



www.drlm.org

Past, Present & Future of DRLM project



Didac Oliveira

DRLM Chief Architect & Core Developer



Co-Owner & Co-Founder at Brain Updaters, S.L.L.

Co-Founder & Maintainer at DRLM Project

Other OpenSource contributions:

- **Relax-and-Recover (ReaR)**
www.relax-and-recover.org
- **Config-to-HTML (cfg2html v6.x)**
www.cfg2html.com



DRLM Team

Project founders & maintainers



Didac Oliveira

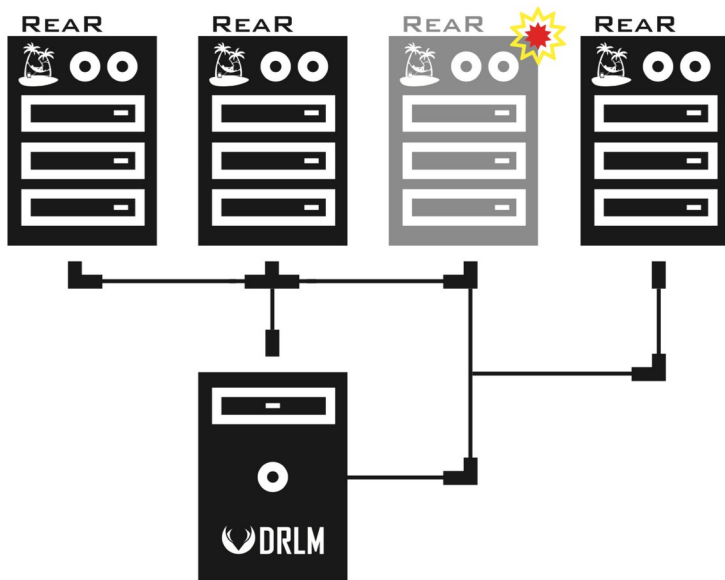
Pau Roura

Ruben Carbonell



DRLM Project

Agenda



Past:

- Project history

Present:

- What is DRLM?
- DRLM 2.3.X news

Future:

- DRLM 3.0 and future



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Past



GRIFOLS needs a proper DR system for it's strategic projects on GNU/Linux:

- They were used to proprietary UNIXes (AIX and HP-UX) for years.
- Disaster Recovery is a must for them, as a pharma company needs to report to organizations like FDA (US Food & Drug Administration) and EMA (European Medical Agency).
- They were happy with DR tools for AIX (mysysb/NIM server) and HP-UX (Ignite Server).
- What should they use for GNU/Linux?



GRIFOLS



BRAINUPDATERS

- GRIFOLS requirements were analyzed. A solution based on Relax-and-Recover was proposed.
- ReaR had some drawbacks in the management area that are very important for a big company like GRIFOLS.
- BU had the commitment to make a PoC for the proposed solution with ReaR, and to develop a management layer, released as Open Source software, in few months with all the requirements needed.



Project History

DRLM v1.0.0 released



DRLM version 1.0 was released in just 6 months of hard effort in development and testing!

- GRIFOLS was happy with the Proof of concept results, and this way the DRLM project was born.
- The project implementation at GRIFOLS was a success in January 2014.
- This is not the end of the story, but ...



To see what is the situation of DRLM project in a Big Pharma Company **don't trust me, trust them.**

See what GRIFOLS Unix Global Manager told at Librecon 2018 about us:

<http://bit.ly/Librecon18>



Project History

Timetable



2013 AUG: DRLM Project was born

2013 DEC: First DRLM stable version (1.0.0)

2014 DEC: DRLM full integration with ReaR

2015 JAN: DRLM project websites released
(www.drlm.org & docs.drlm.org)

2016 JUL: DRLM version 2.0.0 released

2017 MAY: DRLM version 2.1.3 released

2017 SEP: DRLM version 2.2.0 released

2018 OCT: DRLM version 2.2.1 released

2019 JUL: DRLM version 2.3.1 released



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Present

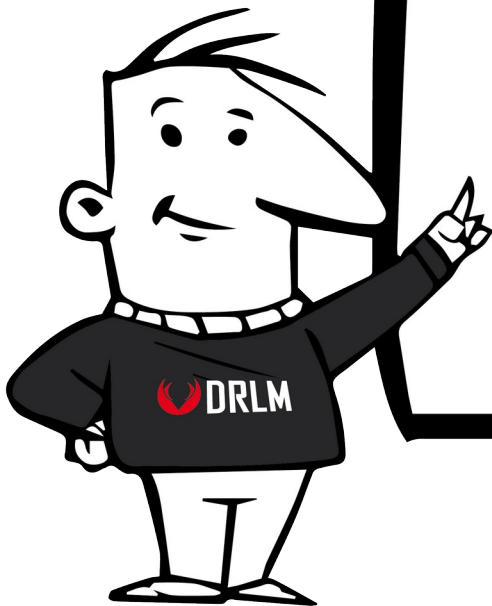


What is DRLM?

