DEVOPSSAAR

Proftpd and GlusterFS - performance tuning

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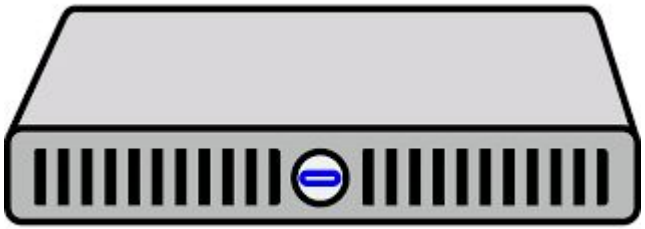
What is the goal?



How is it realized?

Performance test….

1. sftp file Transfer to GlusterFS

sftp> put 1G
Uploading 1G to /1G
100% 977MB **12.5MB/s** 01:18

2. dd to glusterFS

dd if=/dev/zero of=/var/data/sftp/sftp-user01/1.1G bs=1M count=1000
1000+0 Datensätze ein
1000+0 Datensätze aus
1048576000 Bytes (1,0 GB, 1000 MiB) kopiert, 1,92615 s, **544 MB/s**

3. sftp Filetransfer to local disk

sftp> put 1G
Uploading 1G to /1G
100% 977MB **46.5MB/s** 00:21

4. dd to local disk

dd if=/dev/zero of=/tmp/1G bs=1M count=1000
1000+0 Datensätze ein
1000+0 Datensätze aus
1048576000 Bytes (1,0 GB, 1000 MiB) kopiert, 0,795026 s, **1,3 GB/s**

Where is my performance?

dd

GlusterFS: 5[illegible]4 MB/s
local Disk: [illegible] GB/s

OK

sftp

Glus[illegible] 12[illegible] MB/s
local [illegible]isk: [illegible] MB/s

Where is my performance?

sftp

local Disk: 46.5MB/s

```
top - 15:57:45 up 28 days,  3:06,  1 user,  load average: 0,08, 0,02, 0,01
Tasks: 159 total,   3 running, 156 sleeping,   0 stopped,   0 zombie
%Cpu(s): 19,1 us,  5,0 sy,  0,0 ni, 75,6 id,  0,0 wa,  0,0 hi,  0,4 si,  0,0 st
KiB Mem :  8179332 total,  5637492 free,   458740 used,  2083100 buff/cache
KiB Swap:  1046524 total,  1046524 free,        0 used.  7304020 avail Mem

  PID USER        PR  NI       VIRT RES  SHR S  %CPU %MEM         TIME+ COMMAND
17046 sftp-us+  20   0  184200  10700   7716 R  95,7  0,1   0:23.14 proftpd
```

Where is my performance?

sftp

GlusterFS: 12.5MB/s

top - 09:56:59 up 40 days, 21:05, 1 user, load average: 0,59, 0,17, 0,06
Tasks: 159 total, 1 running, 158 sleeping, 0 stopped, 0 zombie
%Cpu(s): 9,7 us, 3,6 sy, 0,0 ni, 85,4 id, 0,0 wa, 0,0 hi, 1,3 si, 0,0 st
KiB Mem : 8179332 total, 5906208 free, 443184 used, 1829940 buff/cache
KiB Swap: 1046524 total, 1046524 free, 0 used. 7313720 avail Mem

PID	USER	PR	NI	VIRT	RES	SHR	S	**%CPU**	%MEM	TIME+	COMMAND
20403	root	20	0	563728	27004	7556	S	**31,2**	0,3	1:48.99	**glusterfs**
7855	sftp-us+	20	0	184180	10328	7608	S	**23,6**	0,1	0:10.47	**proftpd**

Where is my performance?

