



Infraestrutura Nacional de Computação Distribuída

Treino Openstack GUI

helpdesk@incd.pt

<http://www.incd.pt>



Dashboard - Entrar

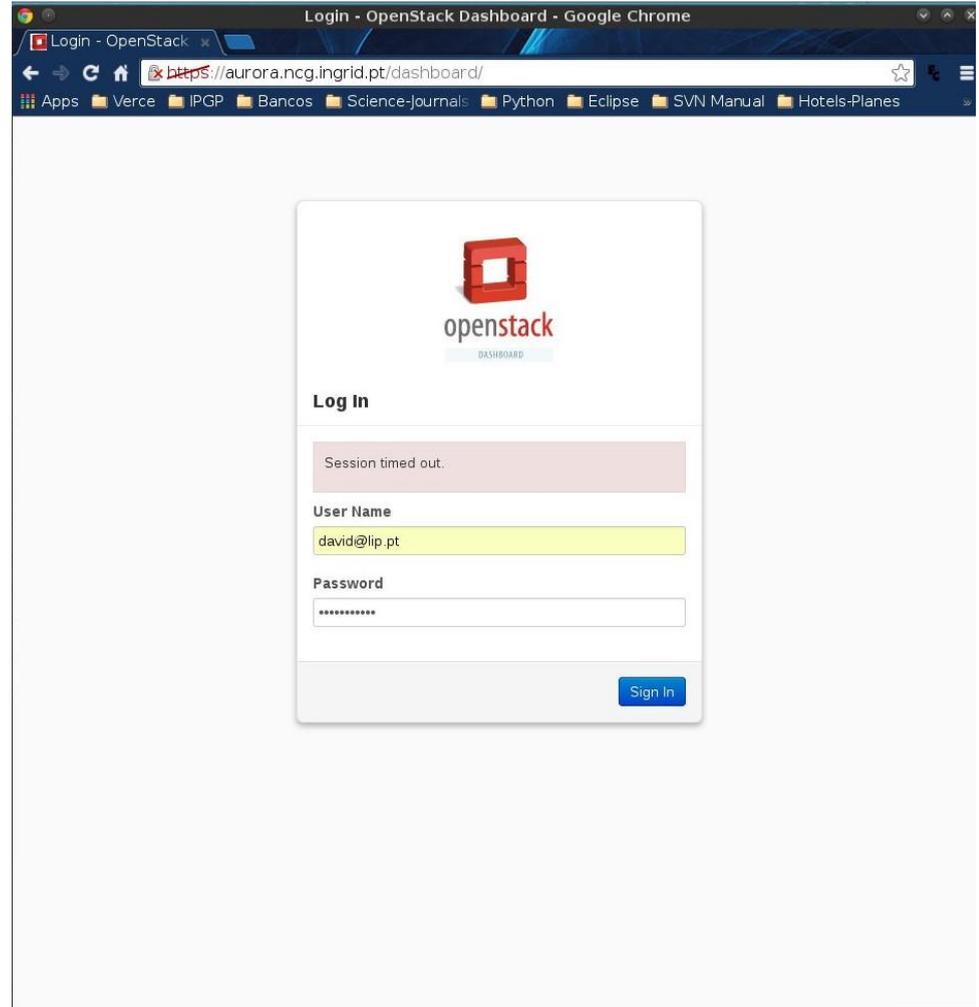
<https://nimbus.ncg.ingrid.pt/dashboard>

Como entrar (fazer Login)

<https://nimbus.ncg.ingrid.pt/dashboard>

Username: <o seu e-mail>

Password: <peça-nos para ativar>





Dashboard – Visão global

<https://nimbus.ncg.ingrid.pt/dashboard>

O seu projeto
(tenant/project)

Settings
para mudar a
password

Instance Overview - OpenStack Dashboard - Google Chrome

Logged in as: david@lip.pt [Settings](#) [Help](#) [Sign Out](#)

Overview

Limit Summary

Instances Used 0 of 10	VCPUs Used 0 of 20	RAM Used 0 of 50.0 GB	Floating IPs Used 0 of 50	Security Groups Used 1 of 10
---------------------------	-----------------------	--------------------------	------------------------------	---------------------------------

Select a period of time to query its usage:

From: To: The date should be in YYYY-mm-dd format.

