

Overview

Between 11 December 2012 and 31 January 2013, a survey was run on the NetWorker blog (<http://nsrd.info/blog>) to gather a high level overview of the NetWorker usage from as many respondents as possible.

This survey aimed to review:

- Operating systems;
- NetWorker versions;
- Licensed modules;
- Cloning;
- Deduplication take-up;
- Backup to disk;
- Open source databases;
- Encryption strategies;
- Virtual machine backup strategies;
- Organisational status of the backup administrator(s).

About the Author

Preston de Guise has been specialising in data protection services since 1996, and has provided consulting services to a diverse selection of companies ranging from a broad range of SMEs to companies in the Global Fortune 500.

Preston is the author of "Enterprise Systems Backup and Recovery: A corporate insurance policy" (ISBN-10 1420076396, ISBN-13 978-1420076394). Written for both technical and management users, "Enterprise Systems Backup and Recovery: A corporate insurance policy" provides insight into best practice approaches to designing policies and procedures for ensuring that data protection solutions installed form a cohesive and reliable system within an enterprise. Details of the book can be found at <http://www.enterprisesystemsbackup.com>.

Preston de Guise currently works for IDATA Resolutions, an Australian/New Zealand company that specialises in storage, archiving, data protection, virtualisation and high availability solutions. IDATA provides a wide range of services including installation and configuration, training, remote support, remote audits, on-site support, operational assistance and managed services. IDATA Resolutions can be found on the net at <http://www.idataresolutions.com>, and has offices in Auckland, Wellington, Sydney and Melbourne.

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Survey Introduction

Continuing the NetWorker Hub's periodic polling of EMC NetWorker usage within the community, this survey ran from 11 December 2012 through to 31 January 2013.

Many of the questions asked in previous surveys (2010, 2011) were polled again in order to determine trends in the NetWorker User Community, as well as a new question on the organisational structure for backup administrators, and methods used to backup virtual machines.

While previously surveys were run at semi-random times with between 6 and 9 months between them, the new survey format for the NetWorker Hub will be yearly, starting early-mid December and running through to the end of January for the next year. This allows a greater number of respondents – for this survey, there were 155 respondents, considerably higher than the 108 respondents of the previous survey.

Since the survey needed to cover multiple data zones, and most questions allowed multiple selections, there are several questions where the total number of selected answers exceeds the number of individual survey responses.

Much gratitude is owed to all respondents.

How many datazones are you running?

The numbers for the responses **were** as follows:

1 – 69

2 – 34

3 – 9

4 – 9

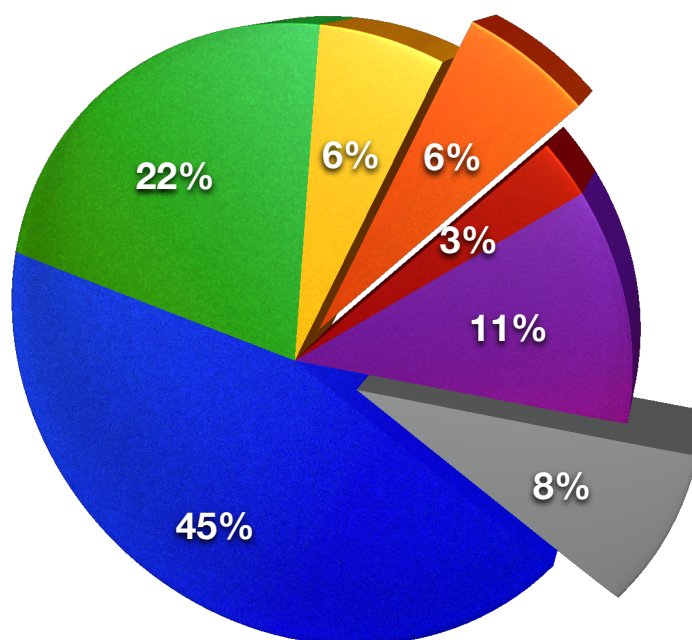
5 – 4

6-10 – 17

More than 10 – 13



Number of Datazones



Comments and Conclusions

While a large percentage of NetWorker deployments feature a single datazone, there are significant numbers of environments with multiple datazones present – in fact, 55% of NetWorker deployments feature 2 or more datazones, and more than 20% of NetWorker deployments feature 5 or more datazones.

Reporting in any environment is critical to successful monitoring and evaluation of critical success factors, and backup is no different. While a single datazone or a small number of datazones will have sufficient reporting capabilities from NetWorker Management Console and scripted interrogation of NetWorker command line output, or freeware tools such as the NetWorker Reporter from Thierry Faidherbe¹, as the number of datazones and size of the data being protected grows, serious consideration must be given to holistic reporting utilities such as EMC's Data Protection Advisor, which interrogates multiple backup products and other components of the environment (e.g., storage, databases, etc.)

Ultimately, backup is not an island – it represents a significant quarter of Information Lifecycle Protection², a sister activity to Information Lifecycle Management. As such, it's critical reporting on backup isn't an island either – hence increased consideration should be given for more comprehensive reporting packages such as DPA.