sftp

GlusterFS: 12.5MB/s

STRACE

strace is a diagnostic, debugging and instructional userspace utility for Linux. It is used to monitor and tamper with interactions between processes and the Linux kernel, which include system calls, signal deliveries, and changes of process state.

```
# ps auxwww| grep proftpd
proftpd   7949  0.0  0.0 137252  4316 ?          Ss   09:58   0:00 proftpd: (accepting connections)
sftp-us+  9098  0.0  0.1 183920 10012 ?          SL   11:11   0:00 proftpd: sftp-user01: IDLE
root   9102  0.0  0.0  12804   968 pts/0    S+   11:11   0:00 grep proftpd
```

```
# strace -p 9098
```

Where is my performance?

sftp

GlusterFS: 12.5MB/s

```
stat("/var/data/sftp/sftp-user01/1G", {st_mode=S_IFREG|0644, st_size=20283392, ...}) = 0
stat("/.ftpaccess", 0x7ffcda12c0b0)     = -1 ENOENT (No such file or directory)
stat("/var/data/sftp/sftp-user01/.ftpaccess", 0x7ffcda12c1c0) = -1 ENOENT (No such file or directory)
umask(022)                              = 022
lseek(14, 20283392, SEEK_SET)           = 20283392
getpid()                                = 8723
write(14, "\0\0\0\0\0\0\0\0\0\0\0\0\0\0\0\0\0\0\0\0\0\0\0\0\0\0\0\0\0\0\0\0\0\0\0\0\0\0"..., 32768) = 32768
.
.
.
.
.
stat("/var/data/sftp/sftp-user01/1G", {st_mode=S_IFREG|0644, st_size=20316160, ...}) = 0
stat("/.ftpaccess", 0x7ffcda12c0b0)     = -1 ENOENT (No such file or directory)
stat("/var/data/sftp/sftp-user01/.ftpaccess", 0x7ffcda12c1c0) = -1 ENOENT (No such file or directory)
```

Where is my performance?

sftp

GlusterFS: 12.5MB/s

A .ftpaccess file is meant to function like Apache's .htaccess file: a file that acts as free-floating section of the server's configuration file. If a .ftpaccess file is present in a directory in which ProFTPD performs some action, ProFTPD will parse that .ftpaccess file as a configuration file, and act accordingly. Note that only some configuration directives are allowed in the .ftpaccess section, though.

AllowOverride -- Toggles handling of .ftpaccess files

Synopsis
AllowOverride [on|off ["user"|"group"|"class" expression]]

Where is my performance?

sftp

GlusterFS: 12.5MB/s

```
sftp> put 1G
Uploading 1G to /1G
1G                                    100%  977MB  20.8MB/s
```

```
top - 09:54:51 up 40 days, 21:03,  1 user,  load average: 0,07, 0,02, 0,00
Tasks: 158 total,   2 running, 156 sleeping,   0 stopped,   0 zombie
%Cpu(s): 11,2 us,  4,1 sy,  0,0 ni, 84,1 id,  0,0 wa,  0,0 hi,  0,5 si,  0,0 st
KiB Mem :  8179332 total,  5903292 free,   446204 used,  1829836 buff/cache
KiB Swap:  1046524 total,  1046524 free,        0 used.  7310788 avail Mem

  PID USER        PR  NI       VIRT RES  SHR S  %CPU %MEM         TIME+ COMMAND
 7776 sftp-us+  20   0  184052  10320   7608 S  36,4  0,1   0:09.54 proftpd
20403 root         20   0  563728  27004   7556 S  23,5  0,3   1:29.40 glusterfs
```

Where is my performance?

sftp

GlusterFS: 20.8MB/s

```
#  dd if=/dev/zero of=/var/data/sftp/sftp-user01/1G bs=1M count=1000
1000+0 Datensätze ein
1000+0 Datensätze aus
1048576000 Bytes (1,0 GB, 1000 MiB) kopiert, 1,8855 s, 556 MB/s
```

```
#  dd if=/dev/zero of=/var/data/sftp/sftp-user01/1G bs=16K count=100000
100000+0 Datensätze ein
100000+0 Datensätze aus
1638400000 Bytes (1,6 GB, 1,5 GiB) kopiert, 8,44122 s, 194 MB/s
```

```
# dd if=/dev/zero of=/var/data/sftp/sftp-user01/1G bs=1024 count=1000000
1000000+0 Datensätze ein
1000000+0 Datensätze aus
1024000000 Bytes (1,0 GB, 977 MiB) kopiert, 53,4771 s, 19,1 MB/s
```

Conclusion….