Active Instances: - Active RAM: - This Period's VCPU-Hours: 11.96 This Period's GB-Hours: 239.26

Usage Summary

[Download CSV Summary](#)

Instance Name	VCPUs	Disk	RAM	Uptime
No items to display.				
Displaying 0 items				

Não há instâncias a correr (por enquanto)



Dashboard – mudar a password

<https://nimbus.ncg.ingrid.pt/dashboard>

Para mudar a password

Change Password - OpenStack Dashboard - Google Chrome

Change Password

Logged in as: david@lip.pt Settings Help Sign Out

Change Password

Current password *

New password *

Confirm new password *

Description:
From here you can change your password. We highly recommend you create a strong one.

Change

Project

User Settings

Change Password



Dashboard – ver imagens disponíveis

<https://nimbus.ncg.ingrid.pt/dashboard>

Imagens (images &

Nomes das imagens

snapshots)

Images & Snapshots - OpenStack Dashboard - Google Chrome

https://aurora.ncg.ingrid.pt/dashboard/project/images_and_snapshots/

Logged in as: david@lip.pt Settings Help Sign Out

Images & Snapshots

Project (0) Shared with Me (0) Public (9) + Create Image Delete Images

<input type="checkbox"/>	Image Name	Type	Status	Public	Protected	Format	Actions
<input type="checkbox"/>	Image_for_Chipster_[Ubuntu_11.10_KVM]	Image	Active	Yes	No	QCOW2	Launch More ▾
<input type="checkbox"/>	Image_for_CernVM_[Scientific_Linux_6.0_KVM]	Image	Active	Yes	No	QCOW2	Launch More ▾
<input type="checkbox"/>	Image_for_CentOS_6_minimal_[CentOS_6_x_KVM]	Image	Active	Yes	No	QCOW2	Launch More ▾
<input type="checkbox"/>	ubuntu-14.04-mdavid	Image	Active	Yes	No	QCOW2	Launch More ▾
<input type="checkbox"/>	Image_for_TinyCoreLinux_[Other_TinyCoreLinux_QEMU-KVM]	Image	Active	Yes	No	QCOW2	Launch More ▾
<input type="checkbox"/>	OS_Disk_Image	Image	Active	Yes	No	QCOW2	Launch More ▾
<input type="checkbox"/>	Image_for_Ubuntu_Server_14.04_LTS_[Ubuntu_14.04_LTS_KVM]	Image	Active	Yes	No	QCOW2	Launch More ▾
<input type="checkbox"/>	Basic_Ubuntu_Server_12.04_LTS_OS_Disk_Image	Image	Active	Yes	No	QCOW2	Launch More ▾
<input type="checkbox"/>	Fedora 19	Image	Active	Yes	No	QCOW2	Launch More ▾

Displaying 9 items

Volume Snapshots

Name	Description	Size	Status	Volume Name	Actions
No items to display.					

Displaying 0 items



Dashboard – Lançar uma instância

<https://nimbus.ncg.ingrid.pt/dashboard>

Lançar (instânciar) uma imagem

The screenshot shows the OpenStack Dashboard interface. The main content area is titled 'Images & Snapshots' and displays a table of available images. A red arrow points from the text 'Lançar (instânciar) uma imagem' to the 'Launch' button of the 'ubuntu-14.04-mdavid' image.

