

Computación Ubicua

Sesión 6 – Cloud e Internet de las Cosas (IoT)

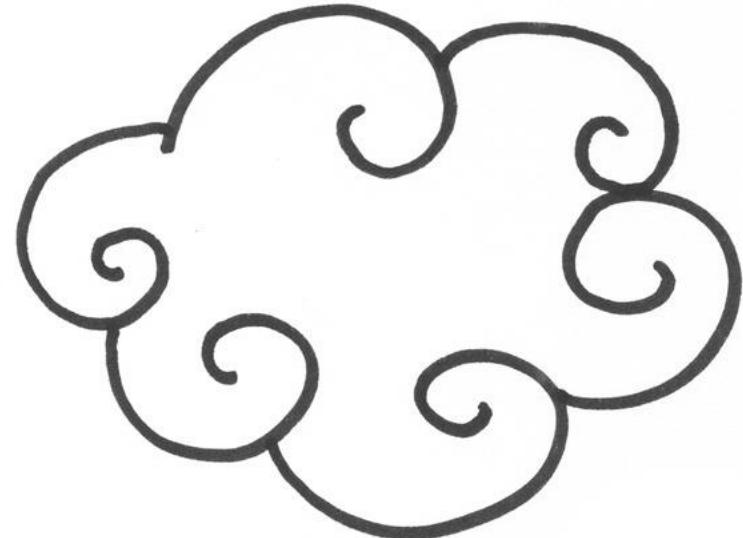
Ana Castillo Martínez
Javier Albert Segui

¿Que es eso de la Nube?

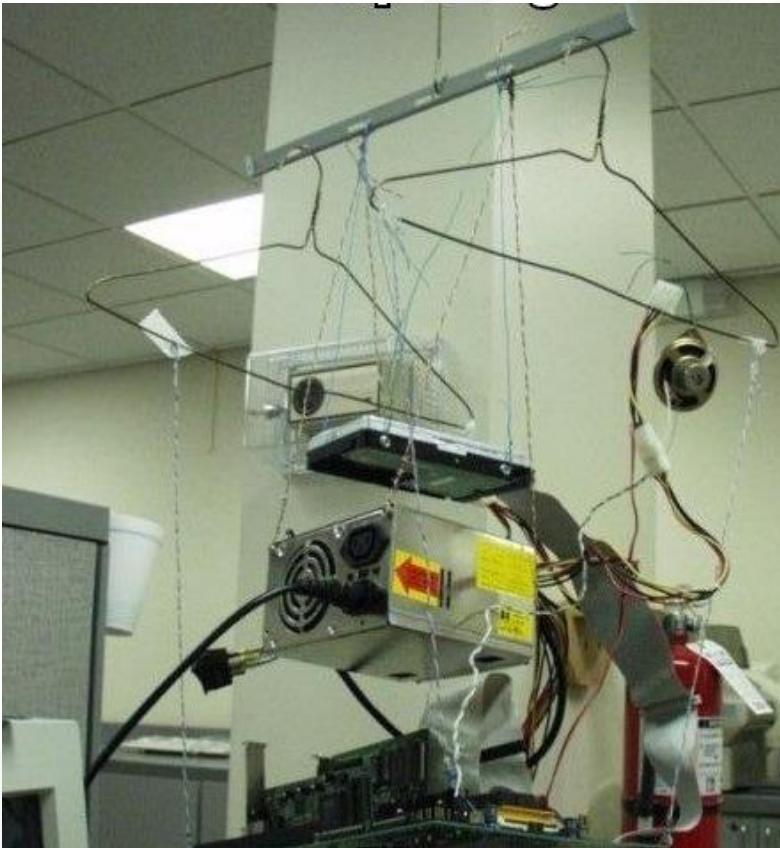
¿Qué se te ocurre cuando piensas en una nube?

¿Días nublados, lluvia, problemas, formas raras, el cielo, la imaginación?

¿Aire?



Que es el cloud computing



Que es el cloud computing

- La computación en la nube (del inglés *cloud computing*) es un paradigma que permite ofrecer servicios de computación a través de una red, que usualmente es Internet.

Características

- Agilidad
- Costo
- Escalabilidad
- Independencia
- Rendimiento
- Seguridad
- Mantenimiento

Ventajas

- Integración de servicios
- Rápida implementación
- Servicios ubicuos
- Actualización automática
- Green Computing

