

Free Software Mirror Group

(FSMG)

Michael Fincham
Brad Cowie
James Forman

Think back to 2016...

- A time when New Zealand depended on a single mirroring service

Michael Fincham michael@h...

Sat Apr 2 15:06:17 NZDT 2016

- Next message: [\[nznog\] Anyone interested in donating space / connectivity / kit for a proper NZ Debian mirror?](#)

- [\[nznog\] Anyone interested in donating space / connectivity / kit for a proper NZ Debian mirror?](#) *Michael Fincham*
 - [\[nznog\] Anyone interested in donating space / connectivity / kit for a proper NZ Debian mirror?](#) *Tony Wicks*
 - [\[nznog\] Anyone interested in donating space / connectivity / kit for a proper NZ Debian mirror?](#) *Richard Hulse*
 - [\[nznog\] Anyone interested in donating space / connectivity / kit for a proper NZ Debian mirror?](#) *Alex White-Robinson*
 - [\[nznog\] Anyone interested in donating space / connectivity / kit for a proper NZ Debian mirror?](#) *Michael Fincham*
 - [\[nznog\] Anyone interested in donating space / connectivity / kit for a proper NZ Debian mirror?](#) *Davey Goode*
 - [\[nznog\] Anyone interested in donating space / connectivity / kit for a better NZ Debian mirror?](#) *Michael Fincham*
 - [\[nznog\] Anyone interested in donating space / connectivity / kit for a better NZ Debian mirror?](#) *Pieter De Wit*
 - [\[nznog\] Anyone interested in donating space / connectivity / kit for a better NZ Debian mirror?](#) *Chris Browning*
 - [\[nznog\] Anyone interested in donating space / connectivity / kit for a better NZ Debian mirror?](#) *Pieter De Wit*
 - [\[nznog\] Anyone interested in donating space / connectivity / kit for a better NZ Debian mirror?](#) *Simon Blake*
 - [\[nznog\] Anyone interested in donating space / connectivity / kit for a better NZ Debian mirror?](#) *Michael Fincham*
 - [\[nznog\] Anyone interested in donating space / connectivity / kit for a better NZ Debian mirror?](#) *Todd Dickason*
 - [\[nznog\] Anyone interested in donating space / connectivity / kit for a better NZ Debian mirror?](#) *Scott Newton*
 - [\[nznog\] Anyone interested in donating space / connectivity / kit for a better NZ Debian mirror?](#) *Michael Fincham*
 - [\[nznog\] Anyone interested in donating space / connectivity / kit for a better NZ Debian mirror?](#) *Pieter De Wit*
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 - [\[nznog\] Anyone interested in donating space / connectivity / kit for a proper NZ Debian mirror?](#) *Joel van Velden*
 - [\[nznog\] Anyone interested in donating space / connectivity / kit for a proper NZ Debian mirror?](#) *Michael Fincham*
 - [\[nznog\] Anyone interested in donating space / connectivity / kit for a proper NZ Debian mirror?](#) *Joel Wirāmu Pauling*
 - [\[nznog\] Anyone interested in donating space / connectivity / kit for a proper NZ Debian mirror?](#) *Alex Smith*
 - [\[nznog\] Anyone interested in donating space / connectivity / kit for a proper NZ Debian mirror?](#) *Michael Fincham*
 - [\[nznog\] Anyone interested in donating space / connectivity / kit for a proper NZ Debian mirror?](#) *Alex Smith (Platform)*
 - [\[nznog\] Anyone interested in donating space / connectivity / kit for a proper NZ Debian mirror?](#) *Michael Fincham*
 - [\[nznog\] Anyone interested in donating space / connectivity / kit for a proper NZ Debian mirror?](#) *Jamie Walker*

Converting interest into action

- Formed a small team of dedicated volunteers
- Solicited sponsorship and help
 - Big thanks to the folks who wasted no time in making it happen:
 - Insomnia Security (gave us lots of \$\$\$ for HDDs)
 - REANNZ (donated rackspace, bandwidth, IP blocks)
 - Catalyst IT (donated server hardware)
 - Shout out w0lfie's Dad for driving one of our machines from WLG to HLZ
- Hardware
 - “Recycled” servers from Catalyst IT, new disks from Insomnia (about \$5,000 worth of disk...)
 - Donated RAM from Advantage, new CPUs purchased by Brad and Michael

Goals for FSMG

- Dedicated infrastructure just for mirroring - NZ is still a long way away from the world, it's important to have well peered local mirrors
- Redundant hardware to reduce outages and maintenance
- Mirror (a few) things other people weren't mirroring
- Access via IPv6 and HTTPS
- Make everyone's apt-get updates quicker:



Alex
@alex_smith

Crikey. Downloads from [@fsmgnz](#) are amazingly quick. Yes, that's 96MByte/Sec. It's not even the fastest I've seen from home. Nice work over there!

```
2018-11-01 19:52:34 (96.0 MB/s) - 'CentOS-7-x86_64-NetInstall-1804.iso' saved
```