Brief description of ReaR



ReaR is the best standalone Disaster Recovery tool for GNU/Linux.
It is able to recover a single system in few minutes from scratch.





What is DRLM?

Brief description of DRLM

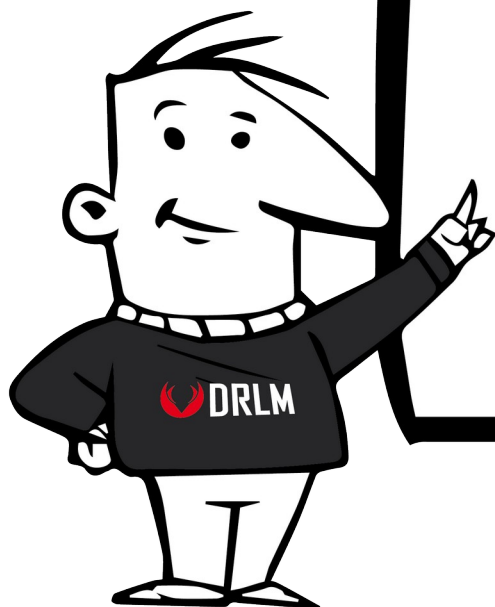


DRLM is a centralized management tool for GNU/Linux implementations using ReaR.

An easy-to-use software for Disaster Recovery, System Migrations and OS Deployments of GNU/Linux.



DRLM





What is DRLM?

Feature highlights



Automatic error
reporting



Nagios

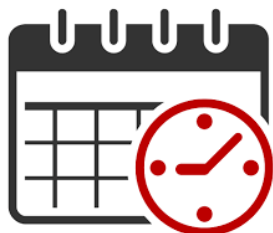
ZABBIX



Unattended client installation and
base config



Backup job
scheduler



Export & import
DR images





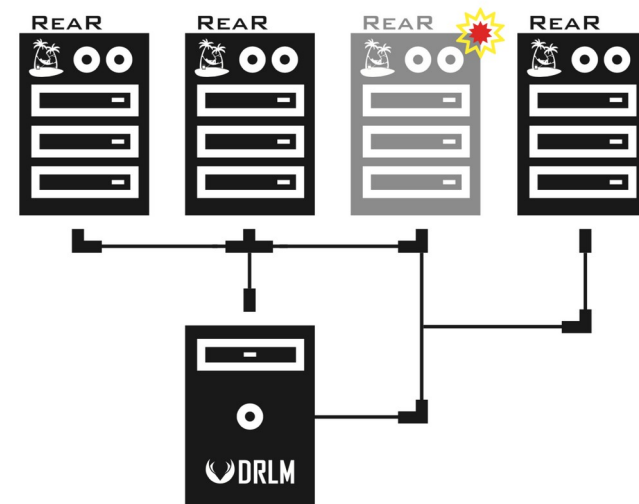
What is DRLM?

GNU/Linux Disaster Recovery



- Fast *rollback* to a pre-upgrade backup after any wrong OS upgrade causing service downtime or malfunction.
- Recover software or hardware failures. From data corrupted or broken disks to full hardware replacement issues.

- Full network recovery system for your GNU/Linux operating systems.
- Complementary with your existing data backup solution. Is not a data backup replacement.





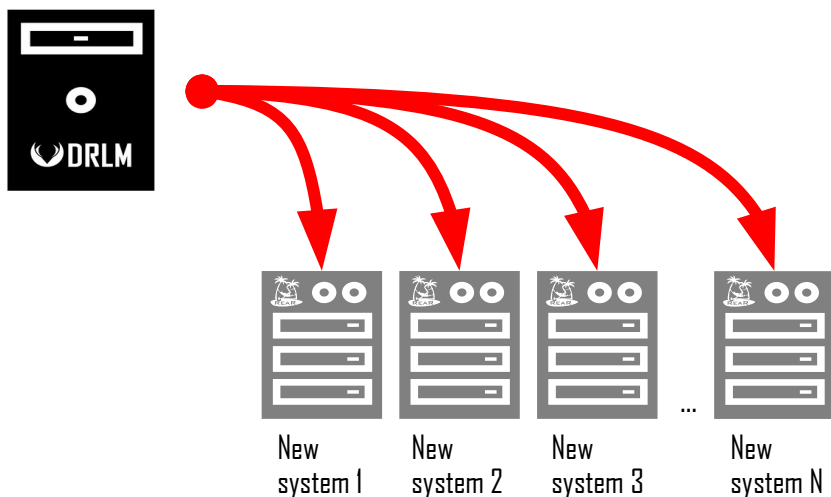
What is DRLM?

