



財團法人國家實驗研究院

國家高速網路與計算中心

NATIONAL CENTER FOR HIGH-PERFORMANCE COMPUTING



# DRBL/Clonezilla 的迴響與未來規劃

## 第二屆 使用者會議

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自由軟體實驗室

Q4, 2010

# 平衡商業獨家軟體與知識教育



知識和軟體都需要讓孩子「帶著走」！



## 商業獨家軟體授權高成本

在校學習，也需回家複習  
學校每台（平均）約 6 千至 1 萬  
學生家用（平均）約 1 至 2 萬

## 知識與法治的學習

教育知識，也需教育尊重  
尊重智財權觀念

# 國網中心自由軟體開發



## 高速計算技術及經驗發展之核心技術



企鵝龍 DRBL

(Diskless Remote Boot in Linux)

無碟環境，適合將整個電腦教室轉換成純自由軟體環境



再生龍

Clonezilla

適用完整系統備份、裸機還原或災難復原

是自由！不僅是免費

使用、複製、修改與再散播軟體的自由。免費是附加價值。人人皆可自由享用。



# DRBL 與 Clonezilla 開發大事紀

- ✓ 2002/05 商業軟體聯盟大規模掃蕩盜版
- ✓ 2002/06/17 輔仁大學毛慶禎教授在福營國中，主持「會診 LTSP 會議」，NCHC 在該會議中第一次提出 DRBL 的想法
- ✓ 2002/06/20 DRBL 雛形完成
- ✓ 2002/07/15 新店大豐國小研習，DRBL 第一次上線面對使用者測試。
- ✓ 2004/01/01 Clonezilla (OCS 的程式名稱) 雛形問世，Clonezilla 正式整合到 DRBL 中
- ✓ 2005/11/28 發行大一統版本，一個版本適用所有支援的 GNU/Linux 套件



# DRBL 與 Clonezilla 開發大事紀

- ✓ 2006/05/08 新增 DRBL Single System Image (SSI) 與 Clonezilla box 模式。這些模式，理論上 server 一張網卡可以支援 253 台 client
- ✓ 2007/03/14 首次發行 Clonezilla live 。 2007/12/04 DRBL 榮獲在法國所舉辦的第四屆國際自由軟體比賽 "公部門" 類別 (public sector software) 的第一名
- ✓ 2008/07/15 DRBL 與 Clonezilla 榮獲國家實驗研究院科技貢獻獎技術發展類玉山獎 (第一名)
- ✓ 2009/03/11 DRBL 與 Clonezilla 榮獲 2008 年行政院傑出科技貢獻獎
- ✓ 2010/01 Clonezilla 獲得 Sourceforge 選為當月最佳專案



# 國際自由軟體競賽

Les Trophées  
du libre 2007

- 2007年11月29日，Centri協會在法國Soissons所舉辦的國際自由軟體競賽中 (Les Trophées du libre)，DRBL贏得 'public sector software' 分類的首獎
  - <http://www.freesoftwareawards.com> or <http://tropheesdulibre.org/?lang=fr>

# International Free Software Contest

## Soissons, France, Nov, 2007



Les Trophées du Libre - Mozilla Firefox

File Edit View History Bookmarks Tools Help

Search Search

[Version française](#)

### Les Trophées du libre 2007

INTERNATIONAL FREE SOFTWARE CONTEST SINCE 2003

[Home page](#) | [The jury](#) | [Prizes](#) | [Rules](#) | [Previous editions](#) | [Testimonials](#)

