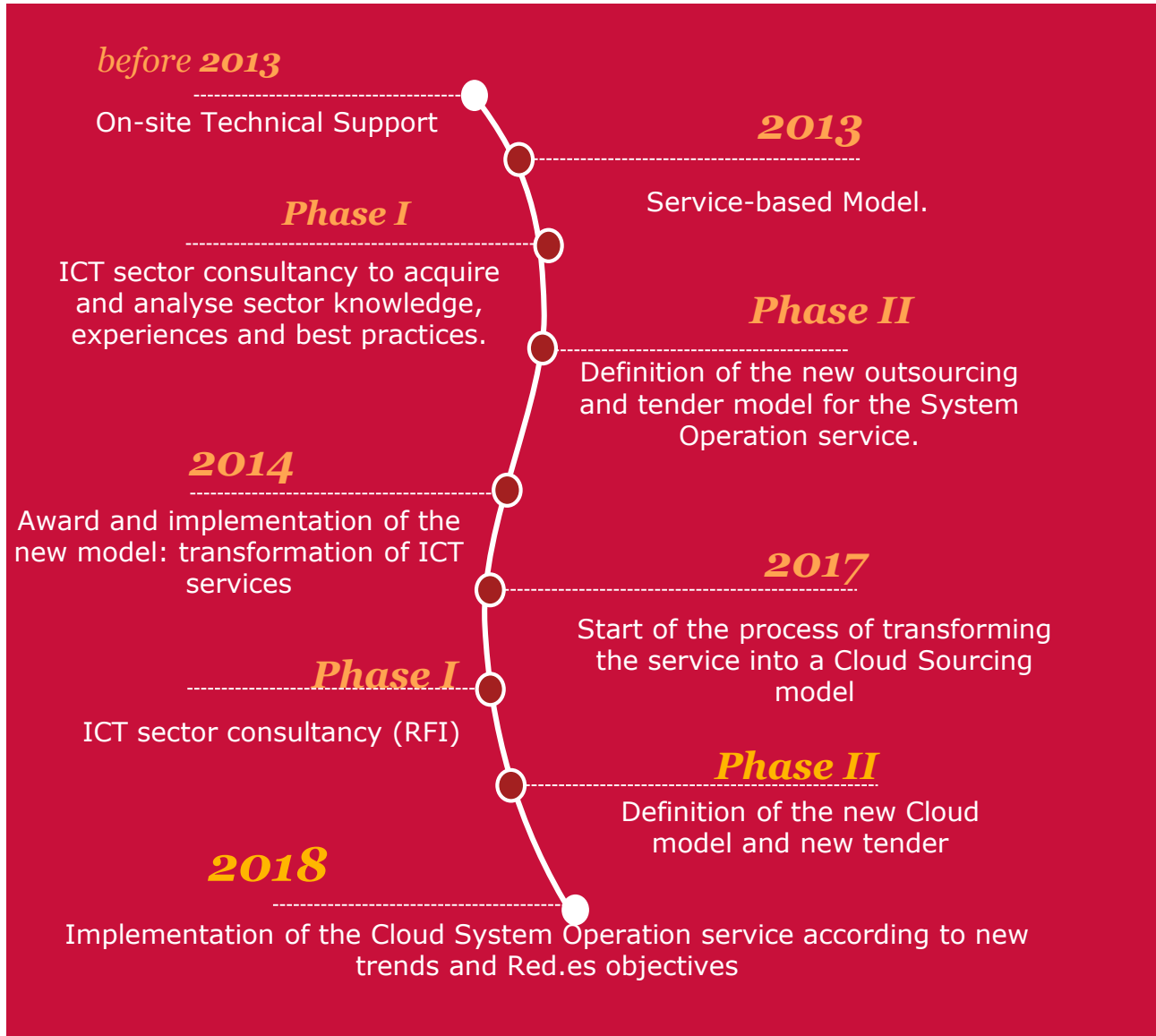


# Cloud Systems Operation Service

**Red.es**

**Madrid, October 2018**



# Complex, Changing Environment



red.es



## SCOPE

06/2018 - 06/2022



## BUDGET

9,956,00.00



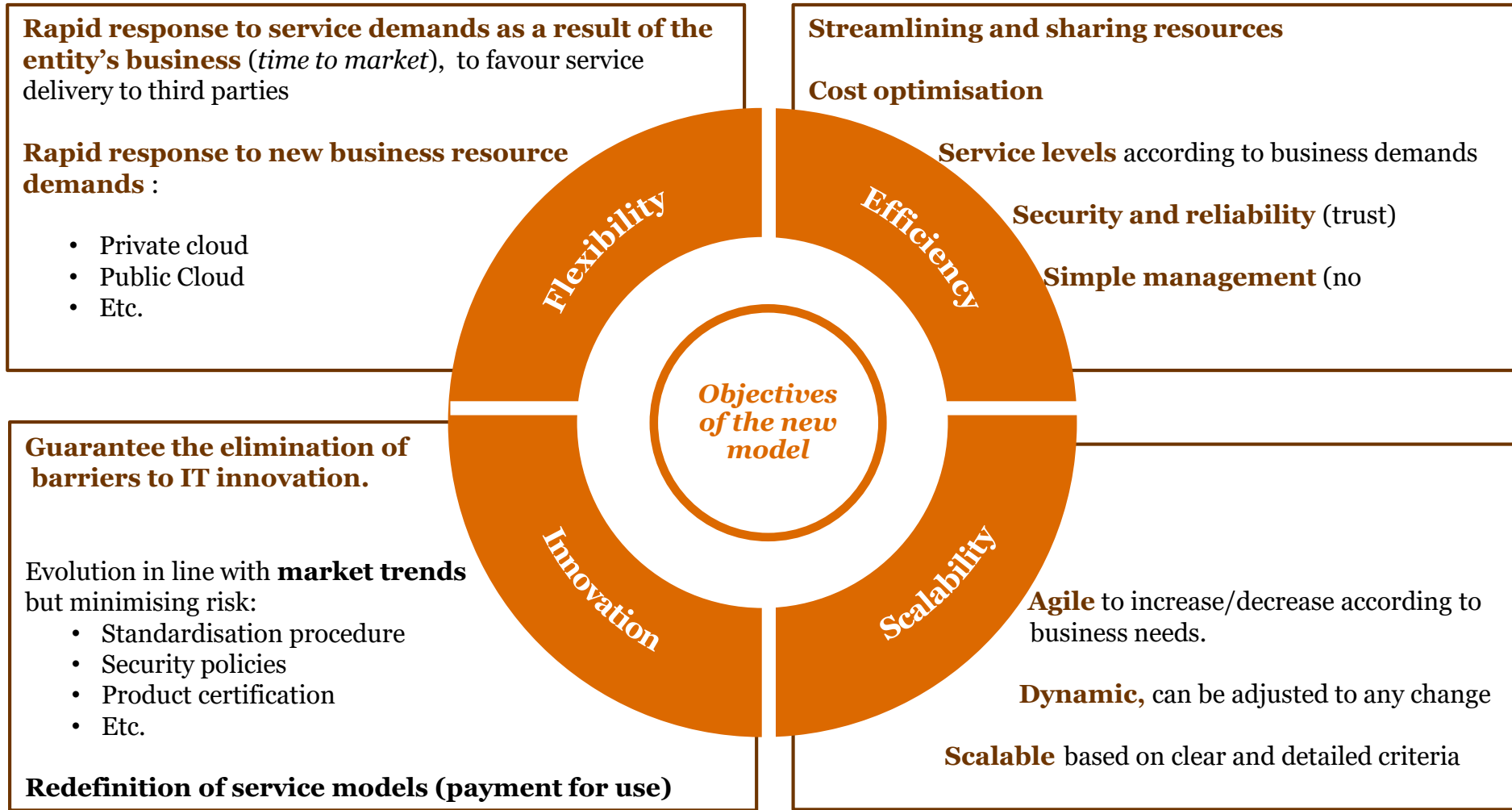
## GOALS OF THE SERVICE

Operation of a hybrid multicloud service. Technical