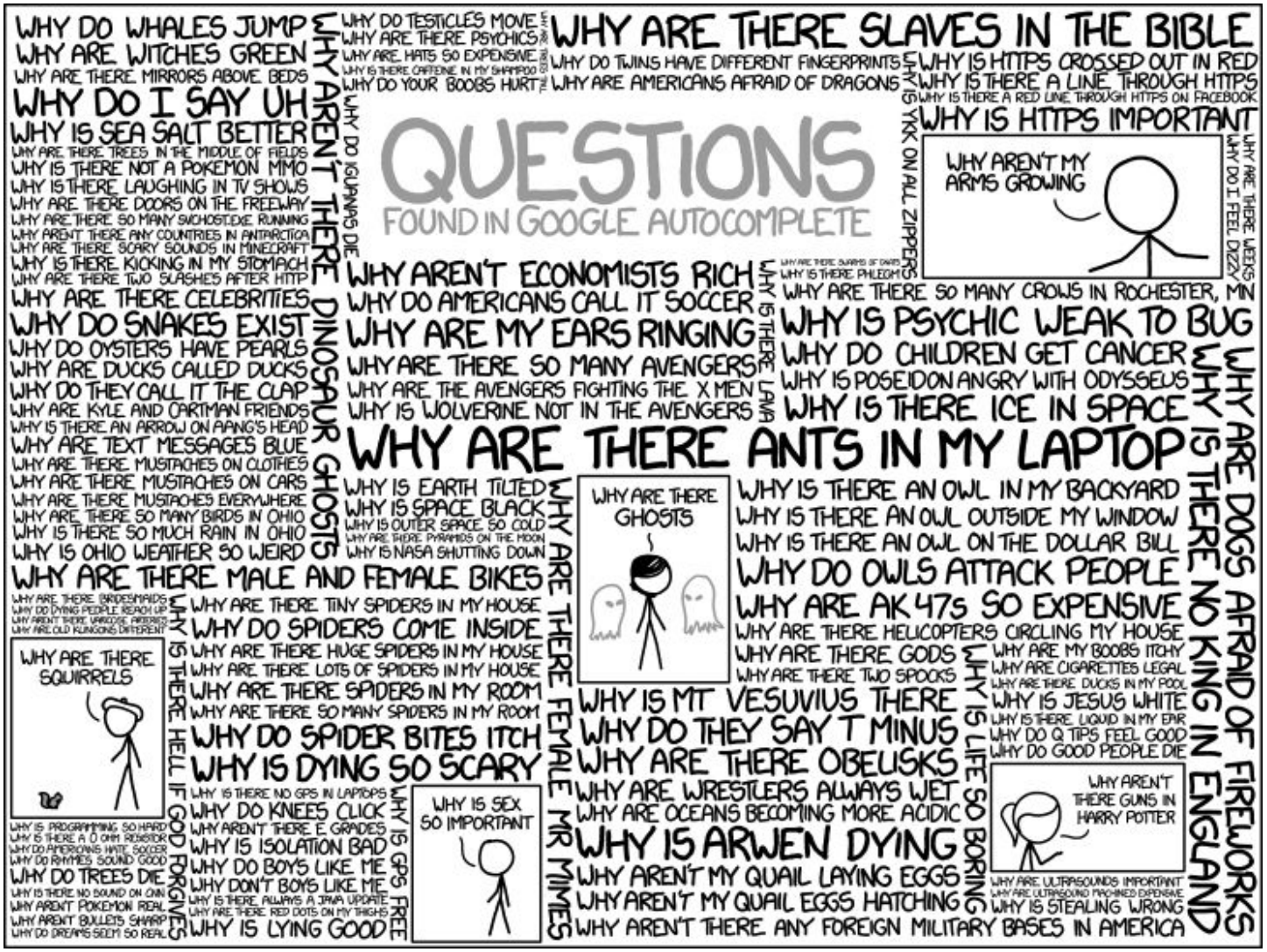
What did we find out ….

