

# Open GnSys

Free and open-source  
application for operating  
systems deployment  
and management

The screenshot displays the OpenGnSys web interface. On the left, a tree view shows a hierarchy of computer rooms: Computer room 1, Computer room 2, and Computer room 3, each containing individual PCs (e.g., pc2-15, pc2-14, etc.). The main content area is split into two panels. The top panel, titled 'Lab Computer Computer room 2', shows five computer icons labeled pc2-01 to pc2-05 with their respective IP addresses and MAC addresses. The bottom panel, titled 'Configuraciones', shows a configuration page for 'Ámbito : Ordenadores' with fields for 'Nombre', 'Dirección IP', 'Dirección MAC', and 'Perfil Hardware'. Below this is a table of partitions:

Partition	Type	Filesys	Installed OS	Size (KB)	Image	Settings Profile
1	NTFS	NTFS	Windows 7 Enterprise	1152000	Windows 7	Windows 7 (spañol, Part 1)
2	LINUX	EXT4	Ubuntu 11.10	1488112		
3	EXTENDED	EMPTY		498048		
4	EMPTY	EMPTY		498048		
5	LINUX-SWAP	LINUX-SWAP		498048		
6	LINUX	EXT4		20871520		
7	NTFS	NTFS				

At the bottom, a smaller window titled 'Gestión de Aulas de Informática Acceso para Administradores' shows a login form with fields for 'Usuario', 'Password', and 'Unidad Organizativa'.



@OpenGnSys

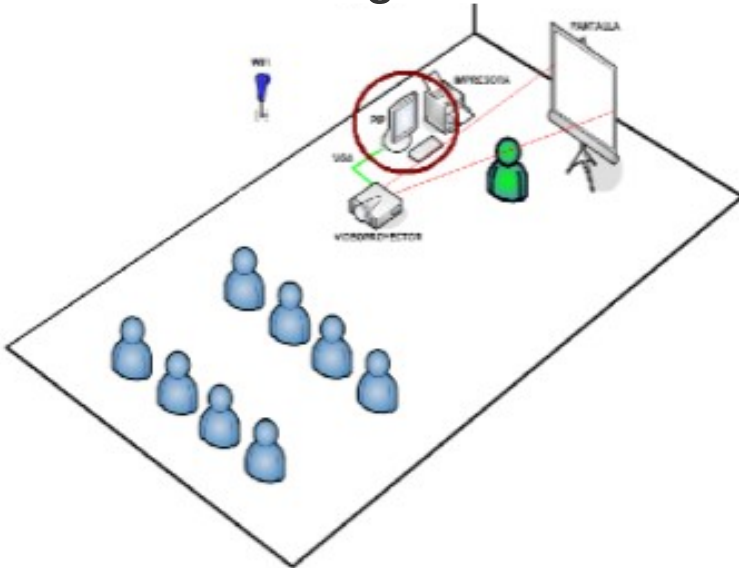
[www.opengnsys.es](http://www.opengnsys.es)

The OpenGnSys Project (pronounced *Open Genesis*) is an open-source application that allows centralized management and deployment of operating systems on all computers of an Institution, using different network protocols (multicast, unicast, peer-to-peer).

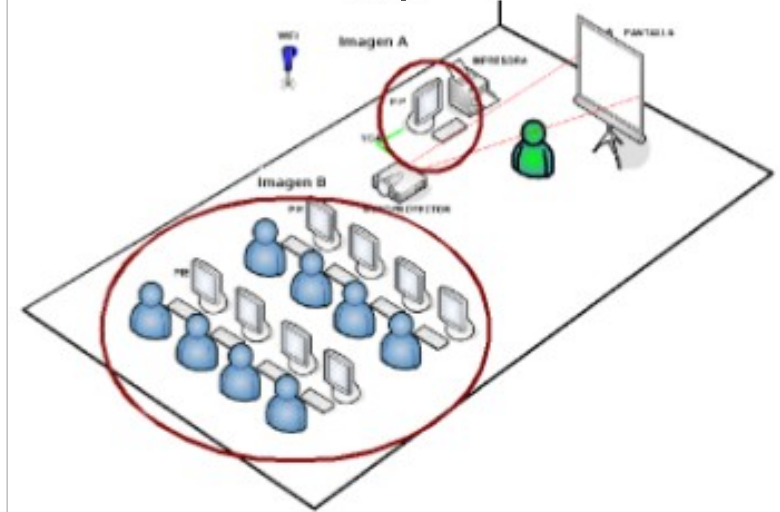
## OS Deployment and Management

Support some of the educational settings defined by the Docencia-Net Working Group in RedIRIS

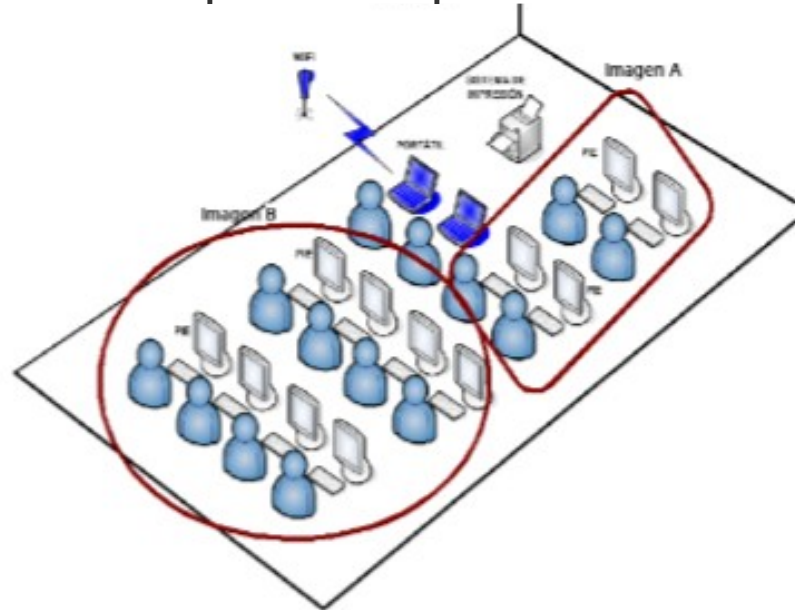
Teaching classroom



Computer Lab.