systems, communications and security infrastructures, Workstation management for good Red.es employee and collaborator performance.



#MWC18





## Licensing

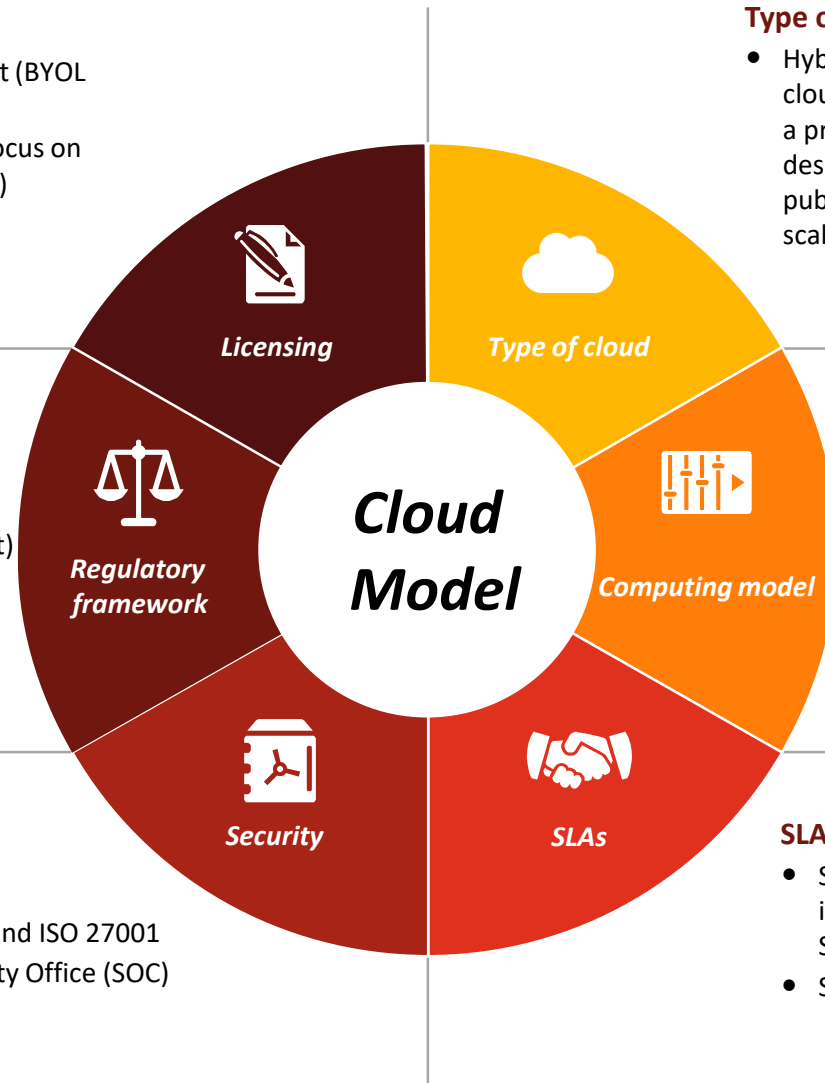
- Red.es licence to reuse investment (BYOL Bring Your Own Licences)
- Licenses included in the service: focus on SAS models (Software as a Service)