GNU/Linux Deployment tool



Network based OS deployments

Install new systems from any DRLM backup image as a template for a new GNU/Linux Server or Desktop.

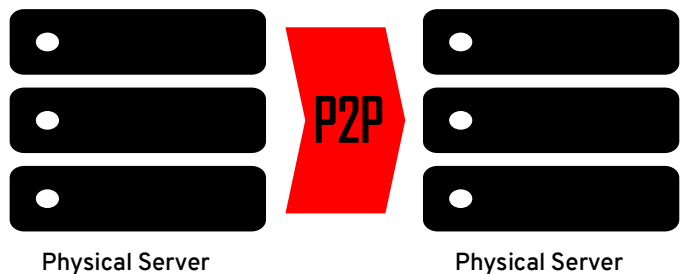
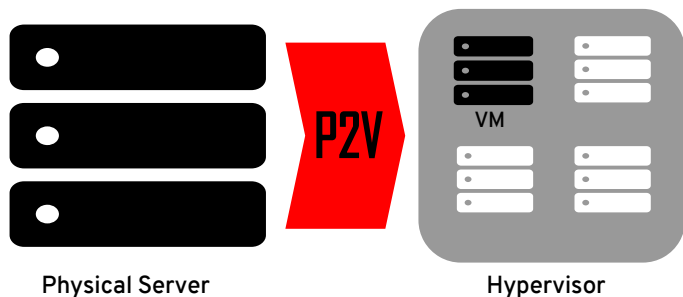


- 1) Install a fresh OS once, with your required FS/LVM layouts, required software packages and base configs, etc.
- 2) Register this new client to your DRLM server.
- 3) Run a DRLM backup on this client
- 4) Export the resulting DR image and distribute it among your DRLM servers on different locations.
- 5) Register your new servers (phys. or virt.) in DRLM.
- 6) Import the template DR image to them.
- 7) Net boot your servers and recover/install them all.



What is DRLM?

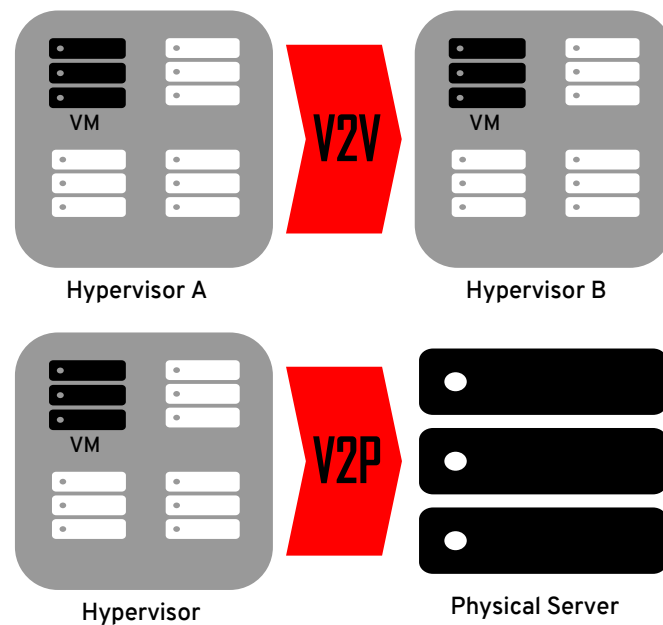
GNU/Linux Migration tool



- Migrate your existing VMs to other virtualization platform, without worrying about cumbersome disk format conversion compatibilities or vendor specific conversion/migration tools.
- Move virtual workloads to physical, for performance needs or to test reproduce issues .

A vendor agnostic solution for all your system migrations.

- Migrate your GNU/Linux physical workloads to any virtualization platform of your choice.
- Replace your old and out-of-warranty hardware for new one from any vendor.





DRLM version 2.X

What is new?



