



Mondo Rescue: A GPL disaster recovery solution

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Why am I here ?





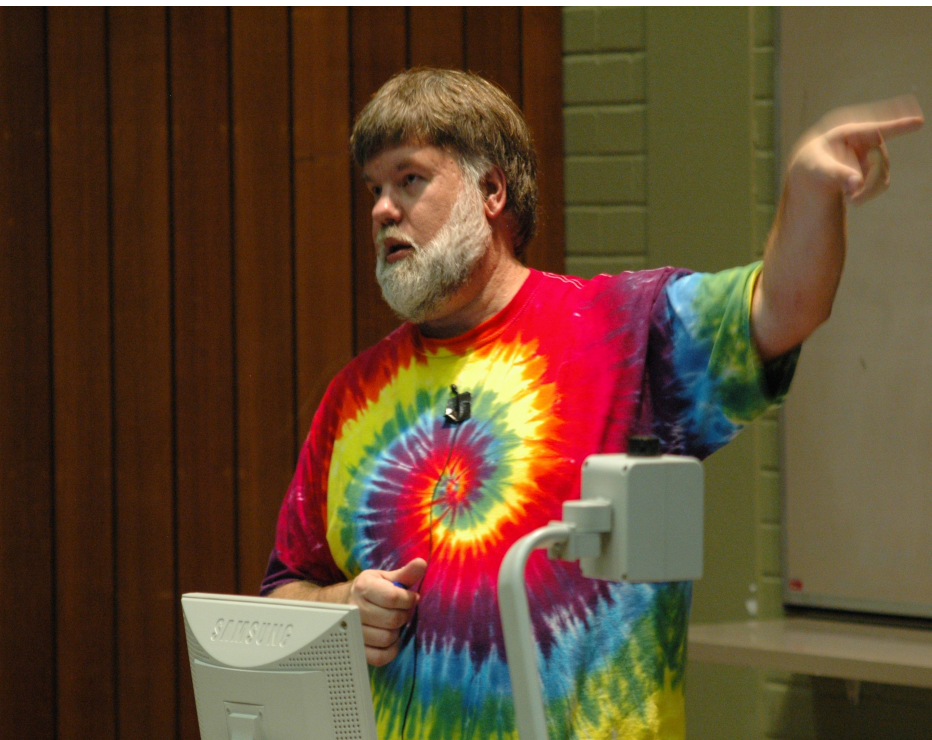
because I'm from France ...



... no !



because I'm from HP ...



... no !



because I'm a great speaker ...



... no !



because I'm an expert ...



... no !



because I take nice pictures ...



... lost again !



because some others
were unavailable ...



... Bingo !



Why am I here ?



because I'm the only one
dealing with Open Source
AND *really* playing recorder !



The User's View

- Need for a Rescue CD for pre-installed servers in 2000
- 2 choices: mkCDrec and mondorescue
- mondorescue nearer from my initial needs
- Developer happy to receive patch
- -H option added

The screenshot shows the Mondo Rescue website in a browser window. The browser address bar shows `http://www.mondorescue.org/`. The website has a navigation menu with links: Home, About, News, Docs, Downloads, Artwork, Support, Wiki, and Thanks. The main content area features the Mondo Rescue logo and the heading "Mondo Rescue Home Page". Below this is a section titled "What is Mondo Rescue ?" which contains a terminal window. The terminal window displays the following text:

```
WELCOME TO MONDO RESCUE
Please choose the backup media:
  CD-R disks
  CD-RW disks
  DVD disks
  CD streamer
  Tape
  Hard disk

Making catalog of files to be backed up
Dividing disk into partitions
Backing up filesystem
Copying MBR
Calling MBR
Preparing boot disk
Archiving regular files

I am backing up your live filesystem now.
Please wait. This may take a couple of hours.
CDR 1: [*****.....] 23% used
3:14 taken      82:35 remaining
3% done        97% to go

Writing boot disk
Boot and data disk images were created.
Boot+data disks were created OK
Archiving regular files
I am backing up your live filesystem now.
```

Below the terminal window, the text reads: "Mondo Rescue is a GPL disaster recovery solution. It supports Linux (i386, x86_64, ia64) and FreeBSD (i386). It's packaged for multiple distributions (RedHat, RHEL, SuSE, SLES, Mandriva, Debian, Gentoo). It supports tapes, disks, network and CD/DVD as backup media, multiple filesystems, LVM, software and hardware Raid."