Image Name	Type	Status	Public	Protected	Format	Actions
<input type="checkbox"/> Image_for_Chipster_[Ubuntu_11.10_KVM]	Image	Active	Yes	No	QCOW2	<input type="button" value="Launch"/> <input type="button" value="More"/>
<input type="checkbox"/> Image_for_CernVM_[Scientific_Linux_6.0_KVM]	Image	Active	Yes	No	QCOW2	<input type="button" value="Launch"/> <input type="button" value="More"/>
<input type="checkbox"/> Image_for_CentOS_6_minimal_[CentOS_6.x_KVM]	Image	Active	Yes	No	QCOW2	<input type="button" value="Launch"/> <input type="button" value="More"/>
<input type="checkbox"/> ubuntu-14.04-mdavid	Image	Active	Yes	No	QCOW2	<input type="button" value="Launch"/> <input type="button" value="More"/>
<input type="checkbox"/> Image_for_TinyCoreLinux_[Other_TinyCoreLinux_QEMU-KVM]	Image	Active	Yes	No	QCOW2	<input type="button" value="Launch"/> <input type="button" value="More"/>
<input type="checkbox"/> OS_Disk_Image	Image	Active	Yes	No	QCOW2	<input type="button" value="Launch"/> <input type="button" value="More"/>
<input type="checkbox"/> Image_for_Ubuntu_Server_14.04_LTS_[Ubuntu_14.04_LTS_KVM]	Image	Active	Yes	No	QCOW2	<input type="button" value="Launch"/> <input type="button" value="More"/>
<input type="checkbox"/> Basic_Ubuntu_Server_12.04_LTS_OS_Disk_Image	Image	Active	Yes	No	QCOW2	<input type="button" value="Launch"/> <input type="button" value="More"/>
<input type="checkbox"/> Fedora 19	Image	Active	Yes	No	QCOW2	<input type="button" value="Launch"/> <input type="button" value="More"/>

Displaying 9 items

Volume Snapshots

Name	Description	Size	Status	Volume Name	Actions
No items to display.					

Displaying 0 items



Lançar uma instância - Detalhes

<https://nimbus.ncg.ingrid.pt/dashboard>

Launch Instance

Details * Access & Security * Networking * Post-Creation

Availability Zone

nova

Instance Name *

david-test

Flavor *

m1.small

Instance Count *

1

Instance Boot Source *

Boot from image

Image Name

ubuntu-14.04-mdavid (1.8 GB)

Specify the details for launching an instance.

The chart below shows the resources used by this project in relation to the project's quotas.

Flavor Details

Name	m1.small
VCPUs	1
Root Disk	20 GB
Ephemeral Disk	0 GB
Total Disk	20 GB
RAM	2,048 MB

Project Limits

Number of Instances	0 of 10 Used
Number of VCPUs	0 of 20 Used
Total RAM	0 of 51,200 MB Used

Inserir nome da Instância (VM)



Escolher a configuração da instância (VM)



Cancel

Launch



Lançar uma instância - Autenticação

<https://nimbus.ncg.ingrid.pt/dashboard>

Chave pública ssh
(para já é opcional)

Password da root
da instância

Launch Instance ×

Details * Access & Security * Networking * Post-Creation

Keypair
david Control access to your instance via keypairs, security groups, and other mechanisms.

Admin Pass
.....

Confirm Admin Pass
.....|

Security Groups *
 default

Para poder entrar na instância (VM) usando “ssh” é necessário adicionar uma chave “ssh” pública.



Lançar uma instância – Rede privada

<https://nimbus.ncg.ingrid.pt/dashboard>

Launch Instance [Close]

Details * Access & Security * **Networking *** Post-Creation

Selected Networks

nic:1	lnec_private_net (7b4ae489-a799-4eed-a992-9b6b9d6da1c8)	[Remove]
-------	---	----------

Available networks

Choose network from Available networks to Selected Networks by push button or drag and drop, you may change nic order by drag and drop as well.

[Cancel] [Launch]

Selecionar uma rede,
para já vamos usar apenas
endereços IP privados

Lançar a instância



Dashboard - Instâncias

<https://nimbus.ncg.ingrid.pt/dashboard>

Instância em preparação

- spawning

The screenshot shows the OpenStack Dashboard interface. On the left, there is a sidebar with the OpenStack logo and navigation options like 'Project', 'Manage Compute', 'Overview', 'Instances', and 'Volumes'. The main area is titled 'Instances' and shows a table with one instance named 'david-test'. The instance is in the 'Build' status and 'Spawning' power state. A red arrow points to the 'Spawning' text in the 'Power State' column. Above the table, there are buttons for '+ Launch Instance', 'Soft Reboot Instances', and 'Terminate Instances'. A notification box at the top right says 'Success: Launched instance named "david-test"'. The browser address bar shows the URL 'https://aurora.ncg.ingrid.pt/dashboard/project/instances/'.