Nick Le Mouton
@noodlesnz

[@fsmgnz](#) a lot of love coming through for having a local Kali mirror. Getting 24MB/s getting the Kali 2018.3 release, but have been reports of others getting 89.8 MB/s (one day we'll get gigabit fibre). Thanks again for all the work you do. cc [@nzcizmoguy](#)

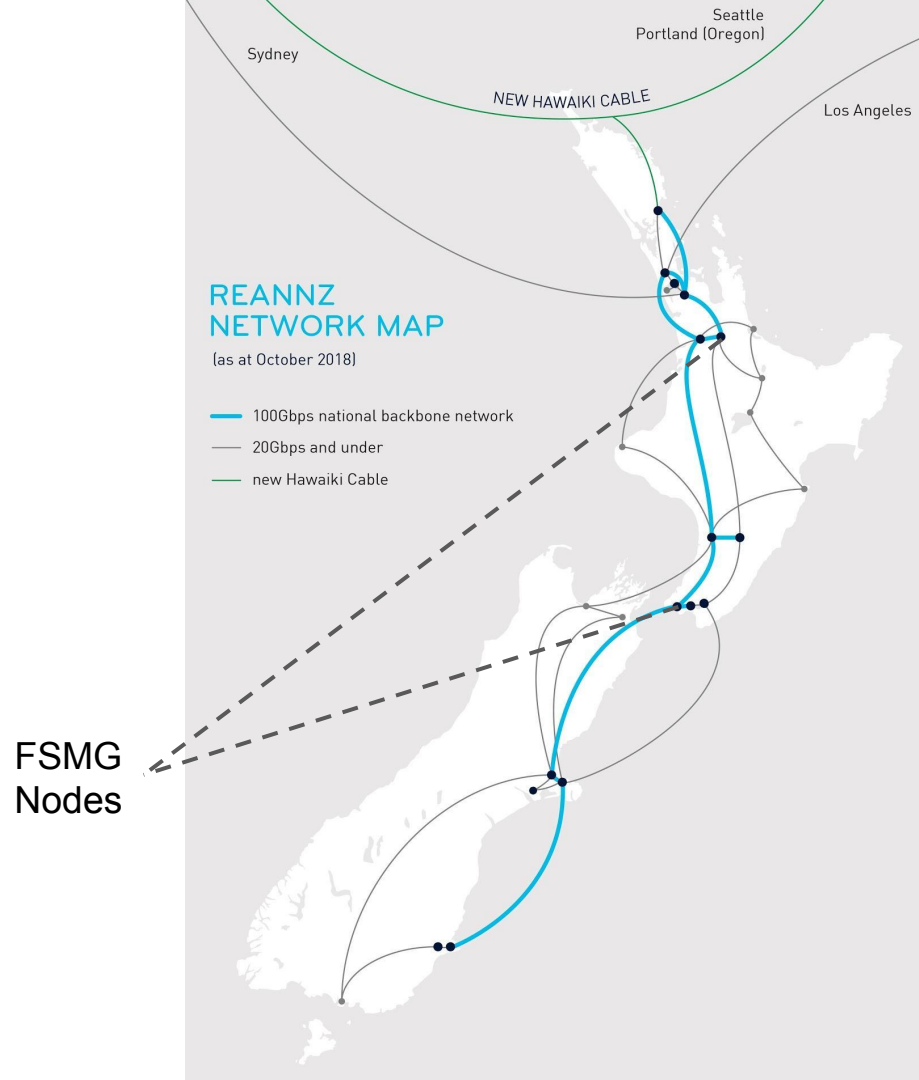


Metlstorm
@Metlstorm

Good jerb [@fsmgnz](#), all the local hackers appreciate your work and being able to apt at 300mbps instead of 300kbps. Thanks to the various sponsors and stuff too; [@REANNZ](#), ZXSecurity, [@catalystnz](#), WAND, and ehem, [@insomniasec](#) :)

What did we build?

- Two physical nodes
 - Hamilton
 - Wellington
- High availability with anycast
- Each node advertises the same IP blocks into BGP
- When node is down BGP advertisement is pulled and other node takes over



Traffic insights

31/DEC/2018 — 14/JAN/2019

📊 Total Requests

8,535,441

📊 Valid Requests

3,466,222

📊 Failed Requests

0

📊 Unique Visitors

78,339

📊 Requested Files

173,505

📊 Log Size

1.11 GiB

📊 Tx. Amount

6.96 TiB

Traffic insights

31/DEC/2018 — 14/JAN/2019

1	1,408,130 (40.62%)	22,749 (29.04%)	5.29 TiB (75.98%)	OC Oceania
	1,279,086 (36.90%)	18,960 (24.20%)	1.93 TiB (27.72%)	NZ New Zealand
	115,829 (3.34%)	3,250 (4.15%)	3.27 TiB (47.02%)	AU Australia
	3,442 (0.10%)	68 (0.09%)	5 GiB (0.07%)	VU Vanuatu
	3,041 (0.09%)	53 (0.07%)	10.28 GiB (0.14%)	TL Democratic Republic of Timor-Leste
	1,918 (0.06%)	21 (0.03%)	1.63 GiB (0.02%)	SB Solomon Islands
	1,286 (0.04%)	133 (0.17%)	7.22 GiB (0.10%)	FJ Fiji
	1,075 (0.03%)	75 (0.10%)	5.06 GiB (0.07%)	PG Papua New Guinea

Challenges to date

- Scaling isn't always easy
- Looking at you Apache2
 - mpm_event looks fun...

