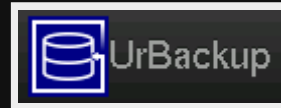


UrBackup



URL	https://www.urbackup.org
Current Version	2.4.12
Installed version	2.4.12
Release Date	17/12/2019
Lang	C++

Problem

Current solution has problems;

- no central management
- no maintenance
- tricky to install
- doesn't work on all systems
- no restore

Alternatives

Backup software

Updated: 20/02/2020

Product	UrBackup	borgbackup	burp	backupper	backupper	bacula	amanda	fwbackup	Chiark-backup	duplcity
current version	2.4.12	1.1.10	2.3.22	4.3.2	4.3.0	9.4.4	3.5.1	1.43.7	6.1.2	0.8.10
repository version				3.3.2	4.3.0	9.4.2	3.5.1	N/A	6.1.2	
release date	17/12/19	16/05/19	01/02/20	17/02/20	28/08/17	28/05/19	01/12/17	26/12/17	12/02/20	23/01/20
DB						postgres/mysql	mysql			
client/server model	y	y	y	y	n	y	y	n	?	
Open Source	AGPL3	BSD	AGPL3	GPL	MIT	AGPL3	y	y	y	y
maintained	y	y	y	y	n	y				y
Lang	C++	python		perl	ruby	C				python
Package						community				
Dashboard	y	Optional	<input type="checkbox"/> ncurses	y	n	Optional	<input type="checkbox"/>	n	n	n
email notification	y		y	y	y	y				
local backups	y	y	y	y	y	y		y		
offsite backups	y	y	y	y	y	y		y		y
compression	y	y	y	y	y	y				
encryption	y	y	y	y	n	y				y
deduplicating	y	y	y	y	n					
incremental	y				y	y		y		y
delta changes			y		n	n				y
fast	y	y			y	y				
restoring	y		y	y	n	y				
intermittent connecte	y			y	n	n				
client software require	y			n	y	y				
system backups	<input type="checkbox"/> y	<input type="checkbox"/>		y	<input type="checkbox"/> n	y		y		
backups mountable	y	y			n	y				
file format					tar					tar
Resume backups			y			n				
retention periods			y			tricky				
linux support	y	y	y	y	y	y	y			
bsd support	y	y	y	likely?	y	y	y			
windows support	y	experimental	y	y	y	y	y			
mac support	y	y	y	y	y	y				
Ease of use x/5	4			4	4	2				
Installation x/5	5			3	<input type="checkbox"/> 4	3	1	<input type="checkbox"/>		
Documentation x/5	5			4	4	4	1		<input type="checkbox"/> 0	3
Tested	y			y	y	y	y			
Verdict x/5	<input type="checkbox"/> 5	4	3	3	3	2	1	n/a	n/a	1

Installed

Bacula	over complex
--------	--------------

BackupPC	buggy, perl, some nice features
----------	---------------------------------

Amanda	too hard to setup, geared towards tape backup
--------	--

Deja Dup	too basic
----------	-----------

Reviewed

borgbackup

basic dash, experimental windows

burp

ncurses dash, pretty good

fwbackup

single user

chiark-
backup

no docs

duplicity

no dash

Features of UrBackup

- Dashboard
- client/server model
- open source
- Email notification
- Compression
- Encryption
- Deduplication
- Incremental
- Restores
- Intermittent connections
- file backups

- system backups (VHD/VHDX format support up to 64TB)
- backups mountable
- linux/bsd/windows/mac

Use cases

- Multiple computers to backup (~20)
- Central management
- Different OS's
- Easy to use

Pros

- Central web interface
- Flexible backup schedule
- Easy backup & restore of files & system

Cons

- Uses VHD/VHDX (Microsoft Open File Format)?
- Linux imaging support is Beta only at the moment

Tested

System	File	System	System
	Backup	Backup	Restore
POP!OS 19.10	ok		
debian 10	ok	ok	ok
FreeBSD 12.1	ok		
FreeBSD 7.x	fail		
Windows 7	ok		

Installing Server 2.4.12

OS

Requirements GNU/Linux, Windows and
FreeBSD.