Desventajas

- Centralización
- Disponibilidad
- Madurez
- Seguridad
- Escalabilidad

Servicios en la nube



IaaS
Infrastructure as a Service
host



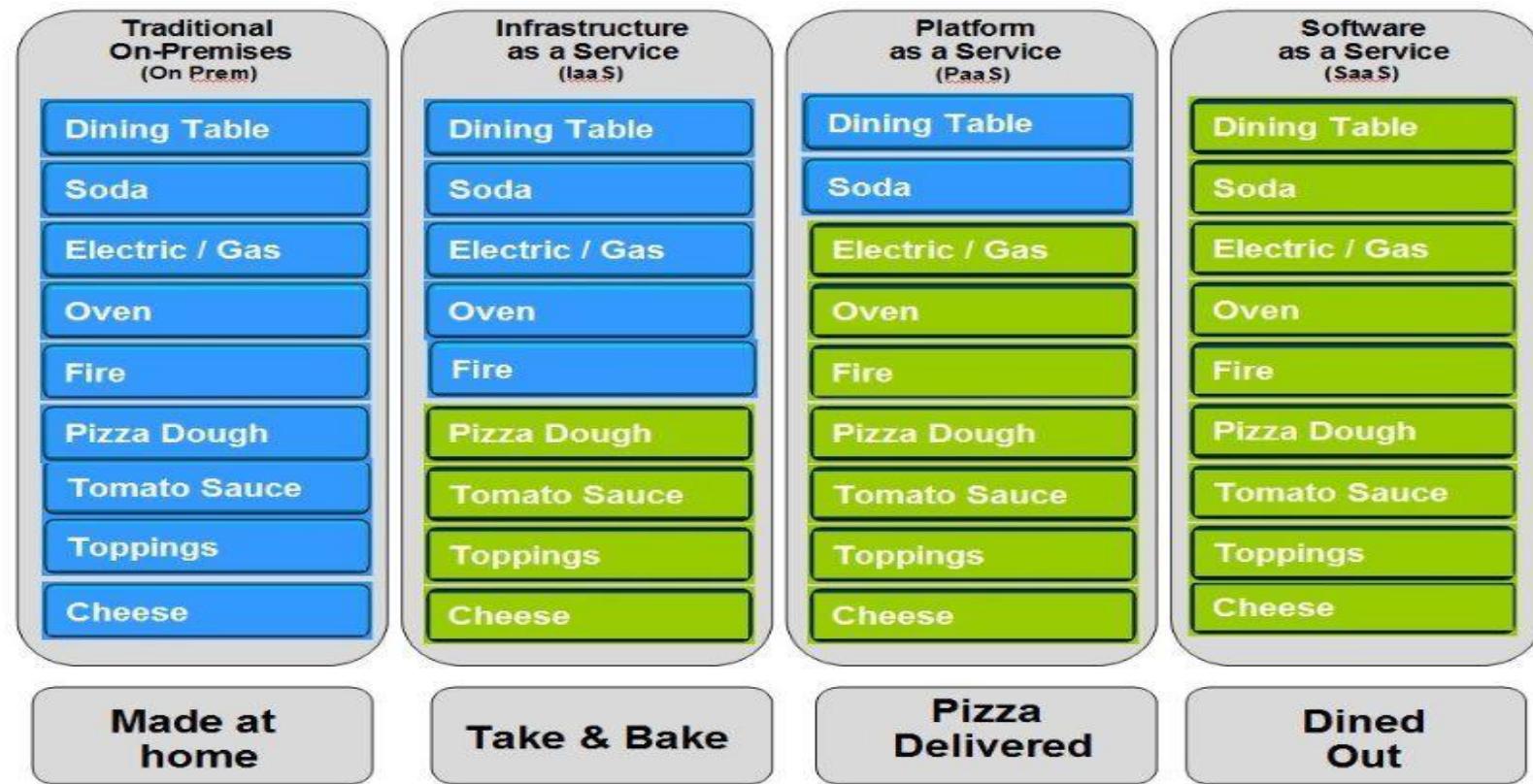
PaaS
Platform as a Service
build



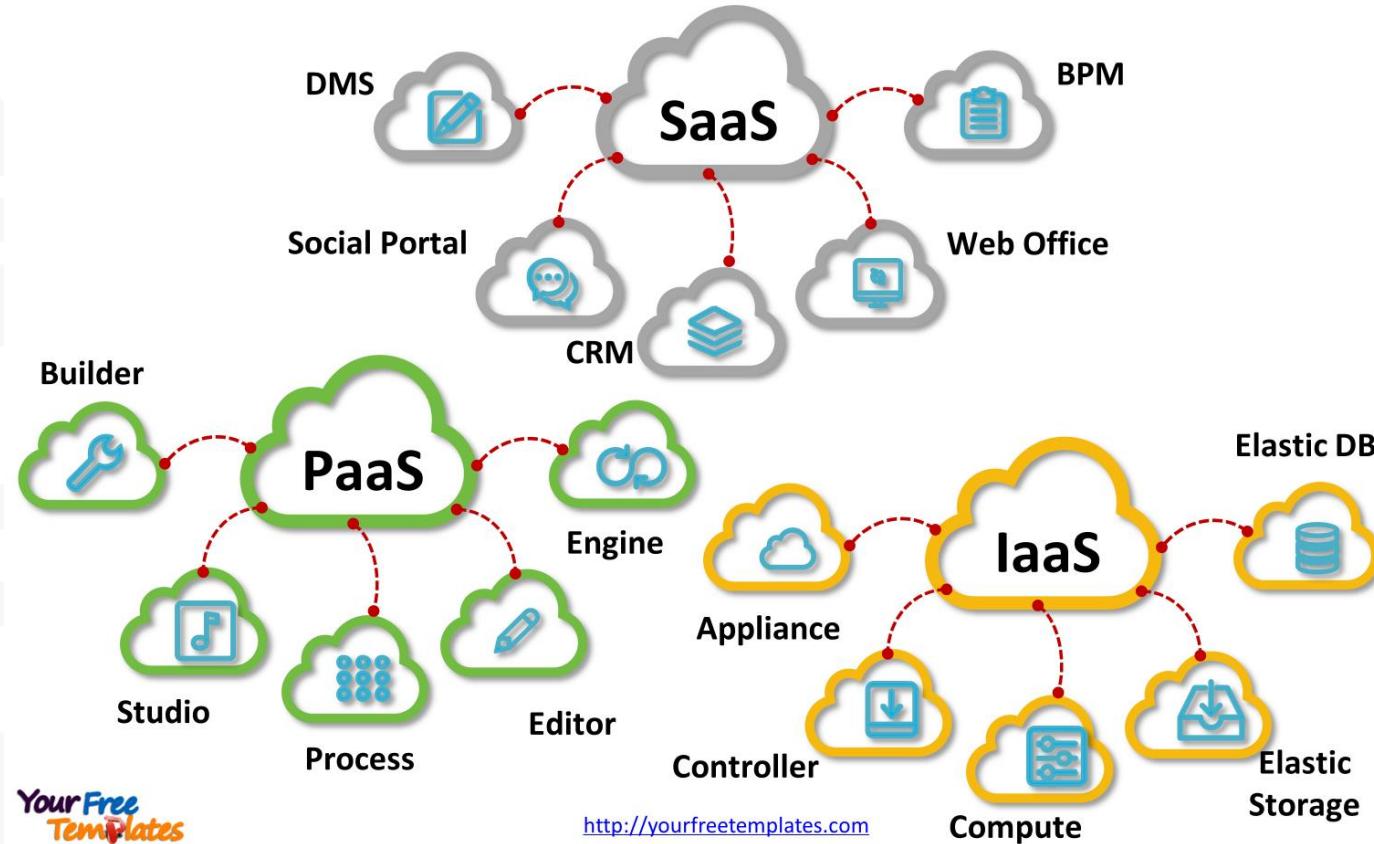
SaaS
Software as a Service
consume

Pizza as a Service

