

Moderne Kommandozeilen Werkzeuge

(endgültig letzte Version)

Error 451

Unavailable for legal reasons

19. Gulaschprogrammierenacht

30.05. - 02.06.2019 | gulas.ch

Entropia e.V. / CCC Karlsruhe

#GPN19

@LEYRER

DANKE an karas et.al.!



Alles, was zum Zeitpunkt unserer Geburt bereits
vorhanden war, wird als Bestandteil der
natürlichen Ordnung empfunden.

Alles, was in der Zeit zwischen dem fünfzehnten
und fünfunddreißigsten Lebensjahr erfunden
wurde, ist aufregend, revolutionär und fördert
vielleicht sogar die eigene Karriere.

Alles, was nach unserem 35. Geburtstag erfunden wurde, verstößt gegen die natürliche Ordnung der Welt und wird abgelehnt.

“I've come up with a set of rules that describe our reactions to technologies:

1. Anything that is in the world when you're born is normal and ordinary and is just a natural part of the way the world works.
2. Anything that's invented between when you're fifteen and thirty-five is new and exciting and revolutionary and you can probably get a career in it.
3. Anything invented after you're thirty-five is against the natural order of things.”

Douglas Adams, The Salmon of Doubt

The UNIX philosophy

Doug McIlroy, Bell System Technical Journal 1978

http://emulator.pdp-11.org.ru/misc/1978.07_-_Bell_System_Technical_Journal.pdf

The UNIX philosophy

Erstelle Programme so, dass sie eine Aufgabe richtig erfüllen. Wenn es eine neue Aufgabe gibt, beginne ein neues Programm anstatt das andere zu verkomplizieren.

The UNIX philosophy

Gehe davon aus, dass die Ausgaben eines Programms die Eingabe eines anderen sein können, selbst wenn Du dieses noch nicht kennst. Programme sollten nicht schwafeln, halte die Ausgaben kurz und einfach verarbeitbar.

The UNIX philosophy

Lass Computer-Tools die Arbeit für Dich machen,
nicht die Hilfskräfte.

The UNIX philosophy

Peter H. Salus in “A Quarter-Century of Unix” (1994):

- Write programs that do one thing and do it well.
- Write programs to work together.
- Write programs to handle text streams, because that is a universal interface.

systemd Utilities

systemctl journalctl notify analyze cglsgcgtop loginctl nspawn

systemd Daemons

systemd
journald networkd
loginduser session

systemd Targets

bootmode basic multi-user graphical user-session
shutdown reboot dbus telephony display service
dlog logind user-session tizen service

systemd Core

manager unit login namespace log
systemd service timer mount target multiseat inhibit
snapshot path socket swap session pam cgroup dbus

systemd Libraries

dbus-1 libpam libcap libcryptsetup tcpwrapper libaudit libnotify

Linux Kernel

cgroups autofs kdbus

Was bisher geschah

systemd

HTTPIe / jq

dig

aria2c

tracepath / mtr / oping

icdiff / colordiff

iproute2

ripgrep / fd / z

tmux

exa

zsh

fzf

ranger

pV / progress

Plan

hub / tig

lynis

top Familie

Nethogs

socket statistics

dstat / saidar / discus

nmon

kubetail / colorex / lolcat

gulasch

HTTP Prompt

XMLStarlet

Ultimate Plumber

reptyr / tttyd

WTF

no more secrets

Moderne Kommandozeilen Werkzeuge

(endgültig letzte Version)

Error 451

Unavailable for legal reasons

19. Gulaschprogrammierenacht

30.05. - 02.06.2019 | gulas.ch

Entropia e.V. / CCC Karlsruhe

hub

- Wrapper (embrace and expand) für git
- Bessere Unterstützung für Github
 - fork, pull-requests, create repo, clone, ...
 - Tab Completion
- <https://github.com/github/hub>

```
$ hub clone frcl/gulasch
Cloning into 'gulasch'...
remote: Enumerating objects: 66, done.
remote: Counting objects: 100% (66/66), done.
remote: Compressing objects: 100% (39/39), done.
remote: Total 66 (delta 35), reused 55 (delta 25), pack-reused 0
Receiving objects: 100% (66/66), 132.87 KiB | 708.00 KiB/s, done.
Resolving deltas: 100% (35/35), done.
```

```
$ ls -al gulasch
total 184
drwxrwxr-x 3 leyrer leyrer 4096 Mai 31 06:55 .
drwxrwxr-x 6 leyrer leyrer 4096 Mai 31 06:55 ..
-rw-rw-r-- 1 leyrer leyrer 172 Mai 31 06:55 Dockerfile
drwxrwxr-x 8 leyrer leyrer 4096 Mai 31 06:55 .git
-rw-rw-r-- 1 leyrer leyrer 26 Mai 31 06:55 .gitignore
-rw-rw-r-- 1 leyrer leyrer 13586 Mai 31 06:55 gulaschkanone.py
...
```

```
cd gpn19
git init
hub create -d "GPN19 Demo Repository" "GPN19 Demo"
echo "# GPN19Demo" >> README.md
git add README.md
git commit -m "first commit"
git push -u origin master
```

```
[master (root-commit) 85a8cb8] first commit
 1 file changed, 1 insertion(+)
 create mode 100644 README.md
Counting objects: 3, done.
Writing objects: 100% (3/3), 224 bytes | 224.00 KiB/s, done.
Total 3 (delta 0), reused 0 (delta 0)
To github.com:leyrer/GPN19Demo.git
 * [new branch]      master -> master
Branch 'master' set up to track remote branch 'master' from 'origin'.
```

```
$ hub issue create -m "Error 451 Unavailable for legal reasons"  
"GPN19 Demo Issue"  
https://github.com/leyrer/GPN19Demo/issues/1
```

```
$ hub issue
```

```
    #1  Error 451 Unavailable for legal reasons
```

```
$ hub issue show 1  
# Error 451 Unavailable for legal reasons
```

```
* created by @leyrer on 2019-05-31 05:24:07 +0000 UTC
```

```
$ hub issue create -m "Error 451 Unavailable for legal reasons"  
"GPN19 Demo Issue"  
https://github.com/leyrer/GPN19Demo/issues/1
```

```
$ hub issue
```

```
    #1  Error 451 Unavailable for legal reasons
```

```
$ hub issue show 1  
# Error 451 Unavailable for legal reasons
```

```
* created by @leyrer on 2019-05-31 05:24:07 +0000 UTC
```

tig

- ncurses-based text-mode interface for git
- Browse Changes
- Pager for git commands
- <https://jonas.github.io/tig/>

```
fonseca@antimatter: /home/fonseca/src/git/cogito
commit 35dd3a46a9d5b244072467edca15581d08f5adc2
Author: Petr Baudis <pasky@suse.cz>
Date: Fri May 5 10:47:41 2006 +0200

    cg-commit --no-hooks and use it when shelving changes

    We do not want any hooks since this is an internal and temporary shelving
    commit.

---
cg-commit |      8 ++++++--
cg-switch |      2 +-
2 files changed, 8 insertions(+), 2 deletions(-)

diff --git a/cg-commit b/cg-commit
index f8c8e0d..4ec2b33 100755
--- a/cg-commit
+++ b/cg-commit
@@ -86,6 +86,9 @@ #      and the commit information. This is fo
#      might not actually _have_ any object database. This option is
#      normally not interesting.
#
+# --no-hooks:: Do not call any commit hooks
+#      Do not call any commit hooks during the commit.
+#
# -p, --review:: Show and enable editing of changes being committed
#      Show changes being committed as a patch appended to the commit message
#      buffer. Changes made to the patch will be reapplied before completing
@@ -212,6 +215,7 @@ msgs=()
msgfile=
quiet=
+no_hooks=
while optparse; do
    if optparse --author=: then
        load_author "$OPTARG" force
@@ -241,6 +245,8 @@ while optparse; do
    msgfile="$OPTARG"
    elif optparse -c; then
[diff] 35dd3a46a9d5b244072467edca15581d08f5adc2 - line 13 of 66 (19%)
```

lynis

- console-based
- Auditing, system hardening, compliance testing
- hub clone CISOfy/lynis
- ./lynis audit system
- <https://cisofy.com/lynis/>

-[Lynis 2.7.4 Results]-

Great, no warnings

Suggestions (44):

- * Set a password on GRUB bootloader to prevent altering boot configuration (e.g. boot in single user mode without password) [BOOT-5122]

<https://cisofy.com/lynis/controls/BOOT-5122/>

- * Run pwck manually and correct any errors in the password file [AUTH-9228]

<https://cisofy.com/lynis/controls/AUTH-9228/>

- * Install a PAM module for password strength testing like pam_cracklib or pam_passwdqc [AUTH-9262]

<https://cisofy.com/lynis/controls/AUTH-9262/>

- * Configure minimum password age in /etc/login.defs [AUTH-9286]

<https://cisofy.com/lynis/controls/AUTH-9286/>

- * Configure maximum password age in /etc/login.defs [AUTH-9286]

<https://cisofy.com/lynis/controls/AUTH-9286/>

- * Default umask in /etc/login.defs could be more strict like 027 [AUTH-9328]

<https://cisofy.com/lynis/controls/AUTH-9328/>

- * Default umask in /etc/init.d/rc could be more strict like 027 [AUTH-9328]

<https://cisofy.com/lynis/controls/AUTH-9328/>

- * To decrease the impact of a full /home file system, place /home on a separate partition [FILE-6310]

<https://cisofy.com/lynis/controls/FILE-6310/>

- * To decrease the impact of a full /tmp file system, place /tmp on a separate partition [FILE-6310]

<https://cisofy.com/lynis/controls/FILE-6310/>

top

- Liste der aktuell laufenden Prozesse des Systems
- Auslastung CPU, RAM
- Per default alle 3 Sekunden aktualisiert.
- Standardmäßig in den meisten Linux-Distributionen installiert

```
top - 07:58:07 up 5 days, 18:17,  2 users,  load average: 1,02, 0,92, 0,85
Tasks: 266 total,  2 running, 201 sleeping,   0 stopped,   0 zombie
%Cpu(s):  4,7 us,  2,5 sy,  0,1 ni, 92,6 id,  0,2 wa,  0,0 hi,  0,0 si,  0,0 st
KiB Mem : 46,1/8043756  [|||||||||||||||||||||||||||||||||||||]
KiB Swap:  2,2/8265724  [||]
```