Open Computer Lab.

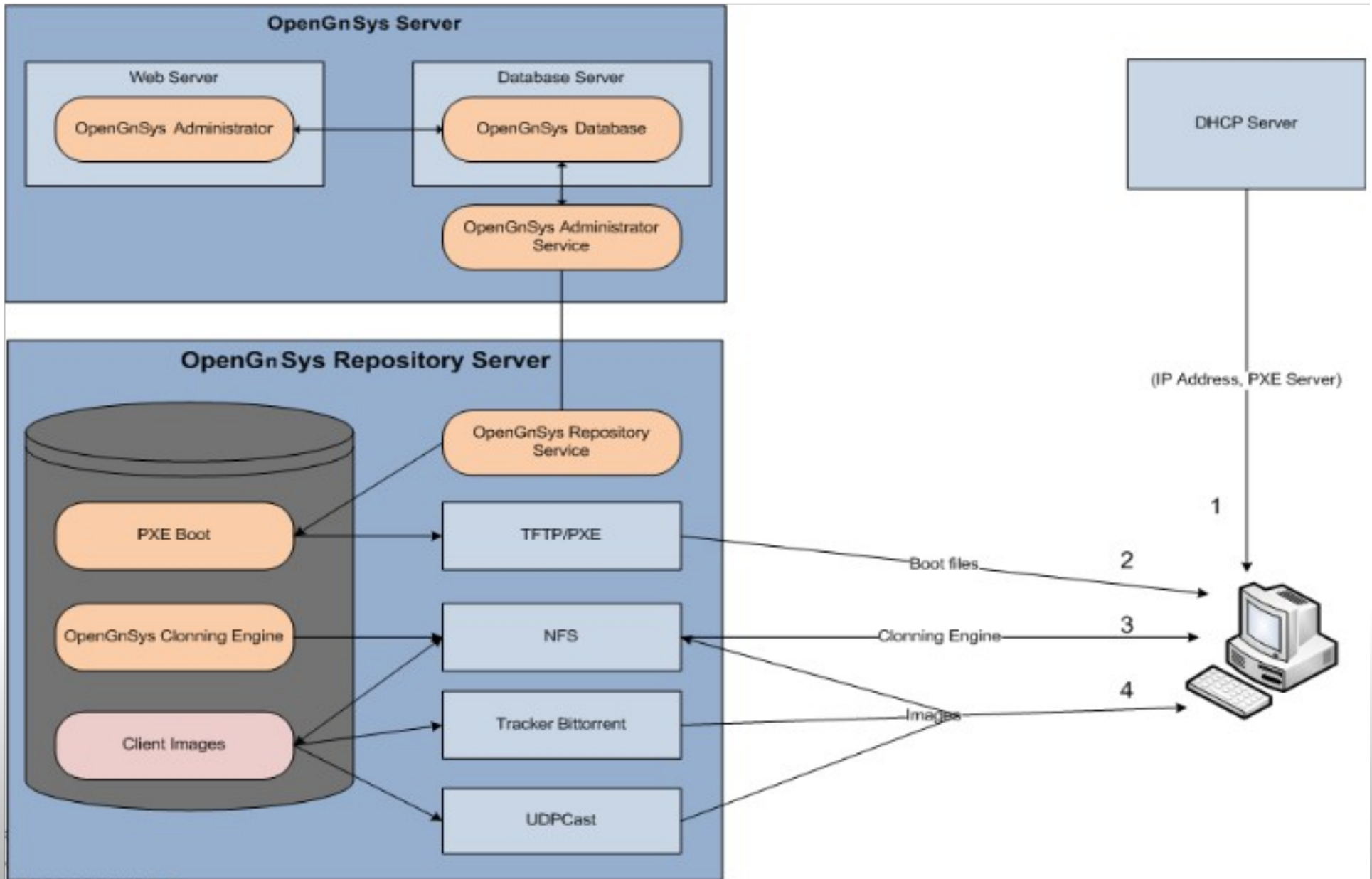


### Support in other settings defined in an Institution:

- Information Services.
- Helpdesk for employment computers.
- Servers deployment in Data Center.

The screenshot shows the 'Computer Labs Management Administrators Access' login interface. It features a background image of a person working at a computer. The form includes the following fields and controls:

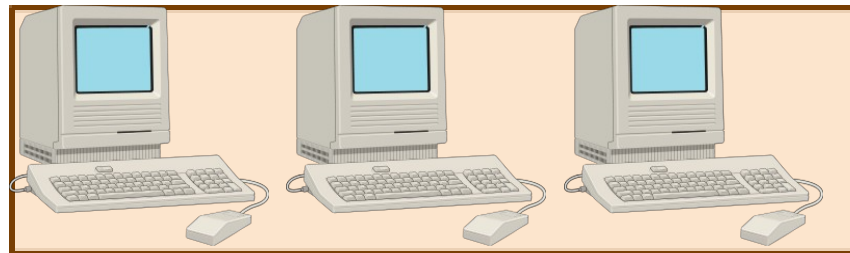
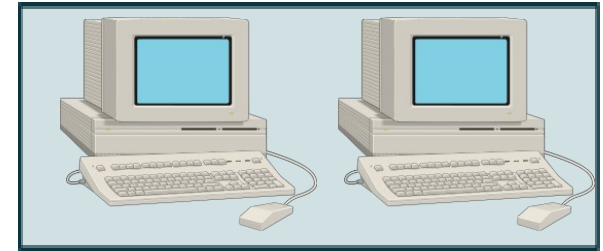
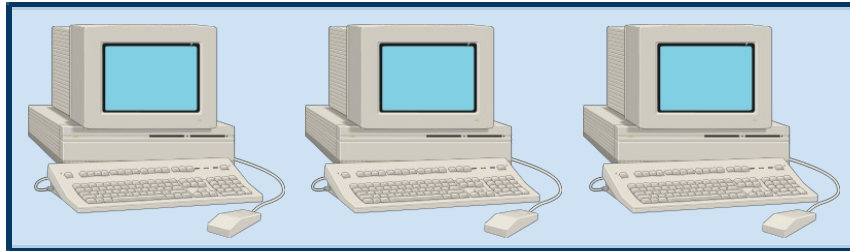
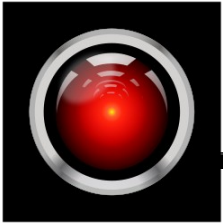
- Username:** A text input field.
- Password:** A text input field.
- Organizational Unit:** A dropdown menu.
- OK:** A button to submit the login information.
- Language Selection:** A dropdown menu currently set to 'English' with a 'Choose' button next to it.
- Footer:** The OpenGnSys logo and the version number 'OpenGnSys 1.0.3' are located at the bottom right.



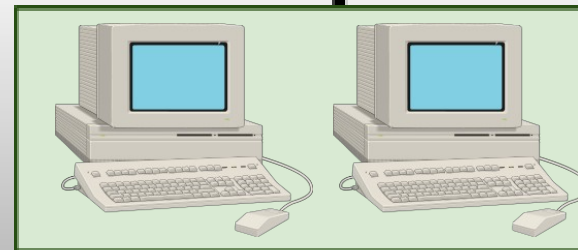
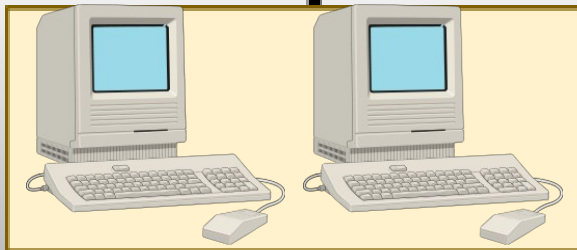
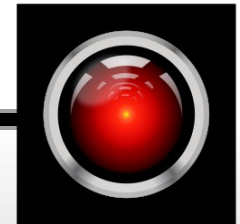
## OS Deployment and Management

OU 1

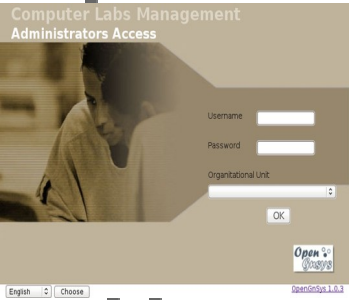
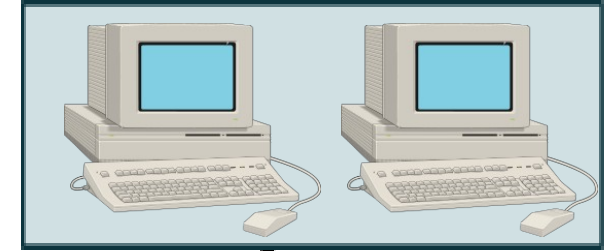
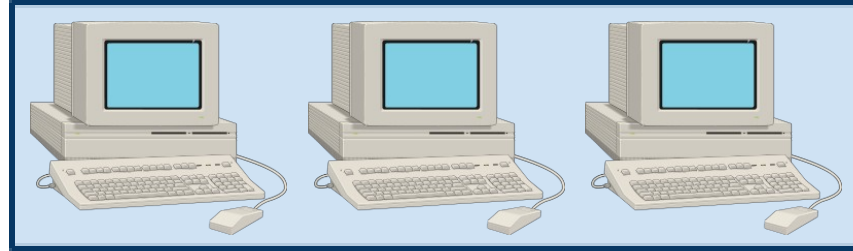
Organizational Unit 1



OU 2  
Organizational Unit 2



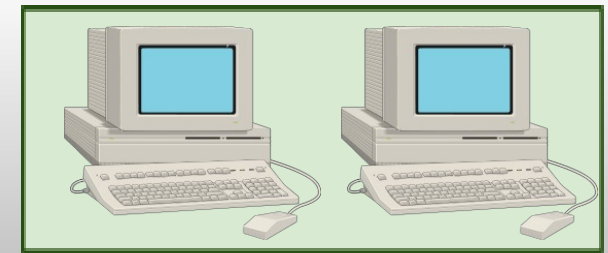
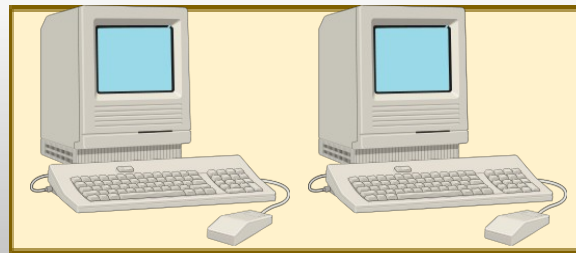
Repo 1  
OU 1