<ul style="list-style-type: none"><li>PROJECT AREA<ul style="list-style-type: none"><li><a href="#">Jury extranet</a></li><li><a href="#">How to register</a></li><li><a href="#">Candidate projects</a></li></ul></li><li>THE CEREMONY<ul style="list-style-type: none"><li><a href="#">Event schedule</a></li><li><a href="#">Maps</a></li><li><a href="#">Registration</a></li><li><a href="#">The results</a></li></ul></li><li>RESOURCES<ul style="list-style-type: none"><li><a href="#">Newsletter</a></li></ul></li></ul>	<h4>THE 2007 EDITION WINNERS</h4> <p>The winners are :</p> <p>In the category "Security" :</p> <ul style="list-style-type: none"><li>n°1 - <a href="#">rsyncrypto</a></li><li>n°2 - <a href="#">Unicomscan</a></li><li>n°3 - <a href="#">Yersinia</a></li></ul> <p>In the category "Enterprise management" :</p> <ul style="list-style-type: none"><li>n°1 - <a href="#">LimaSurvey</a></li><li>n°2 - <a href="#">Scanari</a></li><li>n°3 - <a href="#">DeStar</a></li></ul> <p>In the category "Public sector applications" :</p> <ul style="list-style-type: none"><li>n°1 - <a href="#">DRBL</a></li><li>n°2 - <a href="#">PMB</a></li><li>n°3 - <a href="#">VHFFS</a></li></ul> <p>Dans la catégorie "Education" :</p> <ul style="list-style-type: none"><li>n°1 - <a href="#">Chronojump</a></li></ul>	<h4>FOCUS ON..</h4> <h5>PLICI</h5> <p>PLICI is a web site platform. Install it to manage multiple web sites easily and make an ecommerce web site in a few minutes. Your are a webagency ? It is your free solution. Written in PHP you can easy add plugin to PLICI. A powerful solution. PL..</p>
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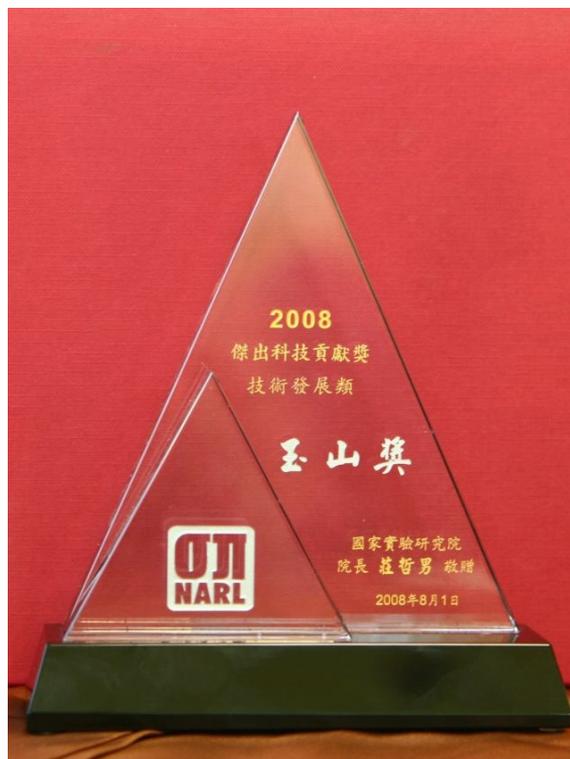
OpenOffice.org

網路與計算中心  
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# 第二屆 2008 年國家實驗研究院傑 出科技貢獻獎



DRBL/Clonezilla 團隊獲得 '技術發展' 類的 '玉山獎' (第一名)



# 2008 年行政院傑出科技貢獻獎



高效能計算平台 DRBL 與 Clonezilla 軟體的技術發展與推廣應用  
頒獎典禮：2009 年 3 月 11 日





# Project of the Month, January 2010



**sourceforge** FIND AND DEVELOP OPEN SOURCE SOFTWARE

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[SourceForge.net](#) > Blog  
**Project of the Month, January 2010**

## Clonezilla

Clonezilla is a partition or disk clone tool similar to Norton Ghost. It saves and restores only the used blocks in the hard drive. Two types of Clonezilla are available, Clonezilla live and Clonezilla SE (Server Edition). The filesystem supported by Clonezilla are: ext2, ext3, ext4, reiserfs, xfs, jfs of GNU/Linux, FAT, NTFS of MS Windows, and HFS+ of Mac OS. Therefore you can clone GNU/Linux, MS windows and Intel-based Mac OS whether they be 32-bit (x86) or 64-bit (x86-64) OS. For these file systems, only the used blocks in the partition are saved and restored. For unsupported file systems, a sector-to-sector copy is done by dd in Clonezilla.

