickstarts\simulated-device>
```

Figura: Dispositivo de IoT de Azure.