Central  
Console



Repo 1  
OU 2



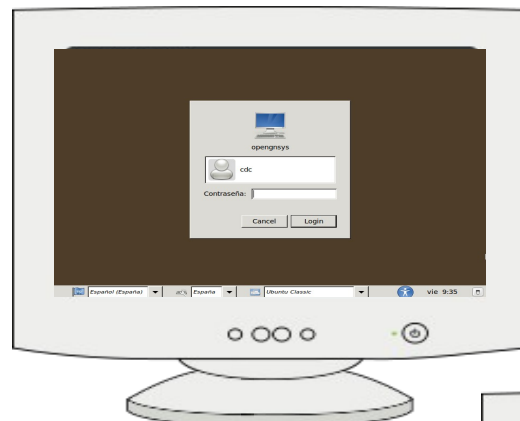
Repo 2  
OU 2



## OS Deployment and Management



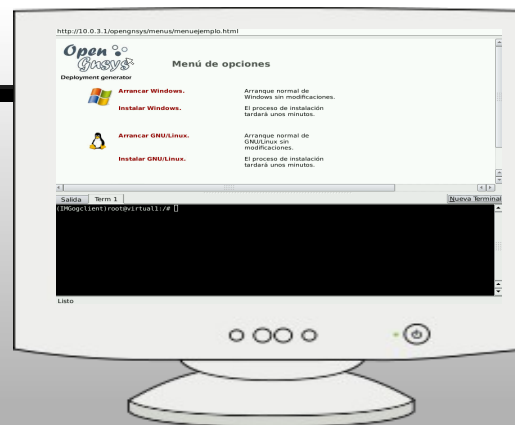
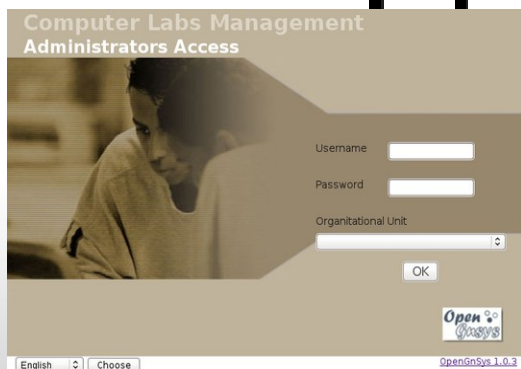
Starting with local bootloader



Starting with Operating System



Client with Browser on user mode



Client with Browser on admin mode



Información Perfil hardware

- ▼ Perfil hardware (virtual1)
  - ▼ Componentes hardware
    - (Tarjetas de Red) Advanced Micro Devices 79c970 100MB/s v.40
    - (Tarjetas de Red) Intel Corporation 82543GC Gigabit Ethernet Controller (Copper) 1GB/s v.02
    - (Microprocesadores) Advanced Micro Devices AMD Athlon(tm) 64 Process 3700+ 2200MHz v.15.7.1
    - (Memorias) 1017MiB
    - (Tarjetas gráficas) InnoTek Systemberatung GmbH VirtualBox Graphics Ad v.00

Computer hardware inventory

pc-i23x

Partición	Tipo	S.F.	S.O. Instalado	Tamaño
1	NTFS	NTFS	Microsoft Windows XP	40000000
2	LINUX	EXT2	Ubuntu 10.04.2 LTS 64 bits	30000000
3	LINUX-SWAP	LINUX-SWAP		2000000
4	CACHE	CACHE		30000000

Inventory of partitions and installed operating systems

Información perfiles software

- ▼ Perfil Software (virtual2, Part:1)
  - ▼ Componentes software
    - 7-Zip 4.64
    - Actualización de seguridad para el Reproductor de Windows Media (KB952069)
    - Actualización de seguridad para el Reproductor de Windows Media (KB954155)
    - Actualización de seguridad para el Reproductor de Windows Media (KB973540)
    - Actualización de seguridad para el Reproductor de Windows Media (KB978695)
    - Actualización de seguridad para el Reproductor de Windows Media (KB979402)
    - Actualización de seguridad para Windows Internet Explorer 7 (KB938127-v2) 2

Inventory of installed applications on operating systems

Primary Partitions		
Partition	Type	Size (KB)
<input checked="" type="checkbox"/> Partition 1	LINUX:EXT[2:3:4] FAT12	Customize 8000000
<input checked="" type="checkbox"/> Partition 2	LINUX-SWAP FAT12	Customize 5000000
<input checked="" type="checkbox"/> Partition 3	Customize NTFS	Customize 8000000
<input checked="" type="checkbox"/> Partition 4	CACHE	Customize 9000000
Less free disk space (KB):		1457280

Web: Partitioning Wizard

```

ogUnmountCache
ogUnmountAll 1
ogDeletePartitionTable 1
ogUpdatePartitionTable 1
initCache 20000000
ogListPartitions 1
ogCreatePartitions 1 NTFS:30000000 REISERFS:30000000
ogSetPartitionActive 1 1
    
```