A GPL disaster recovery solution



- Distribution neutral (Mandriva, RedHat, Fedora, RHEL, OpenSuSE, SLES, Debian, Gentoo, Slackware)
- Supports any FS supported by the kernel (including dual boot systems) on any disk supported (+HW Raid) and boot loader (+LVM, +SW Raid)
- Supports CD-R[W], DVD[-+]R[W], Tapes, NFS, local FS (ISO9660 files)
- Uses mindi for mini-distro (using the running or fail-safe kernel)
- Full and differential backups are supported
- CLI + curses based UI



Archiving: mondoarchive

- Uses either bzip2, gzip or lzo for data compression
- Uses afio for reliable backup (supports compression on a file basis, ASCII headers, cpio comp.)
- Generates variable size bootable ISO images or burns media / creates tapes
- Use running kernel + modules or a generic set

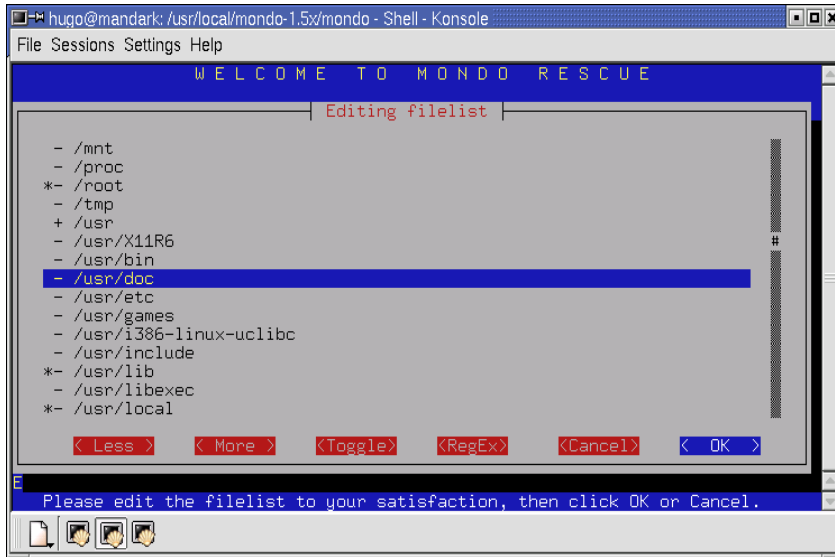


```
/usr/sbin/mondoarchive -O -k  
/boot/vmlinuz-2.6.16 -d / -s 700M  
-p mach1 -E "/usr/share/doc /usr/src  
/mnt/fs2" -F -N -T /home/mondo/tmp  
-n server.hpintelco.org:/writer/nfs
```



Restoring: mondorestore

- From bootable physical medias (floppy, CDs, tapes), images on disks, network, virtual media (Proliant specific) or PXE
- Interactive restore from image files under the OS
- mindi.iso tool set
- Various modes: Automatic, Interactive, Selective, Compare
- Ability to change FS type, layout, SW Raid, even HW configuration.