My Choose Debian 10 64bit

Installation

```
wget https://hndl.urbackup.org/Server/2.4.12/debian/buster/urbackup-se  
dpgk -i urbackup-server_2.4.12_amd64.deb  
apt install -f
```

DattoDB

Snapshots to a file (for systems without
btrfs/LVM/etc)

Install dattobd (optional)

Snapshots for Linux (alternative to LVM/btrfs)

```
sudo apt-key adv --fetch-keys https://cpkg.datto.com/DATTO-PKGS-GPG-KEY
echo "deb [arch=amd64] https://cpkg.datto.com/datto-deb/public/$(lsb_release -sc) main" >> /etc/apt/sources.list.d/datto.list
sudo apt-get update
sudo apt-get install dattobd-dkms dattobd-utils
```

Using dattodb

Create

```
root@logicaldoc:~# dbdctl setup-snapshot /dev/vda1 /.datto 0
```

Destroy

```
root@logicaldoc:~# dbdctl destroy 0
```

Installing Client 2.4.10

Install client

```
TF=$(mktemp) && wget "https://hdl.urbackup.org/Client/2.4.10/UrBackup9
```

Select Snapshot mechanism as dattobd

Installing Beta Server 2.5.1

NOTE: This version allows for Linux system backups. NOTE: You must install this on Debian bullseye or greater because 2.5.1 requires libc6 2.29.

```
wget https://beta.urbackup.org/Server/2.5.1%20beta/urbackup-server_2.5.1_ubuntu20.04_amd64.deb
sudo dpkg -i urbackup-server_2.5.1_ubuntu20.04_amd64.deb
```

Installing Beta Client 2.5.1

Partclone

Allows system backup of data only

Install partclone (optional)

```
sudo apt install partclone
```

Install dattobd

Refer to previous slide

Install client

```
wget https://beta.urbackup.org/Client/2.5.1%20beta/UrBackup%20Client%20Linux%202.5.1%20beta.tar.gz  
sudo bash UrBackup\ Client\ Linux\ 2.5.1\ beta.sh
```

Upgrading

1. renamed

`/usr/local/var/urbackup/server_idents.txt` to `.bak`

2. stop urbackupclientbackend service

```
sudo service urbackupclientbackend stop
```

3. Wait 5 minutes

4. start urbackupclientbackend service

```
sudo service urbackupclientbackend start
```

Dashboard

Show entries

Show/hide columns

<input type="checkbox"/>	Computer name	Online	Last seen	Last file backup	Last image backup	File backup status	Image backup status
<input type="checkbox"/>	BB-8	No	02/24/20 10:57	02/24/20 10:53	Never	Completed with issues	No recent backup
<input type="checkbox"/>	airiam	Yes	02/24/20 15:59	02/24/20 14:37	Never	Completed with issues	Not supported
<input type="checkbox"/>	freebsd12.1	Yes	02/24/20 15:59	02/24/20 14:35	Never	Ok	Not supported
<input type="checkbox"/>	logicaldoc	Yes	02/24/20 15:59	02/24/20 14:35	02/21/20 13:41	Ok	No recent backup
<input type="checkbox"/>	tramontana-PC	Yes	02/24/20 15:59	02/24/20 14:26	Never	Ok	Disabled


Showing 1 to 5 of 5 entries

First Previous **1** Next Last

Show all clients Select all Select none Remove selected With Selected

<http://<urbackup server>:55414>

Activities

Activities							
Computer name	Action	Details	Progress	ETA	Speed	Files in queue	
tramontana-PC	Full file backup	-	<div><div style="width: 48%;">48%</div></div> 2.55 GB / 5.37 GB	4 minutes	 104.11 Mbit/s	0	Stop Show log
Last activities							
ID	Computer name	Action	Details	Starting time	Required time	Used Storage	
31	freebsd12.1	Full file backup	-	02/24/20 14:15	0 min	2.79 MB	
30	logicaldoc	Full file backup	-	02/24/20 12:06	1 min	612 KB	
29	logicaldoc	Incremental file backup	-	02/24/20 12:04	2 min	0 bytes	

Add local clients

- LAN clients are automatically detected
- May need to restart the clients

```
sudo service urbackupclientbackend restart  
sudo service urbackupclientbackend status
```

Add remote/internet clients

Setup server

Settings -> General -> Internet

Enable internet
mode

true

Internet server

server.tramontana.com.au

Do image backups
over internet

true

Do full file backups
over internet

true

Setup firewall

Port forward in the firwall

IP 192.168.200.137

port 55415

Add client on Server

Click Add Client Enter 'BB-8' (NOTE: It must equal the hostname of your client exactly)

Download pre-configured client

```
scp UrBackup\ Client\ \ (bb8\).sh <remote client>:~
```