### Why and how did you get started?

On the 29th of March, 2003, the computers in the computer classrooms at the National Center for High-Performance Computing (NCHC, <http://www.nchc.org.tw>) were all upgraded. However, the deployment software did not support the new hardware. That's why we started the Clonezilla project. In the beginning, we started the Clonezilla server edition first, then, in 2007, Clonezilla live was created.

### Who is the software's intended audience?

System administrators, that being, PC cluster administrators, computer classroom administrators, and of course anyone who needs a tool to clone or image his/her computer.

### What are a couple of notable examples of how people are using your software?

\* The National Computer Centre Wonen, Netherlands, used Clonezilla to, "clone a 3 GB image to 27 machines with an average speed was 2.4 GB/min."

\* Cisco Systems used DRBL, "...in the design of our Cisco Computational Cloud cluster to multicast a 5 GB disk image to 64 machines simultaneously."

\* Information Systems Security, Southbridge, Massachusetts, USA, said, "So far, I have cloned 1,084 systems using DRBL. By carefully following the instructions on the DRBL website, and using multicasting and dividing the number of systems into groups of 80-100 PCs at the time, it took me somewhere between 16-38 minutes for each group of PCs, using images of various operating systems that averaged 1 GB in size. DRBL has reduced the recovery/cloning factor by more than 500% as compared with the previous commercial solution [we were] using"