## Regulatory framework

- European framework: datacenter and data located in European Union
- LOPD (Spanish Data Protection Act)
- GDPR
- Red.es regulations
- Critical point: service transition
- IT cost control and governance

## Security

- National Security Scheme (ENS) and ISO 27001
- Integration with Managed Security Office (SOC)



## Type of Cloud

- Hybrid Cloud in Sourcing, but the Red.es private cloud will have the specifications and flexibility of a private cloud -such as dedicated resources, design adaptation or audits- and the functions of a public cloud such as shared resources that favor scalability and standardization

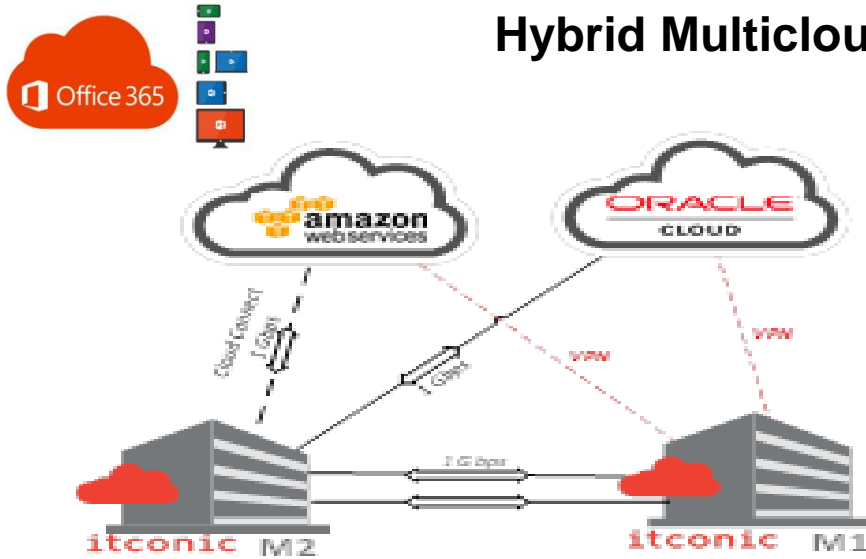
## Computing model

- Initial IaaS model (Infrastructure as a Service)
- Flexible to the evolution of PaaS models (Platform as a Service)
- Computing capacities in SaaS models (Software as a Service), especially for workstations

## SLAs

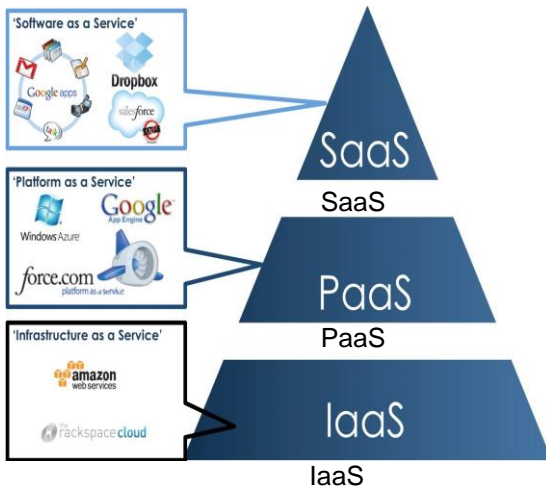
- Sourcing-based model, the sourcer or integrator will be liable for compliance with SLAs.
- Service oriented

## Hybrid Multicloud Architecture



Public (Amazon Web Services and Oracle Cloud) and private cloud (private Equinix Cloud) which remain as unique entities but coexist as their technology allows data or applications to be shared.

## Computing resources in different models



**Software as a Service:** Software is offered directly for a specific use.

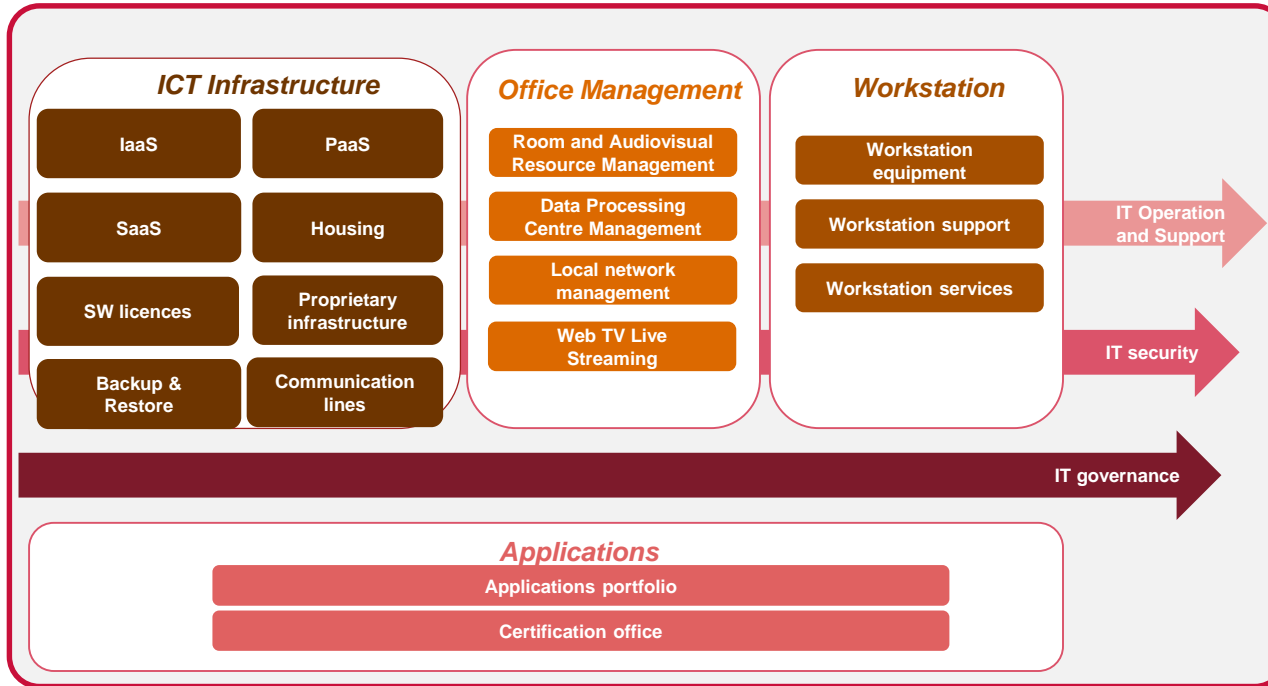
**Platform as a Service:** Provision of a comprehensive platform with the software necessary to execute applications or services.