- Upload from 12 MB/s to 20MB/s (.ftaccess Handling)
- GlusterFS Blocksize and proftpd write Blocksize
- Proftpd - userspace

What could we also look into ….

- GlusterFS direct IO Mode
- Change Blocksize in proftpd or/and GlusterFS
- …..

Thanks


QUESTIONS
FOUND IN GOOGLE AUTOCOMPLETE
WHY ARE THERE SLAVES IN THE BIBLE
WHY DO WHALES JUMP
WHY ARE WITCHES GREEN
WHY ARE THERE MIRRORS ABOVE BEDS
WHY DO I SAY UH
WHY IS SEA SALT BETTER
WHY ARE THERE TREES IN THE MIDDLE OF FIELDS
WHY IS THERE NOT A POKEMON MMO
WHY IS THERE LAUGHING IN TV SHOWS
WHY ARE THERE DOORS ON THE FREEWAY
WHY ARE THERE SO MANY SWOOSHES RUNNING
WHY AREN'T THERE ANY COUNTRIES IN ANTARCTICA
WHY ARE THERE SCARY SOUNDS IN MINECRAFT
WHY IS THERE KICKING IN MY STOMACH
WHY ARE THERE TWO SLASHES AFTER HTTP
WHY ARE THERE CELEBRITIES
WHY DO SNAKES EXIST
WHY DO OYSTERS HAVE PEARLS
WHY ARE DUCKS CALLED DUCKS
WHY DO THEY CALL IT THE CLAP
WHY ARE KYLE AND CARTMAN FRIENDS
WHY IS THERE AN ARROW ON AANG'S HEAD
WHY ARE TEXT MESSAGES BLUE
WHY ARE THERE MUSTACHES ON CLOTHES
WHY ARE THERE MUSTACHES ON CARS
WHY ARE THERE MUSTACHES EVERYWHERE
WHY ARE THERE SO MANY BIRDS IN OHIO
WHY IS THERE SO MUCH RAIN IN OHIO
WHY IS OHIO WEATHER SO WEIRD
WHY ARE THERE MALE AND FEMALE BIKES
WHY ARE THERE BRIDESMAIDS
WHY DO DYING PEOPLE REACH UP
WHY AREN'T THERE VARICOSE AMBERS
WHY ARE OLD KLINGONS DIFFERENT
WHY ARE THERE SQUIRRELS
WHY IS PROGRAMMING SO HARD
WHY IS THERE A 0 OHM RESISTOR
WHY DO AMERICANS HATE SOCCER
WHY DO RHYMES SOUND GOOD
WHY DO TREES DIE
WHY IS THERE NO SOUND ON CNN
WHY AREN'T POKEMON REAL
WHY AREN'T BULLETS SHARP
WHY DO DREAMS SEEM SO REAL
WHY DO TESTICLES MOVE
WHY ARE THERE PSYCHICS
WHY ARE HATS SO EXPENSIVE
WHY IS THERE CAFFEINE IN MY SHAMPOO
WHY DO YOUR BOOBS HURT
WHY DO IGUANAS DIE
WHY DO TWINS HAVE DIFFERENT FINGERPRINTS
WHY ARE AMERICANS AFRAID OF DRAGONS
WHY IS HTTPS CROSSED OUT IN RED
WHY IS THERE A LINE THROUGH HTTPS
WHY IS THERE A RED LINE THROUGH HTTPS ON FACEBOOK
WHY IS HTTPS IMPORTANT
WHY AREN'T MY ARMS GROWING
WHY IS YKK ON ALL ZIPPERS
WHY ARE THERE DINOSAUR GHOSTS
WHY AREN'T ECONOMISTS RICH
WHY DO AMERICANS CALL IT SOCCER