PID	USER	PR	NI	VIRT	RES	SHR	S	%CPU	%MEM	TIME+	COMMAND
1202	root	20	0	695400	114200	83812	S	3,3	1,4	43:35.23	/usr/lib/xorg/Xorg -core :0 -seat seat0 -auth /var/run/lightdm/root/:0 -nolisten +
2761	leyrer	20	0	3789096	301124	156744	S	3,3	3,7	62:57.59	cinnamon --replace
1467	leyrer	20	0	2481760	387344	168956	S	1,3	4,8	4:48.03	/usr/lib/firefox/firefox
6694	leyrer	20	0	536652	25056	16452	S	1,3	0,3	0:00.12	gnome-screenshot --area --clipboard
15181	leyrer	20	0	1069196	90592	53528	S	1,3	1,1	3:22.73	/usr/bin/python3 /usr/share/cinnamon/cinnamon-settings/cinnamon-settings.py netwo+
994	message+	20	0	49396	4908	3012	S	1,0	0,1	6:08.82	/usr/bin/dbus-daemon --system --address=systemd: --nofork --nopidfile --systemd-a+
8522	leyrer	20	0	153312	5500	3372	S	0,7	0,1	3:08.81	tmux new-session -s work -n TaskWarrior -d watch "task proj && tmux resize-pane ->
10	root	20	0	0	0	0	I	0,3	0,0	2:36.52	[rcu_sched]
240	root	-2	0	0	0	0	S	0,3	0,0	1:03.07	[i915/signal:0]
528	root	0	-20	0	0	0	I	0,3	0,0	0:00.01	[kworker/u17:2-r]
680	root	-51	0	0	0	0	S	0,3	0,0	10:06.34	[irq/31-iwlwifi]
991	avahi	20	0	46652	4932	3104	S	0,3	0,1	1:06.27	avahi-daemon: running [Betty.local]
1120	root	20	0	0	0	0	I	0,3	0,0	0:00.04	[kworker/0:0-eve]
1349	root	20	0	0	0	0	D	0,3	0,0	0:00.06	[kworker/u16:3+e]
1542	root	20	0	439544	6424	5160	S	0,3	0,1	2:27.81	/usr/lib/upower/upowerd
2547	leyrer	20	0	220776	4484	4208	S	0,3	0,1	0:08.42	/usr/lib/at-spi2-core/at-spi2-registryd --use-gnome-session
3432	leyrer	31	11	7934236	129704	7164	S	0,3	1,6	114:03.62	/app/bin/syncthing -no-browser
4134	leyrer	20	0	166004	4092	3340	R	0,3	0,1	0:00.30	top
7785	leyrer	20	0	4039928	814208	550424	S	0,3	10,1	17:36.63	/app/Signal/signal-desktop --type=renderer --no-sandbox --enable-features=SharedA+
7998	leyrer	20	0	1976936	243220	117844	S	0,3	3,0	0:45.21	/usr/lib/firefox/firefox -contentproc -childID 6 -isForBrowser -prefsLen 7131 -pr+
17357	leyrer	20	0	787884	47788	24928	S	0,3	0,6	2:13.66	/usr/lib/gnome-terminal/gnome-terminal-server
29867	leyrer	20	0	498400	7920	6816	S	0,3	0,1	0:12.53	/usr/lib/gvfs/gvfsd-dnssd --spawner :1.13 /org/gtk/gvfs/exec_spaw/6
32010	leyrer	20	0	1698528	254480	130884	S	0,3	3,2	0:45.05	/usr/lib/libreoffice/program/soffice.bin --impress --splash-pipe=5
1	root	20	0	225756	7440	5092	S	0,0	0,1	0:07.54	/sbin/init splash
2	root	20	0	0	0	0	S	0,0	0,0	0:00.06	[kthreadd]
3	root	0	-20	0	0	0	I	0,0	0,0	0:00.00	[rcu_gp]
4	root	0	-20	0	0	0	I	0,0	0,0	0:00.00	[rcu_par_gp]
6	root	0	-20	0	0	0	I	0,0	0,0	0:00.00	[kworker/0:0H-kb]
8	root	0	-20	0	0	0	I	0,0	0,0	0:00.00	[mm_percpu_wq]
9	root	20	0	0	0	0	S	0,0	0,0	0:05.52	[ksoftirqd/0]
11	root	20	0	0	0	0	I	0,0	0,0	0:00.00	[rcu_bh]
12	root	rt	0	0	0	0	S	0,0	0,0	0:01.64	[migration/0]

atop

- ASCII full-screen performance monitor
- With kernel module netatop, it even shows network activity per process/thread.
- Permanent logging of resource utilization
- <https://www.atoptool.nl/>

ATOP - robin				2012/10/25 13:08:11				y-----				10s elapsed		
PRC	sys	1.16s	user	1.40s	#proc	330	#tslpi	450	#tslpu	0	#zombie	0	#exit	0
CPU	sys	10%	user	12%	irq	0%	idle	376%	wait	2%	curf	1.20GHz	curscal	49%
CPL	avg1	0.03	avg5	0.07	avg15	0.02	csw	66844	intr	49036			numcpu	4
MEM	tot	3.5G	free	767.6M	cache	1.8G	buff	329.2M	slab	368.1M	shmem	50.0M	shrss	6.9M
SWP	tot	4.0G	free	2.9G							vmcom	2.2G	vmlim	5.8G
DSK		sda	busy	2%	read	0	write	27	MBr/s	0.00	MBw/s	0.67	avio	7.85 ms
NET	transport		tcpi	30862	tcpo	21031	udpi	1	udpo	0	tcpao	0	tcppo	0
NET	network		ipi	30865	ipo	21031	ipfrw	0	deliv	30863	icmpi	0	icmpo	0
NET	p5p1	28%	pcki	30862	pcko	21029	si	28 Mbps	so	5571 Kbps	erri	0	erro	0

PID	TID	TCPRCV	TCPRSZ	TCPSND	TCPSASZ	UDPRCV	UDPRSZ	UDPSND	UDPSASZ	BANDWI	BANDWO	NET	CMD	1/3
24858	-	20163	1438	10328	71	0	0	0	0	23 Mbps	588 Kbps	70%	ssh	
24970	-	10703	582	10703	582	0	0	0	0	4983 Kbps	4983 Kbps	30%	attract	
24857	-	0	0	0	0	0	0	0	0	0 Kbps	0 Kbps	0%	scp	
3011	-	0	0	0	0	0	0	0	0	0 Kbps	0 Kbps	0%	Xorg	
2213	-	0	0	0	0	0	0	0	0	0 Kbps	0 Kbps	0%	cgrulesengd	
24755	-	0	0	0	0	0	0	0	0	0 Kbps	0 Kbps	0%	atop	
3550	-	0	0	0	0	0	0	0	0	0 Kbps	0 Kbps	0%	multiload-appl	
3550	3550	0	0	0	0	0	0	0	0	0 Kbps	0 Kbps	0%	multiload-appl	
18308	-	0	0	0	0	0	0	0	0	0 Kbps	0 Kbps	0%	gnome-terminal	
18308	18308	0	0	0	0	0	0	0	0	0 Kbps	0 Kbps	0%	gnome-terminal	
3554	-	0	0	0	0	0	0	0	0	0 Kbps	0 Kbps	0%	clock-applet	
3554	3554	0	0	0	0	0	0	0	0	0 Kbps	0 Kbps	0%	clock-applet	
24925	-	0	0	0	0	0	0	0	0	0 Kbps	0 Kbps	0%	gnome-power-ma	
2184	-	0	0	0	0	0	0	0	0	0 Kbps	0 Kbps	0%	irqbalance	
4	-	0	0	0	0	0	0	0	0	0 Kbps	0 Kbps	0%	ksoftirqd/0	

htop

- Interaktiver Prozessmonitor
- Aktiv entwickelt seit 2004
- Tree view !!!
- <http://hisham.hm/htop/>

1 [|||||] 1.3%
2 [|||||] 10.0%
3 [|||||] 2.0%
4 [|||||] 2.0%
Mem [|||||] 754/3830MB
Sup [|||||] 0/0MB