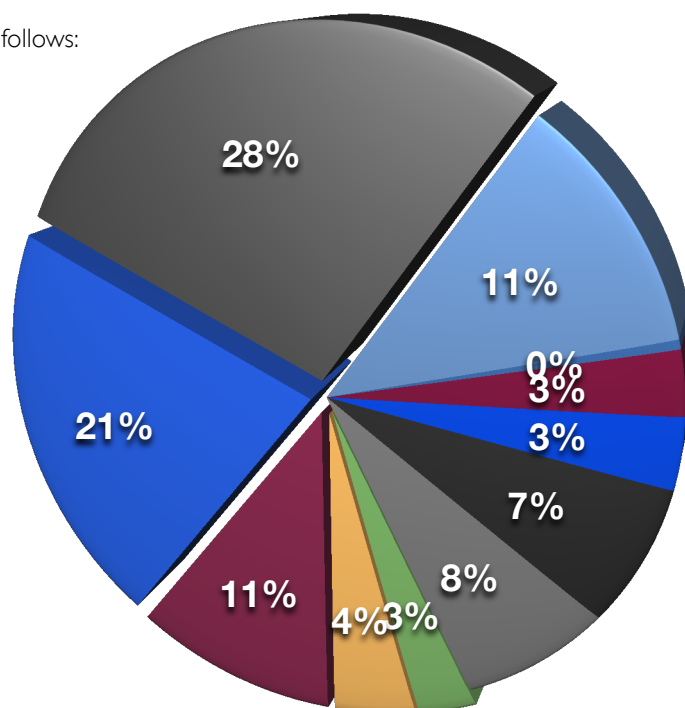
¹ <https://skydrive.live.com/?cid=14190B6B5B8ECCD5&id=14190B6B5B8ECCD5%21136>

² <http://nsrd.info/blog/2009/09/12/think-backup-belongs-in-ilm-think-again/>

What is the version of your NetWorker server(s)?

The numbers for the responses were as follows:

🖥️ **6.x or older** – 1
 🖥️ **v7** – 0
 🖥️ **v7.1.x** – 0
 🖥️ **v7.2.x** – 7
 🖥️ **v7.3.x** – 8
 🖥️ **v7.4.x** – 17
 🖥️ **v7.5.x** – 18
 🖥️ **v7.6** – 7
 🖥️ **v7.6 SP1** – 10
 🖥️ **v7.6 SP2** – 25
 🖥️ **v7.6 SP3** – 50
 🖥️ **v7.6 SP4** – 65
 🖥️ **v8** – 26



● v6.x and older	● v7	● v7.1.x	● v7.2.x
● v7.3.x	● v7.4.x	● v7.5.x	● v7.6
● v7.6 SP1	● v7.6 SP2	● v7.6 SP3	● v7.6 SP4
● v8			

Comments and Conclusions

Versions of NetWorker 7.4.x and lower are no longer supported by EMC, with v7.5.x in extended support only (running through to 31 January 2014).

NetWorker 7.6.x upwards are in full support still, with primary support for v7.6.x running through to 31 January 2014, and primary support for NetWorker 8.x available until 31 August 2015. (It should be noted that NetWorker 7.6 SP5 was released towards the end of the survey period, so was not an option in the survey.)

Based on responses, almost 85% of NetWorker datazones surveyed are running on a supported version of NetWorker, with a significant number running on the later versions of 7.6.

At the time the 7.6 tree of NetWorker was released, it was initially puzzling for many that it wasn't considered a sufficiently major release to warrant the 8.0 moniker. That being said, the user community has justifiably seen it as a significant release – over 65% of surveyed sites are running this major release.

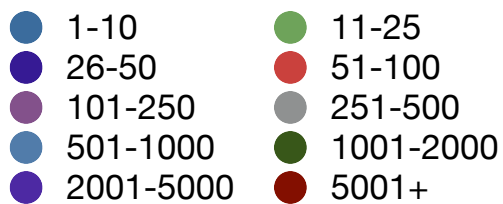
The older releases of NetWorker are growing fewer, but interestingly in this survey there was still one site running a NetWorker 6.x or lower datazone (hopefully for legacy restores, only).

Given the large-scale changes introduced into NetWorker 8 and the code quality demonstrated therein, it will be very interesting to see how many 7.6.x users have switched to 8.x when the 2013 usage survey is conducted in December of this year.

Number of clients being backed up

The numbers for the responses **were** as follows:

- 1-10 – 4
- 11-25 – 6
- 26-50 – 13
- 51-100 – 16
- 101-250 – 37
- 251-500 – 28
- 501-1000 – 15
- 1001 - 2000 – 8
- 2001 – 5000 – 19
- 5001+ – 9



Comments and Conclusions

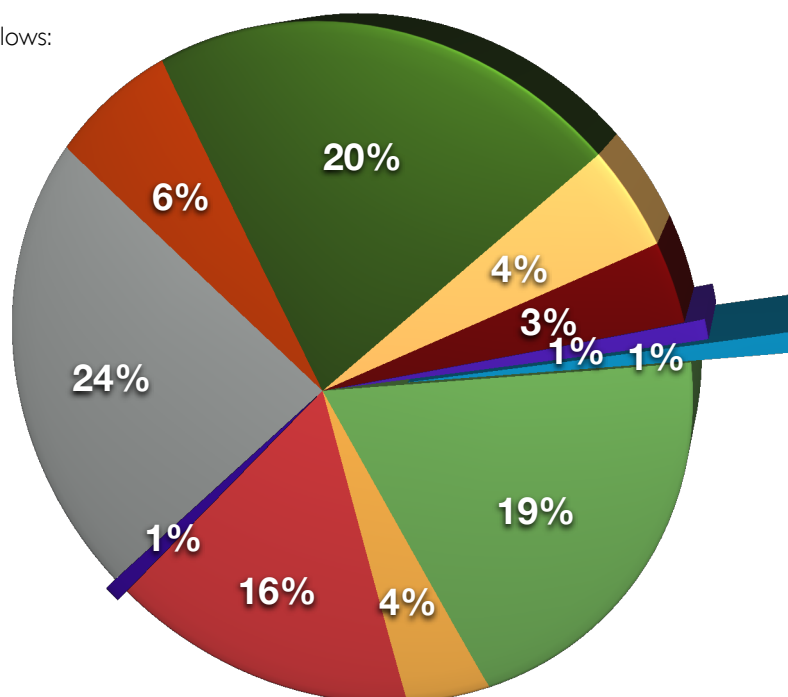
The number of hosts being backed up by NetWorker environments remains within reasonable variation across surveys. For instance, in this survey 23.2% of respondents indicated they were backing up more than 1000 clients with their NetWorker environment, and there were 24% doing so in the last survey.