Web&CLI: Custom partitioning schema

Información

▼ Particionar Sala de Control

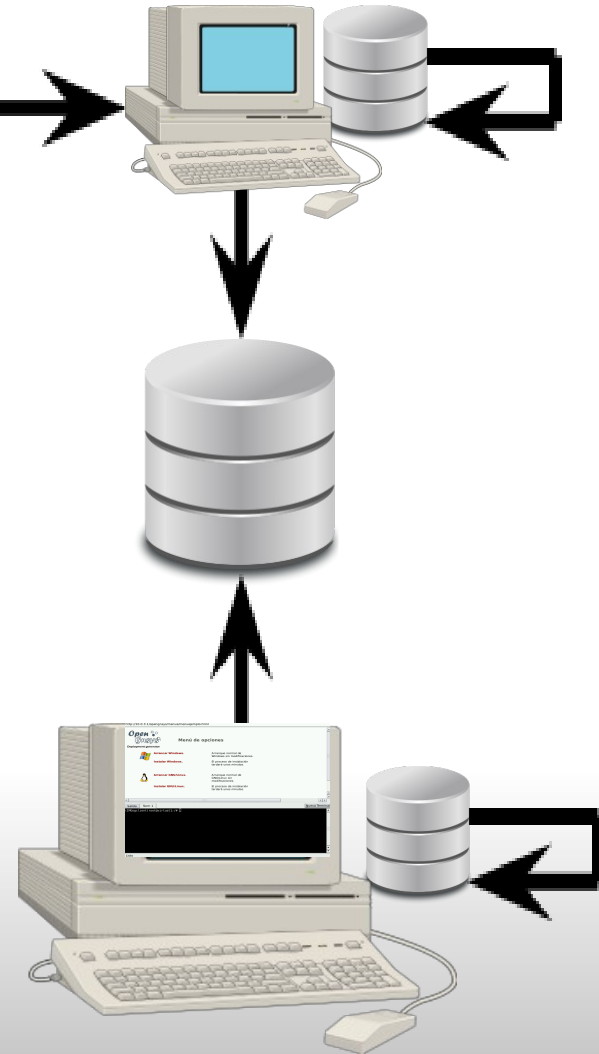
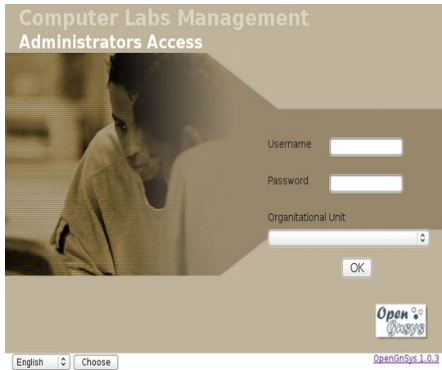
▼ Ejecutar Script

Código script:

**ogCreatePartitions 1 NTFS:40000000 EXT2:30000000 EXTENDED:32000000 EXT3:29999999 LINUX-SWAP:1999999**

Web: Custom partitioning schema with procedures based on functions

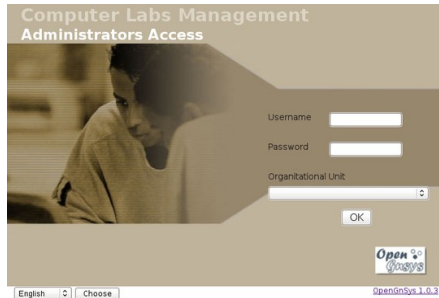
# Create Image



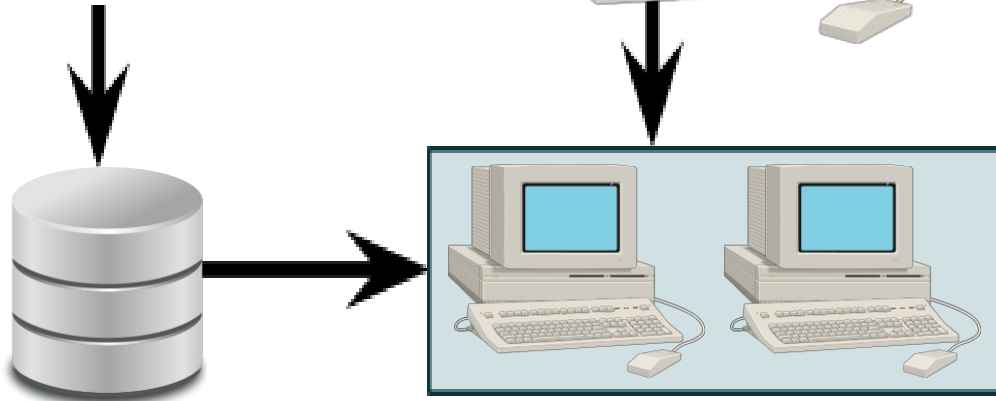
Create image in local cache or in repository from web console

