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By Ockham's Razor
Solutions

A division of OCRgroup



[DOMAINS.CO.ZA/DIAMTRIX VPS TEST RESULTS]

This document contains the VPS benchmarking results for Domains.co.za/Diamatrix as performed by Ockham's Razor Sysadmin's on the dates listed.

Index:

Contents

Results for VPS Testing:	2
1. Base installed VPS configuration:	2
2. Hosted DC:.....	2
3. VPS install:	3
4. CPU Test result:	3
1. CPU - Loop Test:	3
2. CPU - No Loop Test:	4
5. Scheduler/Thread test result:	5
6. Memory test result (RAM):.....	6
1. Global	6
2. Local.....	7
7. Fileio-prepare test result (I/O) :	8
8. Fileio-run test result (I/O) :.....	8
9. Disk Based I/O (General):.....	9
10. Disk Based I/O (Intensive):	10
11. MySQL Simulation:	11
1. MySQL - Prepare:	11
2. MySQL - Test:	11
12. Networks Speeds:	12
1. Speedtest.net:	12
2. LAN Only:	13
3. Basic Test of Internet Speed:	14
13. Disaster Recovery:	15
14. Collision Testing:	15
15. Security:	15
16. SLA - Service level agreement:	15
17. Packages	15
18. Support:.....	16
19. 20 Questions:	16
20. Suggestions:	17
21. Conclusion:	17

Results for VPS Testing:

1. Base installed VPS configuration:

1. Debian Current.
2. Source list is US, best practice for international mirror is Germany.
3. NB** However the overall speed of the connection was impressive.

```
#####Source List#####  
#  
# deb cdrom:[Debian GNU/Linux 7.3.0 _Wheezy_ - Official amd64 NETINST Binary-1 20131215-  
04:55]/ wheezy main  
  
#deb cdrom:[Debian GNU/Linux 7.3.0 _Wheezy_ - Official amd64 NETINST Binary-1 20131215-04:55]/  
wheezy main  
  
deb http://ftp.us.debian.org/debian/ wheezy main  
deb-src http://ftp.us.debian.org/debian/ wheezy main  
  
deb http://security.debian.org/ wheezy/updates main  
deb-src http://security.debian.org/ wheezy/updates main  
  
# wheezy-updates, previously known as 'volatile'  
deb http://ftp.us.debian.org/debian/ wheezy-updates main  
deb-src http://ftp.us.debian.org/debian/ wheezy-updates main  
#####Source List#####
```

2. Hosted DC:

1. Local ZA:



3. VPS install:
 1. Was basic system.
 2. No preinstalled software.

4. CPU Test result:
 1. CPU - Loop Test:

multi-threaded system evaluation benchmark

Running the test with following options:

Number of threads: 1

Doing CPU performance benchmark

Threads started!

Done.

Maximum prime number checked in CPU test: 200000

Test execution summary:

total time:	551.2632s
total number of events:	10000
total time taken by event execution:	551.2612
per-request statistics:	
min:	55.08ms
avg:	55.13ms
max:	56.80ms
approx. 95 percentile:	55.14ms

Threads fairness:

events (avg/stddev):	10000.0000/0.00
execution time (avg/stddev):	551.2612/0.00

2. CPU - No Loop Test:

multi-threaded system evaluation benchmark

Running the test with following options:

Number of threads: 1

Doing CPU performance benchmark

Threads started!

Done.

Maximum prime number checked in CPU test: 3

Test execution summary:

total time:	0.2253s
total number of events:	524288
total time taken by event execution:	0.1666
per-request statistics:	
min:	0.00ms
avg:	0.00ms
max:	0.03ms
approx. 95 percentile:	0.00ms

Threads fairness:

events (avg/stddev):	524288.0000/0.00
execution time (avg/stddev):	0.1666/0.00

5. Scheduler/Thread test result:

1. Thread handling was above average and rather impressive.:

multi-threaded system evaluation benchmark

Running the test with following options:

Number of threads: 100

Doing thread subsystem performance test

Thread yields per test: 100 Locks used: 5

Threads started!

Done.