Tasks: 37, 49 thr: 1 running
Load average: 0.96 0.63 0.61
Uptime: 02:45:52



PID	USER	PRI	NI	VIRT	RES	SHR	S	CPU	CPUP	MEM%	TIME+	Command
705	hisham	20	0	2944	840	692	S	2	0.0	0.0	0:00.01	/usr/bin/dbus-daemon --fork --print-pid 5 --print-address 7 --session
704	hisham	20	0	3772	596	432	S	2	0.0	0.0	0:00.00	dbus-launch --autolaunch=48133a1b5d2c363218a9104d4c04c7ec --binary-s
672	hisham	20	0	66268	9768	3816	S	3	0.0	0.2	0:00.13	urxvt -cr green -fn *-lode-* -fb *-lode-* -fi *-lode-* -fbi *-lode-*
673	hisham	20	0	9036	3864	2060	S	3	0.0	0.1	0:00.34	└─ zsh
577	hisham	20	0	13508	5688	2544	S	4	0.0	0.1	0:02.76	xterm -bg black -fg white -title XTerm -u8
578	hisham	20	0	8220	2868	1848	S	4	0.0	0.1	0:00.05	└─ zsh
14240	hisham	20	0	6864	2088	1240	R	1	1.3	0.1	0:16.32	└─ htop -d 15
568	hisham	20	0	71580	56012	6372	S	1	0.0	1.4	0:01.39	urxvt -cr green -fn *-lode-* -fb *-lode-* -fi *-lode-* -fbi *-lode-*
569	hisham	20	0	9740	4600	2064	S	3	0.7	0.1	0:01.31	└─ zsh
516	root	20	0	2464	408	216	S	3	0.0	0.0	0:00.00	dhcpcd eth0
410	hisham	20	0	6772	1376	1112	S	4	0.0	0.0	0:00.00	/bin/sh /System/Links/Executables/firefox
414	hisham	21	1	1034M	559M	38448	S	1	0.7	14.6	54:37.78	└─ /Programs/Firefox/27.0.1/bin/./firefox/firefox
405	root	20	0	4268	708	640	S	2	0.0	0.0	0:00.00	/System/Links/Executables/agetty tty1 9600
391	hisham	20	0	78840	27112	3856	S	3	0.0	0.7	0:02.51	urxvt -cr green -fn *-lode-* -fb *-lode-* -fi *-lode-* -fbi *-lode-*
392	hisham	20	0	9860	4668	2052	S	4	0.0	0.1	0:01.22	└─ zsh
765	root	20	0	5964	1140	952	S	3	0.0	0.0	0:00.05	└─ /bin/su root
775	root	20	0	8388	2948	1748	S	1	0.0	0.1	0:00.05	└─ zsh
327	root	20	0	4268	716	640	S	4	0.0	0.0	0:00.00	/System/Links/Executables/agetty tty6 9600
326	root	20	0	4268	712	640	S	1	0.0	0.0	0:00.00	/System/Links/Executables/agetty tty5 9600
325	root	20	0	4268	712	640	S	3	0.0	0.0	0:00.00	/System/Links/Executables/agetty tty4 9600
324	root	20	0	4268	712	640	S	4	0.0	0.0	0:00.00	/System/Links/Executables/agetty tty3 9600
323	root	20	0	2672	1076	876	S	1	0.0	0.0	0:00.00	/bin/login --
328	hisham	20	0	8500	2880	1868	S	1	0.0	0.1	0:00.10	└─ zsh
335	hisham	20	0	6904	1504	1220	S	1	0.0	0.0	0:00.01	└─ sh /System/Links/Executables/startx
351	hisham	20	0	3552	700	608	S	4	0.0	0.0	0:00.00	└─ xinit /Users/hisham/.xinitrc -- /usr/bin/X :0 -auth /Users/
363	hisham	20	0	9280	3296	1612	S	4	0.0	0.1	0:01.23	└─ twm
375	hisham	20	0	0	0	0	Z	3	0.0	0.0	0:00.00	└─ 2monitors
374	hisham	20	0	6772	1412	1144	S	1	0.0	0.0	0:00.02	└─ /bin/sh /Users/hisham/bin/flash_screensaver_daemon.sh
7724	hisham	20	0	5424	268	224	S	2	0.0	0.0	0:00.00	└─ sleep 300
352	root	20	0	145M	80588	45592	S	2	1.3	2.1	2:06.76	/usr/bin/X :0 -auth /Users/hisham/.serverauth.335
360	root	20	0	145M	80588	45592	S	4	0.0	2.1	0:00.00	└─ X
359	root	20	0	145M	80588	45592	S	3	0.0	2.1	0:02.70	└─ X
310	messagehu	20	0	2944	888	720	S	2	0.0	0.0	0:00.00	/bin/dbus-daemon --system
208	root	20	0	2220	648	556	S	1	0.0	0.0	0:00.04	syslogd -n -m 0
207	root	20	0	3748	2212	544	S	3	0.0	0.1	0:00.05	klogd -n
143	root	20	0	5224	1420	912	S	1	0.0	0.0	0:01.36	/lib/udev/udevld --daemon

apachetop

- console-based
- monitoring threads & overall performance
- multiple Apache logfiles
- <https://github.com/JeremyJones/Apachetop>

```

last hit: 16:48:42      atop runtime:  0 days, 00:06:46      16:48:50
All:      150 reqs (   0.4/sec)      747.5K ( 2019.5B/sec)  5102.7B/req
2xx:      121 (80.7%) 3xx:      21 (14.0%) 4xx:      8 ( 5.3%) 5xx:      0 ( 0.0%)
R ( 30s):   26 reqs (   0.9/sec)      182.1K ( 6216.7B/sec)  7173.1B/req
2xx:       24 (92.3%) 3xx:       1 ( 3.8%) 4xx:       1 ( 3.8%) 5xx:       0 ( 0.0%)

```

REQS	REQ/S	KB	KB/S	URL
3	0.10	97.9	3.4*/	
2	0.11	0.3	0.0	/xmedia/theme/plume-cms-powered.png
1	0.03	1.6	0.1	/plugins/jqueryplugin/ajaxCallback.js
1	0.04	13.0	0.5	/plugins/jqueryplugin/form.js
1	0.04	8.5	0.4	/IMG/jpg/poussee_vectorielle_su_37.jpg
1	0.05	10.6	0.5	/IMG/jpg/tuyere_Mig_29_OVT_1.jpg
1	0.05	6.0	0.3	/squelettes/warstyle.css
1	0.05	5.4	0.3	/IMG/jpg/poussee_vectorielle_f22.jpg
1	0.04	4.1	0.2	/plugins/jqueryplugin/jq-corner.js
1	0.06	8.3	0.5	/IMG/jpg/mig_29-2-62257.jpg
1	0.08	0.2	0.0	/divers/factory/dist/ecrire/
1	0.08	0.4	0.0	/squelettes/design/fond_bouton.jpg
1	0.10	6.2	0.6	/xmedia/theme/default/style.css
1	0.10	1.4	0.1	/xmedia/theme/default/layout.css
1	0.11	0.2	0.0	/xmedia/theme/default/img/dotted.png
1	0.11	0.7	0.1	/xmedia/theme/default/img/background.png
1	0.11	0.3	0.0	/xmedia/theme/default/img/sstar.png
1	0.11	16.0	1.8	/xmedia/theme/default/img/header.jpg
1	0.12	0.2	0.0	/xmedia/theme/default/img/puce.png
1	0.12	0.2	0.0	/xmedia/theme/default/img/bulle.png

ngxtop

- console-based
- Real-time metrics for nginx server
- <https://github.com/lebinh/nginxtop>

\$ ngxtop
running for 411 seconds, 64332 records processed: 156.60 req/sec

Summary:

count	avg_bytes_sent	2xx	3xx	4xx	5xx
64332	2775.251	61262	2994	71	5

Detailed:

request_path	count	avg_bytes_sent	2xx	3xx	4xx	5xx
/abc/xyz/xxxx	20946	434.693	20935	0	11	0
/xxxxx.json	5633	1483.723	5633	0	0	0
/xxxxx/xxx/xxxxxxxxxxxxxxx	3629	6835.499	3626	0	3	0
/xxxxx/xxx/xxxxxxxxxx	3627	15971.885	3623	0	4	0
/xxxxx/xxx/xxxxxxxxxx	3624	7830.236	3621	0	3	0
/static/js/minified/utils.min.js	3031	1781.155	2104	927	0	0
/static/js/minified/xxxxxxxx.min.v1.js	2889	2210.235	2068	821	0	0
/static/tracking/js/xxxxxxxx.js	2594	1325.681	1927	667	0	0
/xxxxx/xxx.html	2521	573.597	2520	0	1	0
/xxxxx/xxxx.json	1840	800.542	1839	0	1	0

mytop

- console-based
- threads and overall performance
- MySQL 3.22.x, 3.23.x, and 4.x server
- <https://jeremy.zawodny.com/mysql/mytop/>

MySQL on localhost (4.1.20)

up 11+11:03:03 [09:48:24]

Queries: 123.8M qps: 131 Slow: 11.4k Se/In/Up/De(%): 78/04/06/03

qps now: 108 Slow qps: 0.0 Threads: 31 (1/ 0) 78/03/07/03

Cache Hits: 60.9M Hits/s: 64.5 Hits now: 53.4 Ratio: 63.1% Ratio now: 63.3%

Key Efficiency: 100.0% Bps in/out: 4.1k/599.8 Now in/out: 39.5k/567.9k

Id	User	Host/IP	DB	Time	Cmd	Query or State
--	----	-----	--	----	---	-----
233817	user	localhost	—	0	Sleep	
233822	user	localhost	—	0	Sleep	
233851	■ user	localhost	■.	0	Sleep	
233888	user	localhost	■	0	Sleep	
233910	■ user	localhost	■	0	Sleep	
233915	user	localhost	—	0	Query	SELECT DISTINCT year(FROM_UNI
233918	user	localhost	—	0	Query	show full processlist
233704	■ user	localhost	■.	1	Sleep	
233907	user	localhost	■	1	Sleep	
233838	■ user	localhost	■	2	Sleep	
233854	user	localhost	—	2	Sleep	
233859	user	localhost	—	2	Sleep	
233875	■ user	localhost	■.	2	Sleep	
233887	user	localhost	■	2	Sleep	
233894	■ user	localhost	■	2	Sleep	
233895	user	localhost	—	3	Sleep	
233853	user	localhost	—	4	Sleep	
233863	■ user	localhost	■.	4	Sleep	
233890	user	localhost	■	4	Sleep	

pg_top

- console-based
- top cpu PostgreSQL processes
- `sudo yum install pg_top`
- `sudo apt-get install pgtop`
- https://git.postgresql.org/gitweb/?p=pg_top.git;a=summary

last pid: 20111; load avg: 2.79, 1.64, 1.07; up 42+09:15:31 18:55:59
21 processes: 14 sleeping, 7 uninterruptable
CPU states: 8.4% user, 0.1% nice, 4.5% system, 61.4% idle, 25.7% iowait
Memory: 2758M used, 1180M free, 18M buffers, 2406M cached
Swap: 76K used, 8189M free, 72K cached