Pizza as a Service



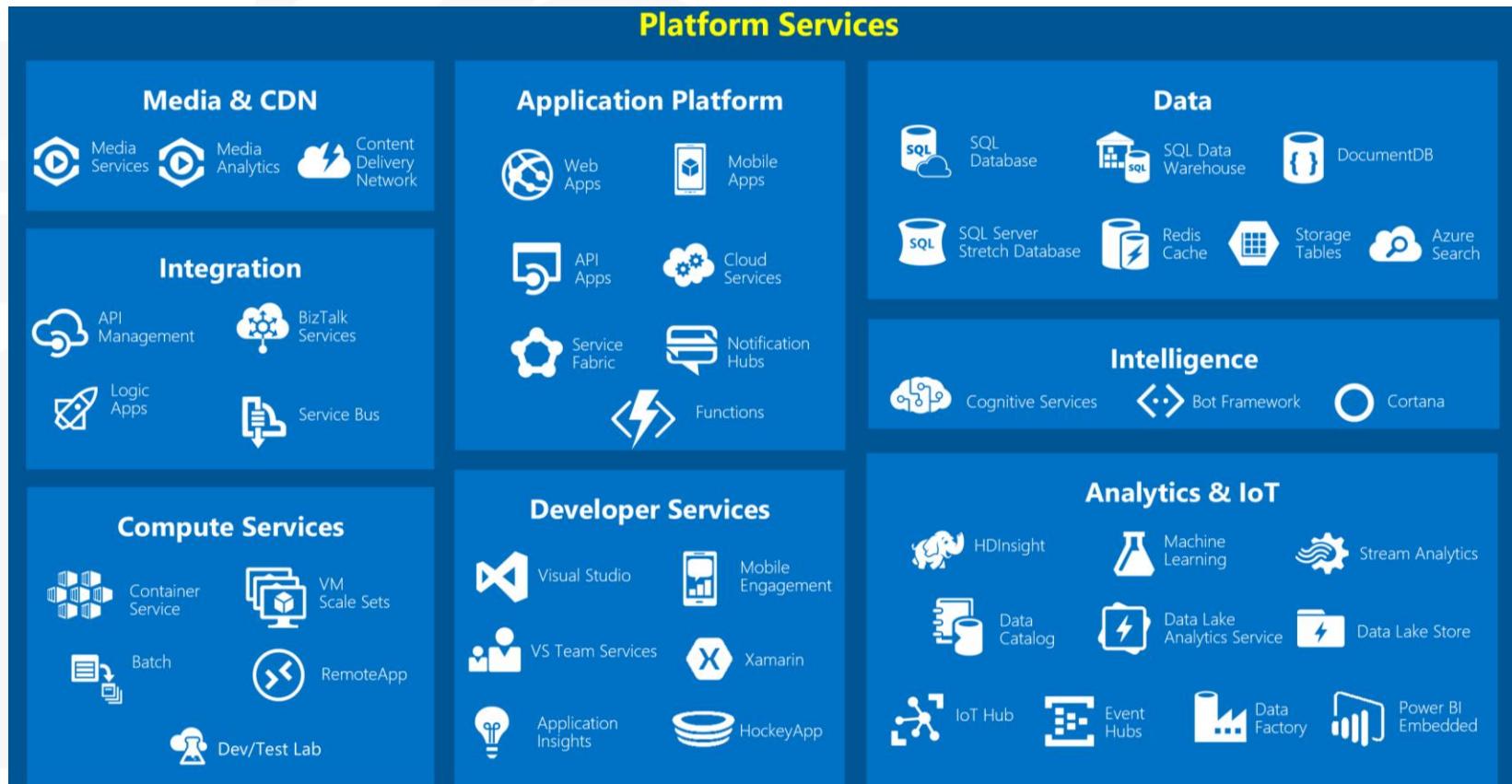
Servicios en la nube



IaaS



PaaS



SaaS



facebook



twitter

flickr



Google buzz



LinkedIn



salesforce.com.
Success. Not Software.

angel.com



YAHOO

TypePad



InterCall

intuit

GoToMeeting®

Google

Constant Contact®
Connect. Inform. Grow.