The overall number of clients continues to prove one essential fact about NetWorker – larger enterprises clearly feel confident about protecting the data on high numbers of their servers using the product.

NetWorker Server Operating Systems

The numbers for the responses were as follows:

- Windows 2012 – 2
- Windows 2008 R2 – 46
- Windows 2008 – 10
- Windows 2003 – 37
- Windows 2000/NT4 – 2
- Linux (Commercial) – 56
- Linux (Free) – 15
- Solaris – 48
- AIX – 10
- HPUX – 8
- Tru64 – 2



- Windows 2012
- Windows 2008 R2
- Windows 2008
- Windows 2003
- Windows 2000/NT4
- Linux (Commercial)
- Linux (Free)
- Solaris
- AIX
- HPUX
- Tru64

Comments and Conclusions

Where previous surveys had kept operating systems collapsed, rather than split out by versions, this survey split both Windows and Linux operating systems out to gather some additional details.

Despite the overall anecdotal evidence that commercial Linux vendors provide poor to fair support at best, it would appear most companies are more confident using a commercial rather than free Linux distribution – approximately 79% of Linux NetWorker servers are running on a commercial release, with only 21% running a free release.

Examining Windows, the OS-release breakdown is fairly expected. Windows 2008 R2, much as it introduced some changes initially disliked by many administrators has become the primary release of choice for Windows NetWorker servers – almost 50% of Windows NetWorker servers are running that version of the operating system. It should be noted that as of the time of the survey, support for Windows 2012 was minimal, so it is perhaps concerning that some companies have jumped to such a *bleeding edge* combination. (Though of equal surprise was the same number of NetWorker servers running on Windows 2000/NT4!)

Oracle's purchase of Sun appears to have made significant inroads into decimating the operating system's market share. While in theory this may simply be a one-survey aberration, anecdotally companies using Solaris continue to complain of higher support and maintenance fees, amongst other issues. As mentioned in the previous survey, many companies have actively enacted policies that require Sun equipment to be swapped for either Windows or Linux servers when it comes up for replacement.

This survey would suggest those policies may be bearing fruit, and if so, will likely cause ongoing negative impacts to Oracle in the operating system market share³.

If we compare the major 3 server OS types over the three surveys completed:

Survey	Windows	Linux	Solaris
March 2010	29%	22%	43%
November 2010	29%	19%	43%
June 2011	38%	23%	33%
December 2012	41%	30%	20%

In this survey we've seen the utilisation of Solaris and Linux as NetWorker servers swap. While some growth has continued for Windows, it would seem to be a clear conclusion that businesses running a Solaris NetWorker server are more comfortable switching to another Unix-like platform.

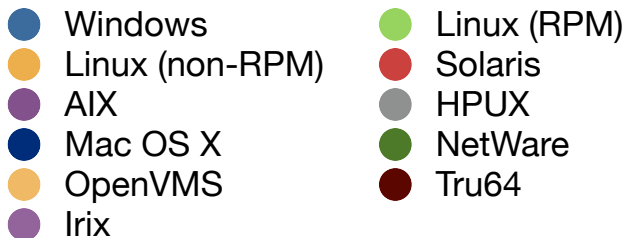
Further surveys will continue to track Solaris usage in the NetWorker server space.

³ For more details, refer to: <http://nsrd.info/blog/2010/04/22/rip-solaris/>

Client Operating Systems

The numbers for the responses were as follows:

👤	Windows	– 147
👤	Linux (RPM)	– 117
👤	Linux (non-RPM)	– 53
👤	Solaris	– 89
👤	AIX	– 43
👤	HPUX	– 30
👤	Mac OS X	– 13
👤	NetWare	– 10
👤	OpenVMS	– 6
👤	Tru64	– 14
👤	Irix	– 4



Comments and Conclusions

We are still seeing a reasonably comprehensive spread of client operating systems in NetWorker environments. Linux, Solaris and Windows operating systems retain the lions share again, with Linux just edging out past Windows as the most deployed client operating system in a NetWorker environment for this survey.

Solaris saw a modest shrinkage in client representation too, though small enough that it may simply represent a cross-survey variation. Polling in the 2013 survey may provide more data on this.

For the most part, client operating system spread and usage seems relatively unchanged across surveys conducted thus far.

Sites using Deduplication

Deduplication is not a binary activity; sites may choose not to use it, or use it at the target level, or the source level, or a mix of the two depending on the circumstances at hand.





The responses to this question were:

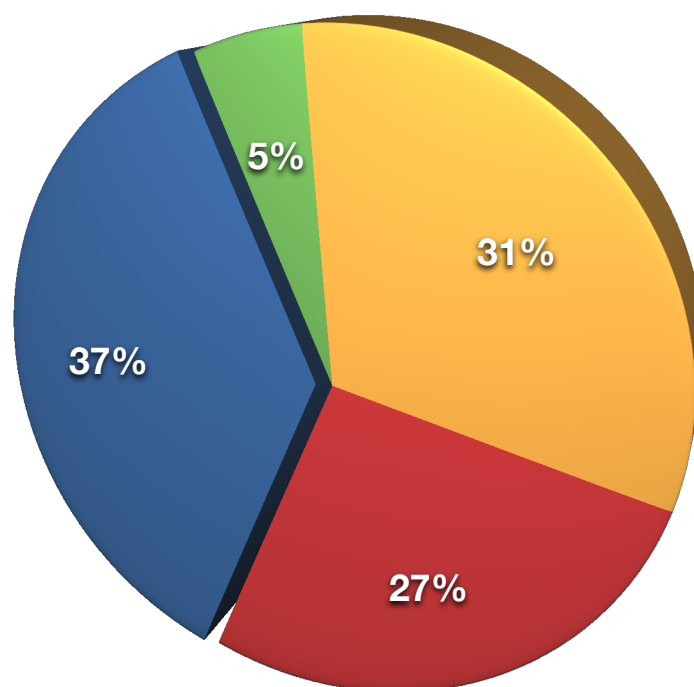
 **No** – 57

 **Yes, Source Only** – 8

 **Yes, Target Only** – 47

 **Yes, Source & Target** – 42

-  No
-  Source Only
-  Target Only
-  Source and Target



Comments and Conclusions

EMC has spent considerable effort not only improving their deduplication offerings, but also marketing the benefits thereof, and it is clear this message to the market is starting to pay off.