Test execution summary:

total time:	0.3348s
total number of events:	10000
total time taken by event execution:	32.8615
per-request statistics:	
min:	0.02ms
avg:	3.29ms
max:	56.47ms
approx. 95 percentile:	12.72ms

Threads fairness:

events (avg/stddev):	100.0000/12.45
execution time (avg/stddev):	0.3286/0.00

6. Memory test result (RAM):
1. Global

multi-threaded system evaluation benchmark

Running the test with following options:

Number of threads: 1

Doing memory operations speed test

Memory block size: 1024K

Memory transfer size: 102400M

Memory operations type: write

Memory scope type: global

Threads started!

Done.

Operations performed: 102400 (12206.63 ops/sec)

102400.00 MB transferred (12206.63 MB/sec)

Test execution summary:

total time:	8.3889s
total number of events:	102400
total time taken by event execution:	8.3753
per-request statistics:	
min:	0.08ms
avg:	0.08ms
max:	0.21ms
approx. 95 percentile:	0.08ms

Threads fairness:

events (avg/stddev):	102400.0000/0.00
execution time (avg/stddev):	8.3753/0.00

2. Local

multi-threaded system evaluation benchmark

Running the test with following options:

Number of threads: 1

Doing memory operations speed test

Memory block size: 1024K

Memory transfer size: 102400M

Memory operations type: write

Memory scope type: local

Threads started!

Done.

Operations performed: 102400 (12219.50 ops/sec)

102400.00 MB transferred (12219.50 MB/sec)

Test execution summary:

total time: 8.3800s

total number of events: 102400

total time taken by event execution: 8.3664

per-request statistics:

min: 0.08ms

avg: 0.08ms

max: 0.18ms

approx. 95 percentile: 0.08ms

Threads fairness:

events (avg/stddev): 102400.0000/0.00

execution time (avg/stddev): 8.3664/0.00

7. Fileio-prepare test result (I/O) :

multi-threaded system evaluation benchmark

128 files, 96Kb each, 12Mb total

8. Fileio-run test result (I/O) :

multi-threaded system evaluation benchmark

Running the test with following options:

Number of threads: 64

Extra file open flags: 0

128 files, 96Kb each

12Mb total file size

Block size 16Kb

Number of random requests for random IO: 10000

Read/Write ratio for combined random IO test: 1.50

Periodic FSYNC enabled, calling fsync() each 100 requests.

Calling fsync() at the end of test, Enabled.

Using synchronous I/O mode

Doing random r/w test

Threads started!

Done.

Operations performed: 6006 Read, 4015 Write, 12551 Other = 22572 Total

Read 93.844Mb Written 62.734Mb Total transferred 156.58Mb (244.18Mb/sec)

15627.81 Requests/sec executed

Test execution summary:

total time: 0.6412s

total number of events: 10021

total time taken by event execution: 2.9831

per-request statistics:

min: 0.00ms

avg: 0.30ms

max: 104.90ms

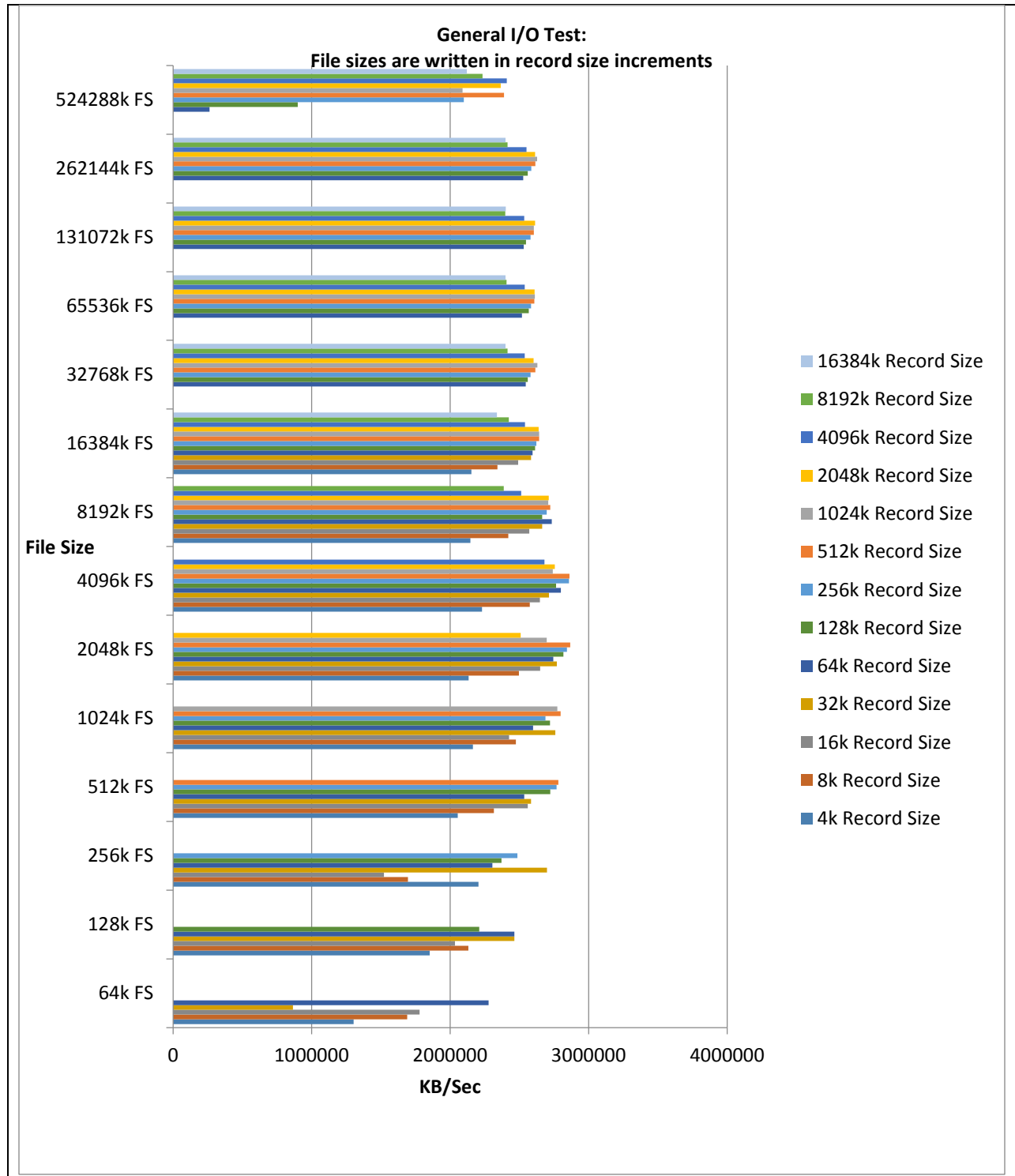
approx. 95 percentile: 1.37ms

Threads fairness:

events (avg/stddev): 156.5781/40.18

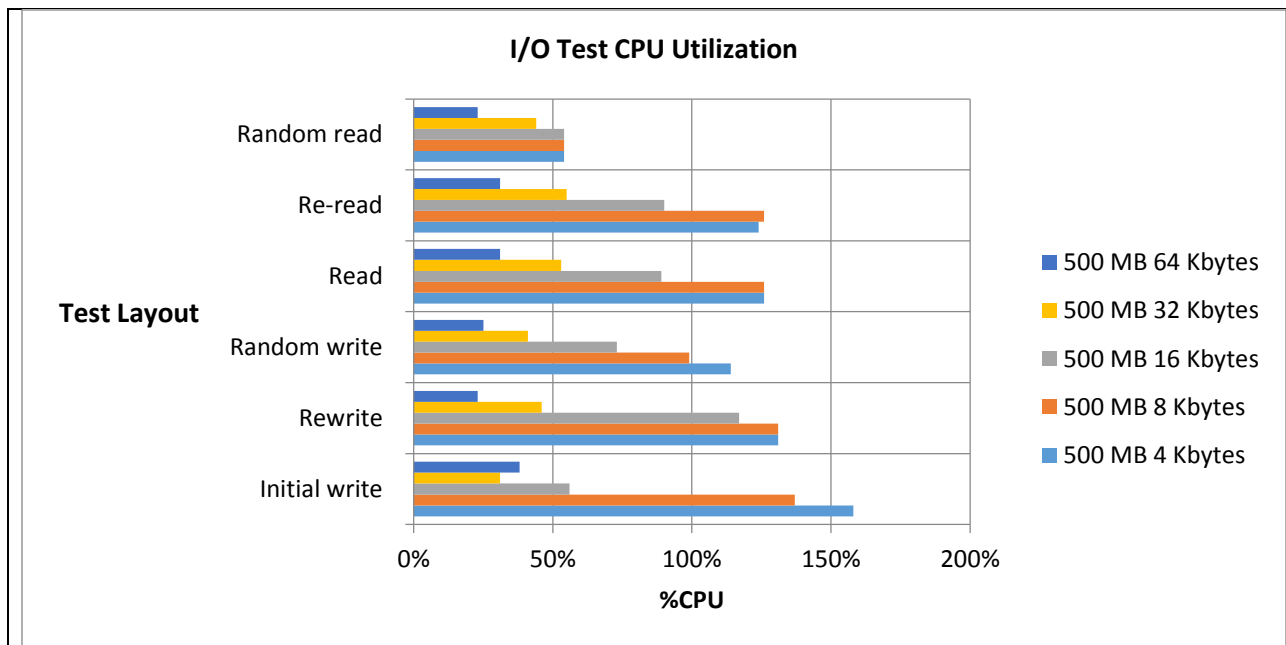
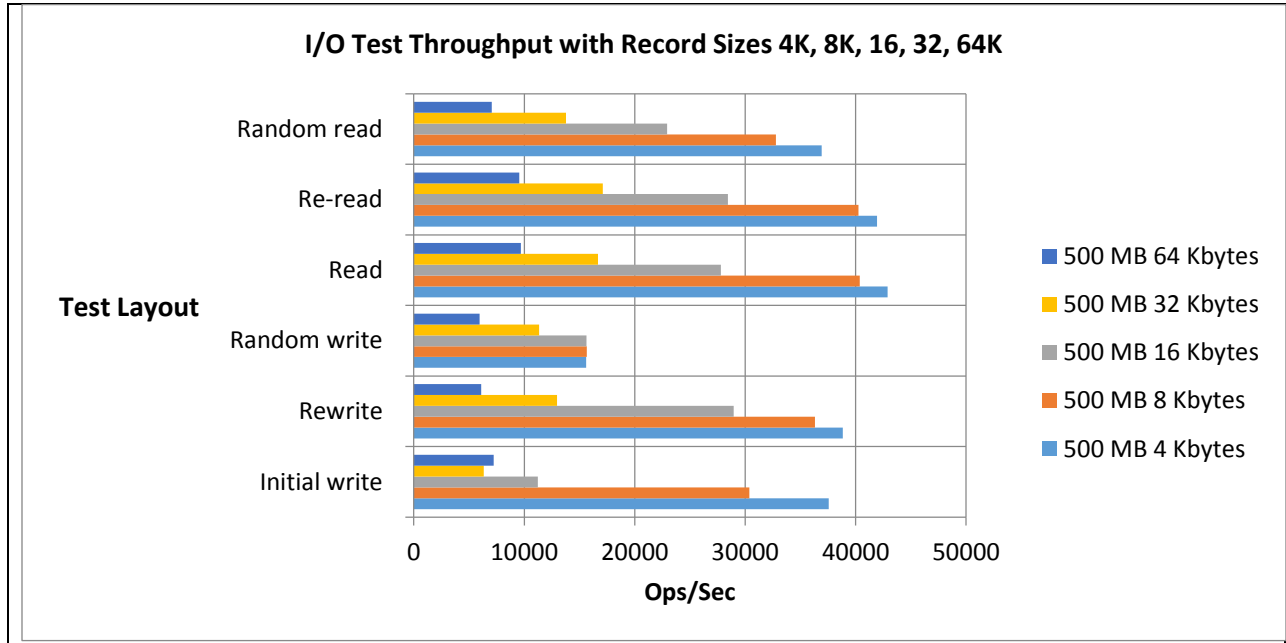
execution time (avg/stddev): 0.0466/0.03