facebook

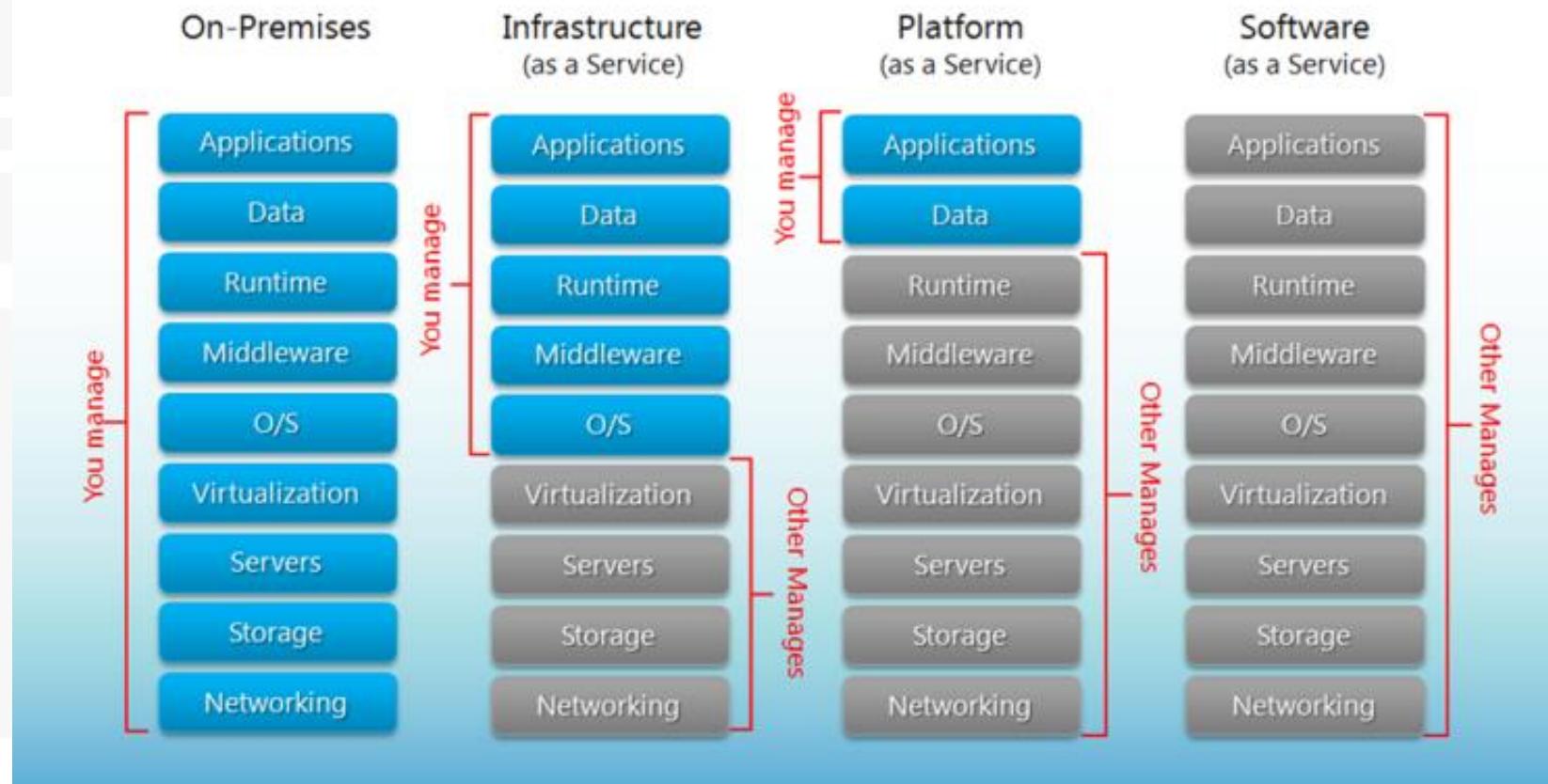
ADP



Universidad
de Alcalá



Responsabilidades





IoT

IoT

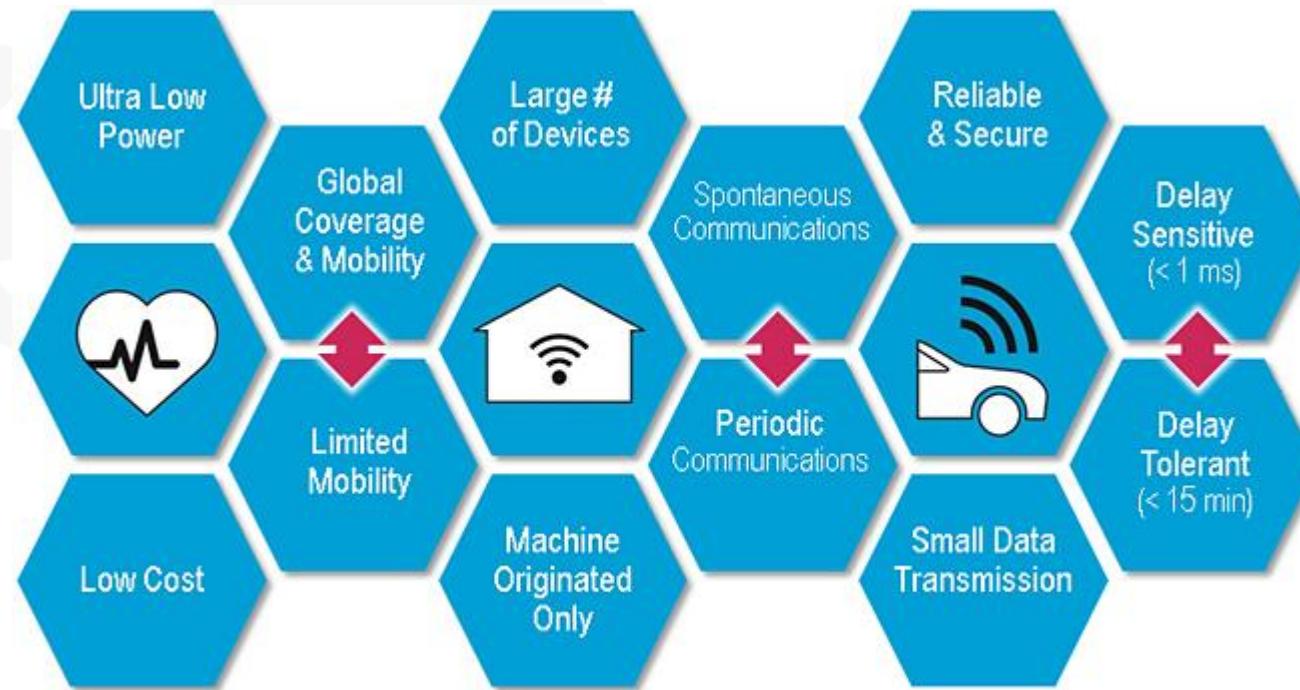
- Es un concepto que se refiere a una interconexión digital de objetos cotidianos con internet. Alternativamente, el internet de las cosas es la conexión de internet con más cosas u objetos que con personas.
- También, se suele conocer como *internet de todas las cosas* o *internet en las cosas*.