Instance Name	Image Name	IP Address	Size	Keypair	Status	Task	Power State	Uptime	Actions
david-test	ubuntu-14.04-mdavid		m1.small 2GB RAM 1 VCPU 20.0GB Disk	david	Build	Spawning	No State	0 minutes	Associate Floating IP More



Dashboard - Instâncias

<https://nimbus.ncg.ingrid.pt/dashboard>

Instância ativa -
running

Instances

Logged in as: david@lip.pt Settings Help Sign Out

Instances

<input type="checkbox"/>	Instance Name	Image Name	IP Address	Size	Keypair	Status	Task	Power State	Uptime	Actions
<input type="checkbox"/>	david-test	ubuntu-14.04-mdavid	192.168.100.2	m1.small 2GB RAM 1 VCPU 20.0GB Disk	david	Active	None	Running	10 minutes	Create Snapshot More

Displaying 1 item

openstack DASHBOARD

Project

CURRENT PROJECT Inec

Manage Compute

- Overview
- Instances
- Volumes
- Images & Snapshots



Dashboard – Topologia da rede

<https://nimbus.ncg.ingrid.pt/dashboard>

The screenshot shows the OpenStack Network Topology dashboard in a Google Chrome browser. The browser's address bar displays the URL https://aurora.ncg.ingrid.pt/dashboard/project/network_topology/. The dashboard header includes the OpenStack logo, the title "Network Topology", and the user "Logged in as: david@lip.pt". On the right side of the header, there are buttons for "Launch Instance", "Create Network", and "Create Router".

The main content area displays a network topology diagram. On the left, a vertical blue bar represents the "public_net". A horizontal line connects this bar to a "Router" node labeled "inec_rout..". The router is connected to a vertical orange bar representing the "inec_private_net". The IP address "192.168.100.1" is shown at the connection point between the router and the private network. From the private network, another horizontal line connects to an "Instance" node labeled "david-tes..". The IP address "192.168.100.2" is shown at the connection point between the private network and the instance. The private network bar is labeled with the IP range "192.168.100.0/24".

The left sidebar contains navigation options under "Project" (CURRENT PROJECT Inec), "Manage Compute" (Overview, Instances, Volumes, Images & Snapshots, Access & Security), and "Manage Network" (Network Topology, Networks, Routers). The "Network Topology" option is highlighted with a red box.



Dashboard – Estado da instância

<https://nimbus.ncg.ingrid.pt/dashboard>

The screenshot shows the OpenStack Dashboard interface. The browser address bar displays the URL: <https://aurora.ncg.ingrid.pt/dashboard/project/instances/e47b7fa4-5630-4192-8039-d1837a52ddad/>. The page title is "Instance Detail: david-test". The user is logged in as "david@lip.pt".

The main content area is titled "Instance Overview" and contains the following information:

- Info**
 - Name:** david-test
 - ID:** e47b7fa4-5630-4192-8039-d1837a52ddad
 - Status:** Active
 - Created:** Nov. 10, 2014, 2 p.m.
 - Uptime:** 31 minutes
- Specs**
 - Flavor:** m1.small
 - RAM:** 2GB
 - VCPUs:** 1 VCPU
 - Disk:** 20GB
- IP Addresses**
 - Lnec_Private_Net:** 192.168.100.2
- Security Groups**

The left sidebar contains navigation options for "Project" (Current Project: lnec), "Manage Compute" (Overview, Instances, Volumes, Images & Snapshots, Access & Security), "Manage Network" (Network Topology, Networks, Routers), and "Manage Storage" (Overview, Snapshots, Volumes, Images & Snapshots).