Survey	No	Yes - Source	Yes - Target	Yes - Both
Nov 2010	68%	4%	20%	7%
June 2011	64%	5%	27%	4%
December 2012	37%	5%	31%	27%
















In the previous survey it was surmised that perhaps data deduplication would take longer to reach critical mass/acceptance than backup to disk generally had, but this would not seem to be the case. Instead, this survey has shown a significant reversal in data deduplication trends within the NetWorker market. Whereas the 2010 and 2011 surveys had shown over 60% of sites *not* using deduplication at all, this has now shrunk to just 37%. Over 60% of sites now *are* using deduplication in their backup environment, with a strong focus on the target side – quite likely due to increased take-up of Data Domain. The number of sites using both source and target deduplication has increased substantially as well – yet given the number of sites using *only* source deduplication, it seems logical to assume this rise is substantially related to the introduction of Data Domain Boost integration at the storage node level.

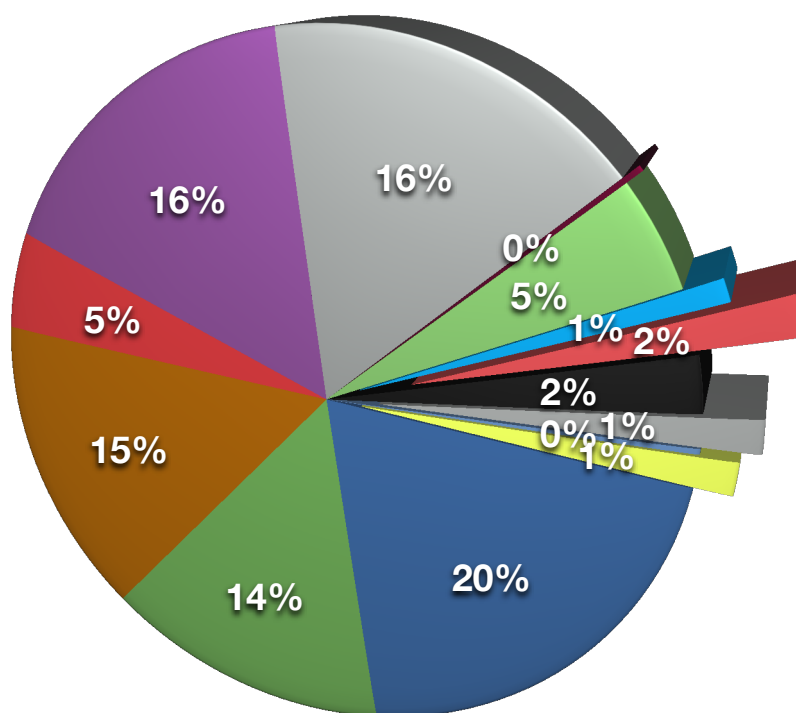
Since NetWorker 8 introduces Boost integration at the client level, it will be interesting to see where this figure heads in the 2013 survey.

Modules in Use

Note that this question is not aimed at determining actual databases/mail servers/etc in use, but to find out what the layout of actual *module* use for those products were.

The numbers for the responses were as follows:

 NMM – 82
 NMDA – 57
 Oracle – 60
 Notes – 19
 Exchange – 65
 MSSQL – 64
 Documentum – 1
 SAP on Oracle – 19
 SnapImage – 4
 PowerSnap – 7
 DB2 – 10
 Sybase – 6
 EDM – 1
 Meditech – 0
 Informix – 6



 NMM	 NMDA	 Oracle	 Notes
 Exchange	 MSSQL	 Documentum	 SAP on Oracle
 SnapImage	 PowerSnap	 DB2	 Sybase
 EDM	 Meditech	 Informix	

Comments and Conclusions

The most popular databases and applications to backup using NetWorker remain Oracle and the Microsoft Applications (be they encapsulated in NMM, or as the older, standalone Exchange and SQL modules). The consolidated module options are seeing expected gains – NMM has grown from 11% use in the previous survey to 14% in this one, and NMDA has grown from 5% in the previous survey to 14% in this one.






Both the old Exchange and MSSQL modules have seen their utilisation shrink to 16% (as opposed to 24% and 20% respectively from the 2011 survey). However, if we examine the combined Microsoft Module use (incorporating the old modules and the NMM module), utilisation remains relatively stable – 54% for 2011, 53% for 2012.

Perhaps if anything can be drawn by this is that it seems the ability of NMM to backup SharePoint is not making as major an impact to the take-up of NMM as previously envisaged. Whether this speaks to functionality of NMM, a slow uptake of SharePoint, or a lack of understanding about its backup requirements is uncertain. (One leans towards the third possibility, however.)