Restart server

```
sudo service urbackupsrv restart
```

Install on client

Install datto as before.

```
ssh <client>  
sudo bash UrBackup\ Client\ \(\bb8\).sh
```

Turn on internet mode in settings

Edit /usr/local/var/urbackup/data/settings.cfg

Add the following

```
internet_mode_enabled=true  
internet_authkey=<your auth key>  
internet_server=<server IP or domain name>
```

Restart client

```
kodi@BB-8:~$ sudo service urbackupclientbackend restart  
kodi@BB-8:~$ sudo service urbackupclientbackend status
```

Add directories

On the client;

```
sudo urbackupclientctl add-backupdir -d /etc  
sudo urbackupclientctl list-backupdirs
```

Output

```
PATH NAME FLAGS  
-----  
/etc etc follow_symlinks,symlinks_optional,share_hashes
```

Check Dashboard

- Server dashboard should say Online 'Yes'

Email setup

General settings

Within General -> Alerts

E-Mail michael@dtcorp.com.au

Mail settings

Go to Settings -> Mail

Mail server	smtp.gmail.com
-------------	----------------

Port	465
------	-----

username	<email address>
----------	-----------------

password	<password>
----------	------------

Sender email	<email address>
--------------	-----------------

Send mails only with SSL/TLS	Y
---------------------------------	---

Check SSL/TLS cert	N
--------------------	---

Use SSL encrypted SMTP Y

Server admin mail address <email address>

Test mail email address <your email address>

Click Save

Schedule

File Backups

Interval for incremental file backups:	<input type="text" value="5"/>	<input type="text" value="hours"/>	<input type="checkbox"/> Disable
Interval for full file backups:	<input type="text" value="30"/>	<input type="text" value="days"/>	<input type="checkbox"/> Disable
Maximal number of incremental file backups:	<input type="text" value="100"/>		
Minimal number of incremental file backups:	<input type="text" value="40"/>		
Maximal number of full file backups:	<input type="text" value="10"/>		
Minimal number of full file backups:	<input type="text" value="2"/>		
Excluded files (with wildcards):	<input type="text"/>	<input type="text" value="?"/>	
Included files (with wildcards):	<input type="text"/>	<input type="text" value="?"/>	
Default directories to backup:	<input type="text"/>	<input type="text" value="?"/>	
Directories to backup are optional by default:	<input type="checkbox"/>		

Image Backups

Interval for incremental image backups:	<input type="text" value="7"/>	days	<input type="checkbox"/> Disable
Interval for full image backups:	<input type="text" value="60"/>	Days	<input checked="" type="checkbox"/> Disable
Maximal number of incremental image backups:	<input type="text" value="30"/>		
Minimal number of incremental image backups:	<input type="text" value="4"/>		
Maximal number of full image backups:	<input type="text" value="5"/>		
Minimal number of full image backups:	<input type="text" value="2"/>		
Volumes to backup:	<input type="text" value="C"/>	?	
Image backup file format:	<input type="text" value="Compressed VHD (Compressed non-standard Virtual HardDisk)"/>		

Restoring files

Select computer

Backups	Logs	Statistics	Settings
Clients			
Computer name			Last file backup
BB-8			02/24/20 10:53
airiam			02/24/20 11:01
logicaldoc			02/24/20 11:12

Select file backup

Clients > airiam

File backups

Backup time	Incremental	Size	Archived?
02/24/20 11:01	No	147.63 MB	<input type="checkbox"/>

Download

Clients > airiam > 02/24/20 11:01

File	Size	Created	Last modified	Last accessed	
etc	-		02/24/20 10:14	07/01/18 12:06	List

Download folder as ZIP

Restoring image

Requirements

Destination drive must be the same size or greater than original

Procedure

1. UrBackup provide a live restore ISO
https://hndl.urbackup.org/Restore/urbackup_res
2. Boot
3. Searches for UrBackup server on the LAN
4. Select your computer name
5. Restore from your server
6. Select what you want to restore
7. Select where you want to restore it to (your HD)
8. Accept that it will override everything
9. DONE

My Test

- Debian 10 system
- Snapshot with compression to UrBackup 9 minutes
- Restored the whole image to new VM 5 minutes
- Fixed Grub
- It worked

Fixing grub

Had to fix up grub by booting the VM into system rescue cd and performing

```
mount /dev/sda1 /mnt
mount -o bind /proc /mnt/proc
mount -o bind /dev /mnt/dev
mount -o bind /dev/pts /mnt/dev/pts
mount -o bind /sys /mnt/sys
chroot /mnt
grub-install /dev/sda
exit
shutdown -h now
```

Access VHD(X) without UrBackup

1. First, you need to install it, on Ubuntu/Debian-like Linux that would be:

```
sudo apt-get install libguestfs-tools
```

2. Then, you can mount almost whatever you wish:

```
guestmount --add yourVirtualDisk.vhdx --inspector --ro /mnt/anyd
```

This is just an example of read-only extraction point.