- **Golang DRLM API replacing Apache2 and CGI-BIN.**
- **Listbackup command shows size and duration of backup.**
- Improved database version control.
- Added "-C" on install workflow to allow configuration of the client without install dependencies.
- Added "-I" in the import backup workflow to allow importing a backup from within the same DRLM server.
- Added "-U" on list clients to list the clients that have no scheduled jobs.
- **listclient shows if a client has scheduled jobs or not.**
- Added "-p" on list backups workflow to mark the backups that might have failed with colors.
- Added "-C" on addclient workflow to allow the configuration of the client without installing the dependencies.
- **Debian 10 Support.**
- Added ReaR 2.5 support on Debian 9, Debian8, Ubuntu 18, Ubuntu 16 and Ubuntu 14.
- Added OS version and ReaR version in listclient.
- **listclient workflow shows client status (up/down).**
- Installclient workflow install ReaR packages from default.conf by default. Is possible to force to install ReaR from repositories with -r/--repo parameter (issue #114).
- **Added docker support (not for production) – *develop branch***
- Etc.



DRLM version 2.3.1

Latest production release news



```
[root@drlm ~]# drlm listclient
```

Id	Name	MacAddres	Ip	Client OS	ReaR Version	Network	Scheduled
100	centos	080027010011	10.100.0.11	CentOS 7.6	2.5/2019-05-10	vboxnet1	False

```
[root@drlm ~]# drlm listclient
```

Id	Name	MacAddres	Ip	Client OS	ReaR Version	Network	Scheduled
100	centos	080027010011	10.100.0.11	CentOS 7.6	2.5/2019-05-10	vboxnet1	False

```
[root@drlm ~]# drlm listbackup
```

Backup Id	Client Name	Backup Date	Backup Status	Duration	Backup Size
100.20190612135859	centos	2019-06-12 13:58	enabled	0h.4m.4s	605M



DRLM 2.3.1 Demo

<https://asciinema.org/a/TUAIkRzD1J9QBFmOvAL64QA2>

A brief demo of how last DRLM production release (v2.3.1) works.

This video shows the basic use of DRLM and some of the latest news of the DRLMv2 and its CLI, displaying important information to the user like:

- client is online (GREEN) / offline (RED)
- client has Scheduled Jobs
- backup duration / size (gives a clue if our client config is correct and backup is complete)

Anyway is a demo of how easy and fast is to have a proper Disaster Recovery solution for GNU/Linux.
Enjoy!



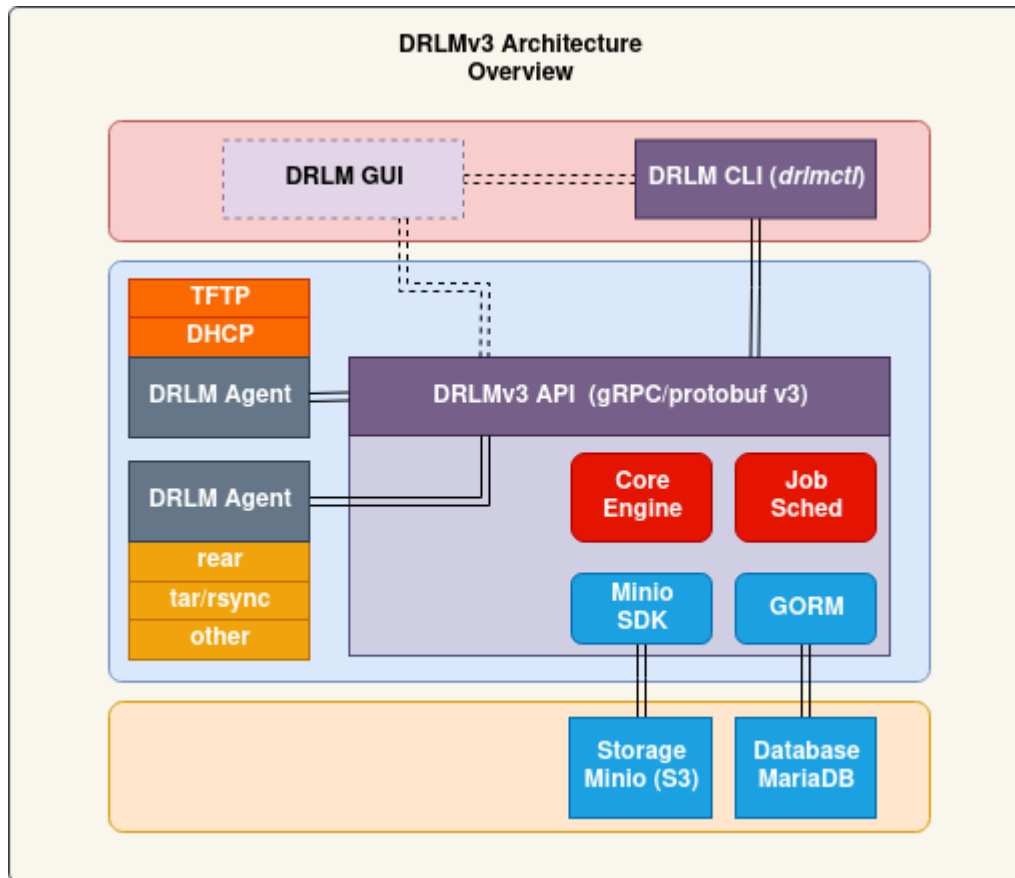
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Future