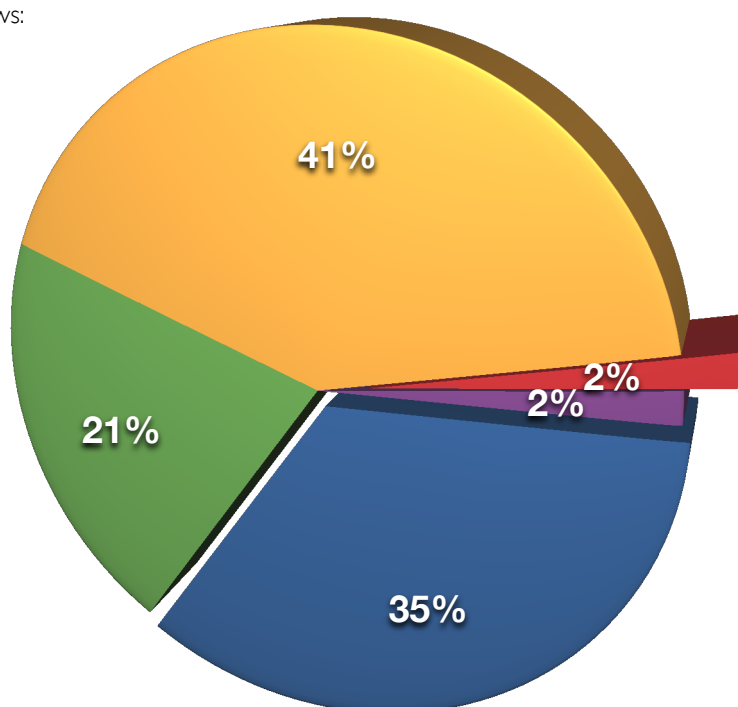
Open Source Database Usage

We continue to track the popularity and NetWorker customer thoughts on open source database modules in this survey.

Usage numbers for the were as follows:

-  **Not Using** – 68
-  **PostgreSQL** – 41
-  **MySQL/MaxDB** – 80
-  **Firebird** – 3
-  **Other** – 3





- Not using
- PostgreSQL
- MySQL/MaxDB
- Firebird
- Other

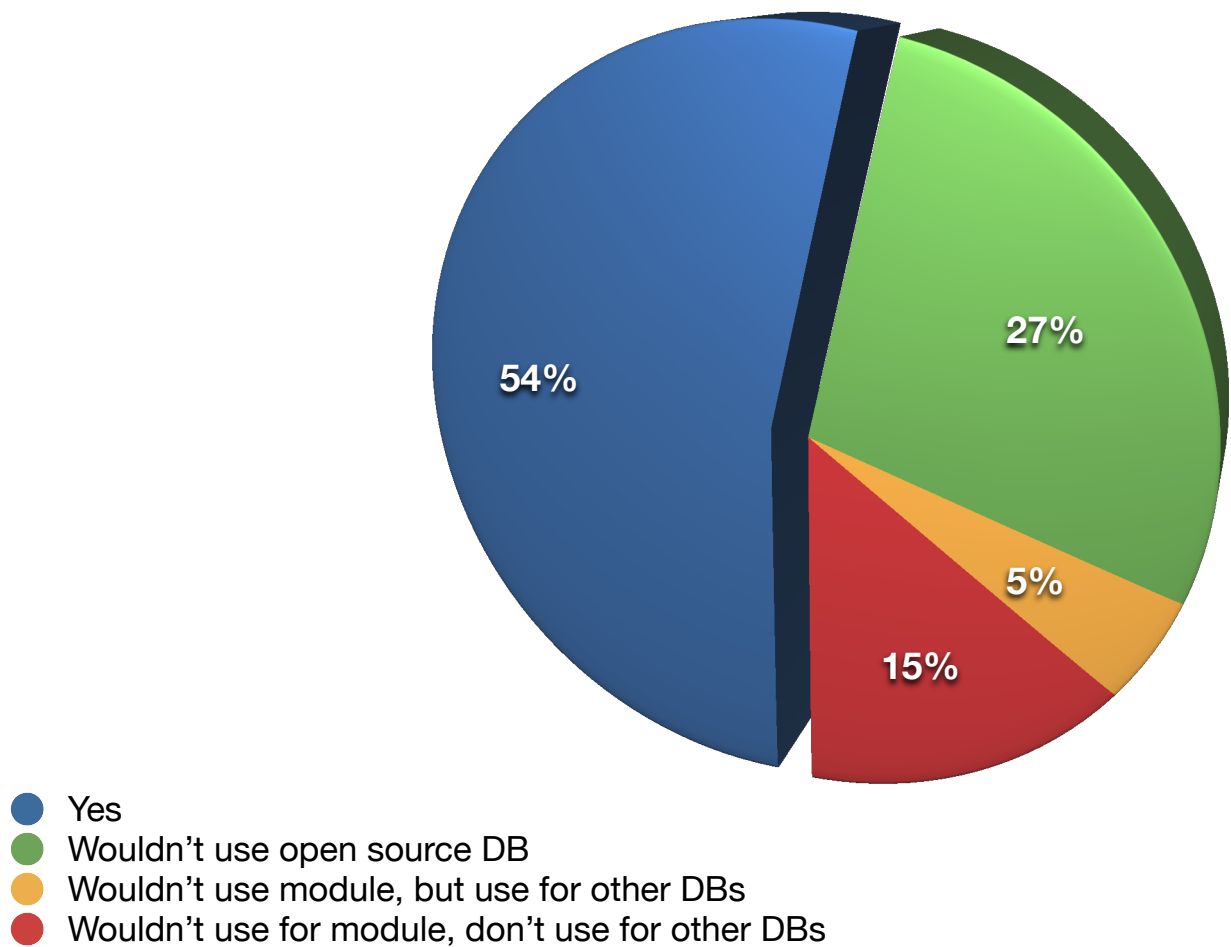


Comments and Conclusions

When evaluating “not using” vs “using”, it’s clear there’s a lot of businesses are making use of Open Source database technology due to its ongoing evolution and improvement. (The somewhat sad practice of some commercial vendors having only one sales model, “pillage”, may be assisting this take-up.) Just 35% of surveyed sites were not using Open Source databases within their environment; 65% however, were. This continues to suggest a need for EMC to provide an Open Source database module, with MySQL remaining the prime initial candidate.