**Infrastructure as a Service:** Provision of a cloud infrastructure for operating applications or software.

**O365, WebTV, Cloud Videoconference.**

**Oracle databases, CMS (Drupal, Wordpress, ...)**

**Web Front end and Back end applications, J2EE**



“Rediseñando lo que somos para transformar lo que hacemos”

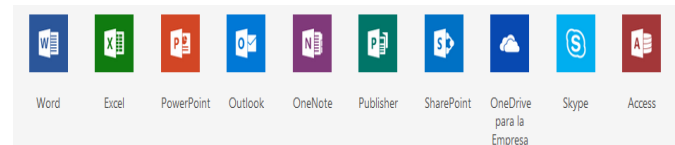


Mejor calidad de imagen

Mejor calidad de sonido



Mejor experiencia en reuniones



Office 365  
Enterprise E3

Nuevas opciones

- **Conexión remota** a la pantalla (wireless)
- Videoconferencia **cloud multidispositivo**
- **Movilidad** (todo el equipamiento en un único soporte)

A single control panel offers an overview of the main service indicators.



ICT Computer Resources



ICT Service Catalogue



ICT Resource Monitoring



User Experience



ICT Resource Consumption



Business Indicators



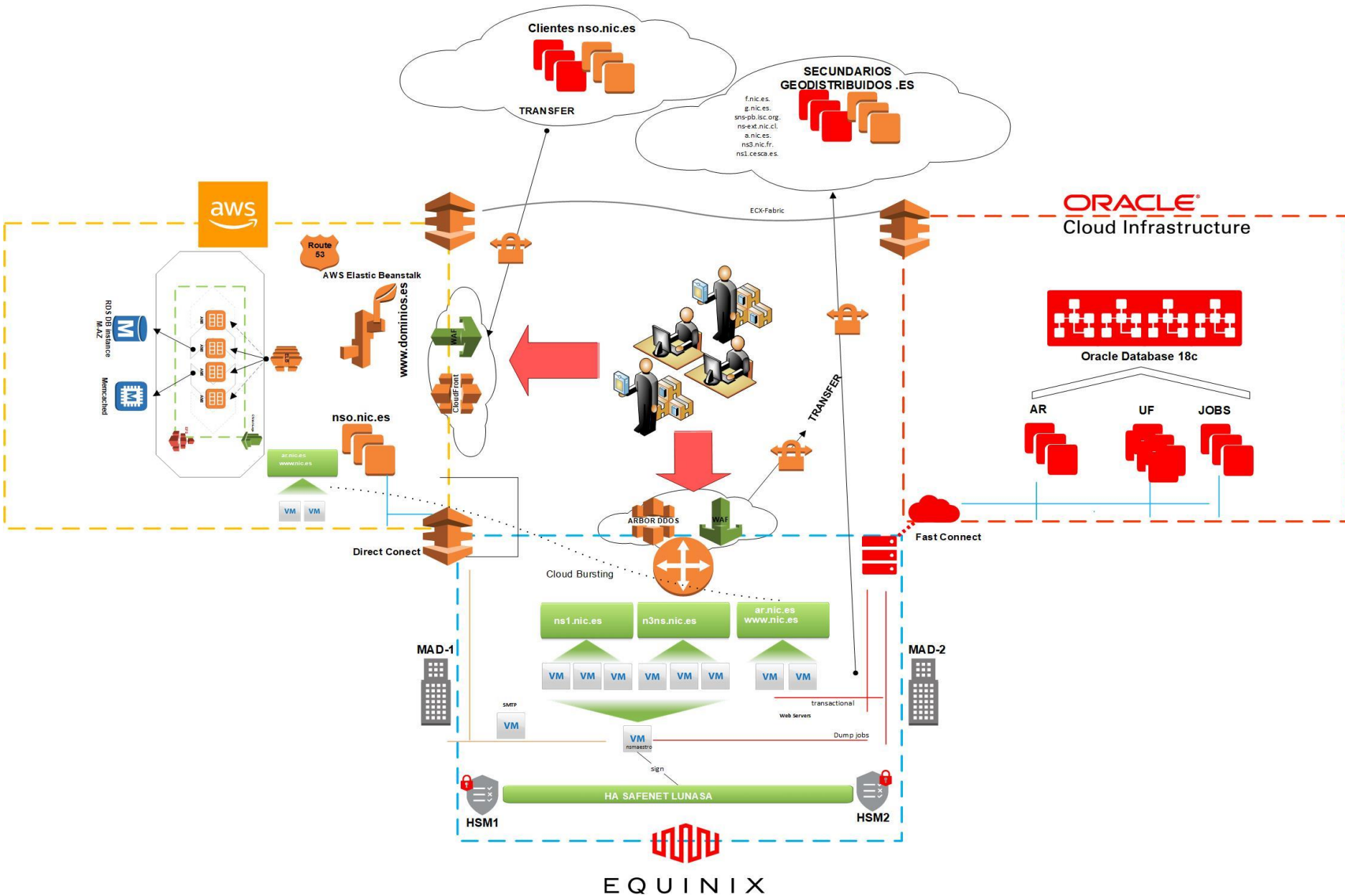
Billing Items



Service Level Agreement



# Architecture Diagram



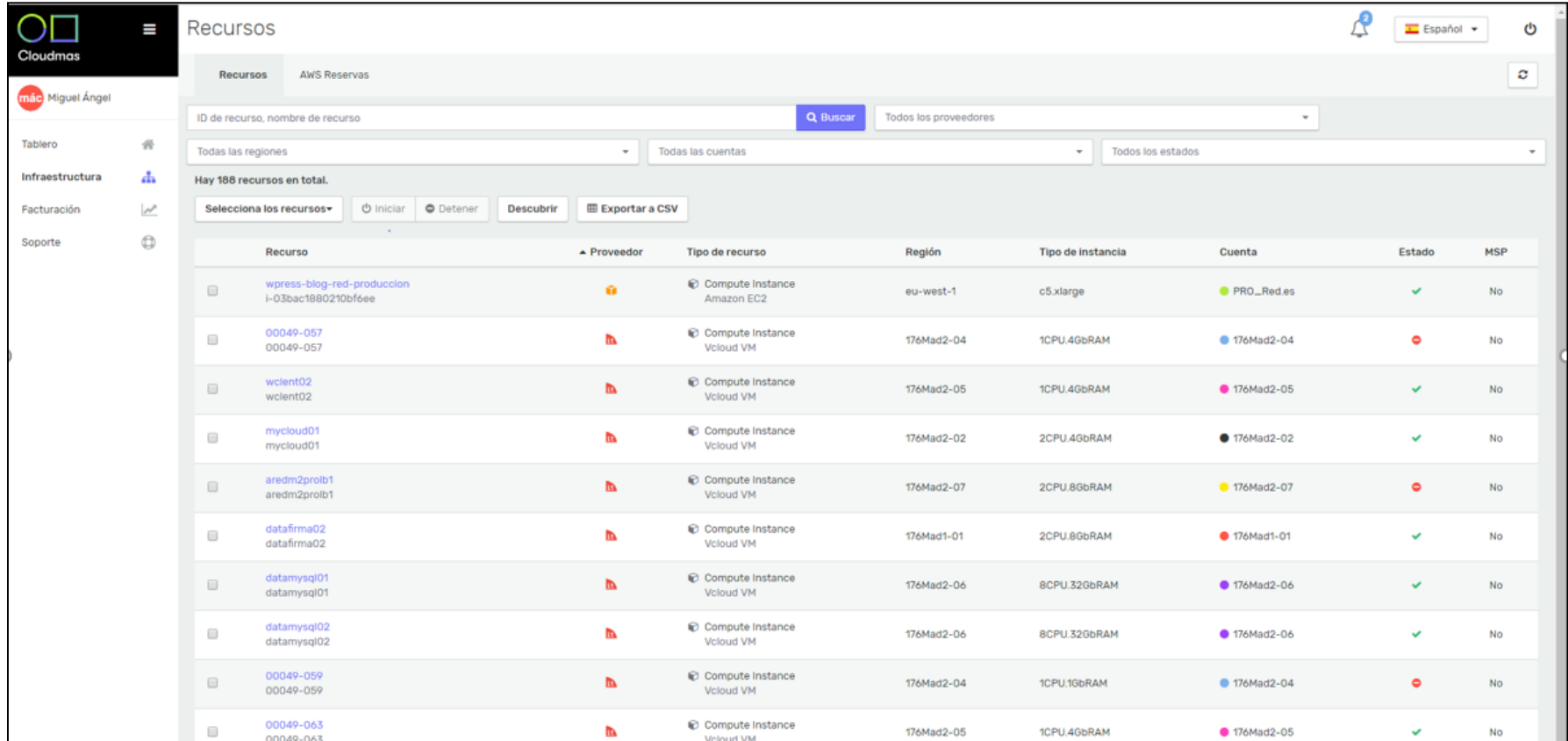
[juan.gutierrez@red.es](mailto:juan.gutierrez@red.es)

# Appendix Examples

Red.es

Madrid, October 2018

## Online infrastructure control tool deployed in the Cloud



The screenshot displays the 'Recursos' (Resources) section of the Cloudmas interface. The dashboard includes a search bar, filters for regions, accounts, and states, and a table listing various cloud resources. The table columns are: Recurso, Proveedor, Tipo de recurso, Región, Tipo de instancia, Cuenta, Estado, and MSP.