9. Disk Based I/O (General):
1. General I/O Write Test:



10. Disk Based I/O (Intensive):

1. 4KB Read, Write, Random R/W
2. 8KB Read, Write, Random R/W
3. 16KB Read, Write, Random R/W
4. 32KB Read, Write, Random R/W
5. 64KB Read, Write, Random R/W



11. MySQL Simulation:

1. MySQL - Prepare:

multi-threaded system evaluation benchmark

```
No DB drivers specified, using mysql
Creating table 'sbtest'...
Creating 10000000 records in table 'sbtest'...
real    1m31.052s
user    0m1.160s
sys     0m0.064s
```

2. MySQL - Test:

multi-threaded system evaluation benchmark

```
No DB drivers specified, using mysql
Running the test with following options:
Number of threads: 16
Doing OLTP test.
Running mixed OLTP test
Doing read-only test
Using Special distribution (12 iterations, 1 pct of values are returned in 75 pct cases)
Using "BEGIN" for starting transactions
Using auto_inc on the id column
Threads started!
Time limit exceeded, exiting...
(last message repeated 15 times)
Done.
OLTP test statistics:
  queries performed:
    read:                6507998
    write:                0
    other:                929714
    total:                7437712
  transactions:         464857 (774.75 per sec.)
  deadlocks:            0 (0.00 per sec.)
  read/write requests: 6507998 (10846.44 per sec.)
  other operations:     929714 (1549.49 per sec.)
```

Test execution summary:

```
total time:                600.0123s
total number of events:    464857
total time taken by event execution: 9598.3943
per-request statistics:
  min:                      1.30ms
  avg:                       20.65ms
  max:                       677.32ms
  approx. 95 percentile:    26.56ms
```

Threads fairness:

```
events (avg/stddev):       29053.5625/36.03
execution time (avg/stddev): 599.8996/0.00
```

12. Networks Speeds:

1. Speedtest.net:

1. Telkom Rosebank

Retrieving speedtest.net configuration...
Retrieving speedtest.net server list...
Testing from DPBOL (41.76.110.12)...
Hosted by Telkom SA (SAIX) (Rosebank) [509.22 km]: 10.729 ms
Testing download speed.....
Download: 92.17 Mbit/s
Testing upload speed.....
Upload: 59.11 Mbit/s

2. Telkom Durban:

Retrieving speedtest.net configuration...
Retrieving speedtest.net server list...
Testing from DPBOL (41.76.110.12)...
Hosted by Telkom SA (SAIX) (Durban) [686.90 km]: 10.967 ms
Testing download speed.....
Download: 87.66 Mbit/s
Testing upload speed.....
Upload: 71.38 Mbit/s

3. Telkom Cape Town:

Retrieving speedtest.net configuration...
Retrieving speedtest.net server list...
Testing from DPBOL (41.76.110.12)...
Hosted by Telkom SA (SAIX) (Cape Town) [765.05 km]: 11.444 ms
Testing download speed.....
Download: 39.28 Mbit/s
Testing upload speed.....
Upload: 52.02 Mbit/s

2. LAN Only:
1. Server

Server: 41.76.110.14

Server listening on TCP port 45678
TCP window size: 85.3 KByte (default)

[4] local 41.76.110.14 port 45678 connected with 41.76.110.12 port 58761

Client connecting to 41.76.110.12, TCP port 45678
TCP window size: 347 KByte (default)

[6] local 41.76.110.14 port 43247 connected with 41.76.110.12 port 45678

[ID]	Interval	Transfer	Bandwidth
[4]	0.0-60.0 sec	85.5 GBytes	12.2 Gbits/sec
[6]	0.0-60.0 sec	89.0 GBytes	12.7 Gbits/sec

2. Client

Server listening on TCP port 45678
TCP window size: 85.3 KByte (default)

Client connecting to 41.76.110.14, TCP port 45678
TCP window size: 310 KByte (default)