Settings

Server

Backup storage path:

/media/BACKUP/urbackup

Server URL:**Do not do image backups:****Do not do file backups:****Automatically shut down server:****Download client from update server:****Show when a new server version is available:****Autoupdate clients:****Max simultaneous backups:**

100

Max recently active clients:

10000

Cleanup time window:

1-7/3-4

?

Automatically backup UrBackup database:**Total max backup speed for local network:**

-

MBit/s

Global soft filesystem quota:

95%

?

File Backups

General | Mail | LDAP/AD | Users | Clients ▼ + Add new group

Server | **File Backups** | Image Backups | Permissions | Client | Archive | Alerts | Internet | Advanced

Interval for incremental file backups: hours Disable

Interval for full file backups: days Disable

Maximal number of incremental file backups:

Minimal number of incremental file backups:

Maximal number of full file backups:

Minimal number of full file backups:

Excluded files (with wildcards): ?

Included files (with wildcards): ?

Default directories to backup: ?

Directories to backup are optional by default:

Image Backups

General Mail LDAP/AD Users Clients + Add new group

Server File Backups **Image Backups** Permissions Client Archive Alerts Internet Advanced

Interval for incremental image backups: days Disable

Interval for full image backups: Days Disable

Maximal number of incremental image backups:

Minimal number of incremental image backups:

Maximal number of full image backups:

Minimal number of full image backups:

Volumes to backup: ?

Image backup file format:

Permissions

The screenshot shows the Backup Exec console interface. At the top, there are tabs for 'General', 'Mail', 'LDAP/AD', 'Users', 'Clients', and '+ Add new group'. Below these are sub-tabs for 'Server', 'File Backups', 'Image Backups', 'Permissions', 'Client', 'Archive', 'Alerts', 'Internet', and 'Advanced'. The 'Permissions' tab is selected. The main area contains a list of permissions, each with a checked checkbox:

- Allow client-side changing of the directories to backup:
- Allow client-side starting of full file backups:
- Allow client-side starting of incremental file backups:
- Allow client-side starting of full image backups:
- Allow client-side starting of incremental image backups:
- Allow client-side viewing of backup logs:
- Allow client-side pausing of backups:
- Allow client-side changing of settings:
- Allow clients to quit the tray icon:
- Allow clients to start file restores:
- Allow clients to configure components to backup:
- Allow clients to start component restores:

Client

General | Mail | LDAP/AD | Users | Clients | [+ Add new group](#)

Server | File Backups | Image Backups | Permissions | Client | Archive | Alerts | Internet | Advanced

Delay after system startup: [Min](#)

Backup window: [Show details ?](#)

Max backup speed for local network: [MBit/s](#)

Perform autoupdates silently:

Soft client quota:

Archive

General | Mail | LDAP/AD | Users | Clients | [+ Add new group](#)

Server | File Backups | Image Backups | Permissions | Client | **Archive** | Alerts | Internet | Advanced

Archive every	Archive for	Archive window <small>?</small>	Backup type	Volume letters			
<input type="text"/>	days <small>▼</small>	<input type="text"/>	days <small>▼</small>	**** ***	File backup <small>▼</small>	ALL	<input type="button" value="Add"/>

Alerts

General Mail LDAP/AD Users Clients **+** Add new group

Server File Backups Image Backups Permissions Client Archive Alerts Internet Advanced

Alert script: Default [Edit scripts](#)

Number of times the file backup interval after which the file backup status is set to not ok 3

Number of times the image backup interval after which the image backup status is set to not ok 3

E-Mail addresses (separated by ';') to notify once the image/file backup status is not ok michael@dtcorp.com.au

Add [Important] tag to alert mails

Send ok mail after backup status goes from not ok to ok

alert_nag_interval 0 hours

Internet/Remote

General Mail LDAP/AD Users Clients + Add new group

Server File Backups Image Backups Permissions Client Archive Alerts Internet Advanced