WHY ARE MY EARS RINGING
WHY ARE THERE SO MANY AVENGERS
WHY ARE THE AVENGERS FIGHTING THE X MEN
WHY IS WOLVERINE NOT IN THE AVENGERS
WHY ARE THERE SWARMS OF DAVID
WHY IS THERE PHLEGM
WHY ARE THERE SO MANY CROWS IN ROCHESTER, MN
WHY IS PSYCHIC WEAK TO BUG
WHY DO CHILDREN GET CANCER
WHY IS POSEIDON ANGRY WITH ODYSSEUS
WHY IS THERE ICE IN SPACE
WHY IS THERE LAVA
WHY ARE THERE ANTS IN MY LAPTOP
WHY IS EARTH TILTED
WHY IS SPACE BLACK
WHY IS OUTER SPACE SO COLD
WHY ARE THERE PYRAMIDS ON THE MOON
WHY IS NASA SHUTTING DOWN
WHY ARE THERE GHOSTS
WHY IS THERE AN OWL IN MY BACKYARD
WHY IS THERE AN OWL OUTSIDE MY WINDOW
WHY IS THERE AN OWL ON THE DOLLAR BILL
WHY DO OWLS ATTACK PEOPLE
WHY ARE AK 47s SO EXPENSIVE
WHY ARE THERE HELICOPTERS CIRCLING MY HOUSE
WHY ARE THERE GODS
WHY ARE THERE TWO SPOOKS
WHY ARE THERE FIREWORKS
WHY ARE DOGS AFRAID OF
WHY IS THERE NO KING IN ENGLAND
WHY ARE MY BOOBS ITCHY
WHY ARE CIGARETTES LEGAL
WHY ARE THERE DUCKS IN MY POOL
WHY IS JESUS WHITE
WHY IS THERE LIQUID IN MY EAR
WHY DO Q TIPS FEEL GOOD
WHY DO GOOD PEOPLE DIE
WHY ARE THERE FEMALE MR MIMES
WHY ARE THERE TINY SPIDERS IN MY HOUSE
WHY DO SPIDERS COME INSIDE
WHY ARE THERE HUGE SPIDERS IN MY HOUSE
WHY ARE THERE LOTS OF SPIDERS IN MY HOUSE
WHY ARE THERE SPIDERS IN MY ROOM
WHY ARE THERE SO MANY SPIDERS IN MY ROOM
WHY DO SPIDER BITES ITCH
WHY IS DYING SO SCARY
WHY IS THERE HELL IF GOD FORGIVES
WHY IS THERE NO GPS IN LAPTOPS
WHY DO KNEES CLICK
WHY AREN'T THERE E GRADES
WHY IS ISOLATION BAD
WHY DO BOYS LIKE ME
WHY DON'T BOYS LIKE ME
WHY IS THERE ALWAYS A JAVA UPDATE
WHY ARE THERE RED DOTS ON MY THIGHS
WHY IS LYING GOOD
WHY IS SEX SO IMPORTANT
WHY IS GPS FREE
WHY IS MT VESUVIUS THERE
WHY DO THEY SAY T MINUS
WHY ARE THERE OBELISKS
WHY ARE WRESTLERS ALWAYS WET
WHY ARE OCEANS BECOMING MORE ACIDIC
WHY IS ARWEN DYING
WHY AREN'T MY QUAIL LAYING EGGS
WHY AREN'T MY QUAIL EGGS HATCHING
WHY AREN'T THERE ANY FOREIGN MILITARY BASES IN AMERICA
WHY IS LIFE SO BORING
WHY AREN'T THERE GUNS IN HARRY POTTER
WHY ARE ULTRASOUNDS IMPORTANT
WHY ARE ULTRASOUND MACHINES EXPENSIVE
WHY IS STEALING WRONG
WHY ARE THERE WEEKS
WHY DO I FEEL DIZZY