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DRBL and Clonezilla

The deployment and restoration system

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<http://drbl.nchc.org.tw>, <http://drbl.sf.net>

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What is DRBL and Clonezilla ?

- Diskless Remote Boot in Linux (DRBL) provides a diskless or systemless environment for client machines.
- Unlike LTSP, it uses distributed hardware resources and makes it possible for clients to fully access local hardware. It also includes Clonezilla, a partitioning and disk cloning utility similar to Symantec Ghost.
- Coexist with the OS in client's local HD
- Client machines plug-and-play



Free Software Smart Classroom, FSSC

- Free software projects developed by NCHC Free Software Labs
- Our goal

FSSC (Free Software Smart Classroom)

- DRBL, Clonezilla
- Multicast VNC
- Access Grid, E-learning
- Cluster computing ready classroom
- Grid computing ready classroom



DRBL - Diskless Remote Boot in Linux

- ✓ PXE/Etherboot + NFS + NIS - standing on a giant's shoulder

Orig: PC Cluster -> Free Software Classroom

1. Multi environment in computer classroom -
Linux & M\$ Windows coexist

2. Simplify the management

All services and programs are in one server, you do not have to check every client

OS and packages are installed once in DRBL server.

3. Hardware and installation are simplified, but
software is full and all ready for clients!



DRBL vs. LTSP

Since there is LTSP, why DRBL ?

- Centralized resource vs. distributed resource
- Special features for DRBL
 - ◆ Clonezilla
 - ◆ switch client environment, just one selection in server
 - DRBL, FreeDOS, OS in local HD, memtest
 - Linux network installation
- DRBL is not suitable for old machines
- Choose what you need



Clonezilla - DRBL built-in killer function

- ✓ Clonezilla [OCS (Opensource Clone System)]

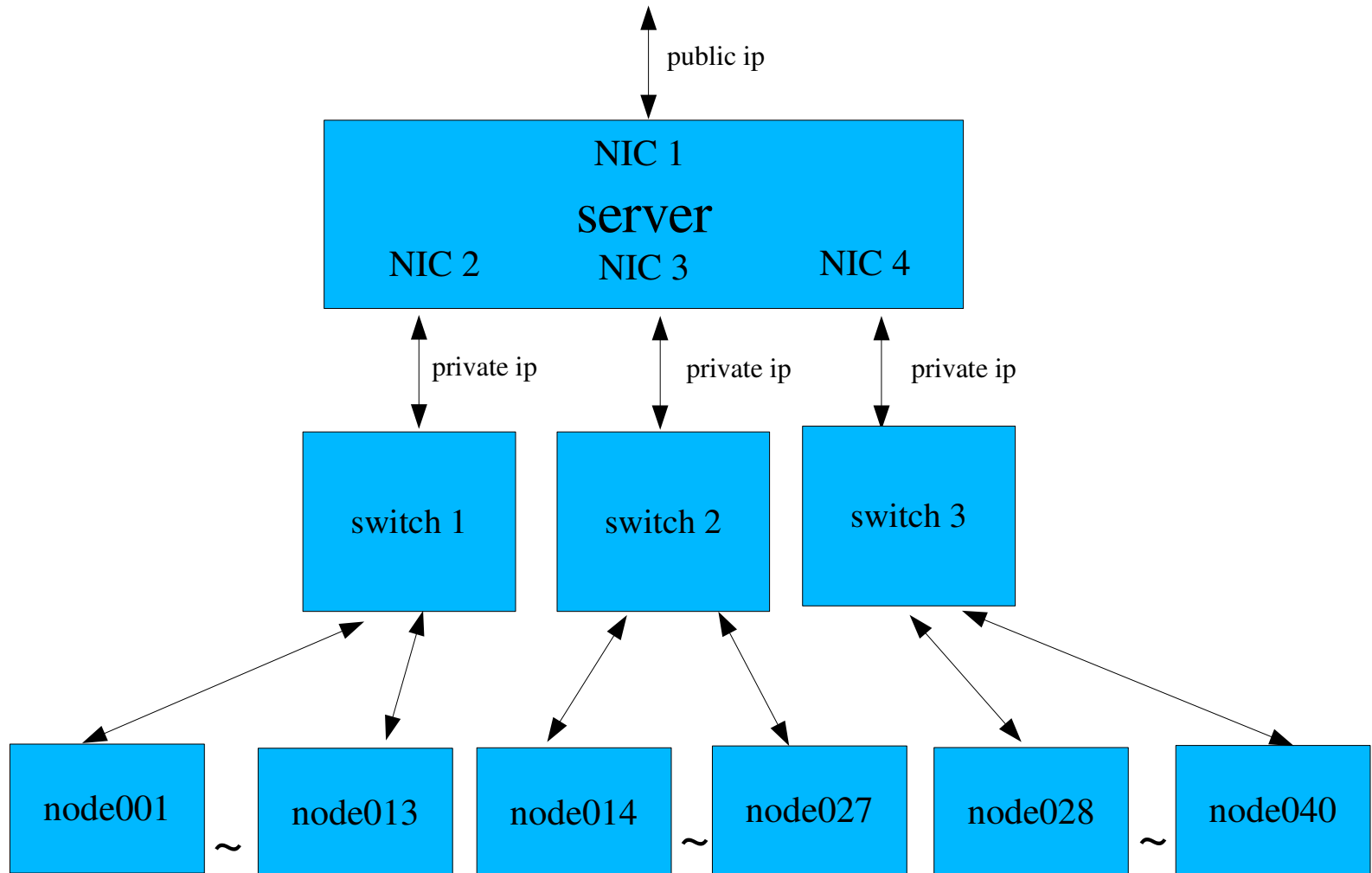
With partimage (<http://www.partimage.org>) and udpcast (<http://udpcast.linux.lu/>), a partitioning and disk cloning utility similar to Symantec Ghost. In NCHC PC classroom, it takes 50 minutes to 1 hour to clone 3.5 Gbytes M\$ windows XP image for 36 clients. For multicast cloning, it takes about only 10 minutes.