Enable internet mode (requires server restart):

Internet server name/IP:

Internet server port:

Connect via HTTP(S) proxy (leave empty to connect without):

Do image backups over internet:

Do full file backups over internet:

Max backup speed for internet connection: KBit/s

Total max backup speed for internet connection: KBit/s

Encrypted transfer:

Compressed transfer:

Calculate file-hashes on the client:

Beta: Calculate file hashes on client in parallel:

Connect to Internet backup server if connected to local backup server:

Do not start file backups if current estimated data usage limit per month is smaller than:

5000

MB

Do not start image backups if current estimated data usage limit per month is smaller than:

20000

MB

Update data limit estimation database:

Internet restore authentication key:

FEsG48nHwh

Advanced

General | Mail | LDAP/AD | Users | Clients | [+ Add new group](#)

Server | File Backups | Image Backups | Permissions | Client | Archive | Alerts | Internet | **Advanced**

Temporary files as file backup buffer:

Temporary files as image backup buffer:

Local full file backup transfer mode: Hashed

Internet full file backup transfer mode: Raw

Local incremental file backup transfer mode: Hashed

Internet incremental file backup transfer mode: Block differences - hashed

Local image backup transfer mode: Hashed

Internet image backup transfer mode: Raw

Local incremental image style: Based on last full image backup

Internet incremental image style: Based on last image backup

Local full image style: Full image backup #1

Internet full image style: Synthetic full image backup

Database cache size during batch processing: 200 MB

Use compressed deduplication for incremental file backups

Use symlinks during incremental file backups:



List of server IPs (proxys) from which to expect endpoint information (forwarded for) when connecting to Internet service (needs server restart)

Debugging: End-to-end verification of all file backups:



Debugging: Verify file backups using client side hashes:



Periodically readd file entries of internet clients to database (disable only if you do not run fulls):



Run backups with background priority on the clients:



Advanced part 2

Create symbolically linked views for each user on the clients after file backups:	<input type="checkbox"/>
Maximum number of simultaneous jobs per client	<input type="text" value="1"/>
List of volumes for which change block tracking should be used (if available)	<input type="text" value="ALL"/>
List of volumes for which the change block tracking should be crash persistent	<input type="text" value="-"/>
Do not fail backups in case of hash mismatches or read errors	<input type="checkbox"/>
Volumes to snapshot in groups during image backups	<input type="text"/>
Volumes to snapshot in groups during file backups	<input type="text"/>
Windows components backup configuration	<input type="text" value="default=1"/>
Require tray icon users to enter following text before being able to change settings:	<input type="text"/>

Mail

General Mail LDAP/AD Users Clients + Add new group

Mail server name:

Mail server port:

Mail server username (empty for none):

Mail server password:

Sender E-Mail Address:

Send mails only with SSL/TLS:

Check SSL/TLS certificate:

Use SSL encrypted SMTP (SMTPS) instead of SMTP with STARTTLS:

Server admin mail address:

Send test mail to this email address after saving the settings (leave empty to not send a test mail):

LDAP/AD

LDAP/AD login is currently undergoing development and testing. Please do not expect it to work.

Enable logins via LDAP/AD:

LDAP/AD server name:

example.com

LDAP/AD server port:

3268

LDAP/AD user name prefix:

example\

LDAP/AD user name suffix:

LDAP/AD group and class query:

DC=example,DC=com?memberOf,objectClass?sub?(sAMAccountName={USERNAME})

LDAP/AD group key name in query:

memberOf

LDAP/AD class key name in query:

objectClass

LDAP/AD group rights map:

CN=Domain Admins,*=>all=all

LDAP/AD class rights map:

user=>lastacts={AUTOCLIENTS},progress={AUTOCLIENTS},status={AUTOCLIENTS},stop_

Test login with this user:

Password for test user:

Save

Users

General Mail LDAP/AD Users Clients ▾ + Add new group

Username	Rights	Actions
No Users		

Create user

Group clients

General Mail LDAP/AD Users Clients test + Add new group

Group test

Group membership File Backups Image Backups Permissions Client Archive Alerts Internet Advanced