¿Dispositivos IoT?

Dispositivos IoT

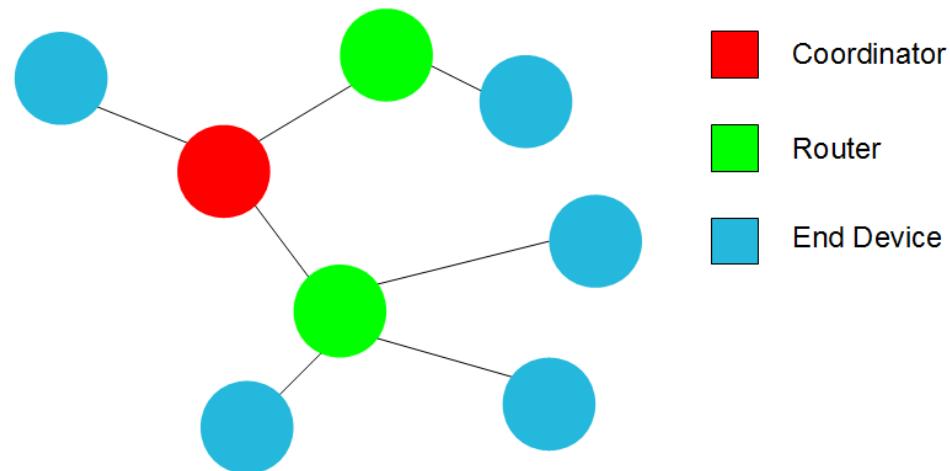
- Smartwatches
- Smartphones
- Coches
- Sensores ambientales
- Semáforos
- Señales de tráfico
- Farolas
- Cámaras de seguridad
- Dispositivos médicos
- Electrodomésticos
-