- ✓ Save and restore different OS images

- ✓ Linux, M\$ Windows



DRBL Environment



DRBL



server



switch



client nodes



DHCP

— IP —>

pxe/etherboot

192.168.0.1

pxe/etherboot

172.16.100.40

TFTP

— kernel —>

boot

boot

NFS

— file system —>

/, /usr, /home ...

/, /usr, /home ...

NIS

— account —>

user login

user login



Installation

- <http://drbl.nchc.org.tw>; <http://drbl.sf.net>
- GNU/Linux distributions

i386/X86_64 platform

- Debian Woody(3.0)/Sarge(3.1), B2D, Ubuntu Breezy(5.10),
- RedHat Linux 8.0, 9, Fedora Core 1, 2, 3, 4, 5,
- Mandrake 9.2, 10.0, 10.1, Mandriva LE2005 (10.2), 2006,
- CentOS 4, 4.1, 4.2, 4.3,
- SuSE 9.3, 10.0, OpenSuSE 10.0

- 4 steps to install

Install GNU/Linux

Install DRBL package

Configure server

Configure client

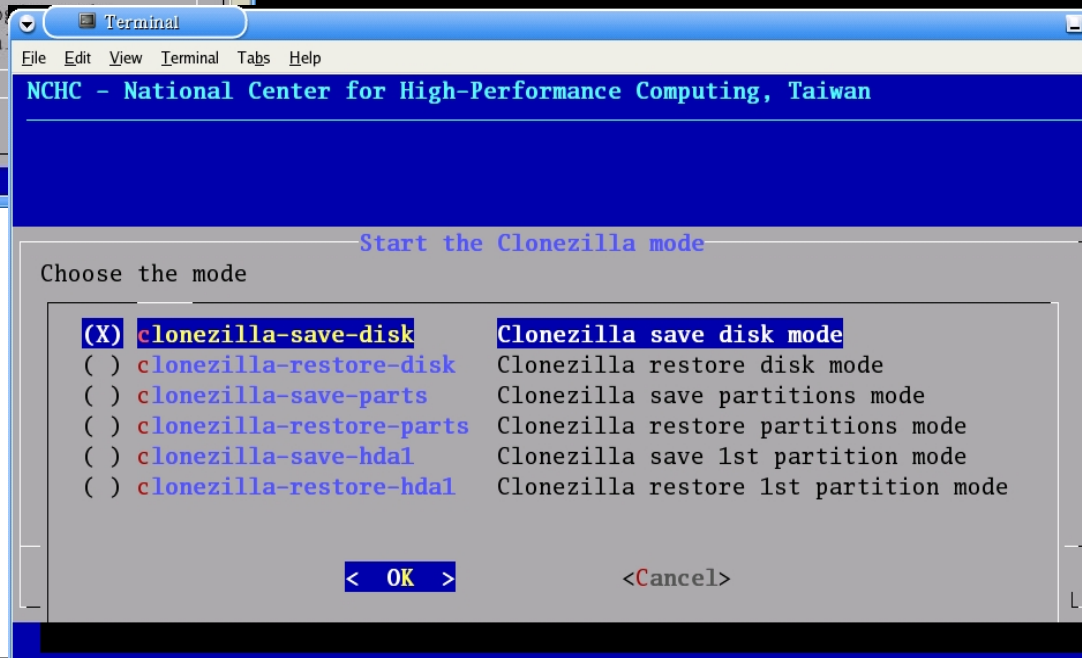
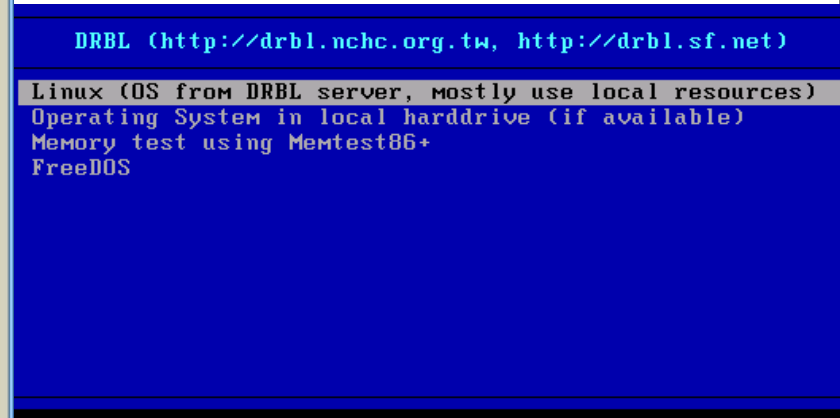
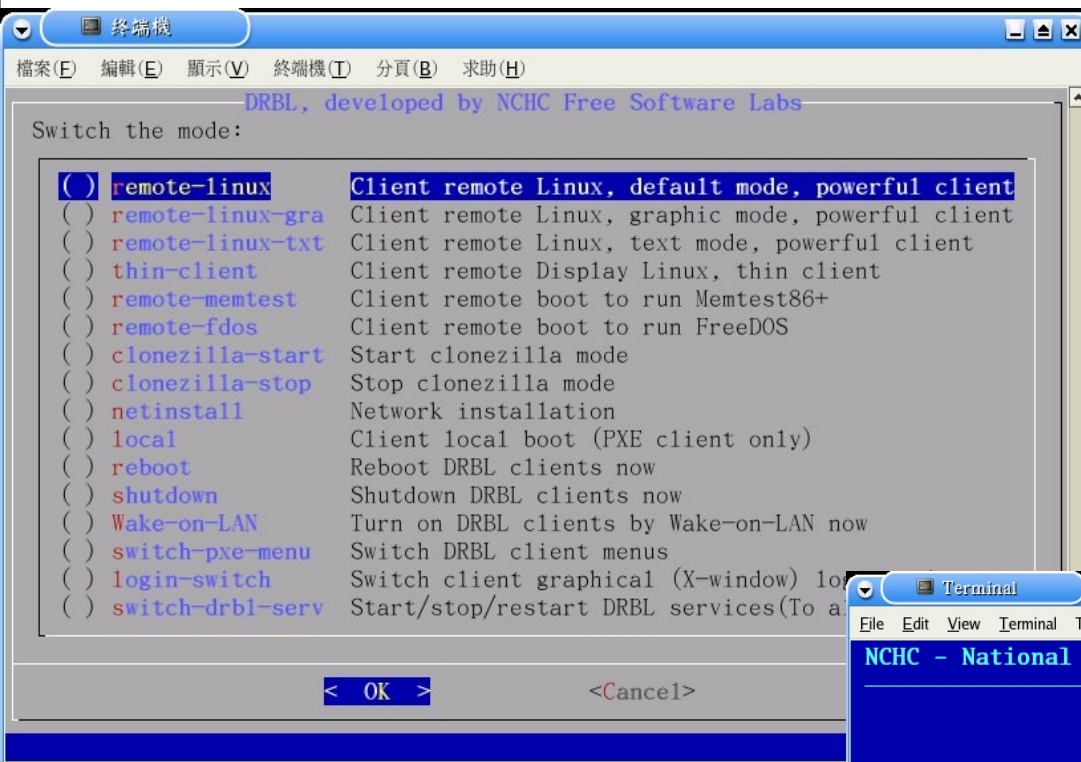