Recurso	Proveedor	Tipo de recurso	Región	Tipo de instancia	Cuenta	Estado	MSP
wpress-blog-red-produccion i-03bac1880210bf6ee	Amazon	Compute Instance Amazon EC2	eu-west-1	c5.xlarge	PRO_Red.es	✓	No
00049-057 00049-057	Vcloud	Compute Instance Vcloud VM	176Mad2-04	1CPU.4GbRAM	176Mad2-04	✗	No
wclient02 wclient02	Vcloud	Compute Instance Vcloud VM	176Mad2-05	1CPU.4GbRAM	176Mad2-05	✓	No
mycloud01 mycloud01	Vcloud	Compute Instance Vcloud VM	176Mad2-02	2CPU.4GbRAM	176Mad2-02	✓	No
aredm2prob1 aredm2prob1	Vcloud	Compute Instance Vcloud VM	176Mad2-07	2CPU.8GbRAM	176Mad2-07	✗	No
datafirma02 datafirma02	Vcloud	Compute Instance Vcloud VM	176Mad1-01	2CPU.8GbRAM	176Mad1-01	✓	No
datamysqI01 datamysqI01	Vcloud	Compute Instance Vcloud VM	176Mad2-06	8CPU.32GbRAM	176Mad2-06	✓	No
datamysqI02 datamysqI02	Vcloud	Compute Instance Vcloud VM	176Mad2-06	8CPU.32GbRAM	176Mad2-06	✓	No
00049-059 00049-059	Vcloud	Compute Instance Vcloud VM	176Mad2-04	1CPU.1GbRAM	176Mad2-04	✗	No
00049-063 00049-063	Vcloud	Compute Instance Vcloud VM	176Mad2-05	1CPU.4GbRAM	176Mad2-05	✓	No

# Management and Communication Orchestrator



GOBIERNO DE ESPAÑA

MINISTERIO DE ECONOMÍA Y EMPRESA

red.es

## Equinix VMWare Cloud Platform

**Ironic TGC IaaS Service**

Administración | 176Mad2-07

Nombre	Estado	Procesador	Memoria	Almacenamiento
A10PRO01	En ejecución	4	10,00 GB	20,00 GB
arnd2pro01	Detenido	2	8,00 GB	20,00 GB
datafma01	En ejecución	4	16,00 GB	1,400,00 GB
datafmapro01	En ejecución	4	16,00 GB	1,400,00 GB
dataf01	En ejecución	6	48,00 GB	700,00 GB
dataf02	En ejecución	6	24,00 GB	650,00 GB
dataf03	En ejecución	6	24,00 GB	760,00 GB
dataf04	En ejecución	6	24,00 GB	1,800,00 GB
dataf05	En ejecución	6	16,00 GB	1,135,00 GB

**Ironic TGC IaaS Service**

Acceso rápido

- PRO\_MySQL-Name
- arnd2pro01
- datafma02
- datafma02
- 00048-001
- 00048-003
- dataf01
- PRO\_Feixa
- 00048-000
- 00048-001
- 00048-002
- dataf02
- PRO\_OfficialVirtual
- 00048-000
- 00048-001
- 00048-002
- Problea Copia con

**Ironic TGC IaaS Service**

Administración | 176Mad2-07

Nombre	Estado	Dirección de puerta de enlace	Tipo	Tipo de interfaz	Conectada a	Grupo de direcciones IP (utilizadas/total)	Compartida	Propietario
A10_PRO_EXTERNAL	✓	10.66.120.1/28	Directa		176_10.66.120.0_28_VLAN1240	0,00%	-	176Mad2-07
MNGT-A10-M2	✓	10.50.214.174/28	Directa		176_10.50.214.160_28_VLAN890	16,00%	-	176Mad2-07
PRO_Backend_NFS	✓	10.66.32.1/23	Directa		176_10.66.32.0_23_VLAN1130	0,41%	-	176Mad2-07
PRO_BE_BBDD-GST	✓	10.50.216.14/28	Directa		176_10.50.216.0_28_VLAN899	100,00%	-	176Mad2-07
PRO-Backend-SBDD	✓	10.66.34.1/23	Directa		176_10.66.34.0_23_VLAN1131	5,42%	-	176Mad2-07
PRO-Backend-Servicio de Usuar	✓	10.66.36.1/25	Directa		176_10.66.36.0_25_VLAN1132	0,91%	-	176Mad2-07
PRO-Frontend-WEB Real	✓	10.66.2.1/23	Directa		176_10.66.2.0_23_VLAN1111	0,41%	-	176Mad2-07
PRO-Frontend-DNS Real	✓	10.66.5.1/24	Directa		176_10.66.5.0_VLAN1113	0,00%	-	176Mad2-07
PRO-Frontend-NFS	✓	10.66.0.1/23	Directa		176_10.66.0.0_23_VLAN1110	0,62%	-	176Mad2-07
PRO-Middleware-NFS	✓	10.66.16.1/23	Directa		176_10.66.16.0_23_VLAN1120	0,41%	-	176Mad2-07
PRO-Middleware-Servicio de Usuar	✓	10.66.18.1/23	Directa		176_10.66.18.0_23_VLAN1121	3,57%	-	176Mad2-07