PID	USERNAME	PRI	NICE	SIZE	RES	STATE	TIME	WCPU	CPU	COMMAND
20052	markwkm	20	0	58M	12M	disk	0:00	0.80%	9.58%	postgres: markwk
20059	markwkm	20	0	54M	10M	disk	0:00	0.60%	7.19%	postgres: markwk
20058	markwkm	20	0	46M	3688K	disk	0:00	0.38%	4.59%	postgres: markwk
20055	markwkm	20	0	46M	3640K	disk	0:00	0.35%	4.19%	postgres: markwk
20061	markwkm	20	0	46M	3672K	disk	0:00	0.33%	3.99%	postgres: markwk
20098	markwkm	20	0	47M	6292K	disk	0:00	0.03%	0.40%	postgres: markwk
20110	markwkm	20	0	46M	3512K	disk	0:00	0.00%	0.00%	postgres: markwk
20112	markwkm	20	0	46M	4032K	sleep	0:00	0.00%	0.00%	postgres: markwk
20091	markwkm	20	0	46M	2632K	sleep	0:00	0.00%	0.00%	postgres: markwk
20080	markwkm	20	0	46M	2632K	sleep	0:00	0.00%	0.00%	postgres: markwk
20092	markwkm	20	0	46M	2628K	sleep	0:00	0.00%	0.00%	postgres: markwk
20081	markwkm	20	0	46M	2628K	sleep	0:00	0.00%	0.00%	postgres: markwk
20071	markwkm	20	0	46M	2628K	sleep	0:00	0.00%	0.00%	postgres: markwk
20072	markwkm	20	0	46M	2624K	sleep	0:00	0.00%	0.00%	postgres: markwk
20105	markwkm	20	0	46M	2624K	sleep	0:00	0.00%	0.00%	postgres: markwk
20099	markwkm	20	0	46M	2624K	sleep	0:00	0.00%	0.00%	postgres: markwk
20094	markwkm	20	0	46M	2624K	sleep	0:00	0.00%	0.00%	postgres: markwk

powertop

- console-based
- diagnose issues related to power consumption and power management
- <https://01.org/powertop/>

```
>> Bad      Enable SATA link power management for host4
Bad      Enable SATA link power management for host5
Bad      Enable SATA link power management for host3
Bad      Enable SATA link power management for host1
Bad      Enable SATA link power management for host2
Bad      Enable SATA link power management for host0
Bad      Enable Audio codec power management
Bad      Runtime PM for I2C Adapter i2c-1 (i915 gmbus vga)
Bad      Runtime PM for I2C Adapter i2c-2 (i915 gmbus panel)
Bad      Runtime PM for I2C Adapter i2c-3 (i915 gmbus dpc)
Bad      Runtime PM for I2C Adapter i2c-4 (i915 gmbus dpb)
Bad      Runtime PM for I2C Adapter i2c-0 (i915 gmbus ssc)
Bad      Runtime PM for I2C Adapter i2c-5 (i915 gmbus dpd)
Bad      Runtime PM for PCI Device Intel Corporation 6 Series/C200 Series Chipset Family PCI Express Root Port 2
Bad      Runtime PM for PCI Device Intel Corporation 82579LM Gigabit Network Connection (Lewisville)
Bad      Runtime PM for PCI Device Intel Corporation 6 Series/C200 Series Chipset Family High Definition Audio Controller
Bad      Runtime PM for PCI Device Intel Corporation Centrino Advanced-N 6205 [Taylor Peak]
Bad      Runtime PM for PCI Device Intel Corporation 6 Series/C200 Series Chipset Family 6 port Mobile SATA AHCI Controller
Bad      Runtime PM for PCI Device Intel Corporation 6 Series/C200 Series Chipset Family PCI Express Root Port 5
Bad      Runtime PM for PCI Device Intel Corporation 6 Series/C200 Series Chipset Family PCI Express Root Port 1
Bad      Runtime PM for PCI Device Intel Corporation QM67 Express Chipset LPC Controller
Bad      Runtime PM for PCI Device Intel Corporation 2nd Generation Core Processor Family DRAM Controller
Bad      Runtime PM for PCI Device Intel Corporation 6 Series/C200 Series Chipset Family USB Enhanced Host Controller #1
Bad      Runtime PM for PCI Device Intel Corporation 6 Series/C200 Series Chipset Family USB Enhanced Host Controller #2
Bad      Runtime PM for PCI Device Ricoh Co Ltd PCIe SDXC/MMC Host Controller
Bad      Runtime PM for PCI Device Intel Corporation 2nd Generation Core Processor Family Integrated Graphics Controller
Bad      Runtime PM for PCI Device Intel Corporation 6 Series/C200 Series Chipset Family SMBus Controller
Bad      Runtime PM for PCI Device Intel Corporation 6 Series/C200 Series Chipset Family PCI Express Root Port 4
Bad      Runtime PM for PCI Device Intel Corporation 6 Series/C200 Series Chipset Family MEI Controller #1
Good     VM writeback timeout
Good     NMI watchdog should be turned off
Good     Autosuspend for USB device EHCI Host Controller [usb2]
Good     Autosuspend for USB device Integrated Camera [Chicony Electronics Co., Ltd.]
Good     Autosuspend for unknown USB device 1-1 (8087:0024)
```

iotop

- Python program with a top like UI
- current I/O usage by processes or thread
- <http://guichaz.free.fr/iotop/>

Total DISK READ : 0.00 B/s | Total DISK WRITE : 7.39 K/s
Actual DISK READ: 0.00 B/s | Actual DISK WRITE: 0.00 B/s

TID	PRIO	USER	DISK READ	DISK WRITE	SWAPIN	IO>	COMMAND
430	be/3	root	0.00 B/s	7.39 K/s	0.00 %	3.16 %	[jbd2/dm-1-8]
1	be/4	root	0.00 B/s	0.00 B/s	0.00 %	0.00 %	init splash
2	be/4	root	0.00 B/s	0.00 B/s	0.00 %	0.00 %	[kthreadd]
3	be/0	root	0.00 B/s	0.00 B/s	0.00 %	0.00 %	[rcu_gp]
4	be/0	root	0.00 B/s	0.00 B/s	0.00 %	0.00 %	[rcu_par_gp]
6	be/0	root	0.00 B/s	0.00 B/s	0.00 %	0.00 %	[kworker/0:0H-kblockd]
8	be/0	root	0.00 B/s	0.00 B/s	0.00 %	0.00 %	[mm_percpu_wq]
9	be/4	root	0.00 B/s	0.00 B/s	0.00 %	0.00 %	[ksoftirqd/0]
10	be/4	root	0.00 B/s	0.00 B/s	0.00 %	0.00 %	[rcu_sched]
11	be/4	root	0.00 B/s	0.00 B/s	0.00 %	0.00 %	[rcu_bh]
12	rt/4	root	0.00 B/s	0.00 B/s	0.00 %	0.00 %	[migration/0]
13	rt/4	root	0.00 B/s	0.00 B/s	0.00 %	0.00 %	[watchdog/0]
14	be/4	root	0.00 B/s	0.00 B/s	0.00 %	0.00 %	[cpuhp/0]
15	be/4	root	0.00 B/s	0.00 B/s	0.00 %	0.00 %	[cpuhp/1]
16	rt/4	root	0.00 B/s	0.00 B/s	0.00 %	0.00 %	[watchdog/1]
17	rt/4	root	0.00 B/s	0.00 B/s	0.00 %	0.00 %	[migration/1]
18	be/4	root	0.00 B/s	0.00 B/s	0.00 %	0.00 %	[ksoftirqd/1]
20	be/0	root	0.00 B/s	0.00 B/s	0.00 %	0.00 %	[kworker/1:0H-kblockd]
21	be/4	root	0.00 B/s	0.00 B/s	0.00 %	0.00 %	[cpuhp/2]
22	rt/4	root	0.00 B/s	0.00 B/s	0.00 %	0.00 %	[watchdog/2]
23	rt/4	root	0.00 B/s	0.00 B/s	0.00 %	0.00 %	[migration/2]
24	be/4	root	0.00 B/s	0.00 B/s	0.00 %	0.00 %	[ksoftirqd/2]
26	be/0	root	0.00 B/s	0.00 B/s	0.00 %	0.00 %	[kworker/2:0H-kblockd]
27	be/4	root	0.00 B/s	0.00 B/s	0.00 %	0.00 %	[cpuhp/3]
28	rt/4	root	0.00 B/s	0.00 B/s	0.00 %	0.00 %	[watchdog/3]
29	rt/4	root	0.00 B/s	0.00 B/s	0.00 %	0.00 %	[migration/3]
30	be/4	root	0.00 B/s	0.00 B/s	0.00 %	0.00 %	[ksoftirqd/3]
32	be/0	root	0.00 B/s	0.00 B/s	0.00 %	0.00 %	[kworker/3:0H-kblockd]
33	be/4	root	0.00 B/s	0.00 B/s	0.00 %	0.00 %	[kdevtmpfs]
34	be/0	root	0.00 B/s	0.00 B/s	0.00 %	0.00 %	[netns]
35	be/4	root	0.00 B/s	0.00 B/s	0.00 %	0.00 %	[rcu_tasks_kthre]
36	be/4	root	0.00 B/s	0.00 B/s	0.00 %	0.00 %	[kauditd]
40	be/4	root	0.00 B/s	0.00 B/s	0.00 %	0.00 %	[khungtaskd]
41	be/4	root	0.00 B/s	0.00 B/s	0.00 %	0.00 %	[oom_reaper]
42	be/0	root	0.00 B/s	0.00 B/s	0.00 %	0.00 %	[writeback]
43	be/4	root	0.00 B/s	0.00 B/s	0.00 %	0.00 %	[kcompactd0]

iftop

- console-based
- „does for network usage what top(1) does for CPU usage”
- `sudo iftop -i wlp3s0`
- <http://www.ex-parrot.com/pdw/iftop/>

	12,5Kb	25,0Kb	37,5Kb	50,0Kb	62,5Kb			
Betty		=> google-public-dns-a.google.com		544b	332b	479b		
		<=		544b	377b	547b		
224.0.0.251		=> 10.1.2.187		0b	0b	0b		
		<=		1,06Kb	697b	232b		
255.255.255.255		=> 10.1.2.88		0b	0b	0b		
		<=		0b	694b	231b		
239.255.255.250		=> 10.1.3.20		0b	0b	0b		
		<=		612b	490b	326b		
224.0.0.251		=> 10.1.3.82		0b	0b	0b		
		<=		896b	488b	955b		
224.0.0.252		=> 10.1.1.192		0b	0b	0b		
		<=		244b	244b	325b		
Betty		=> ec2-34-225-240-173.compute-1.amazonaws.co		0b	139b	46b		
		<=		0b	84b	28b		
224.0.0.251		=> 10.1.3.134		0b	0b	0b		
		<=		0b	219b	454b		
Betty		=> leyrer.priv.at		0b	106b	35b		
		<=		0b	106b	35b		
Betty		=> contrib.legoff.be		0b	74b	25b		
		<=		0b	116b	39b		
224.0.0.251		=> 10.1.1.235		0b	0b	0b		
		<=		688b	138b	69b		
TX:	cum:	3,15KB	peak:	4,83Kb	rates:	544b	652b	859b
RX:		18,1KB		10,4Kb		4,52Kb	4,07Kb	4,84Kb
TOTAL:		21,3KB		14,9Kb		5,05Kb	4,71Kb	5,68Kb

Nethogs

- console-based
- groups bandwidth by process
- <https://github.com/raboof/nethogs>