Consola – Fazer login

<https://nimbus.ncg.ingrid.pt/dashboard>

```
Connected (encrypted) to: QEMU (instance-0000034d)
root 387 0.0 0.0 0 0 ? S< 14:01 0:00 [ttm_swapi]
root 551 0.0 0.0 15524 724 ? S 14:01 0:00 upstart-socket-bridge --daemon
root 554 0.0 0.1 10232 2920 ? Ss 14:01 0:00 dhclient -1 -v -pf /run/dhclient.eth0.pid -lf /var/lib/dhcp/dhc
lien
message+ 723 0.0 0.0 39116 1024 ? Ss 14:01 0:00 dbus-daemon --system --fork
root 766 0.0 0.0 15276 624 ? S 14:01 0:00 upstart-file-bridge --daemon
root 768 0.0 0.0 43452 1796 ? Ss 14:01 0:00 /lib/systemd/systemd-logind
syslog 810 0.0 0.0 260076 1188 ? Ss1 14:01 0:00 rsyslogd
root 841 0.0 0.0 15820 956 tty4 Ss+ 14:01 0:00 /sbin/getty -8 38400 tty4
root 844 0.0 0.0 15820 948 tty5 Ss+ 14:01 0:00 /sbin/getty -8 38400 tty5
root 849 0.0 0.0 15820 952 tty2 Ss+ 14:01 0:00 /sbin/getty -8 38400 tty2
root 850 0.0 0.0 15820 956 tty3 Ss+ 14:01 0:00 /sbin/getty -8 38400 tty3
root 852 0.0 0.0 15820 944 tty6 Ss+ 14:01 0:00 /sbin/getty -8 38400 tty6
root 870 0.0 0.1 61364 3060 ? Ss 14:01 0:00 /usr/sbin/sshd -D
root 874 0.0 0.0 23656 756 ? Ss 14:01 0:00 cron
root 908 0.0 0.0 4368 660 ? Ss 14:01 0:00 acpid -c /etc/acpi/events -s /var/run/acpid.socket
root 956 0.0 0.1 78184 2164 tty1 Ss 14:01 0:00 /bin/login --
root 1262 0.0 0.0 0 0 ? S 14:17 0:00 [kauditd]
root 1549 0.5 0.1 22404 3568 tty1 S 14:34 0:00 -bash
root 1575 0.0 0.0 18448 1284 tty1 R+ 14:34 0:00 ps auxx
root@david-test:~# ll
total 24
drwx----- 4 root root 4096 Nov 10 14:34 /
drwxr-xr-x 22 root root 4096 Nov 10 14:01 /
-rw-r--r-- 1 root root 3106 Feb 20 2014 .bashrc
drwx----- 2 root root 4096 Nov 10 14:34 .cache/
-rw-r--r-- 1 root root 140 Feb 20 2014 .profile
drwx----- 2 root root 4096 Nov 10 14:01 .ssh/
root@david-test:~# ifconfig
eth0 Link encap:Ethernet HWaddr fa:16:3e:78:54:2e
inet addr:192.168.100.2 Bcast:192.168.100.255 Mask:255.255.255.0
inet6 addr: fe80::f816:3eff:fe78:542e/64 Scope:Link
UP BROADCAST RUNNING MULTICAST MTU:1500 Metric:1
RX packets:225 errors:0 dropped:0 overruns:0 frame:0
TX packets:292 errors:0 dropped:0 overruns:0 carrier:0
collisions:0 txqueuelen:1000
RX bytes:34181 (34.1 KB) TX bytes:35386 (35.3 KB)

lo Link encap:Local Loopback
inet addr:127.0.0.1 Mask:255.0.0.0
inet6 addr: ::1/128 Scope:Host
UP LOOPBACK RUNNING MTU:65536 Metric:1
RX packets:0 errors:0 dropped:0 overruns:0 frame:0
TX packets:0 errors:0 dropped:0 overruns:0 carrier:0
collisions:0 txqueuelen:0
RX bytes:0 (0.0 B) TX bytes:0 (0.0 B)

root@david-test:~#
```

Login user: root + passwd: <a password que foi dada na instânciação>



Dashboard – Volumes

<https://nimbus.ncg.ingrid.pt/dashboard>

Criar volume

Volumes - OpenStack Dashboard - Google Chrome

Logged in as: david@lip.pt Settings Help Sign Out

Volumes

Filter Filter + Create Volume

Name	Description	Size	Status	Type	Attached To	Actions
No items to display.						