Modes of DRBL/Clonezilla

	Full DRBL	Full Clonezilla	DRBL SSI	Clonezilla Box
/etc, /var of client	NFS-based	NFS-based	Tmpfs-based	Tmpfs-base
and /var of client after reboot	Kept	Kept	Gone	Gone
Extra space in server/client	~ 50 MB	~ 50MB	0	0
Max client #/ethernet card in server	253	253	253	253



DRBL and Clonezilla



Demo/Workshop for DRBL/Clonezilla

- DRBL deployment

Install and configure.

Manage the clients.

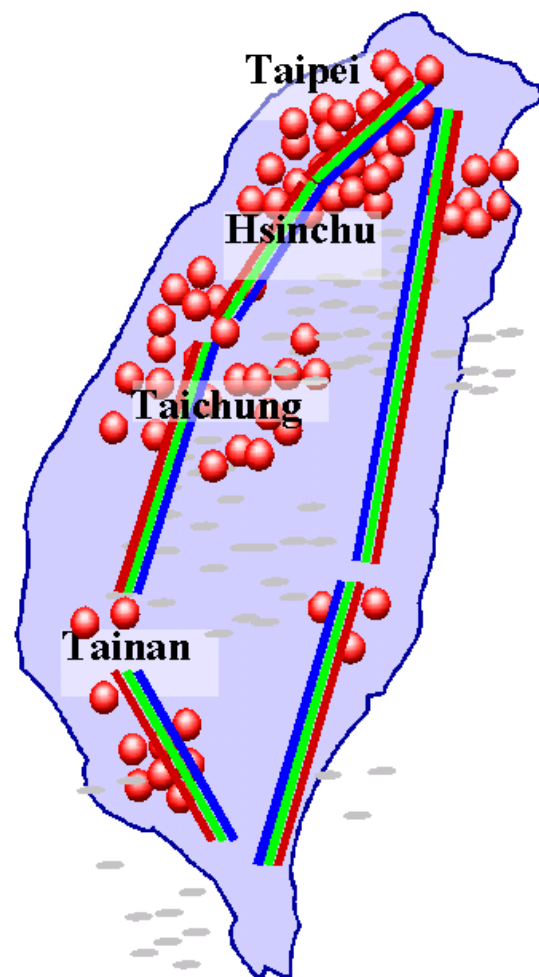
- Clonezilla save/restore image

1. Add one application or modify the setting to one client machine,
2. Upload an image to a set of images to be distributed to clients on a LAN.
3. Restore the image to the clients.



Users in Taiwan

- > 280 sites
 - Public Sector
 - Primary/High school 93
 - University 61
 - Hospital 3
 - TV station 1
 - Government 12
 - NPOs 15
 - SMB 66
 - Misc 41



*Statistics on 2005/12/05

〈編號〉



DRBL/Clonezilla users around the world

- Japan

Osaka Prefecture University

Tokyo Christian University

- USA

Internet Cafe @ Chicago

- Canada

Department of Education, Province of Nova Scotia

- Indonesia

E-learning Centre, Aceh

Index Opensource Cafe, Manado (north sulawesi)

- Portugal

College ISPGaya

- Brazil, France, Germany, Sweden, UK...