# AWS Orchestrator



GOBIERNO DE ESPAÑA

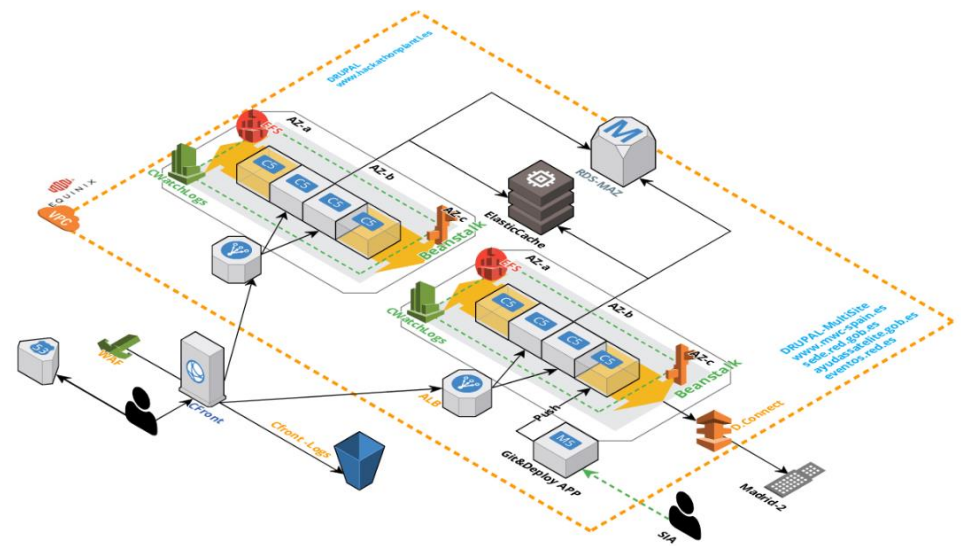
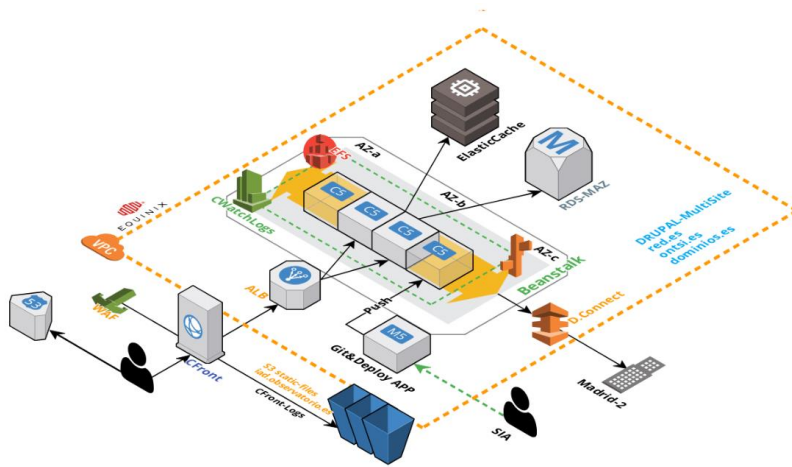
MINISTERIO DE ECONOMÍA Y EMPRESA

red.es

The screenshot shows the AWS Management Console interface for the EC2 Instances page. The top navigation bar includes the AWS logo, 'Services', 'Resource Groups', and a search bar. The left-hand navigation menu is open, showing various AWS services categories like INSTANCES, IMAGES, ELASTIC BLOCK STORE, NETWORK & SECURITY, and LOAD BALANCING. The main content area displays a table of EC2 instances with the following columns: Name, Instance ID, Instance Type, Availability Zone, Instance State, Status Checks, Alarm Status, Public DNS (IPv4), and IPv4 Public IP. The table contains 26 instances, with the first few rows showing instances like 'wpress-blog-red-produccion', 'drupal-ms-mwc-es-produccion', and 'drupalB-ms-fase4-produccion'. The 'Instance State' column shows various states such as 'running' and 'stopped'. The 'Status Checks' column indicates the health of each instance, with most showing '2/2 checks passed'. The 'Alarm Status' column shows 'None' for all instances. The 'Public DNS (IPv4)' and 'IPv4 Public IP' columns provide the network addresses for each instance.