Cloning support



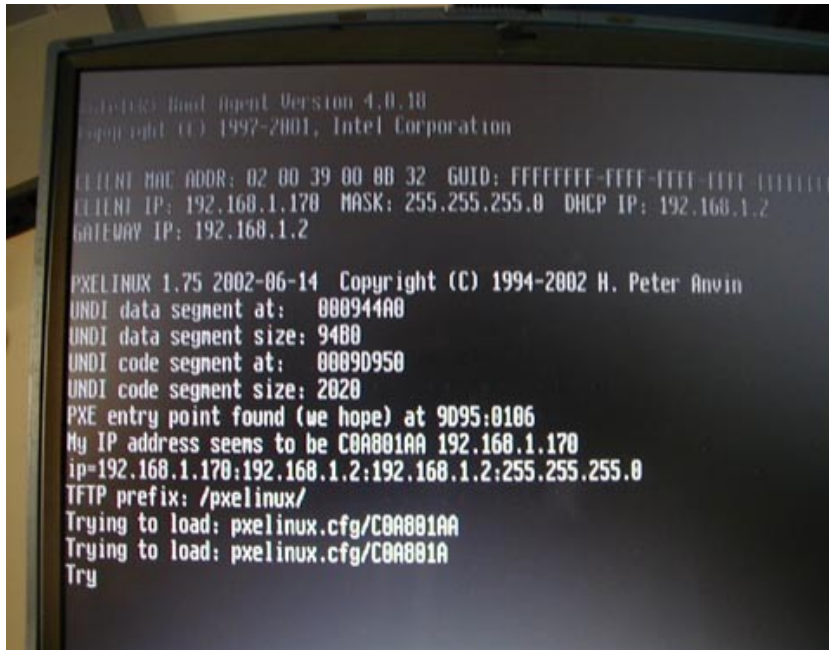
- Requires knowledge of master and target platforms (potential different drivers)
- All drivers should be part of the mindi image created (either used on master or forced in mindi)
- Use -H if master and target are identical hardware platforms
- In other cases, all functions are also available (partition resizing, filesystem type change ...) + hardware adaptation
- Improvement for mindi to include all drivers - TBC



The Contributor's View

- First patch in Dec. 2000
- First attempt of ia64 port back not published in 2001, then in Apr. 2004
- Proliant fixes in Nov. 2004
- Then migration from CVS => SVN
- PXE support added in Apr. 2005
- Then no working SVN (1 year+)
- Patched 2.04 version in Sep. 2005





- Using PXE boot ROM, ability to integrate mondo images with a generic deployment server based on pxelinux.
- Ability to boot from a (central) server hosting (all) ISO images without physical media.

label mondo

```
kernel kernel/vmlinuz-mondo
```

```
append root=/dev/ram rw pxe
```

```
initrd=initrd/initrd-mondo.img
```

```
ramdisk_size=32768 prefix=mach1
```

```
load_ramdisk=1 prompt_ramdisk=0
```

```
ipconf=eth1:192.168.0.1:255.255.255.0:192.168.0.255:192.168.0.254
```

```
nfsmount=192.168.0.10:/export/mondo
```

```
ping=5
```

```
Date : 01/19/2007
```

PXE support



Proliant features



- With the iLO and Virtual Media function, ability to boot from a (central) server hosting (all) ISO images without physical media.
- Creates backup with media mounted through iLO.
- Smart Array support
- Proliant NIC support
- Hardware recovery (hpacucli, hponcfg, conrep) - TBC





The Maintainer's View (I)

- Project Maintainer since Oct. 2005
- New subversion repository (Thanks BerliOS – HP)
- 8 versions published
- New Build process (Generated pkgs – 2 generations)
- 14 distributions (Thanks Qemu)

http://trac.mondorescue.org/report/3

France 2 : site de la chaîne de télé... Ouvrir une session "open source" "user" - Google ... {3} All Tickets by Milestone ...