NetHogs version 0.8.5-2

PID	USER	PROGRAM	DEV	SENT	RECEIVED
21543	leyrer	/usr/lib/thunderbird/thunderbird	wlp3s0	7.221	257.032 KB/sec
21475	leyrer	ssh	wlp3s0	0.103	0.192 KB/sec
21724	root	/usr/bin/keepassxc-proxy	wlp3s0	0.018	0.030 KB/sec
21707	root	/usr/bin/keepassxc-proxy	wlp3s0	0.000	0.000 KB/sec
3575	leyrer	/app/bin/syncthing	wlp3s0	0.000	0.000 KB/sec
7485	leyrer	..pp/Signal/signal-desktop --type=renderer --no-sandbox --	wlp3s0	0.000	0.000 KB/sec
21166	leyrer	/usr/bin/keepassxc-proxy	wlp3s0	0.000	0.000 KB/sec
7981	leyrer	/usr/lib/firefox/firefox	wlp3s0	0.000	0.000 KB/sec
?	root	unknown TCP		0.000	0.000 KB/sec
TOTAL				7.343	257.255 KB/sec

ss – socket statistics

- console-based
- netstat replacement
- Part of Iproute2 package
- <https://wiki.linuxfoundation.org/networking/iproute2>

```
$ ss -s
```

```
Total: 999
```

```
TCP: 45 (estab 13, closed 15, orphaned 0, timewait 8)
```

Transport	Total	IP	IPv6
RAW	1	0	1
UDP	24	15	9
TCP	30	24	6
INET	55	39	16
FRAG	0	0	0

dstat

- console-based
- versatile replacement for vmstat, iostat and ifstat
- <http://dag.wiee.rs/home-made/dstat/>

--total-cpu-usage--					-most-expensive-		-highest-total-		-dsk/total-		-net/total-	
usr	sys	idl	wai	stl	cpu	process	latency	process	read	writ	recv	send
3	1	96	0	0	firefox	0.8	firefox	941	0	0	1605B	0
3	1	96	0	0	firefox	1.2	firefox	1773	0	0	1796B	94B
3	1	96	0	0	WebExtensions	0.5	firefox	2771	0	32k	216B	0
7	1	92	0	0	gnome-screens	2.2	firefox	2500	0	8192B	291B	94B
3	1	96	0	0	firefox	1.0	firefox	1501	0	0	904B	0
3	1	96	0	0	firefox	0.8	kworker/3:2-m	4545	0	0	0	0
3	1	96	0	0	WebExtensions	0.8	firefox	941	0	0	150B	0
2	1	96	0	0	firefox	0.8	firefox	1056	0	0	0	383B
5	2	93	0	0	Xorg	1.5	firefox	1004	0	0	60B	0
4	1	94	1	0	firefox	0.8	rcu_sched	776	0	28k	1782B	94B
6	2	92	0	0	firefox	4.0	firefox	2724	0	0	1348B	0
5	2	93	0	0	firefox	1.5	firefox	987	0	0	280B	0
4	1	95	0	0	firefox	1.0	firefox	1326	0	0	1105B	0
3	1	96	0	0	firefox	0.8	firefox	1622	0	0	1010B	0
8	2	90	0	0	firefox	7.2	firefox	1449	0	32k	1454B	188B
5	1	94	0	0	firefox	2.8	firefox	1368	0	0	2470B	0
3	1	96	0	0	firefox	1.2	kworker/2:3-e	3166	0	0	2345B	0
4	2	95	0	0	thunderbird	1.2	firefox	1067	0	0	2252B	2011B
3	1	96	0	0	firefox	1.0	firefox	1051	0	252k	865B	1016B
4	1	95	1	0	firefox	1.5	firefox	1135	0	76k	993B	0
3	1	96	0	0	firefox	1.0	firefox	924	0	0	195B	0
2	1	94	3	0	firefox	0.8	firefox	853	0	56k	75B	0
3	1	97	0	0	firefox	1.0	firefox	1922	0	0	352B	0
3	1	97	0	0	firefox	0.5	firefox	1084	0	0	988B	234B
4	0	96	0	0	firefox	1.0	firefox	1097	0	0	290B	562B
4	1	95	0	0	firefox	1.2	firefox	1295	0	0	150B	0
8	5	87	0	0	syncthing	9.0	watch	2952	0	48k	93B	2538B

saidar

- console-based
- system statistics overview
- <https://libstatgrab.org/>

Hostname : Betty Uptime : 08:06:05 Date : 2019-06-01 06:13:44

Load 1 : 0.77 CPU Idle : 93.42% Running : 53 Zombie : 0
Load 5 : 0.77 CPU System: 2.03% Sleeping : 178 Total : 242
Load 15 : 0.73 CPU User : 5.32% Stopped : 0 No. Users : 2

Mem Total : 7855M Swap Total: 8071M Mem Used : 48.68% Paging in : 0
Mem Used : 3824M Swap Used : 0B Swap Used : 0.00% Paging out: 28
Mem Free : 4031M Swap Free : 8071M Total Used: 24.01%

Disk Name	Read	Write	Network Interface	rx	tx
loop0	0B	0B	wlp3s0	1034B	141B
loop1	0B	0B	lo	542K	542K
loop2	0B	0B	enp0s25	0B	0B
loop3	0B	0B			
loop4	0B	0B	Mount Point	Free	Used
loop5	0B	0B	/sys	0B	-
loop6	0B	0B	/proc	0B	-
loop7	0B	0B	/dev	3893M	0.00%
sda	0B	28672B	/dev/pts	0B	-
sda1	0B	0B	/run	784M	0.19%
sda2	0B	0B	/	186G	31.22%
sda5	0B	28672B	/sys/kernel/securit	0B	-
dm-0	0B	28672B	/dev/shm	3876M	1.31%
dm-1	0B	32768B	/run/lock	5116K	0.08%
dm-2	0B	0B	/sys/fs/cgroup	3927M	0.00%
			/sys/fs/cgroup/unif	0B	-
Total	0B	116K	/sys/fs/cgroup/syst	0B	-
			/sys/fs/pstore	0B	-
				-/sys/fs/cgroup/devi	0B -/

discus

- console-based
- Colourised Disk Space Usage
- <http://www.raincrazy.com/software/discus>

Mount	Total	Used	Avail	Prcnt	Graph
/run	785.5 MB	1.5 MB	784.1 MB	0.2%	[-----]
/	285.06 GB	84.47 GB	200.59 GB	29.6%	[***-----]
+l/security	0 KB	0 KB	0 KB	0.0%	[-----]
/dev/shm	3.84 GB	41.6 MB	3.79 GB	1.1%	[-----]
/run/lock	5.0 MB	4 KB	5.0 MB	0.1%	[-----]
+/fs/cgroup	3.84 GB	0 KB	3.84 GB	0.0%	[-----]
+up/unified	0 KB	0 KB	0 KB	0.0%	[-----]
+up/systemd	0 KB	0 KB	0 KB	0.0%	[-----]
+/fs/pstore	0 KB	0 KB	0 KB	0.0%	[-----]
+up/devices	0 KB	0 KB	0 KB	0.0%	[-----]
+oup/cpuset	0 KB	0 KB	0 KB	0.0%	[-----]
+group/rdma	0 KB	0 KB	0 KB	0.0%	[-----]
+pu,cpuacct	0 KB	0 KB	0 KB	0.0%	[-----]
+up/hugetlb	0 KB	0 KB	0 KB	0.0%	[-----]
+perf_event	0 KB	0 KB	0 KB	0.0%	[-----]
+up/freezer	0 KB	0 KB	0 KB	0.0%	[-----]
+s,net_prio	0 KB	0 KB	0 KB	0.0%	[-----]
+oup/memory	0 KB	0 KB	0 KB	0.0%	[-----]
+group/pids	0 KB	0 KB	0 KB	0.0%	[-----]
+roup/blkio	0 KB	0 KB	0 KB	0.0%	[-----]
+infmt_misc	0 KB	0 KB	0 KB	0.0%	[-----]
+nel/config	0 KB	0 KB	0 KB	0.0%	[-----]
+rnel/debug	0 KB	0 KB	0 KB	0.0%	[-----]
+dev/mqueue	0 KB	0 KB	0 KB	0.0%	[-----]
+onnections	0 KB	0 KB	0 KB	0.0%	[-----]
+/hugepages	0 KB	0 KB	0 KB	0.0%	[-----]

nmon

- console-based
- monitor anything
- Data Analysis
- <http://nmon.sourceforge.net/pmwiki.php>

CPU Utilisation

CPU	User%	Sys%	Wait%	Idle	0	25	50	75	100
1	6.1	3.0	0.0	90.9	UUUs	>			
2	3.6	1.5	0.0	94.9	U	>			
3	13.8	1.5	0.0	84.6	UUUUUUU	>			
4	4.5	2.0	0.0	93.5	UUUs	>			
Avg	7.1	2.0	0.1	90.7	UUUs	>			

Memory and Swap

PageSize:4KB	RAM-Memory	Swap-Space	High-Memory	Low-Memory	
Total (MB)	7855.2	8072.0	- not in use	- not in use	
Free (MB)	778.1	8072.0			
Free Percent	9.9%	100.0%			
Linux Kernel Internal Memory (MB)					
	Cached=	3044.0	Active=	4341.4	
Buffers=	558.6	Swpcached=	0.0	Inactive =	2104.8
Dirty =	3.5	Writeback =	0.0	Mapped =	667.0
Slab =	498.5	Commit AS =	7979.8	PageTables=	51.2

Network I/O

I/F Name	Recv=KB/s	Trans=KB/s	packin	packout	insize	outsize	Peak->Recv	Trans
wlp3s0	3.8	1.7	23.0	13.0	168.5	137.5	106.0	4.0
lo	271.1	271.1	34.5	34.5	8051.3	8051.3	1624.8	1624.8
enp0s25	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Disk I/O /proc/diskstats mostly in KB/s Warning:contains duplicates

DiskName	Busy	Read	WriteKB	0	25	50	75	100
Totals	Read-MB/s=0.0	Writes-MB/s=0.0	Transfers/sec=0.0					

dm-0 6% 1021.6 0.0|RRR

nmon data file: **sampleD.nmon**

Configuration

Top Summary

Top Commands

Physical CPU

Pool Idle

CPU Util.