The follow-up question to the use of open source databases remains critical – “if one existed, would you use a module for open source databases?” Answers to this question were:

-  **Yes** – 76
-  **Wouldn’t use open source databases** – 38
-  **Wouldn’t use module, but use for other databases** – 7
-  **Wouldn’t use module, and don’t use for other databases** – 21



(Interestingly, 15% of respondents effectively indicated they'd avoid using modules for any database they have – a somewhat worrying attitude.)

However, more than 50% of respondents indicated they *would* use an open source module if it existed.

Backup to Disk

The responses were as follows:

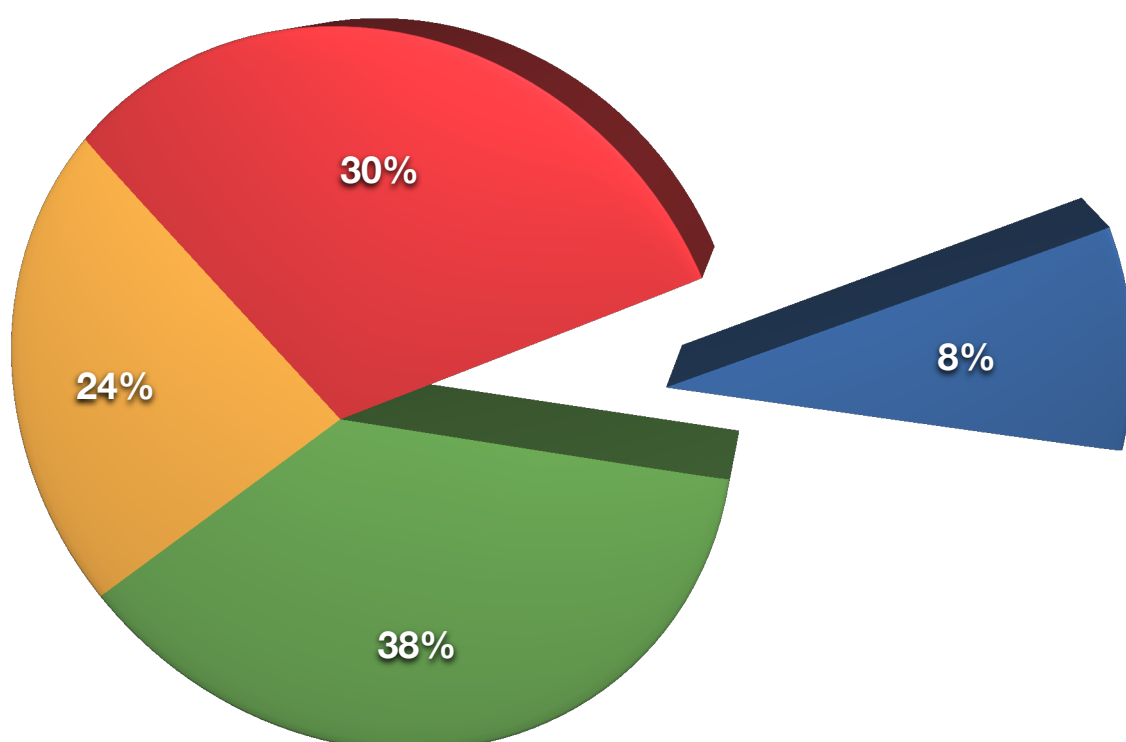
 **No** – 18

 **Yes, ADV_FILE** – 84

 **Yes, VTL** – 52

 **Yes, DD Boost** – 67

 No  ADV_FILE
 VTL  DD Boost



Comments and Conclusions

First, compare the results of this survey and the June 2011 and November 2010 surveys:

Survey	No	Yes - ADV_FILE	Yes - VTL	Yes - DD Boost
Nov 2010	16%	52%	32%	N/A
June 2011	15%	47%	33%	5%
December 2012	8%	38%	24%	30%







"Direct to tape is dead, long live tape". We will not see tape leave the backup industry for many years to come, but it remains abundantly clear that the age of first level backup being about tape drives furiously spooling and writing tape has passed. (The Pacman of disk backup is well and truly gobbling up the remaining dots of tape-only backup.)

Correlating with data deduplication question in the survey, it's clear Data Domain Boost is enjoying huge popularity as a backup device in the NetWorker environment. The usage has jumped from 5% in June 2011 to 30% in December 2012.

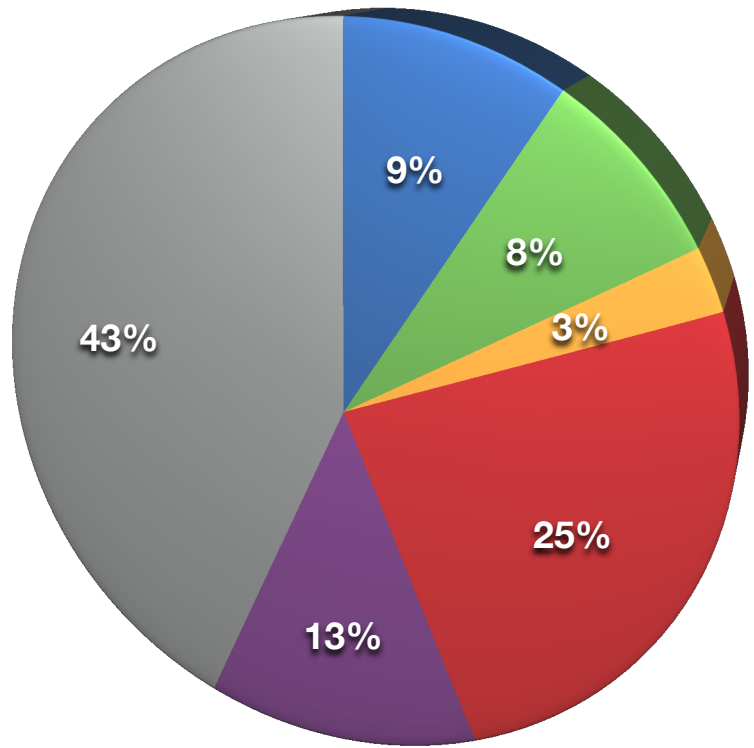
As might be expected, VTL usage is starting to drop off. VTL was never *really* a full solution in and of itself, but a workaround to limits with backup-to-disk in the broader market. Now that products such as NetWorker are rapidly eliminating those deficiencies, the use cases for VTL will continue to drop. Indeed, NetWorker 8's improvements to advanced file type devices will only see this continue.