Requisitos de comunicación



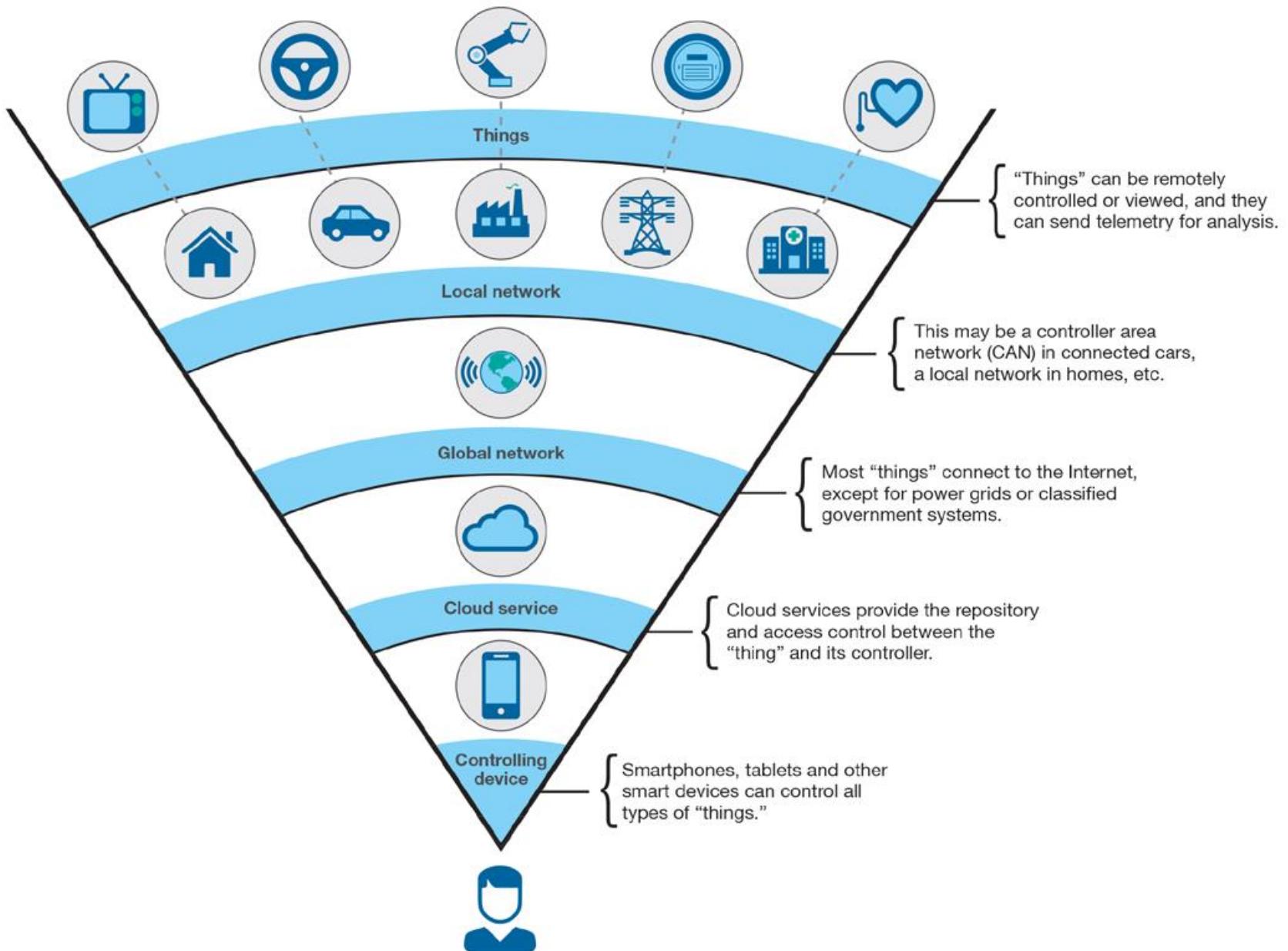
Redes de comunicación M2M

- Xbee
- Bluetooth



Redes de comunicaciones M2M

- Wifi
- Ethernet
- Mobile



Nube e IoT

Nube e IoT

- Recogida de datos



Nube e IoT

- Procesado de datos y toma de decisiones



Nube e IoT

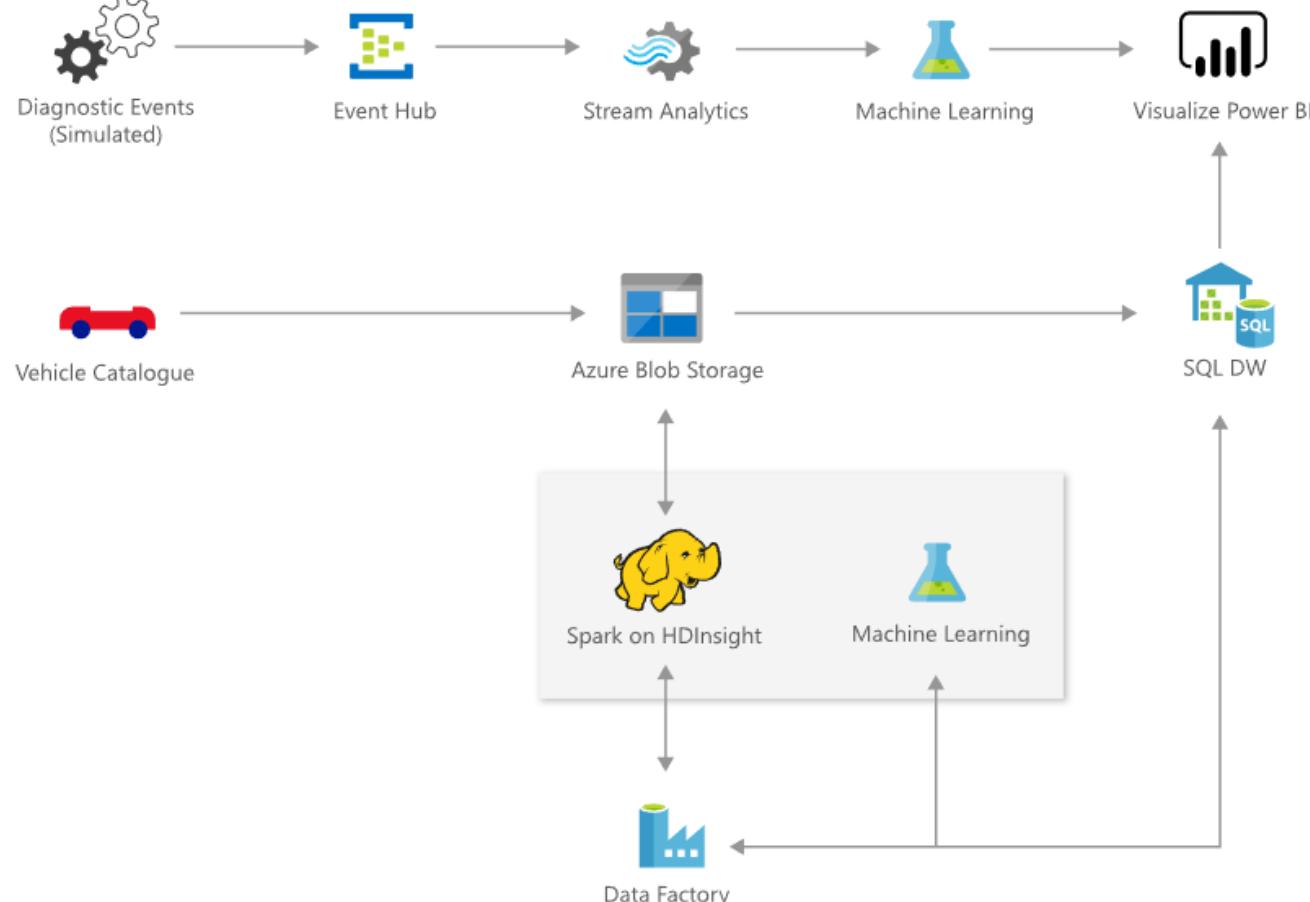
- Aplicaciones de Gestión
- Monitorización
- Dashboard



Ejemplos



Ejemplo



Ejemplo



¿Y para nuestra casa?