CPU Use

RunQ

pSwitch

SysCall

ReadWrite

ForkExec

File I/O

Real Mem

Virt Mem

FS Cache

Paging

Swaping

Network

Net Packets

Net Size

Adapter KBs

Adapter Tps

Disk Busy

Unstacked

Disk Read

Unstacked

Disk Write

Unstacked

Disk BSize

Disk Xfer

Disk Service

Disk Read Service

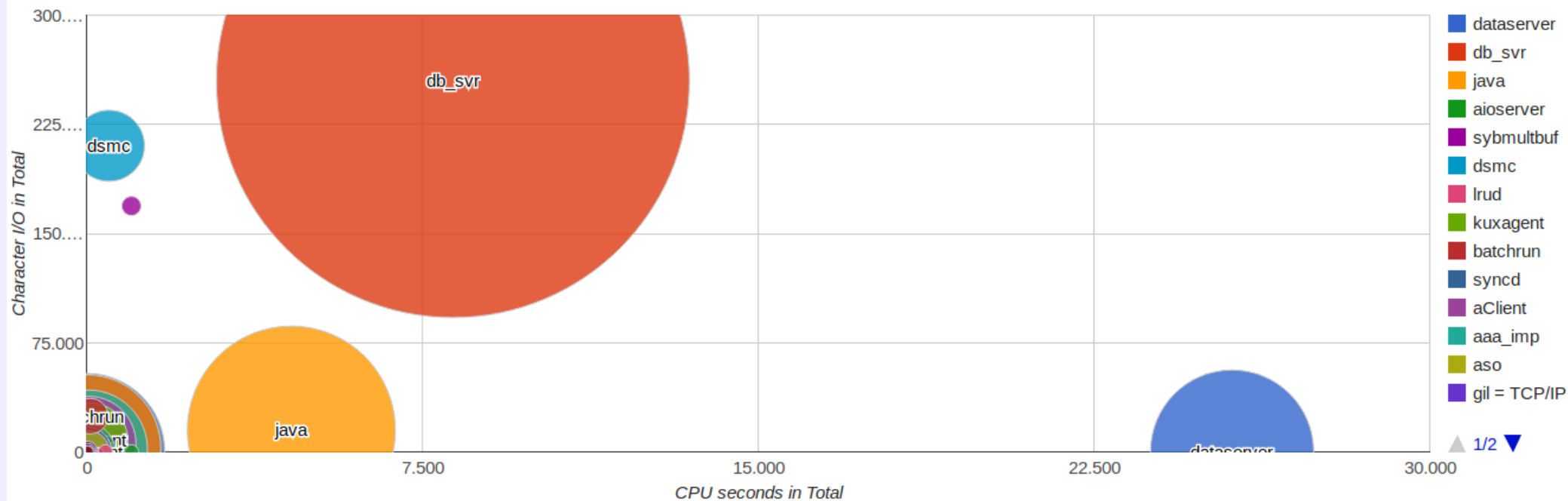
Disk Write Service

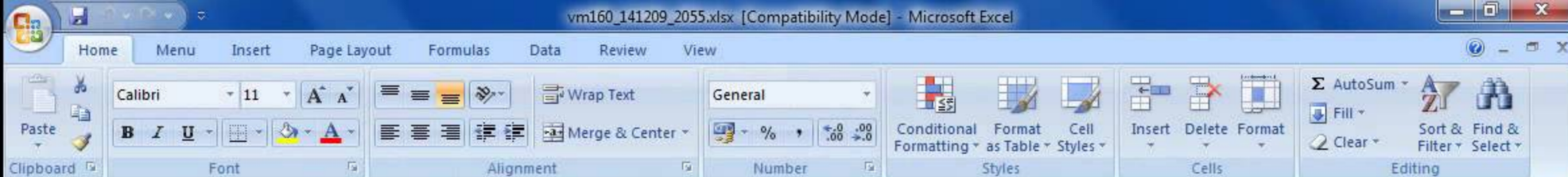
Disk Wait

JFS

IPC

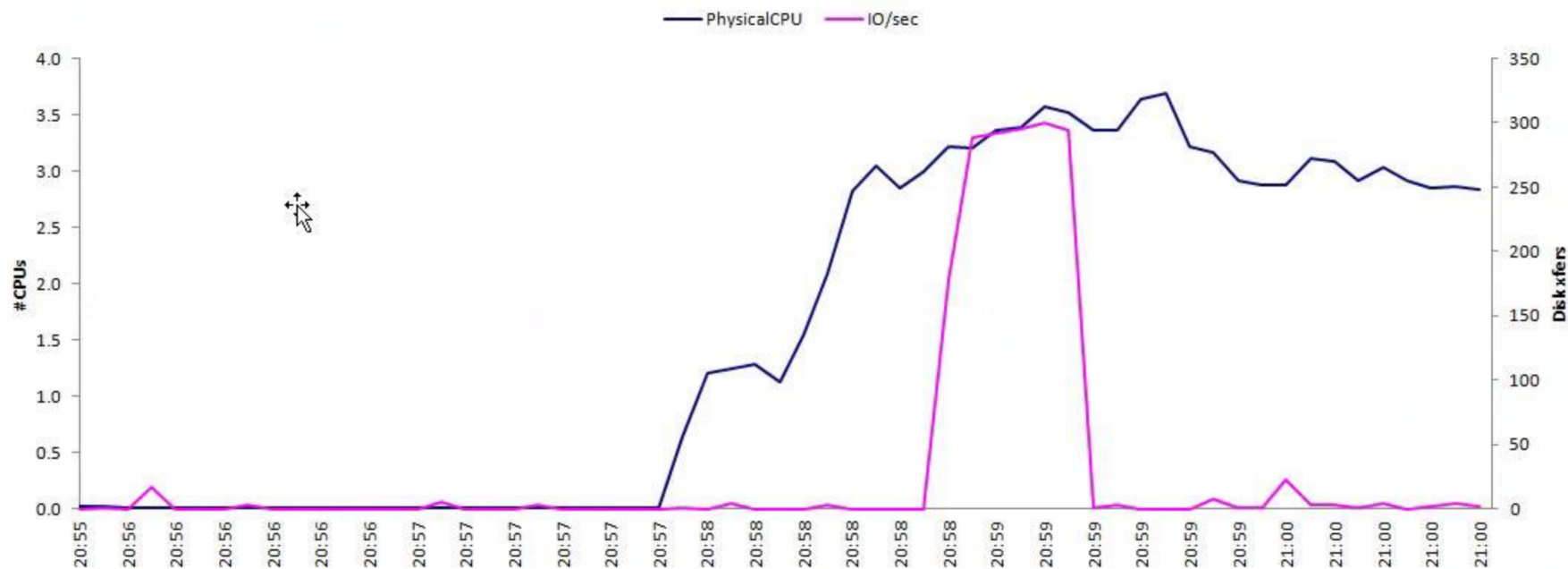
Top 20 processes by CPU correlation between CPU-seconds(Total), Character-I/O(Total), Memory-Size(Max) for each Command Name





	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S
1		Samples	59	First	20:55:52	Last	21:00:48												

System Summary vm160 09/12/2014



Total System I/O Statistics

VP_CPU:	User%	Sys%	Wait%	Idle%	CPU%	PhysCPU
---------	-------	------	-------	-------	------	---------

Avg tns during an interval:

29	24.1	0.9	0.0	14.9	39.9	1.6
----	------	-----	-----	------	------	-----

kubetail

- console-based
- show logs from multiple pods at the same time
- <https://github.com/johanhaleby/kubetail>

Will tail 3 logs...

nginx-fbj71

nginx-k96sc

nginx-v80zx

```
[nginx-v80zx] 172.20.52.108 - - [23/Mar/2017:00:58:21 +0000] "GET / HTTP/1.1" 200 269 "-" "curl/7.51.0"
[nginx-v80zx] 100.96.2.1 - - [23/Mar/2017:00:58:22 +0000] "GET / HTTP/1.1" 200 269 "-" "curl/7.51.0"
[nginx-k96sc] 100.96.1.1 - - [23/Mar/2017:00:58:23 +0000] "GET / HTTP/1.1" 200 269 "-" "curl/7.51.0"
[nginx-v80zx] 172.20.52.108 - - [23/Mar/2017:00:58:24 +0000] "GET / HTTP/1.1" 200 269 "-" "curl/7.51.0"
[nginx-v80zx] 100.96.2.1 - - [23/Mar/2017:00:58:25 +0000] "GET / HTTP/1.1" 200 269 "-" "curl/7.51.0"
[nginx-k96sc] 100.96.1.1 - - [23/Mar/2017:00:58:27 +0000] "GET / HTTP/1.1" 200 269 "-" "curl/7.51.0"
[nginx-k96sc] 172.20.52.108 - - [23/Mar/2017:00:58:28 +0000] "GET / HTTP/1.1" 200 269 "-" "curl/7.51.0"
[nginx-k96sc] 172.20.62.199 - - [23/Mar/2017:00:58:29 +0000] "GET / HTTP/1.1" 200 269 "-" "curl/7.51.0"
[nginx-k96sc] 100.96.1.1 - - [23/Mar/2017:00:58:30 +0000] "GET / HTTP/1.1" 200 269 "-" "curl/7.51.0"
[nginx-v80zx] 172.20.52.108 - - [23/Mar/2017:00:58:31 +0000] "GET / HTTP/1.1" 200 269 "-" "curl/7.51.0"
[nginx-k96sc] 172.20.62.199 - - [23/Mar/2017:00:58:33 +0000] "GET / HTTP/1.1" 200 269 "-" "curl/7.51.0"
[nginx-v80zx] 172.20.52.33 - - [23/Mar/2017:00:58:34 +0000] "GET / HTTP/1.1" 200 269 "-" "curl/7.51.0"
[nginx-fbj71] 172.20.52.108 - - [23/Mar/2017:00:58:35 +0000] "GET / HTTP/1.1" 200 269 "-" "curl/7.51.0"
[nginx-fbj71] 100.96.2.1 - - [23/Mar/2017:00:58:36 +0000] "GET / HTTP/1.1" 200 269 "-" "curl/7.51.0"
[nginx-fbj71] 172.20.52.33 - - [23/Mar/2017:00:58:37 +0000] "GET / HTTP/1.1" 200 269 "-" "curl/7.51.0"
[nginx-k96sc] 172.20.52.108 - - [23/Mar/2017:00:58:39 +0000] "GET / HTTP/1.1" 200 269 "-" "curl/7.51.0"
[nginx-v80zx] 100.96.2.1 - - [23/Mar/2017:00:58:40 +0000] "GET / HTTP/1.1" 200 269 "-" "curl/7.51.0"
[nginx-v80zx] 172.20.52.33 - - [23/Mar/2017:00:58:41 +0000] "GET / HTTP/1.1" 200 269 "-" "curl/7.51.0"
[nginx-v80zx] 172.20.52.108 - - [23/Mar/2017:00:58:42 +0000] "GET / HTTP/1.1" 200 269 "-" "curl/7.51.0"
[nginx-k96sc] 172.20.62.199 - - [23/Mar/2017:00:58:43 +0000] "GET / HTTP/1.1" 200 269 "-" "curl/7.51.0"
```