Cloning policies

The answers were:

-  **No, no budget** – 14
-  **No, not interested** – 12
-  **No, no time** – 4
-  **Yes (all)** – 38
-  **Yes (just prod)** – 20
-  **Yes (very selectively)** – 67

- No:No budget
- No:Not interested
- No:No time
- Yes:All
- Yes:Production
- Yes:Selective



Comments and Conclusions

The first time this question was asked (November 2010), 26% of respondents had indicated they did not do any backup cloning. This grew to 34% in the June 2011 survey, but has dropped now to 24% in the 2012 survey – hopefully the drop will continue, given the extreme importance of protecting backups.

It's possible that the growth in selective cloning (27% in the previous survey, 43% in this survey) comes from the trends seen in Data Domain adoption – Boost's clone controlled replication in particular makes it extremely trivial for sites with two or more Data Domain systems to choose exactly *what* data they wish to clone, and make it a targeted activity.

Longest Retention Period

The purpose of this question was to determine the longest length of time that backups are being kept for.

Available answers were:

👤 **Less than a month** – 2

👤 **1-3 months** – 26

👤 **3-6 months** – 14

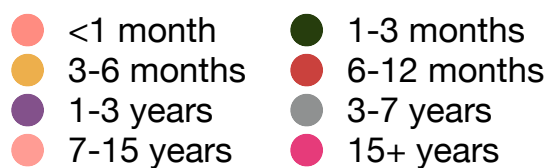
👤 **6-12 months** – 24

👤 **1-3 years** – 25

👤 **3-7 years** – 18

👤 **7-15 years** – 33

👤 **15+ years** – 13







Comments and Conclusions

While the previous survey had showed almost 50% of companies having data retention periods of 7 years or higher, this survey saw that number shrink to 29% – we will track this across coming surveys to see whether it is a trend or an aberration. If it is a trend, it may indicate a growing maturity in organisations for the adoption of replicated archive solutions, which reduce the amount of long-term backups required.

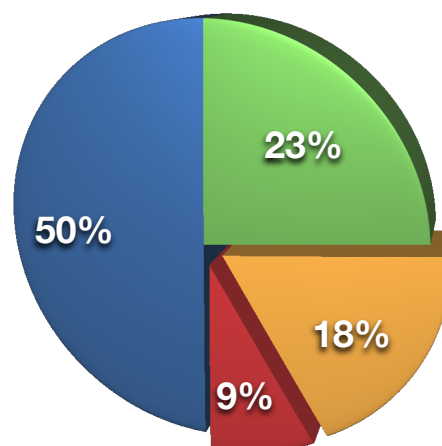
Encryption – Attitude Towards and Usage

New in this survey were questions about attitude towards encryption, and actual adoption within environments. Across the two questions, some interesting results came out:



Question 1 – What is the company attitude towards encryption?

-  **Not interested** – 75
-  **Desirable, not implemented** – 35
-  **Required for offsite backups** – 27
-  **Required for all backups** – 13

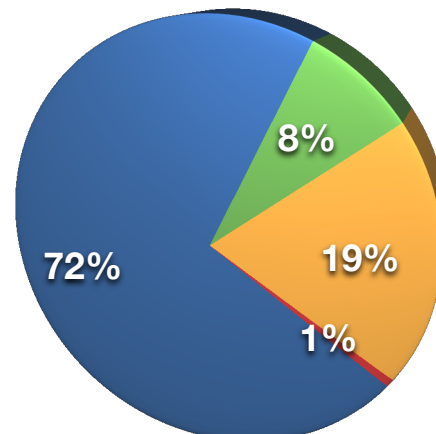
- Not interested
- Desirable
- Required offsite
- Required all



Question 2 – Do you encrypt your backups?

-  **No** – 113
-  **Yes, in software, on client** – 12
-  **Yes, native tape encryption** – 30
-  **Yes, FC/SCSI Appliance** – 1

- No
- Yes on client
- Yes native tape or appliance
- Yes FC/SCSI encryption appliance



Comments and Conclusions

We continue to see a disparity between the number of companies that would like (or need) to encrypt their backups and those that actually do. Only 50% of respondents indicated they're not interested in encryption, indicating 50% of respondents *should* be performing some form of encryption. Instead, only 28% of respondents are actually encrypting their backups.

This continues to highlight that the data protection industry still has some way to go in order to make encryption a readily approachable process. While last year's survey report indicated data deduplication may muddy these waters, given most data deduplication systems are now quite mature in at-rest encryption options, this would actually seem to be unlikely.

Do you have dedicated backup administrators?