Challenges to date

ASF Bugzilla – Bug 60956

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[Bug 60956](#) - Event MPM listener thread may get blocked by SSL shutdowns

Challenges to date

- Let's try `mpm_worker...`

Challenges to date

```
AH00288: scoreboard is full, not at MaxRequestWorkers  
AH00287: server is within MinSpareThreads of MaxRequestWorkers, consider raising the MaxRequestWorkers setting  
AH00286: server reached MaxRequestWorkers setting, consider raising the MaxRequestWorkers setting  
AH00286: server reached MaxRequestWorkers setting, consider raising the MaxRequestWorkers setting  
AH00286: server reached MaxRequestWorkers setting, consider raising the MaxRequestWorkers setting
```

Challenges to date

- The 90s were cool, maybe they knew how to write web servers back then too?

Tree: 72ad541beb ▾

[httpd](#) / [server](#) / [mpm](#) / [prefork](#) / **prefork.c**

Find file

Copy path

 **jimjag** Consistant and shorter naming

72ad541 on Jun 23, 1999

[1 contributor](#)

3515 lines (3085 sloc) | 94.7 KB

Raw

Blame

History







```
81  /* TODO: this is a cobbled together prefork MPM example... it should mostly
82   * TODO: behave like apache-1.3... here's a short list of things I think
83   * TODO: need cleaning up still:
84   * TODO: - use ralf's mm stuff for the shared mem and mutexes
85   * TODO: - abstract the Listen stuff, it's going to be common with other MPM
86   * TODO: - clean up scoreboard stuff when we figure out how to do it in 2.0
87   */
```

Achievements to date

- We helped improve IPv6 on 2degrees

Forums > 2degrees > Slow ipv6 traffic to hosts on WIX (from Auckland)

<p>Noodles</p>  <p>Topic Starter</p> <p>467 posts</p> <p>★★★★★</p> <p>Ultimate Geek</p> <p>+1 received by user: 83</p>	<p>Topic # 229242 14-Feb-2018 11:04 Email</p> <p>I'm seeing very slow ipv6 traffic when downloading from mirror.fsmg.org.nz, about 300KB/s vs 23MB/s on ipv4.</p> <p>I managed to contact one of the admins at fsmg.org.nz and they setup another host on WIX for me to test (different ISP) and I still get 300KB/s.</p> <p>Auckland based ipv6 hosts (via APE) I can get 23MB/s, but not WIX.</p> <p>Can someone from 2degrees take a look?</p>
<p>NickMack</p>  <p>277 posts</p> <p>★★★★★</p> <p>Ultimate Geek</p> <p>+1 received by user: 215</p> <p> Trusted</p> <p> 2degrees</p>	<p>Reply # 1995373 13-Apr-2018 11:58 4 people support this post Email</p> <p>Hi All,</p> <p>Testing has pointed us to the likely suspect - an issue has been identified with a change in behavior post a Junos upgrade on our core PE's - Change is currently in QA with the change scheduled to be rolled out today.</p> <p>Nick.</p>

Achievements to date

- Fully automated mirror setup / maintenance with Ansible
- Flexible exaBGP script for health checking (used elsewhere now as well)
 - Released on GitLab under an Open Source license
 - <https://gitlab.com/fsmg/healthchecks>

How do you use our mirrors?

- It's likely you already are using our mirrors!
- Official country mirrors for:
 - Debian
 - Raspbian
 - Ubuntu
 - CentOS
 - Archlinux
 - Kali
 - OpenBSD

<https://mirror.fsmg.org.nz>

Where to now?

- Our main goal for 2019 is to get some newer server hardware
 - Hard disk space++
- We'd like to open source the rest of our infrastructure Ansible
 - Then other mirror operators can benefit from it

Want to join the #FSMG mission?

- Use our mirrors, if you are not already
- Help get us in contact with more sponsors
- Tell us what to mirror
 - <https://fsmg.org.nz/pages/request-mirroring.html>
- Join the conversation
 - IRC: #fsmg on freenode

Thanks again to our sponsors

- REANNZ
- Insomnia
- Catalyst IT
- ZX Security
- Metaname
- WAND Group
- Advantage

Questions?

Twitter: @fsmgnz

IRC: #fsmg on freenode

Email: contact@fsmg.org.nz