Displaying 0 items

Project

CURRENT PROJECT Inec

Manage Compute

Overview

Instances

Volumes

Image Snapshots

Volumes

A criação de volumes permite adicionar espaço de armazenamento a uma instância.



Dashboard – Criar um volume

<https://nimbus.ncg.ingrid.pt/dashboard>

Nome do volume



Create Volume

Volume Name *
david-volume

Description
Additional information here...

Type
[Dropdown menu]

Size (GB) *
20

Volume Source
No source, empty volume.

Description:
Volumes are block devices that can be attached to instances.

Volume Limits
Total Gigabytes (0 GB) 1,000 GB Available
Number of Volumes (0) 10 Available

Cancel Create Volume

Tamanho do volume em GB (mínimo 1)



Criar volume





Dashboard – Volumes

<https://nimbus.ncg.ingrid.pt/dashboard>

Associar volume à instância

Volumes - OpenStack Dashboard - Google Chrome

Logged in as: david@in. pt Settings Help Sign Out

Info: Creating volume "david-volume" X

Volumes

Filter Filter

<input type="checkbox"/>	Name	Description	Size	Status	Type	Attached To	Action
<input type="checkbox"/>	david-volume		20GB	Available	-		<input type="button" value="Edit Attachments"/> <input type="button" value="More"/>

Displaying 1 item

Volume acabado de criar



Dashboard – Associar um Volume

<https://nimbus.ncg.ingrid.pt/dashboard>

Manage Volume Attachments ×

Attachments

Instance	Device	Actions
No items to display.		
Displaying 0 items		

Attach To Instance

Attach to Instance *

david-test (e47b7fa4-5630-4192-8039-d1837a52c ▾

Cancel Attach Volume

Selecionar a instância à qual se pretende associar o volume (attach)



Associar o volume





Consola – Ver volumes associados

<https://nimbus.ncg.ingrid.pt/dashboard>

Antes de associar o volume

```
root@david-test:~# cat /proc/partitions
major minor #blocks name
253      0  20971520 vda
253      1   9436160 vda1
253      2           1 vda2
253      5  1046528 vda5
root@david-test:~# _
```

Depois de associar o volume
Novo dispositivo /dev/vdb

```
root@david-test:~# cat /proc/partitions
major minor #blocks name
253      0  20971520 vda
253      1   9436160 vda1
253      2           1 vda2
253      5  1046528 vda5
253     16  20971520 vdb
root@david-test:~# _
```



Dashboard – Criar um snapshot

<https://nimbus.ncg.ingrid.pt/dashboard>

Primeiro parar a instância com Shutoff

- Instances -> Actions -> More -> Shut Off Instance

Criar snapshot

Instances

Filter Filter [+ Launch Instance](#) [Soft Reboot Instances](#) [Terminate Instances](#)

<input type="checkbox"/>	Instance Name	Image Name	IP Address	Size	Keypair	Status	Task	Power State	Uptime	Actions
<input type="checkbox"/>	david-inec	centos7-inec	192.168.100.2 192.92.149.136	m1.small 2GB RAM 1 VCPU 20.0GB Disk	david	Shutoff	None	Shutdown	4 hours, 11 minutes	Start Instance More
<input type="checkbox"/>	david	centos7-kbd-pt	192.168.100.4	m1.small 2GB RAM 1 VCPU 20.0GB Disk	david	Shutoff	None	Shutdown	21 hours, 35 minutes	Start Instance More