 AlarmDecoder AlarmDecoder Alarm alarm	 IKEA IKEA Trådfri (Tradfri) light	 LIFX LIFX Cloud Scenes scene
 MaryTTS MaryTTS text-to-speech	 Spotify Spotify media-player	 MQTT MQTT camera
 OpenSky Network sensor	 Ping (ICMP) Binary sensor binary-sensor	

 amazon echo Alexa / Amazon Echo voice	 Apple TV media-player	 ARDUINO Arduino diy	 we mo Belkin WeMo hub
 Dark Sky weather	 Digital Ocean hub	 ecobee hub	 Google Cast media-player
 IFTTT automation	 KODI media-player	 MQTT hub	 MySensors hub
 nest hub	 Owntracks presence-detection	 hue Philips Hue light	 PLEX Plex media-player
 Pushbullet notifications	 SONOS media-player	 Wink hub	 Z-Wave hub



Total Watts

432 W

UPS Load

48%

Run Time

11 min

Available Space

1.187 Tib

Media

5.75 Tib

Documents

32.8 Gib

Battery Charge

100%

Utility Power

Normal

Battery Status

Normal, Fully Charged

Pictures

24.5 Gib

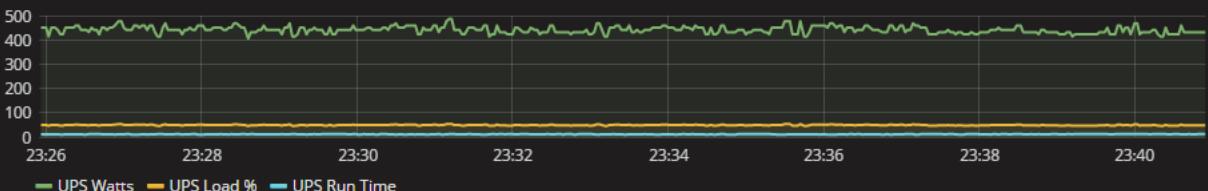
iSCSI Available

1.693 Tib

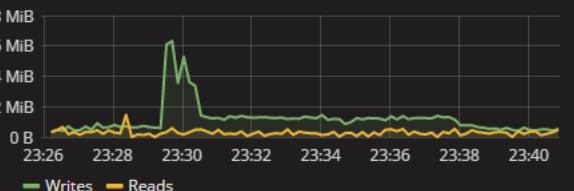
iSCSI Used

96.0 Kib

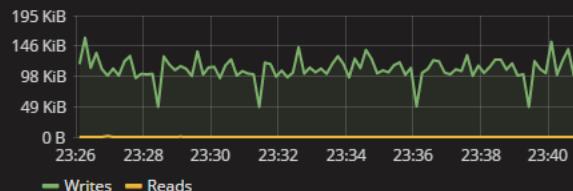
Combined View



fn1.ho.me Disks



fn2.ho.me Disks



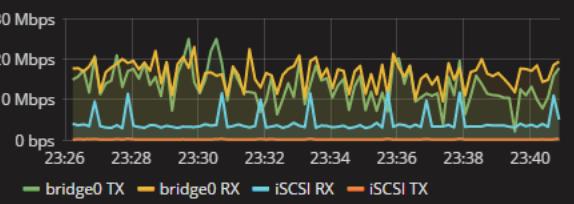
Plex Streams

3

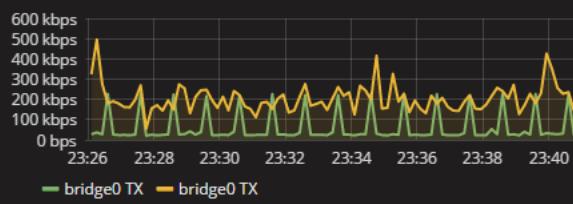
Active Plex Streams

Time	now_playing.stream_title	now_playing.player	now_playing.user	now_playing.host
2016-12-17 23:40:54	Talking Dead	Bedroom		plex.ho.me
2016-12-17 23:40:54	American Horror Story	Livingroom		plex.ho.me
2016-12-17 23:40:54	Unknown	[REDACTED]		sr2.[REDACTED].com