Project name: Clonezilla

Date founded: July 2004

Project page: <https://sourceforge.net/projects/clonezilla/>

### Project Leader

#### Steven Shiau

**Occupation:** Researcher at the NCHC, Taiwan

**Location:** Hsinchu, Taiwan

**Education:** M. S. (Nuclear Engineering), National Tsing Hua University, Taiwan



### Key Developers

#### Blake, Kuo-Lien Huang

**Occupation:** Open source hobbyist

**Education:** M. S.

**Location:** Hsinchu, Taiwan



#### Chenkai (Ceasar) Sun

**Occupation:** Associate Researcher at the NCHC, Taiwan

**Education:** M. S. (Department of Management Information System) National Sun Yat-Sen University, Kaohsiung, Taiwan

**Location:** Hsinchu, Taiwan



#### Yao-Tsung (Jazz) Wang

**Occupation:** Associate Researcher at the NCHC, Taiwan





# DRBL 與 Clonezilla 在台灣

## 公務單位

中小學 295

大學 95

政府單位 35

醫院 3

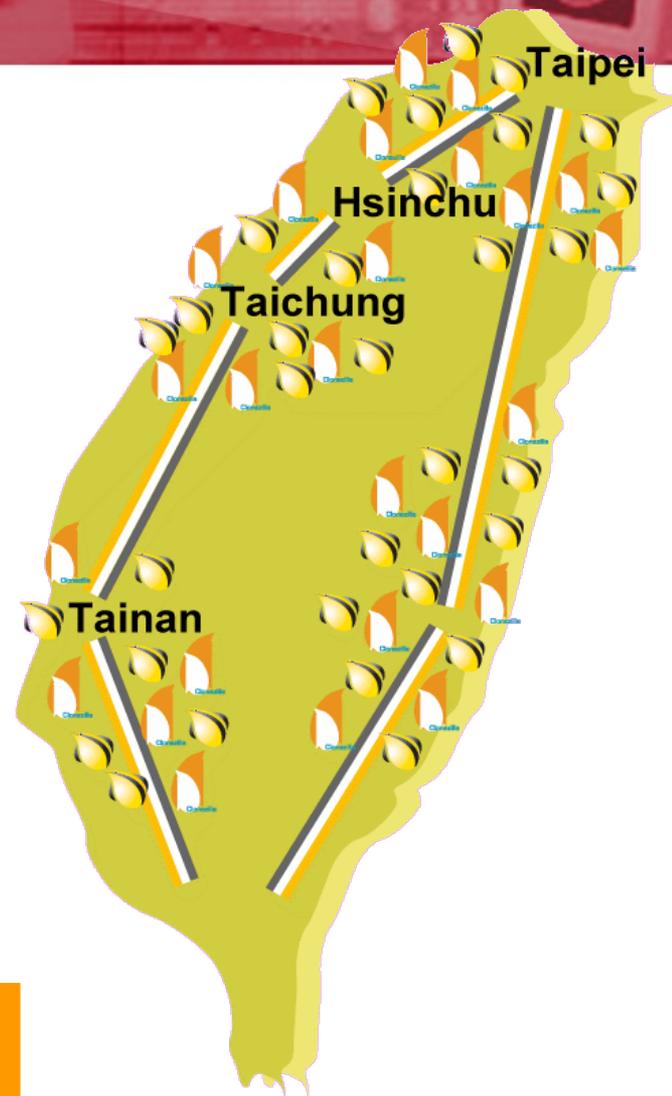
電視台 1

## 中小企業

124

## 其他

62

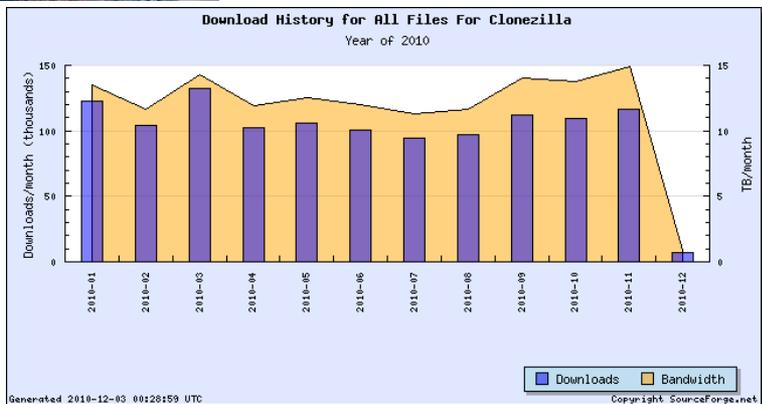


國內已知使用者或單位超過 **500 個**

# Clonezilla



明年一月份的 Linux Journal 有一篇 Clonezilla 的報導，封面上並寫上：  
**Clonezilla – High Performance Open-Source Cloning**



Date (UTC)	Rank	Downloads	Project Web Hits	Tracker opened (closed)	Forum Posts
Dec 2010 *	24	7259	3818	0 (0)	9
Nov 2010	19	116409	54991	8 (2)	279
Oct 2010	18	109299	53209	3 (3)	265
Sep 2010	20	112318	23865	3 (0)	260
Aug 2010	20	97041	18784	6 (6)	330
Jul 2010	18	94321	17468	1 (1)	300
Jun 2010	16	100353	18191	5 (1)	312
May 2010	18	105519	17904	5 (0)	393
Apr 2010	14	102175	18583	7 (2)	340
Mar 2010	20	132196	30223	6 (5)	393
Feb 2010	19	103756	25595	5 (1)	349
Jan 2010	23	123078	33061	2 (0)	413

\* 統計至 2010/12/3



# DRBL/Clonezilla 未來

- 持續自由，開放
- 功能面加強 -DRBL
  - 圖形使用者介面
  - 持續針對新版 GNU/Linux 支援
  - 改用 gpxelinux.0
  - 支援 multicast tftpd
  - 支援 Intel-based Apple 機器無碟環境
  - 針對 MS Windows 無碟效能的改善
  - 支援無線網卡無碟開機
  - ...



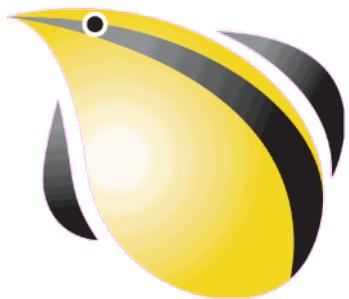
# DRBL/Clonezilla 未來 (續)

- 功能面加強 -Clonezilla
  - 圖形使用者介面
  - Software RAID/FakeRAID 支援
  - 光碟分片還原
  - Clonezilla SE 以 Clonezilla live 為工作環境
  - 更多檔案系統支援 UFS, BTRFS, ZFS...
  - File-based image
  - 加密檔案系統備份還原
  - ...



# 自由下載與使用

- <http://drbl.nchc.org.tw>
- <http://clonezilla.nchc.org.tw>
- <https://tux.nchc.org.tw/trac/tux2live>





# 問題 ?