[5] local 41.76.110.12 port 58761 connected with 41.76.110.14 port 45678

[4] local 41.76.110.12 port 45678 connected with 41.76.110.14 port 43247

[ID]	Interval	Transfer	Bandwidth
[5]	0.0-10.0 sec	14.4 GBytes	12.4 Gbits/sec
[4]	0.0-10.0 sec	14.7 GBytes	12.7 Gbits/sec
[5]	10.0-20.0 sec	14.3 GBytes	12.3 Gbits/sec
[4]	10.0-20.0 sec	14.6 GBytes	12.6 Gbits/sec
[5]	20.0-30.0 sec	14.2 GBytes	12.2 Gbits/sec
[4]	20.0-30.0 sec	14.9 GBytes	12.8 Gbits/sec
[5]	30.0-40.0 sec	14.3 GBytes	12.3 Gbits/sec
[4]	30.0-40.0 sec	14.7 GBytes	12.7 Gbits/sec
[5]	40.0-50.0 sec	14.2 GBytes	12.2 Gbits/sec
[4]	40.0-50.0 sec	14.7 GBytes	12.6 Gbits/sec
[5]	50.0-60.0 sec	14.1 GBytes	12.1 Gbits/sec
[5]	0.0-60.0 sec	85.5 GBytes	12.2 Gbits/sec
[4]	50.0-60.0 sec	15.2 GBytes	13.1 Gbits/sec
[4]	0.0-60.0 sec	89.0 GBytes	12.7 Gbits/sec

3. Basic Test of Internet Speed:

1. Africa: (9.28 MB/s)

```
wget -O /dev/null ftp://debian.mirror.ac.za/debian-cd/7.3.0/amd64/iso-cd/debian-7.3.0-amd64-netinst.iso
100%231,735,296 9.23M/s in 24s
(9.28 MB/s)
```

2. Asia: (947 KB/s)

```
wget -O /dev/null ftp://debian.ustc.edu.cn/debian-cd/7.3.0/amd64/iso-cd/debian-7.3.0-amd64-netinst.iso
100 231,735,296 1.21M/s in 3m 59s
2014-01-30 03:07:05 (947 KB/s)
```

3. Australia: (1.34 MB/s)

```
wget -O /dev/null ftp://ftp.iinet.net.au/debian/debian-cd/7.3.0/amd64/iso-cd/debian-7.3.0-amd64-netinst.iso
100% 231,735,296 2.36M/s in 2m 44s
(1.34 MB/s)
```

4. Europe: (1.39 MB/s)

```
wget -O /dev/null ftp://ftp.de.debian.org/debian-cd/7.3.0/amd64/iso-cd/debian-7.3.0-amd64-netinst.iso
100% 231,735,296 1.41M/s in 2m 39s
(1.39 MB/s)
```

5. North America: (1.69 MB/s)

```
wget -O /dev/null ftp://mirrors.kernel.org/debian-cd/7.3.0/amd64/iso-cd/debian-7.3.0-amd64-netinst.iso
100% 231,735,296 3.37M/s in 2m 11s
(1.69 MB/s)
```

6. South America: (1.07 MB/s)

```
wget -O /dev/null http://ftp.br.debian.org/debian-cd/7.3.0/amd64/iso-cd/debian-7.3.0-amd64-netinst.iso
100% 231,735,296 948K/s in 3m 26s
(1.07 MB/s)
```

13. Disaster Recovery:

1. Backups are made twice over a 7 day ratio for providers own sake.
2. Backups may be requested to be made on a custom base at a cost.
3. Complete VM recovery time is: 17 minutes.

14. Collision Testing:

NB** Collision testing is a test mechanism that reviews the state of multiple VPS's on a single host—performing the same test on the same resource. The result is then reviewed to determine if any starvation has occurred.

1. Due to the results yielding almost indistinguishable data, we did not feel it necessary to create an entire redundant section within the report.

15. Security:

NB** Security testing has a catastrophic impact on systems. Being that this is the production environment for Domains.co.za's VPS clients, we have opted to not perform it. However these must be done in-house. Alternatively if ISP's want this to be tested we recommend setting up a small scale model of your current infrastructure and PENTESTING it for their own peace of mind.