Create image in local cache or in repository from Browser in admin mode

# Restore an Image



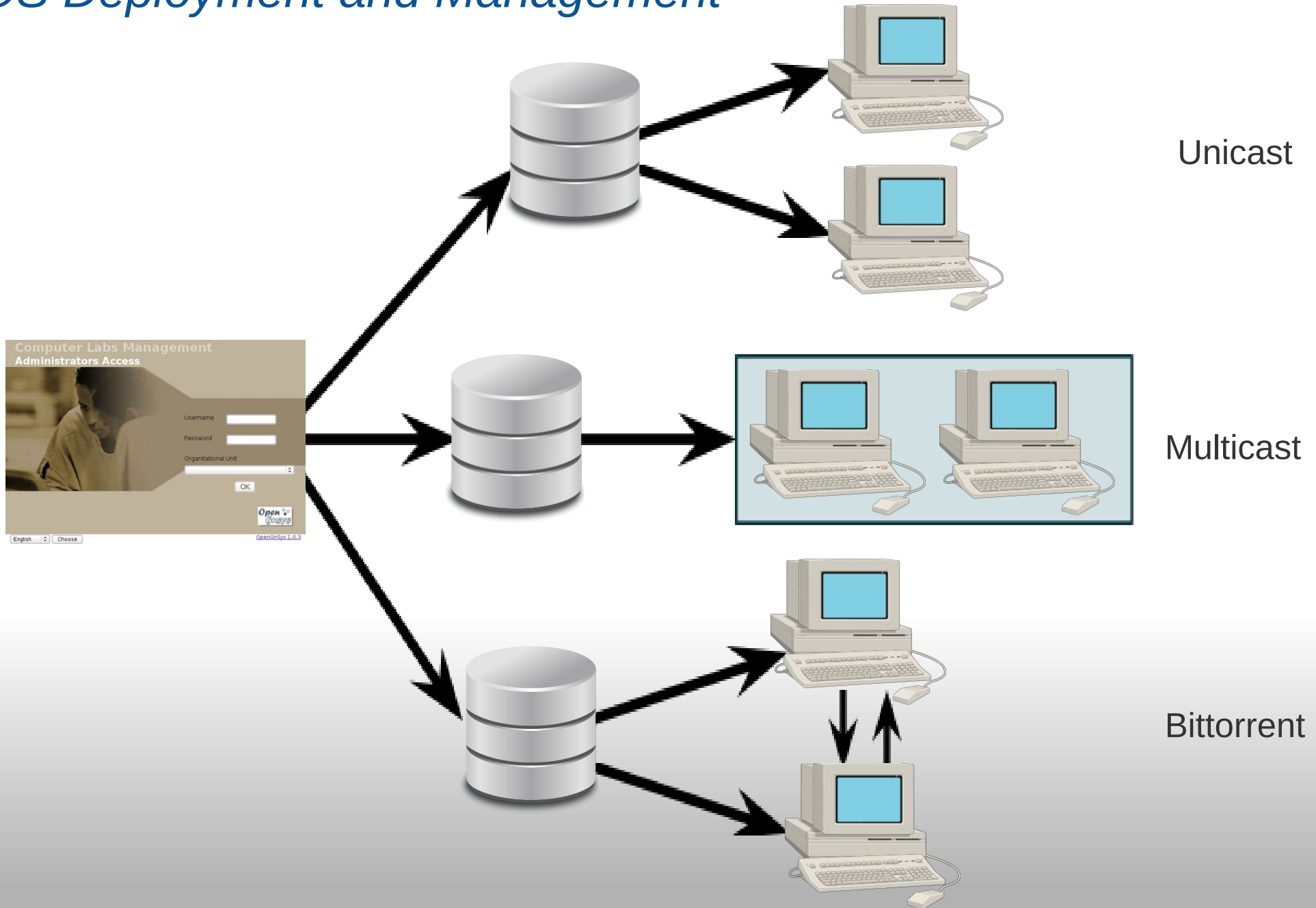
Restore from cache  
to local partition



Restore from remote  
partition

Restore from  
repository

# Cloning Protocols



Unicast

Multicast

Bittorrent

## OS Deployment and Management

Log del equipo pc-gnsys4 con ip 10.1.14.40

```

19/04/2011 13:15 *** Debug: 5-008-Ejecución del script:/opt/opengnsys/interfaceAdm/getIpAddress
19/04/2011 13:15 *** Debug: 5-Información devuelta 10.1.14.40
19/04/2011 13:15 *** Info: 001-Inicio de sesion
19/04/2011 13:15 *** Info: 003-Abriendo sesión en el servidor de Administración
19/04/2011 13:15 *** Debug: 5-008-Ejecución del script:/opt/opengnsys/interfaceAdm/getConfiguration
19/04/2011 13:16 *** Debug: 5-Información devuelta par=1      cpt=7   fsi=NTFS      soi=Microsoft Win
par=2   cpt=83  fsi=EXT4      soi=Ubuntu 10.04.1 LTS 64 bits  tam=20000000
par=3   cpt=5   fsi=EXTENDED  soi=      tam=22000000
par=4   cpt=ca  fsi=CACHE     soi=      tam=30000000
19/04/2011 13:16 *** Debug: 5-014-Configuración de particiones:par=1   cpt=7   fsi=NTFS      soi=Micro
par=2   cpt=83  fsi=EXT4      soi=Ubuntu 10.04.1 LTS 64 bits  tam=20000000
par=3   cpt=5   fsi=EXTENDED  soi=      tam=22000000
par=4   cpt=ca  fsi=CACHE     soi=      tam=30000000
19/04/2011 13:16 *** Info: 004-Cliente iniciado
    
```

Client Logs

\$ head /opt/opengnsys/log/ogAdmServer.log

```

19/04/2011 10:38 *** Info: 001-Inicio de sesion
19/04/2011 13:03 *** Info: 001-Inicio de sesion
19/04/2011 13:05 *** Info: 001-Inicio de sesion
19/04/2011 13:14 *** Info: 001-Inicio de sesion
20/04/2011 10:21 *** Error: 031-No se ha encontrado la acción a notificar es
posible que se haya eliminado el registro. Módulo respuestaEstandar()
    
```

Server Logs

Eliminar
 Reiniciar
 Detener
 Reanudar
 Finalizar sin errores
 Finalizar con errores

	R	Fecha final	Hora final	Fecha inicio	Hora inicio	Ámbito	Información	S	%
Restaurar Imagen				31-05-2011	11:51:13	Ordenadores			0%
Restaurar Imagen				31-05-2011	11:51:13	pc-a433			
Restaurar Imagen				31-05-2011	11:51:13	pc-practica			

Action queue



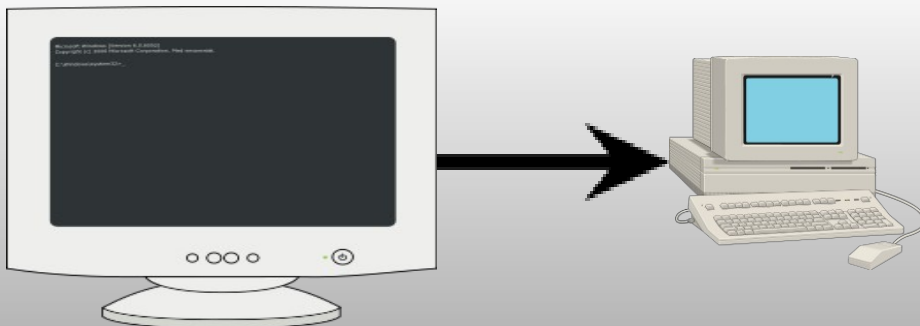
**Runtest:**  
Client self-checking tool