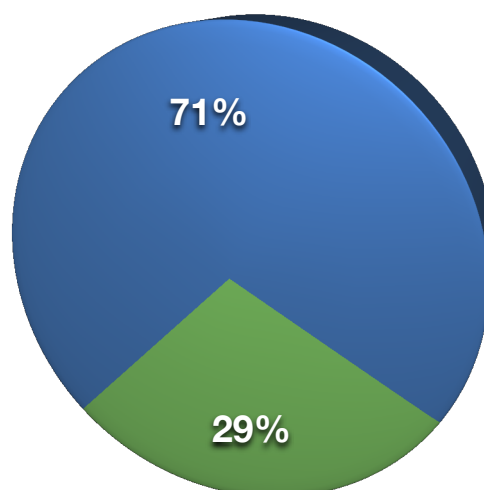
The purpose of this question was to start baselining how many organisations have dedicated backup administrators, as opposed to those organisations where backup administrators are absorbed into other administrative functionality.

Responses were:

 **Yes** – 110

 **No** – 45

 Yes
 No



Comment and Conclusions

In the 90s and into the early 2000's, it was reasonably rare to see sites having dedicated backup administrators. It was typically a function of a particular technical team – usually the OS admin team that happened to be running the backup server. This was in part due to a general attitude that backup wasn't a complex enough activity to require dedicated staff with their own training and processes.

As IT management has matured, this attitude has also changed. An enterprise backup system, installed with suitable scope, will perhaps interact with and touch upon more IT components than anything else other than the base network itself.

More than two thirds of organisations polled have dedicated backup administrators, an excellent sign that Information Lifecycle Protection has a strong focus as an independent technology stream within enterprise IT.

How are you backing up your virtual machines?

Another new question, this was also about establishing a baseline – this time in the backup methodology used for virtual machines.

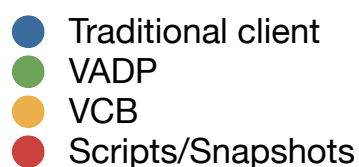
Responses were:

👤 **Traditional client** – 114

👤 **VADP** – 48

👤 **VCB** – 10

👤 **Scripts/Snapshots** – 16



Comments and Conclusions

It is unsurprising that the majority of polled NetWorker users are still backing up virtual machines using the traditional client. For some time NetWorker lagged behind in functionality on this front (somewhat embarrassingly, given EMC has a majority share in VMware and owns NetWorker outright through its acquisition of Legato in July 2003.)

Traditional client backups, while potentially placing a strain on a virtualisation host still provides optimum backup and recovery flexibility – for instance, there are very few situations where it is possible to safely backup a virtualised database server without using an in-guest agent/module.

Tellingly, and undoubtedly linked to the strong uptake in NetWorker 7.6.x, VADP backups are significantly more used than VCB, which had been the agent-less backup method of choice prior to the integration of VADP functionality in NetWorker from 7.6 SP2.

Perhaps even more damningly speaking of the limitations that VCB posed, scripts and snapshots are more favored than VCB backups – options which can require high levels of configuration and maintenance.

VADP is by no means sufficiently mature at this point. Avamar 6.1 for instance introduced the notion of a universal proxy – a host that could facilitate the backup, and file level recovery of data from both Windows and Linux virtual machines. This level of integration is not yet available in NetWorker 8, and it will be interesting to see how much that impacts VADP adoption.

Virtualisation remains an anathema within backup (or perhaps, backup remains an anathema to virtualisation – likely the feeling is mutual). The entire purpose of virtualisation is to reduce the overall hardware footprint required for running individual hosts by cooperative sharing of resources; on the other hand, the entire purpose of backup is to get as many hosts as possible (and as much data as possible) backed up in the shortest possible time. Using the traditional client model, one would go so far as to say these are mutually exclusive goals.

Will VADP step around this challenge? Only time will tell.

In Conclusion

This survey saw several substantial changes, some expected, others perhaps more surprising. Data deduplication, rather than having a slow uptake within sites, has seen a substantial increase. While vendors and integrators had been reasonably confident of the maturity of the concept for some time, whether that message was getting across to customers was uncertain.

EMC's strong push on the deduplication front has clearly been paying off – NetWorker customers are now more likely to be using some form of deduplication than not. (Indeed, less than 40% of polled NetWorker customers are working *without* deduplication.) The clear winner here seems to be Data Domain Boost – EMC has aggressively pursued a strong increase in Data Domain market share, and this is proving to be a boon for NetWorker customers. NetWorker 8 onwards should continue to show gains on this front, with the introduction of Boost managed client-level deduplication.

Encryption seems to remain a potential sore point with many customers; more businesses want or need to use encryption than are, indicating an ongoing gap in the market. On reflection, increasing up-take in deduplication, rather than being a sticking point, may help to resolve this problem thanks to at-rest encryption options within deduplication storage, and this may be survey question for 2013.

The 2013 survey will be in a unique position compared to previous surveys of gauging almost a complete year of NetWorker 8 in the marketplace. Will NetWorker 8.x adoption outstrip NetWorker 7.6? While backup environments have in the past tended to stay on older versions for longer, growing maturity in the backup space has seen this change – NetWorker 7.6 certainly had the lions share of the NetWorker market share in this survey. Given the maturity and stability of NetWorker 8, it is not unreasonable to expect the 2013 survey may show adoption rates of 40% or more for the 8.x tree. (Indeed, 2013 is potentially a big year for NetWorker, based on product roadmaps that have been seen.)

2011 and 2012 in particular saw a significantly renewed focus from EMC in NetWorker. For a while Avamar had received the majority of the attention, but it's apparent that EMC now sees NetWorker as the glue that holds its entire BRS offerings together. NetWorker's historical background as a *framework* rather than a monolith left it well positioned for this role. Wrapping around it are the deduplication options (source and target), but the management options, ease of use and scalability of NetWorker leaves it at the core of many enterprise backup environments ... where it will stay for many years to come.