1. Host
 1. Module Untested
2. Network
 1. Module Untested
3. VPS
 1. General VM security is managed by the end user.

16. SLA - Service level agreement:

1. Standard SLA
2. SLA Credit Claim Plan
3. [Link](#)

17. Packages

vCPU	Memory	Disk Space	Bandwidth	Price
1	1 GB	25 GB	50GB	R 129,00
2	2 GB	50 GB	100GB	R 299,00
4	4 GB	100 GB	250GB	R 499,00
4	8 GB	250 GB	500GB	R 999,00
6	12 GB	350 GB	500GB	R 1 499,00

NB** We have it on good authority that the above packages will be available to the public from the month of February 2014

18. Support:

1. The only contact that was had with Domains.co.za was directly with Dave Strydom.
2. However, it is to be noted that Dave's knowledge on their products was rather refreshing. He certainly has the ability to assist with queries and the eagerness to resolve any matter at hand. We will state that if all employees are of the same caliber, then there is no doubt in ability of the team at Domains.co.za.
3. Q.E.D: we cannot give any confident conclusion on Domains.co.za's support base given our limited interactions.

19. 20 Questions:

1. **What tier ISP is Domains.co.za?**
A: Tier 3
2. **What level of HA is implemented at your Data Centre?**
A: N+1 - 100% uptime for 4 and a half Years.
3. **What has been the longest downtime experience within your VPS Cloud and how was this resolved?**
A: N/A - This is a new service offering by ourselves.
4. **How many Hypervisors are used by Domains.co.za?**
A: As this a new service offering, 3 hypervisors have been provisioned currently.
5. **How successful is your backup system?**
A: We utilize 2 different backup technologies, Snapshot storage + Idera Managed Backup. Backup Data is stored in a different Data Center to the Hypervisors.
6. **How secure is client data on your Public VPS Cloud?**
A: We make every effort to ensure the hypervisors and our platform is secure, both from Physical Security (key card access, camera monitoring, etc) to Software Security. We obviously cannot commit on the security of third party applications the client chooses to run inside his VPS.
7. **What prevention systems are in place to protect clients from (D)DOS attacks?**
A: Upstream filters traffic shapers and network analyzers on the edge of our network.
8. **How are incidents within the VPS Cloud prioritized?**
A: We use an "emergency room" approach where problems are graded for severity and responded to accordingly. Service outages of any type always receive top priority followed by service-degrading factors and general questions about server management. This ensures every customer will receive the best support during the appropriate situation.
9. **How many "able-to-resolve" VPS queries "employees" are at Domains.co.za?**
A: General support queries - 5, intermediate technical queries - 3, advanced technical queries - 2.
10. **Would Domains.co.za be willing to provide a vague layout/blueprint for their VPS cloud for the sake of transparency?**
A: SuperMicro Servers / Raid 10 + SSD Caching / Intel E5 Processors / Public & Private Networks (for private VPS-to-VPS or VPS-to-Dedicated inter connectivity) / HP 3500 Edge Switches / Vyatta Redundant Routing / Arbor Peakflow Upstream DDoS protection.

20. Suggestions:

1. During our initial testing we suggested that Dave review the IO scheduler for the Host systems, this was a concern as our initial collision test results were of tragic proportions. He took this into consideration and performed a change based on this advice—the action of which yielded exceptional results.
2. Given the change in construct for the above mentioned, we do also recommend a redundant method of write caching. With regards to write-caching (high-speed/volatile-memory) a method to be considered would be TCP raid levels. This should aid implementation of HA.
3. Please review the PBX system you are using as we have had the unfortunate pleasure to reach a dial-tone and voice message for a number that does not exist.

21. Conclusion:

1. Our overall experience with Domains.co.za has been a pleasant one. At times communication was hard to maintain but this is as result of only having Dave Strydom as our only point of contact.
2. There is no doubt that meticulous planning has gone into the layout of Domains.co.za's VPS cloud. This can be seen within the results that they have achieved.
3. The availability of resources in their infrastructure is a definite comfort when taking into account how limited an end-user really is.
4. We consider Domains.co.za to be not of the (!=)hesitant types of service providers, willing to review and innovate. They certainly have put their money where their "infrastructure" is.
5. Given the above results, we can confidently say that we would within professional capacity recommend Domains.co.za as a host ready for higher-end VPS hosting.
6. We do not see the benefits of meta-scoring, aiding anyone, and have excluded this from the test—however if pressed Domains.co.za gets an 8/10.

The O.R. Team.