Name	Instance ID	Instance Type	Availability Zone	Instance State	Status Checks	Alarm Status	Public DNS (IPv4)	IPv4 Public IP
wpress-blog-red-produccion	I-03bac1880210bf6ee	c5.xlarge	eu-west-1c	running	2/2 checks passed	None	ec2-34-244-202-85.eu...	34.244.202.85
drupal-ms-mwc-es-produccion	I-0293e11912b6d8a60	c5.xlarge	eu-west-1a	running	2/2 checks passed	None	ec2-34-252-92-241.eu...	34.252.92.241
drupalB-ms-fase4-produccion	I-06ab8a39152817afa	c5.xlarge	eu-west-1c	running	2/2 checks passed	None	ec2-34-248-213-64.eu...	34.248.213.64
test	I-0a90c0b16ea93b1dd	t2.micro	eu-west-1c	running	2/2 checks passed	None	ec2-34-244-225-127.eu...	34.244.225.127
drupalB-ms-fase4-produccion	I-020fad1d2519d863c	c5.xlarge	eu-west-1b	running	2/2 checks passed	None	ec2-34-240-17-123.eu...	34.240.17.123
drupal-fronts-produccion	I-048f2f33daacdb466	c5.xlarge	eu-west-1a	running	2/2 checks passed	None	ec2-34-244-68-8.eu-we...	34.244.68.8
drupal-fronts-produccion	I-006ddb02ef70db48a	c5.xlarge	eu-west-1b	running	2/2 checks passed	None	ec2-34-244-214-226.eu...	34.244.214.226
stfp-RITM00085461	I-0204357145ct3f4c6	c5.xlarge	eu-west-1c	running	2/2 checks passed	None	ec2-18-202-8-100.eu-w...	18.202.8.100
stfp-RITM00085461-old	I-0c11e205545529824	c5.xlarge	eu-west-1a	stopped	2/2 checks passed	None	-	-
nginx-oci	I-090c654c63899947b	t2.medium	eu-west-1c	running	2/2 checks passed	None	ec2-34-254-115-150.eu...	34.254.115.150
WREDCVEPRX01	I-04f8e679874d688a	m5.xlarge	eu-west-1a	running	2/2 checks passed	None	ec2-34-255-222-96.eu...	34.255.222.96
WREDCVEPCM01	I-0df6b6b5ea3fb7a7	c4.2xlarge	eu-west-1a	running	2/2 checks passed	None	-	-
WREDCVEPCS01	I-0e402a94bcd5bb579	c4.2xlarge	eu-west-1a	running	2/2 checks passed	None	-	-
wredpbckvcvm24	I-0f0a6a1b31b9e31d5	c4.2xlarge	eu-west-1a	running	2/2 checks passed	None	-	-
wredpbckvpx02	I-0f8175d6e15dbf68	m5.xlarge	eu-west-1a	running	2/2 checks passed	None	ec2-34-241-245-21.eu...	34.241.245.21
wpress-blog-red-produccion	I-0eb2b177d2cbc9a4	c5.xlarge	eu-west-1b	running	2/2 checks passed	None	ec2-34-247-67-190.eu...	34.247.67.190
drupal-ms-mwc-es-produccion	I-0382c03736c7407c1	c5.xlarge	eu-west-1b	running	2/2 checks passed	None	ec2-34-253-181-205.eu...	34.253.181.205
drupal-stats-produccion	I-08f8fcedb6a871fda	c5.xlarge	eu-west-1c	running	2/2 checks passed	None	ec2-34-243-235-76.eu...	34.243.235.76
drupal-tvinfancia-produccion	I-06007b7de670fab99	c5.xlarge	eu-west-1b	running	2/2 checks passed	None	ec2-34-252-106-195.eu...	34.252.106.195
drupal-tvinfancia-produccion	I-029bd2af6cfd2ac91	c5.xlarge	eu-west-1a	running	2/2 checks passed	None	ec2-34-242-125-75.eu...	34.242.125.75
api-web-asg	I-0b73d567bacd20be3	c5.xlarge	eu-west-1a	running	2/2 checks passed	None	ec2-54-154-177-20.eu...	54.154.177.20
test-api-ubuntu	I-0569e911409af5cb	t2.micro	eu-west-1c	stopped	2/2 checks passed	None	-	-
drupal-backathon-produccion	I-01822f33532c7b0e	c5.xlarge	eu-west-1c	running	2/2 checks passed	None	ec2-34-240-154-217.eu...	34.240.154.217

## Architectures deployed for applications.



MENU ORACLE Cloud Infrastructure  uk-london-1 ?

Bare Metal, VM, and Exadata

DB Systems Standalone Backups

List Scope





COMPARTMENT redesservers

Don't see what you're looking for?

## DB Systems *in* redesservers *Compartment*

Displaying 5 DB Systems

[Launch DB System](#)

 AVAILABLE	<a href="#">REDES</a> Availability Domain: cRUs:UK-LONDON-1-AD-1 OCID: ...f3e04q <a href="#">Show</a> <a href="#">Copy</a>	DB System Version: 18.2.0.0.180417 Oracle Database Software Edition: Enterprise Edition Shape: VM.Standard2.2	Virtual Cloud Network: <a href="#">serversvcn</a> Client Subnet: sn-london1-pro-private Private IP: 10.68.0.9 Public IP: Available Data Storage: 512 GB Total Storage Size: 968 GB	Launched: Thu, 21 Jun 2018 11:43:46 GMT
 AVAILABLE	<a href="#">REDESDEMO</a> Availability Domain: cRUs:UK-LONDON-1-AD-1 OCID: ...q3z6bq <a href="#">Show</a> <a href="#">Copy</a>	DB System Version: 18.2.0.0.180417 Oracle Database Software Edition: Enterprise Edition Shape: VM.Standard2.2	Virtual Cloud Network: <a href="#">serversvcn</a> Client Subnet: sn-london1-test-private Private IP: 10.68.96.4 Public IP: Available Data Storage: 512 GB Total Storage Size: 968 GB	Launched: Thu, 30 Aug 2018 07:30:28 GMT
 AVAILABLE	<a href="#">CORPS</a> Availability Domain: cRUs:UK-LONDON-1-AD-1 OCID: ...jrdzdq <a href="#">Show</a> <a href="#">Copy</a>	DB System Version: 18.2.0.0.180417 Oracle Database Software Edition: Enterprise Edition Shape: VM.Standard2.2	Virtual Cloud Network: <a href="#">serversvcn</a> Client Subnet: sn-london1-pro-private Private IP: 10.68.0.8 Public IP: Available Data Storage: 256 GB Total Storage Size: 712 GB	Launched: Thu, 21 Jun 2018 11:42:14 GMT
 AVAILABLE	<a href="#">REDESPRE</a> Availability Domain: cRUs:UK-LONDON-1-AD-1 OCID: ...qsyxcq <a href="#">Show</a> <a href="#">Copy</a>	DB System Version: 18.2.0.0.180417 Oracle Database Software Edition: Enterprise Edition Shape: VM.Standard2.2	Virtual Cloud Network: <a href="#">serversvcn</a> Client Subnet: sn-london1-pre-private Private IP: 10.68.48.4 Public IP: Available Data Storage: 512 GB Total Storage Size: 968 GB	Launched: Thu, 30 Aug 2018 08:56:08 GMT

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