### Example of Runtest script

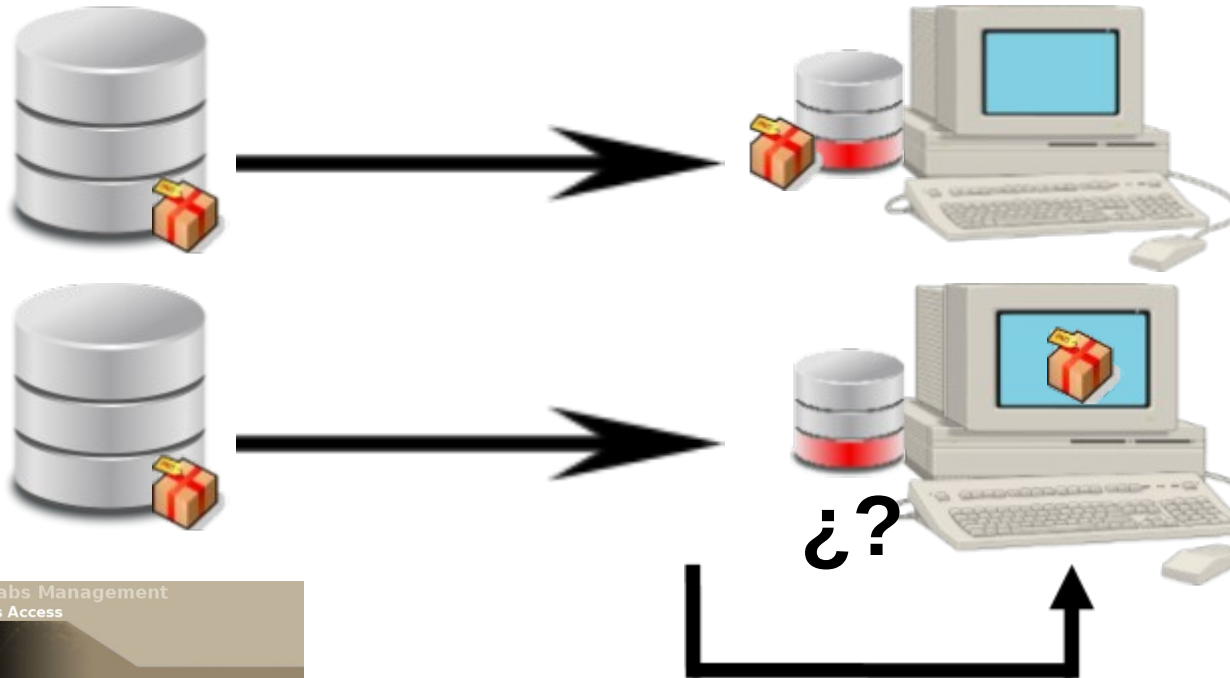
```
$ ls -d $OGCAC$OGIMG  
/opt/opengnsys/cache/opt/opengnsys/images
```

### Ex Runtest

```
(IMGogclient)root@pc-i23x:/opt/opengnsys/lib/engine/tests/NoModify# runtest  
28 tests PASSED in File1.shtest  
27 tests PASSED in Lock1.shtest
```



SSH access for client management

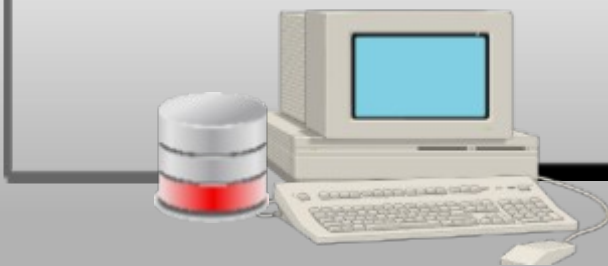
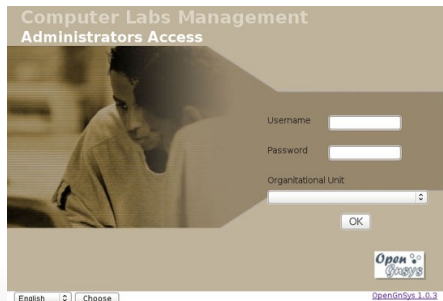
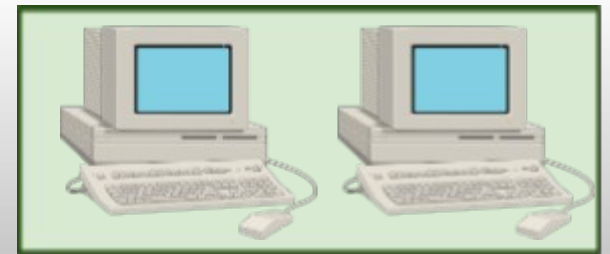