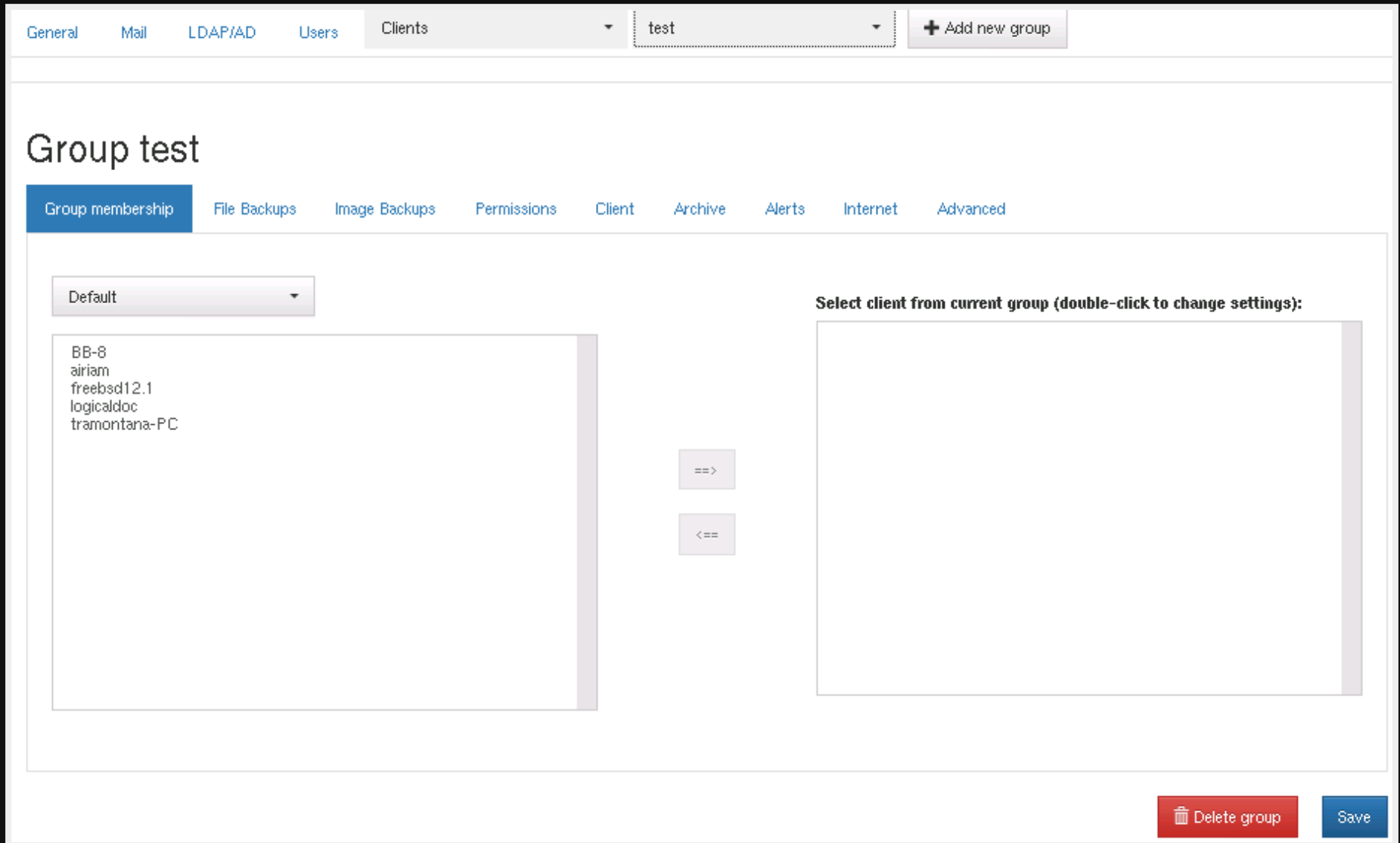
Default

BB-8
airiam
freebsd12.1
logicaldoc
tramontana-PC

Select client from current group (double-click to change settings):

==>
<==

Delete group Save



References

- <https://www.urbackup.org>
- https://www.urbackup.org/administration_manual
- https://github.com/uroni/urbackup_backend
- <https://forums.urbackup.org/t/server-2-5-1-wip-0-1-wip/8361>
- <https://github.com/datto/dattobd>
- <https://github.com/datto/dattobd/blob/master/INSTALLATION.md>
- Full PC Image Backup with Raspberry pi / UrBackup
YouTube

Questions

Email map7777@gmail.com

Twitter [@map7](https://twitter.com/map7)

Github [github: map7](https://github.com/map7)