colorex

- console-based
- colorize output
- `cat access_log | colorex yellow:404`
- <https://github.com/aereal/colorex>

```
kmandla@lv-c5551: ~$ python2 downloads/colorex/colorex -N /var/log/pacman.log | tail -58
[2014-07-31 21:39] [PACMAN] upgraded libarchive (3.1.2-6 -> 3.1.2-8)
[2014-07-31 21:39] [PACMAN] upgraded libcups (1.7.4-1 -> 1.7.5-1)
[2014-07-31 21:39] [PACMAN] upgraded libwbclient (4.1.9-1 -> 4.1.10-2)
[2014-07-31 21:39] [PACMAN] upgraded mkinitcpio (17-1 -> 18-1)
[2014-07-31 21:39] [PACMAN] upgraded smbclient (4.1.9-1 -> 4.1.10-2)
[2014-07-31 21:39] [PACMAN] upgraded tar (1.27.1-1 -> 1.28-1)
[2014-07-31 21:39] [PACMAN] upgraded xf86-video-intel (2.99.914-1 -> 2.99.914-2)
[2014-07-31 21:39] [PACMAN] upgraded xorg-server-common (1.16.0-5 -> 1.16.0-6)
[2014-07-31 21:39] [PACMAN] upgraded xorg-server (1.16.0-5 -> 1.16.0-6)
[2014-07-31 21:40] [PACMAN] upgraded youtube-dl (2014.07.25.1-1 -> 2014.07.30-1)
[2014-08-01 07:55] [PACMAN] Running 'pacman --color auto -S --noconfirm extra/ruby'
[2014-08-01 07:55] [PACMAN] installed libyaml (0.1.6-1)
[2014-08-01 07:55] [ALPM-SCRIPTLET] The default location of gem installs is $HOME/.gem/ruby
[2014-08-01 07:55] [ALPM-SCRIPTLET] Add the following line to your PATH if you plan to install using gem
[2014-08-01 07:55] [ALPM-SCRIPTLET] $(ruby -rubygems -e "puts Gem.user_dir")/bin
[2014-08-01 07:55] [ALPM-SCRIPTLET] If you want to install to the system wide location, you must either:
[2014-08-01 07:55] [ALPM-SCRIPTLET] edit /etc/gemrc or run gem with the --no-user-install flag.
[2014-08-01 07:55] [PACMAN] installed ruby (2.1.2-1)
[2014-08-01 08:20] [PACMAN] Running 'pacman -U /var/cache/pacman/pkg/rig-1.11-1-i686.pkg.tar.xz'
[2014-08-01 08:20] [PACMAN] installed rig (1.11-1)
[2014-08-01 08:30] [PACMAN] Running 'pacman --color auto -S --asdeps --needed --noconfirm extra/icu extra/taglib'
[2014-08-01 08:30] [PACMAN] installed icu (53.1-1)
[2014-08-01 08:30] [PACMAN] installed taglib (1.9.1-1)
[2014-08-01 08:30] [PACMAN] Running 'pacman --color auto -U --noconfirm /tmp/yaourt-tmp-kmandla/PKGDEST.aoX/music-file-organizer-1.0.1-1-i686.pkg.tar.xz'
[2014-08-01 08:30] [PACMAN] installed music-file-organizer (1.0.1-1)
[2014-08-01 08:37] [PACMAN] Running 'pacman -Rscn git'
[2014-08-01 08:51] [PACMAN] removed git (2.0.3-1)
[2014-08-01 08:51] [PACMAN] removed perl-error (0.17022-1)
[2014-08-01 15:33] [PACMAN] Running 'pacman --color auto -S --noconfirm extra/smartmontools'
[2014-08-01 15:33] [PACMAN] installed smartmontools (6.2-1)
[2014-08-01 16:22] [PACMAN] Running 'pacman --color auto -S --noconfirm community/jhead'
[2014-08-01 16:22] [PACMAN] installed jhead (2.97-2)
[2014-08-01 16:40] [PACMAN] Running 'pacman --color auto -S --asdeps --needed --noconfirm extra/cmake'
[2014-08-01 16:40] [PACMAN] installed cmake (3.0.0-3)
[2014-08-01 16:40] [PACMAN] Running 'pacman --color auto -U --noconfirm /tmp/yaourt-tmp-kmandla/PKGDEST.84h/clog-1.1.0-1-i686.pkg.tar.xz'
[2014-08-01 16:40] [PACMAN] installed clog (1.1.0-1)
[2014-08-01 18:16] [PACMAN] Running 'pacman -Rscn co'
[2014-08-01 18:16] [PACMAN] Running 'pacman -Rscn clog'
[2014-08-01 18:16] [PACMAN] removed clog (1.1.0-1)
[2014-08-01 18:26] [PACMAN] Running 'pacman --color auto -S --noconfirm hg'
[2014-08-01 18:26] [PACMAN] Running 'pacman --color auto -S --noconfirm extra/mercurial'
[2014-08-01 18:27] [PACMAN] installed mercurial (3.0.2-1)
[2014-08-01 18:40] [PACMAN] Running 'pacman -Rscn music-file-organizer'
[2014-08-01 18:40] [PACMAN] removed music-file-organizer (1.0.1-1)
[2014-08-01 18:40] [PACMAN] removed icu (53.1-1)
[2014-08-01 18:40] [PACMAN] removed taglib (1.9.1-1)
[2014-08-01 18:40] [PACMAN] Running 'pacman --color auto -S --asdeps --needed --noconfirm extra/icu extra/taglib'
[2014-08-01 18:40] [PACMAN] installed icu (53.1-1)
[2014-08-01 18:40] [PACMAN] installed taglib (1.9.1-1)
[2014-08-01 18:40] [PACMAN] Running 'pacman --color auto -S --noconfirm extra/git'
[2014-08-01 18:41] [PACMAN] installed perl-error (0.17022-1)
[2014-08-01 18:41] [PACMAN] installed git (2.0.3-1)
[2014-08-01 18:41] [PACMAN] Running 'pacman --color auto -U --noconfirm /tmp/yaourt-tmp-kmandla/PKGDEST.1S2/music-file-organizer-git-1.0.4.gd7bc417-1-i686.pkg.tar.xz'
[2014-08-01 18:41] [PACMAN] installed music-file-organizer-git (1.0.4.gd7bc417-1)
[2014-08-01 18:51] [PACMAN] Running 'pacman -Rscn music-file-organizer-git'
[2014-08-01 18:51] [PACMAN] removed music-file-organizer-git (1.0.4.gd7bc417-1)
[2014-08-01 18:51] [PACMAN] removed icu (53.1-1)
[2014-08-01 18:51] [PACMAN] removed taglib (1.9.1-1)
```

kmandla@lv-c5551: ~\$

lolcat

- console-based
- Rainbows and unicorns!
- <https://github.com/busyloop/lolcat>

[illegible]

gulasch

- #gpn19 Fahrplan in der Kommandozeile
 - curl frcl.de/gulasch
 - curl frcl.de/gulasch\?format=list
 - curl frcl.de/gulasch\?from=2019-05-31T12:00\&within=12h
- <https://github.com/frcl/gulasch>

Next talks from 2019-05-30 16:00

	ZKM_Medientheater	ZKM_OpenHUB	ZKM_Vortragssaal	ZKM_CodeHUB	Lounge
16:00 --	What to hack Christian L... de				
16:30 --	Die Vorbereitun... skyangel de				
17:00 --	Schlangenprogra... Thomas Kolb de	Open_Open Codes Blanca Gimé... de		Dein eigener, selbst gelöteter LED-Regenbogen.	
17:30 --					
18:00 --	Hacking Building Automation Security - or how to have keyless entry a...	Software testen? Ja bitte!	Documentation with any editor		Skorpy
18:30 --	Kevin Heneka de	Daniel Kule... de	Christoph S... en		

```
$ curl frcl.de/gulasch\?format=list
Next talks from 2019-05-30 16:00
```

- * 16:00 What to hack, Christian Lölkes; de
- * 16:30 Die Vorbereitung und den Besuch eines Chaosevents smart gestalten, skyangel; de
- * 17:00 Schlangenprogrammiernacht 2.0, Thomas Kolb; de
- * 17:00 Open_Open Codes, Blanca Giménez, LívíaNolasco-Rózsás, Barbara Kiolbassa; de
- * 17:00 Dein eigener, selbst gelöteter LED-Regenbogen., anathem; de
- * 17:45 Hacking Building Automation Security - or how to have keyless entry at your neighbors..., Kevin Heneka; de
- * 17:45 Software testen? Ja bitte!, Daniel Kulesz; de
- * 17:45 Documentation with any editor, Christoph Stoettner; en
- * 18:00 Skorpy, Lounge Control; en

For usage info see <http://frcl.de/gulasch/help>
Found a bug? Open an issue at <https://github.com/frcl/gulasch>

HTTP Prompt

- interaktiver HTTP client
- autocompletion
- syntax highlighting
- basiert auf HTTPie(!) and prompt_toolkit
- <http://http-prompt.com/>

```
$ http-prompt http://httpbin.org
Version: 1.0.0
http://httpbin.org> cd post
http://httpbin.org/post> Authorization:'Bearer accesstoken'
http://httpbin.org/post> Content-Type:application/json
http://httpbin.org/post> username=foo password=bar
http://httpbin.org/post> httpie post
http POST http://httpbin.org/post password=bar username=foo
'Authorization:Bearer accesstoken' Content-Type:application/json
http://httpbin.org/post> post
HTTP/1.1 200 OK
```

```
...
Content-Type: application/json
{
```

```
  "args": {},
  "data": "{\\"password\\": \\"bar\\", \\"username\\": \\"foo\\"}",
  "files": {},
  "form": {},
  "headers": {
    "Accept": "application/json, */*",
    "Accept-Encoding": "gzip, deflate",
```