Displaying 2 items

Create Snapshot

Associate Floating IP

Disassociate Floating IP

Edit Instance

Resize Instance

Soft Reboot Instance

Hard Reboot Instance

Rebuild Instance

Terminate Instance



Dashboard – Criar um snapshot

<https://nimbus.ncg.ingrid.pt/dashboard>

Nome do Snapshot



Create Snapshot

Snapshot Name *

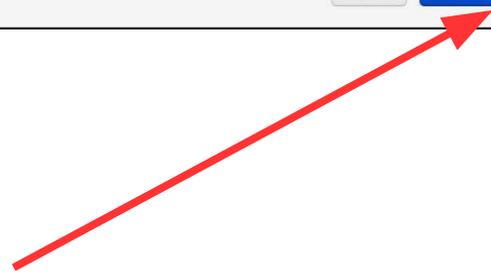
centos7-LNECUseCases

Description:

Snapshots preserve the disk state of a running instance.

Cancel

Create Snapshot



Criar o Snapshot



Dashboard – Associar IP público

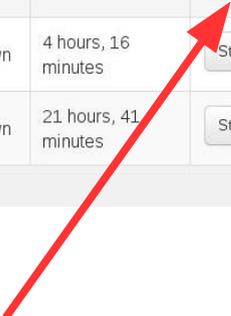
<https://nimbus.ncg.ingrid.pt/dashboard>

Necessário para poder aceder à VM remotamente (ex. Através de “ssh”)
ou para expor outros serviços ao exterior

Instances

<input type="checkbox"/>	Instance Name	Image Name	IP Address	Size	Keypair	Status	Task	Power State	Uptime	Actions
<input type="checkbox"/>	LNECUseCases	centos7-LNECUseCases		m1.small 2GB RAM 1 VCPU 20.0GB Disk	david	Build	Spawning	No State	0 minutes	<input type="button" value="Associate Floating IP"/> <input type="button" value="More"/>
<input type="checkbox"/>	david-lnec	centos7-lnec	192.168.100.2 192.92.149.136	m1.small 2GB RAM 1 VCPU 20.0GB Disk	david	Shutoff	None	Shutdown	4 hours, 16 minutes	<input type="button" value="Start Instance"/> <input type="button" value="More"/>
<input type="checkbox"/>	david	centos7-kbd-pt	192.168.100.4	m1.small 2GB RAM 1 VCPU 20.0GB Disk	david	Shutoff	None	Shutdown	21 hours, 41 minutes	<input type="button" value="Start Instance"/> <input type="button" value="More"/>

Displaying 3 items



Associar IP flutuante
(floating IP)
Um IP flutuante é um
IP público



Dashboard – Associar IP público

<https://nimbus.ncg.ingrid.pt/dashboard>

Adicionar IP
flutuante

Manage Floating IP Associations

IP Address *

IP Address *

No IP addresses available +

Port to be associated *

LNECUseCases: 192.168.100.5

Select the IP address you wish to associate with the selected instance.

Cancel Associate

Alocar
novo
endereço
IP

Allocate Floating IP

Pool *

public_net

Description:
Allocate a floating IP from a given floating IP pool.

Project Quotas

Floating IP (1) 49 Available

Allocate IP



Dashboard – Associar IP público

<https://nimbus.ncg.ingrid.pt/dashboard>

Endereço IP privado alocado
na instância (private IP)

Instances

Filter Filter

Instance Name	Image Name	IP Address	Size	Keypair	Status	Task	Power State	Uptime	Actions
LNECUseCases	centos7-LNECUseCases	192.168.100.5 192.92.149.137	m1.small 2GB RAM 1 VCPU 20.0GB Disk	david	Active	None	Running	2 minutes	Create Snapshot More

Endereço IP público agora
associado (floating IP)
O mapeamento do endereço
público no endereço privado é
feito via NAT

```
$ ssh root@192.92.149.137  
Please login as the user "centos" rather than the user "root".
```

```
Fazer $ ssh centos@192.92.149.137  
... [centos@lneccusecases ~]$ _
```



Dashboard – Parar vs destruir

<https://nimbus.ncg.ingrid.pt/dashboard>

Shutoff instance == **shutdown -h**
now

Terminate instance == **deletes**
the instance



Infraestrutura Nacional de Computação Distribuída

Obrigado !

helpdesk@incd.pt

<http://www.incd.pt>