DRLM version 3

Design Overview



DRLM version 3 Highlights

- Complete rewrite in Golang
- Modular design
- S3 Object storage backend
- MariaDB database
- More than just GNU/Linux DR
- Etc.



What we've done until now?

- Functional DRLMv3 CLI tool (*drlmctl*)
- Installation of DRLMv3 Core from *drlmctl*
- Installation of DRLMv3 Agents from *drlmctl*
- Working base plugins system
- Working base task scheduler
- Working base Storage backend (Minio)
- Working base Testing environment (cp/tar dummy plugins)
- All communication with all components with encryption (TLS)



DRLM version 3

Development, Testing & Build Environment



dr3dev (DRLMv3 Development, Testing & Build environment)

We prepared this repo to avoid issues when developing DRLM version 3, providing exactly the same environment to every developer contributing to DRLMv3. It's easier to detect malfunction components, avoid mismatch of Go libraries used. Is very easy to start, all is setup *automagically*, from git configs to mariaDB and Minio setup, etc.

Let's see how it works:

```
$ git clone https://github.com/brainupdaters/dr3dev
$ cd dr3dev
$ make build
$ make start ghuser=didacog gitname='Didac Oliveira'
  gitmail=didac@dr1m.org
$ Happy hacking!!
```




DRLM version 3
DEMOS



Dr3dev Demo (DRLMv3 Development, Testing & Build tool)

<https://asciinema.org/a/PQbT9sbFshI5oZ2aIBfgAFYUa>

A brief demo of how easy is to contribute to the new DRLM version 3.

This demo shows how to use <https://github.com/brainupdaters/dr3dev> repository that has a complete environment to develop, test and build the future DRLMv3.

It has never been easier to contribute to DRLM with all the required tools, editors, database, storage backend, etc. in a Github repo and keeping your laptop/workstation clean. It uses docker to set up all the environment and is really easy to use!!

Happy hacking!!

DRLMv3 Testing Demo

<https://asciinema.org/a/HkuEfdOkIEIBsmp9JOmPIA4qU>

A brief demo of what is the state of the future version of DRLM (version 3) and what can be tested at this point of development after 7 months of development.

At this point we have the CLI (drlmctl) that is able to install the drlm-core and drlm-agents of version 3 and a working base plugin system with 2 dummy plugins for testing that store data to the Minio(S3) backend.

Enjoy the testing!!



Roadmap for DRLM 2.X

- More automation
- Add support for new platforms (PPC, RPi3, etc.).
- Multiple Boot/restore options (offline, HTTP, etc.)
- Packaging and backup improvements.
- Non planned E.O.L. until version 3 ready for production.
- And lot more

New DRLM version 3 !

- design phase ended.
- Development phase started in march 2019 and working actively on it..
- Is going to be a huge change improving flexibility and modularity of the service.
- Keep updated for future project news!



Project Future

How to contribute?



- Try our latest versions and give us your feedback
- Write code to improve or extend DRLM
- Start discussions for new feature proposals
- Report Issues to improve our code and/or documentation

github.com/brainupdaters/drlm*

- Share your experience with DRLM
- Contract services and/or Support for DRLM

Visit <http://drlm.org/community/> and <http://brainupdaters.net/drlm-services/> for more information.



www.drlm.org

Questions & Answers



DRLM at Github: github.com/brainupdaters/drlm

DRLM website: drlm.org

DRLM Docs: docs.drlm.org

Slides: <http://bit.ly/FOSDEM20>
<http://bit.ly/Librecon18>



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