Version: 0.8.0

http://httpbin.org> **cd** post

http://httpbin.org/post> **Authorization**: 'Bearer accesstoken'

http://httpbin.org/post> **Content-Type**: application/json

http://httpbin.org/post> **username**=foo **password**=bar

http://httpbin.org/post> **httpie** post

http POST http://httpbin.org/post password=bar username=foo 'Authorization:Bearer accesstoken' Content-Type:application/json

http://httpbin.org/post> **post**

post	POST request
Proxy-Authorization	Proxy authorization credentials
Proxy-Connection	Proxy connection options
--proxy	Specify proxy URL
X-Forwarded-Proto	Originating protocol
options	OPTIONS request
password	Body parameter (=bar)

XMLStarlet

- console-based
- transform, query, validate, and edit XML documents
- <http://xmlstar.sourceforge.net/overview.php>

```
$ curl -s https://entropia.de/GPN19:Fahrplan:XML?action=raw | xmlstarlet sel -t -m '/schedule/day/room/event' -v "title" -n
```

What to hack

Schlangenprogrammieren nacht 2.0

Hacking Building Automation Security - or how to have keyless entry at your neighbors...

Low cost Power Monitoring beim CCC Camp 2019

Two thousand Eighty-Four by Copyright Reform

Die Vorbereitung und den Besuch eines Chaosevents smart gestalten

aeahostd -- NSS/PAM-Dienst für Æ-DIR

Moderne App-Programmierung mit Flutter und Dart

Das Leben mit der DSGVO

Software testen? Ja bitte!

recheck and the Sorcerer's Stone: Turning Selenium into Adamantium

Documentation with any editor

Foundations for Decentralization: Data with IPLD

Dein eigener, selbst gelöteter LED-Regenbogen.

Freiheit zum mitnehmen: Ein Workshop von An- zu F- zu G-Droid

Nachhaltigkeit im CCC

Using angr to augment binary analysis workflow

Polyamorie & Beziehungsanarchie Picknick

Skorpy

Piet

DNC

Ultimate Plumber

- console-based
- writing Linux pipes with instant live preview
- <https://github.com/akavel/up>

reptyr

- console-based
- re-pty programs
- reptyr PID
- <https://github.com/nelhage/reptyr>

```
/tmp/x.iso          0%[                               ] 8,17M  472KB/s   eta 76m 46s
[1] + 8074 suspended wget http://cdimage.ubuntu.com/daily-live/current/eoan-desktop-amd64.iso -O
```

```
1%[ ] 26,80M 473KB/s eta 75m 49s
```

ttyd

- console-based
- Share your terminal over the web
- <https://tsl0922.github.io/ttyd/>

```

1  [|||||] 10.7% Tasks: 160, 650 thr; 1 running
2  [|||||] 7.3% Load average: 0.70 0.99 1.00
3  [|||||] 7.4% Uptime: 10:00:42
4  [|||||] 11.2%
Mem[|||||] 4.08G/7.67G
Swp[|||||] 0K/7.88G

```

PID	USER	PRI	NI	VIRT	RES	SHR	S	CPU%	MEM%	TIME+	Command
7981	leyrer	20	0	2942M	558M	167M	S	4.0	7.1	28:50.44	/usr/lib/firefox/firefox
2418	leyrer	20	0	3626M	172M	76028	S	2.7	2.2	20:43.78	cinnamon --replace
1353	root	20	0	670M	142M	112M	S	2.7	1.8	10:54.38	/usr/lib/xorg/Xorg -core :0 -seat seat0 -auth /var/run/lightdm/root/:0 -nolisten tcp vt7 -novtswitch
31610	leyrer	20	0	1552M	125M	82852	S	2.7	1.6	0:10.35	/usr/lib/chromium-browser/chromium-browser --type=renderer --field-trial-handle=4996556114062131328,3284791342945215528,131072 -
14582	leyrer	20	0	1679M	185M	119M	S	2.7	2.4	0:10.91	/usr/lib/firefox/firefox -contentproc -childID 141 -isForBrowser -prefsLen 8785 -prefMapSize 192912 -parentBuildID 2019052014540
8242	leyrer	20	0	19.9G	378M	97164	S	1.3	4.8	6:19.22	/usr/lib/firefox/firefox -contentproc -childID 3 -isForBrowser -prefsLen 5733 -prefMapSize 192912 -parentBuildID 20190520145408
5038	leyrer	20	0	147M	4820	3532	R	1.3	0.1	0:00.50	htop
1077	messagebu	20	0	49172	5632	3736	S	1.3	0.1	0:42.14	/usr/bin/dbus-daemon --system --address=systemd: --nofork --nopidfile --systemd-activation --syslog-only
8173	leyrer	20	0	2268M	319M	114M	S	1.3	4.1	10:13.22	/usr/lib/firefox/firefox -contentproc -childID 2 -isForBrowser -prefsLen 1 -prefMapSize 192912 -parentBuildID 20190520145408 -gr
8060	leyrer	20	0	2942M	558M	167M	S	1.3	7.1	1:14.81	/usr/lib/firefox/firefox
1851	root	20	0	429M	9276	7676	S	1.3	0.1	0:19.22	/usr/lib/upower/upowerd
804	www-data	20	0	1970M	10460	5392	S	1.3	0.1	0:02.26	/usr/sbin/apache2 -k start
30916	leyrer	20	0	1144M	105M	80680	S	0.7	1.3	0:02.51	/usr/lib/chromium-browser/chromium-browser --type=gpu-process --field-trial-handle=4996556114062131328,3284791342945215528,13107
20638	leyrer	20	0	1808M	345M	130M	S	0.7	4.4	2:46.65	/usr/lib/libreoffice/program/soffice.bin --impress file:///home/leyrer/leyrer-default-sync/Documents/Presentations/2019-05%20GPN

F1Help F2Setup F3Search F4Filter F5Tree F6SortBy F7Nice F8Nice F9Kill F10Quit

\$ tttyd -p 8081 zsh

[2019/06/01 08:07:18:0987] NOTICE: tttyd 1.4.4 (libwebsockets 2.4.2)

[2019/06/01 08:07:18:0987] NOTICE: ttty configuration:

[2019/06/01 08:07:18:0987] NOTICE: start command: zsh

[2019/06/01 08:07:18:0987] NOTICE: close signal: SIGHUP (1)

[2019/06/01 08:07:18:0987] NOTICE: terminal type: xterm-256color

[2019/06/01 08:07:18:0987] NOTICE: reconnect timeout: 10s

[2019/06/01 08:07:18:0987] NOTICE: libuv support not compiled in

[2019/06/01 08:07:18:0988] NOTICE: Creating Vhost 'default' port 8081, 2 protocols, IPv6 off

[2019/06/01 08:07:25:0908] NOTICE: HTTP / - 127.0.0.1 (localhost)

[2019/06/01 08:07:25:1082] NOTICE: HTTP /auth_token.js - 127.0.0.1 (localhost)

[2019/06/01 08:07:25:1082] NOTICE: HTTP / - 127.0.0.1 (localhost)

WTF

- console-based
- personal information dashboard
- <https://wtfutil.com/>

Europe				
Amsterdam	08:15	CEST	Jun	1
Barcelona	08:15	CEST	Jun	1
Berlin	08:15	CEST	Jun	1
Copenhagen	08:15	CEST	Jun	1
GMT	06:15	GMT	Jun	1
London	07:15	BST	Jun	1
Rome	08:15	CEST	Jun	1
Stockholm	08:15	CEST	Jun	1

Americas				
Bahamas	02:15	EDT	Jun	1
Chicago	01:15	CDT	Jun	1
Denver	00:15	MDT	Jun	1
Iqaluit	02:15	EDT	Jun	1
New_York	02:15	EDT	Jun	1
Sao_Paulo	03:15	-03	Jun	1
UTC	06:15	UTC	Jun	1
Vancouver	23:15	PDT	May	31

My IP	
IP:	88.130.232.178
Hostname:	
City:	Dortmund
Region:	Nordrhein-Westfalen
Country:	DE
Coords:	51.5208,7.5184
Org:	AS8881 1&1 Versatel Deutschland GmbH

Todo 1

~/.config/wtf/config.yml 2
wtf:
colors:
background: black
border:
focusable: darkslateblue
focused: orange
normal: gray

Staying safe
WiFi
Network: LAN1
Crypto: WPA2
Firewall
Status: N/A
Stealth: N/A

⚡
Source: AC Power
Charge: 96%
Remaining: ∞
State: fully-charged

HackerNews - topstories 3
1. Justice Department Is Preparing Antitrust Investigation of Google (wsj.com)
2. Maine passes bill to prevent ISPs from selling browsing data without consent (techcrunch.com)
3. Lisp System Implementation (t3x.org)
4. Why Was Mini USB Deprecated in Favor of Micro USB? (electronics.stackexchange.com)
5. Space firm founded by billionaire Paul Allen closing operations (reuters.com)
6. California is cracking down on the gig economy (vox.com)
7. Facebook reportedly argues there's no 'expectation of privacy' on social media (cnet.com)
8. The degrowth movement wants to intentionally shrink the economy (vice.com)

ResourceUsage
0 [] 4%

df -h				
Filesystem	Size	Used	Avail	Use% Mounted on

no-more-secrets

- console-based
- for the visit from the TV studio
- <https://wtfutil.com/>

[brian@archtop ~]\$



www.patreon.com/drjuliariede



Dr. Julia Riede is creating Medicine (Knitting in Med School) | Patreon

Become a patron of Dr. Julia Riede today: Read 2 posts by Dr. Julia Riede and get access to exclusive content and experiences on the world's large...

[patreon.com](https://www.patreon.com)



Fragen, Anregungen, weitere Tools?

Martin Leyrer

<https://martin.leyrer.priv.at>

@leyrer on Twitter

@leyrer@chaos.social