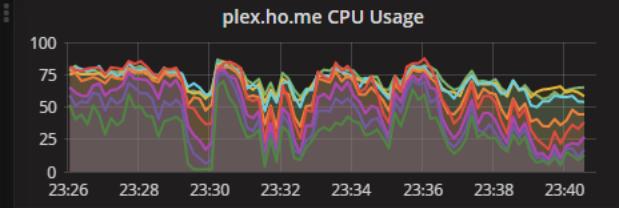
fn1.ho.me Traffic



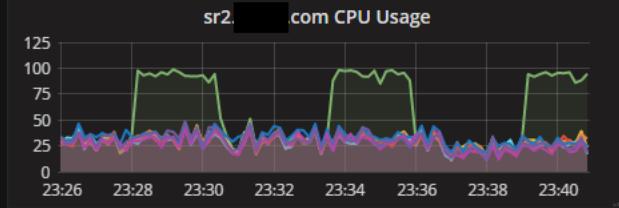
fn2.ho.me Traffic



plex.ho.me CPU Usage



sr2.[REDACTED].com CPU Usage



Fan 1



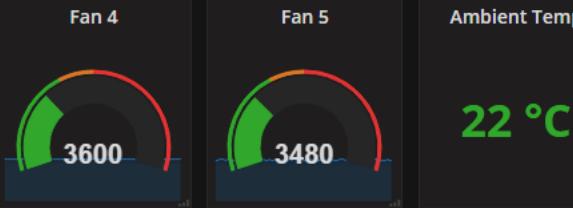
Fan 2



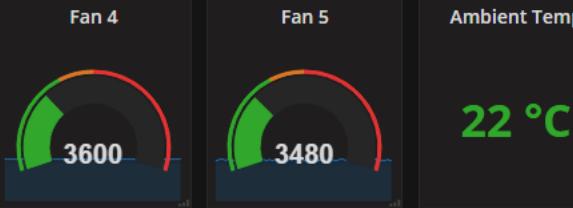
Fan 3



Fan 4



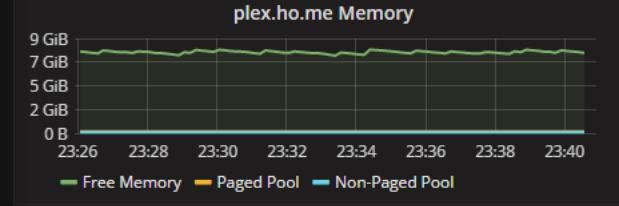
Fan 5



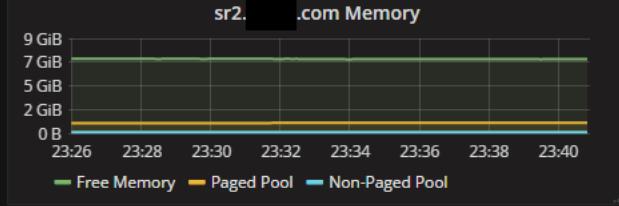
Ambient Temp

22 °C

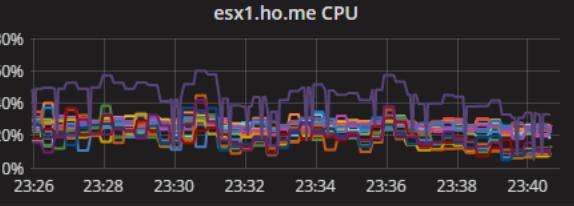
plex.ho.me Memory



sr2.[REDACTED].com Memory



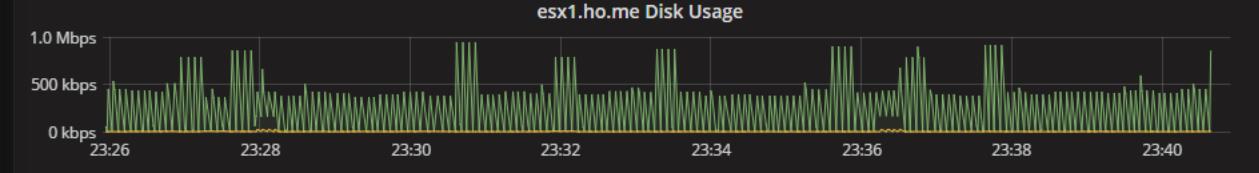
esx1.ho.me CPU



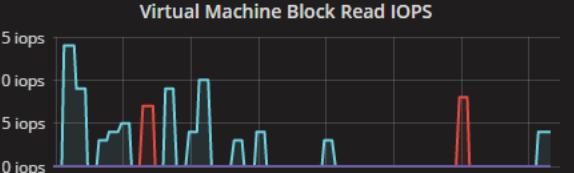
esx1.ho.me Watts



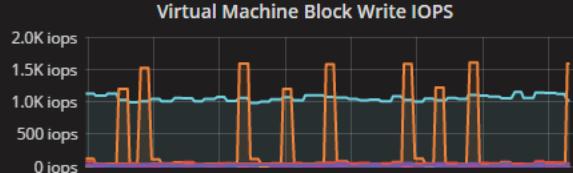
esx1.ho.me Disk Usage



Virtual Machine Block Read IOPS



Virtual Machine Block Write IOPS





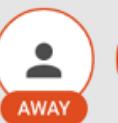
HOME DOWNSTAIRS UPSTAIRS



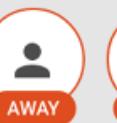
DEMO



Sun



AWAY



AWAY



AWAY



DISARM



54

Outside
Humidity



15.6

Outside
Temperat...



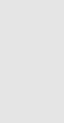
Basement
Floor Wet



Movement
Backyard



Switch on
and off



Toggle
bed_light

Bedroom



Bed Light
7 minutes ago



Decorative Lights
7 minutes ago



Bedroom
7 minutes ago

Epic Sax Guy 10 H...
YouTube

Kitchen



Kitchen Lights
7 minutes ago



Kitchen Window
7 minutes ago



Kitchen Door
7 minutes ago



Living Room



Ceiling Lights
7 minutes ago



AC
7 minutes ago



Living Room ...
7 minutes ago

Visitors

Living Room Wi...
7 minutes ago



Living Room
7 minutes ago

The Best Fire...
YouTube

Romantic Lights
7 minutes ago



Automations

Who Cooks T...
7 minutes ago

Anne Therese

Notify Anne Therese Is Hom...

Media Player



Lounge Room
7 minutes ago

Chapter 1
House of Cards S1...



Walkman
7 minutes ago

I Wanna Be A Hipp...
Technohead



¿ Preguntas ?