2.2.2 Release

Ticket	Summary	Component	Version	Type	Severity	Owner	Created
#103	mind doesn't support UUID needed for Ubuntu 6.10 and VMWare	mondo	2.2.0	enhancement	blocker	bruno *	11/17/06
#108	/dev fills up to 100% and stops	mondo	2.2.0	defect	blocker	bruno *	11/21/06
#119	Devices like /dev/sdn* are not created	mondo	2.2.1	defect	normal	bruno *	12/29/06
#44	mondorestore dont restore all files from the tape and remount the root partition in ro	mondo	2.0.8	defect	major	bruno *	08/15/06
#117	Mondo does not support boot loader not in MBR	mondo	2.2.1	defect	major	bruno *	12/29/06
#68	LVM log. volumes are not resized using factor which creates problems when restoring	mondo	2.0.9	enhancement	normal	bruno *	09/23/06
#82	Archiving to tape leaves out most files (biggiefiles are ok)	mondo	2.0.9	defect	normal	andree *	10/10/06
#83	Create a package hierarchy to easy installation	mondo	2.2.0	defect	normal	bruno *	10/12/06
#84	build x86_64 packages for popular distros	mondo	2.2.0	enhancement	normal	bruno *	10/13/06
#98	continue even if wrong media inserted	mondo	2.2.0	enhancement	normal	bruno *	11/01/06
#102	/dev/shm Problem	mondo	2.2.0	defect	normal	bruno *	11/17/06
#114	mondorestore should support -p	mondo	2.2.0	defect	normal	bruno *	12/14/06
#115	Allow mondo to create bootable USB keys to restore from	mondo	2.2.0	enhancement	normal	bruno *	12/19/06
#120	Mondorestore fails with kernel panic on opensuse 10.2	mondo	2.2.1	defect	normal	bruno *	12/30/06
#121	incorrect tmp dir used by mindi for copying gawk to	mindi	1.2.1	defect	normal	bruno *	12/31/06
#123	Add support for Slackware 11.0	mondo	2.2.1	defect	normal	bruno *	01/03/07
#85	abandoned files	mondo	2.0.9	defect	minor	bruno *	10/13/06
#95	Physical extent size for volume group isn't preserved	mondo	2.2.0	defect	minor	bruno *	11/01/06
#109	add a timestamp to the logfile's name	mondo	2.2.0	enhancement	minor	bruno *	11/22/06

2.2.3 Release

Ticket	Summary	Component	Version	Type	Severity	Owner	Created
#118	In compare mode allow mountlist changes before operation	mondo	2.2.1	enhancement	normal	bruno *	12/29/06
#122	Build a FreeBSD version	mondo	2.2.1	enhancement	normal	bruno *	01/02/07

3.0.0 Release

Ticket	Summary	Component	Version	Type	Severity	Owner	Created
#1	sprintf used without checks	mondo	2.0.8	defect	normal	bruno *	07/31/06
#67	mondarchive should have an option to select NIC	mondo	2.0.9	enhancement	normal	bruno *	09/22/06



The Maintainer's View (II)

- New Website (Thanks Ayo)
- Trac (126 Bugs declared)
- Mondorescue HOWTO Rewritten
- Mailing List activity

The screenshot shows a web browser window at <http://trac.mondorescue.org/>. The page features the Mondo mascot, a "Protected by MONDO" logo, and navigation links for Login, Settings, Help/Guide, About Trac, and Register. A breadcrumb trail includes Wiki, Timeline, Roadmap, Browse Source, View Tickets, and Search. The main content area is titled "Welcome to Mondo Rescue devel pages" and contains the following text:

As all Wiki pages, this page is editable, which means that you can modify the contents of this page simply by using your web-browser, as long as you're registered. Simply click on the "Edit this page" link at the bottom of the page. To Register click on the "register" link at the top right of this page. [WikiFormatting](#) will give you a detailed description of available Wiki formatting commands.

Enjoy!
The Mondo Rescue Dev Team

Starting Points

- ◆ [Mondorescue Web site](#)
- ◆ [Its documentation](#)
- ◆ [TracGuide -- Built-in Documentation](#)
- ◆ [Debian BTS: mondo and mindi](#)

This knowledge base contains information that is still too much in flux or immature to be put into the proper documentation. Some like the [Roadmap](#) will (hopefully!) always be that way.