Download image to local cache without restoring

Restore from repository if no space to store the image in cache

A client can be a repository

Central Console





Several Windows systems  
in the same client



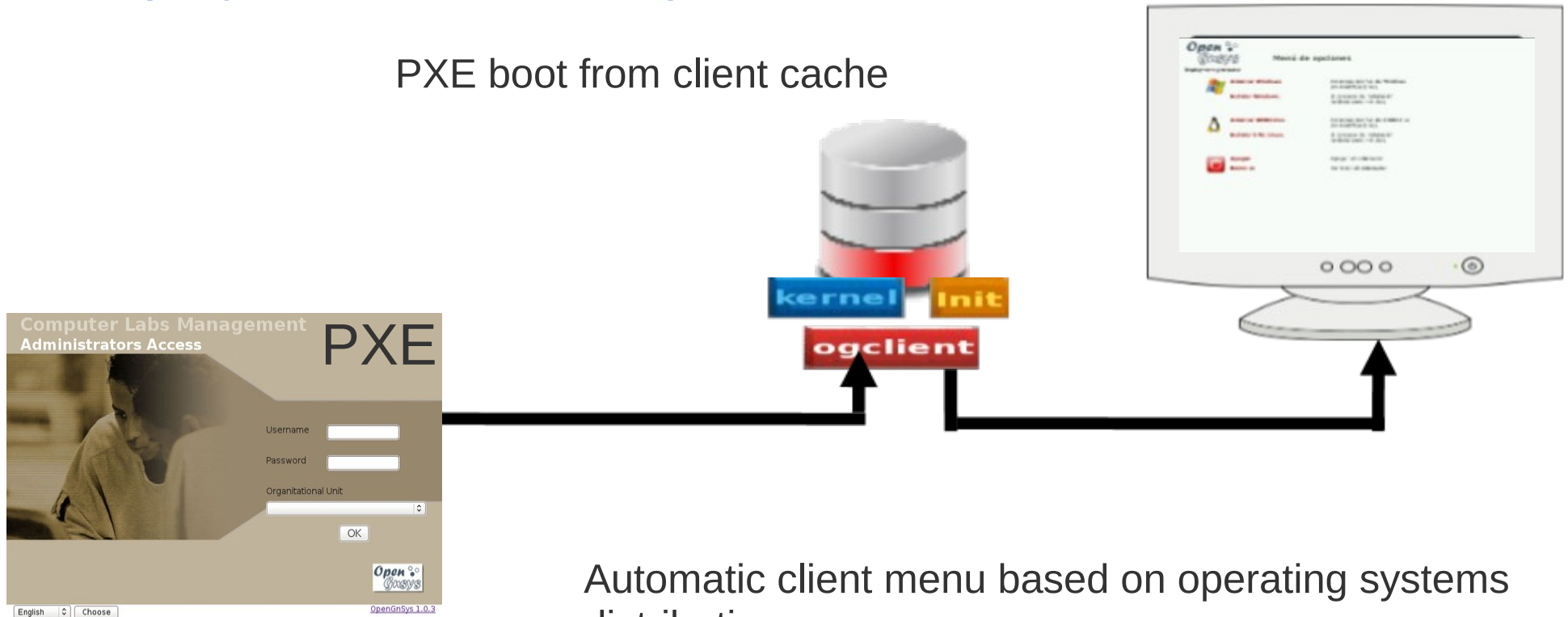
Windows Registry  
Postconfiguration



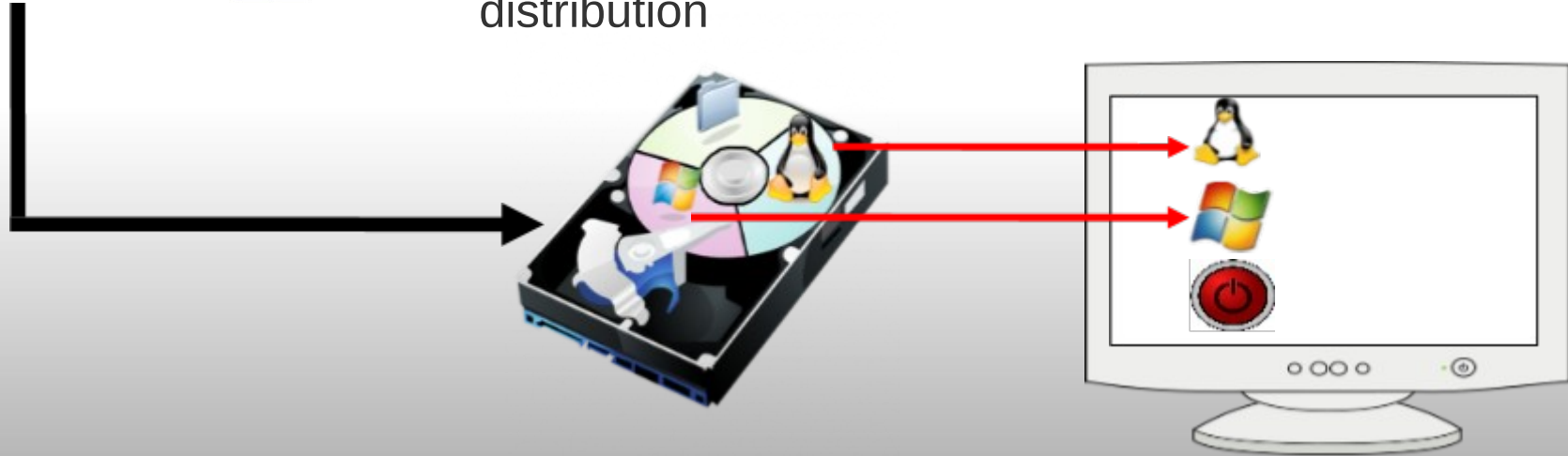
Monitoring the status of  
the Operating Systems



PXE boot from client cache



Automatic client menu based on operating systems distribution



The OpenGnSys Project joins the effort of several Spanish Public Universities



Universidad de Sevilla



Universidad de Málaga



Universitat Autònoma de Barcelona



Universidad de Zaragoza



Universidad de Huelva

## *OS Deployment and Management*

### Internet Forums:

- Incidents
- Suggestions for new features
- Testing and Success cases

### Participation in Development Team:

- Programmers
- Translators
- Testers

### Mailing Lists

Management of trouble tickets

Sign up on [www.opengnsys.es](http://www.opengnsys.es)