Contents

- [Boot Process Unraveled](#)
- [Distribution Packaging](#)
- [Roadmap](#)
- [Standards Compliance](#)
- [Tools](#)
- [FAQ](#)
- [Using Virtualisation Tools With Mondorescue](#)
- [Customer Experience and Feedbacks With Mondorescue](#)



The Technical Lead's View (I)

- Rewrite what I don't like
- trunk testbed for memory management
- v2.2.2
 - bug fixes on 2.2.1
 - Gentoo, Fedora official pkgs TBC

The screenshot shows the Trac Roadmap page for Mondo Rescue. The browser address bar is <http://trac.mondorescue.org/roadmap>. The page features the Mondo Rescue logo and a navigation menu with links for Wiki, Timeline, Roadmap (selected), Browse Source, View Tickets, and Search. The Roadmap section displays three milestones:

- Milestone: 2.2.2** (No date set): 5% progress. Closed tickets: 1, Active tickets: 19.
- Milestone: 2.2.3** (No date set): 0% progress. Closed tickets: 0, Active tickets: 2.
- Milestone: 3.0.0** (No date set): 0% progress. Closed tickets: 0, Active tickets: 3.

Below the 3.0.0 milestone, a description reads: "Major rewrite containing new memory management (dynamic allocation), configuration files, escape strings, ...".

At the bottom of the page, the date is listed as "Date : 01/19/2007".



The Technical Lead's View (II)

- v3.0.0
 - largely rewritten
 - x86_64/ia64 build process
 - more distributions (FreeBSD, Debian Etch)
 - Internationalization
 - Configuration files
 - Code cleanup (memory management)
 - Software Engineering (tests programs, splint, valgrind...)

The screenshot shows the Trac timeline for Mondo Rescue. The browser address bar displays `http://trac.mondorescue.org/timeline`. The page header includes the Mondo mascot, a "Protected by MONDO" badge, and navigation links for "Wiki", "Timeline", "Roadmap", "Browse Source", and "View Tickets". The user is logged in as "bruno". The timeline is organized by date, with entries for 01/18/07, 01/17/07, and 01/16/07. Key entries include changesets [1061], [1060], [1059], [1058], [1057], and [1056], as well as edits to FAQ, Troubleshooting, and WikiStart pages.



The First World Wide Mondorescue Summit



Contribution 2007



Web Resources

Mondorescue main site

<http://www.mondorescue.org>

Trac / Wiki

<http://trac.mondorescue.org>

Busybox

<http://www.busybox.net>

Open Source at HP

<http://opensource.hp.com>

“The evolution of FLOSS
and the Internet are
tightly coupled”



Contact

Bruno_Cornec@hp.com

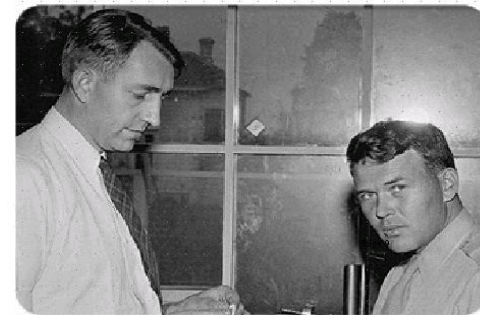
(Linux Solution Consultant in the
HP/Intel Solution Center)

<http://www.hp.com/linux>

"Changes are never easy to
make.
There is comfort and safety
in tradition, but change must
come, no matter how painful
or expensive it may be."

Bill Hewlett

Thanks



Linus Torvalds, Richard
Stallman, Eric Raymond, Nat
Makarevitch, René Cougnenc,
Eric Dumas, Rémy Card, Bdale
Garbee, Hugo Rabson, Gallig
Renaud, Andree Leidenfrost
among others, for their work
and devotion to the Open
Source Software cause... and
my family for his patience :-)