

git

whoami

Steven Burgess

Developer @ Datto Infrastructure Team

git master

zfsunderstander?

git master

GitHub administration

github-hooks integration

repository planning and maintenance

using git

using git

You already know how to do it.

using git

You already know how to do it.

You probably already do.

using git

.....why!?!??!

*.php

*.php-20120824_mdc_timezone

*.php.pre_lightpath

*-bku.php

*-new.php

*.php.hb-2013-06-04

*2.php

*2-old.php

using git

You just don't know the commands yet.

choices

SVN

Git

mercurial

Perforce

is git hard?

is git hard?

yes.

is git hard?

yes.

why?

is git hard?

yes.

why?

because source control is hard.

```
def foo{
  $list = system.call("ls *.pdf")
  if($list)
    log("success")
  else
    log("fail")
}
```

```
def foo{  
  $list = system.call("ls *.pdf")  
  if($list)  
    log("success")  
  else  
    log("fail")  
}
```

```
def foo{  
  $list = dir.listFiles("*.pdf")  
  log($list.isEmpty())  
}
```

```
def foo{
  $list = system.call("ls *.pdf")
  if($list)
    log("success")
  else
    log("fail")
}
```

```
def foo{
  $list = dir.listFiles("*.pdf")
  log($list.isEmpty())
}
```

```
def foo{
  $list = system.call("ls *.pdf")
  if($list)
    logger.log_info($this, $list)
  else
    logger.log_error($this, "call failed")
}
```


?

```
def foo{  
  $list = dir.listFiles("*.pdf")  
  log($list.isEmpty())  
}
```

```
def foo{  
  $list = system.call("ls *.pdf")  
  if($list)  
    logger.log_info($this, $list)  
  else  
    logger.log_error($this, "call failed")  
}
```

Define

commit

Define

commit

```
/home/sburgess/projects/linux > git cat-file -p HEAD  
tree dd65155eb5a9410e83c5b0d760c099f9fbb7719c  
parent fedc1ed0f11be666de066b0c78443254736a942e  
author Linus Torvalds <torvalds@linux-foundation.org> 1396237215 -0700  
committer Linus Torvalds <torvalds@linux-foundation.org> 1396237215 -0700
```

Linux 3.14

```
/home/sburgess/projects/linux > git cat-file commit 1da177e4c3f41524e886b7f1b8a0c1fc7321cac2  
tree 0bba044c4ce775e45a88a51686b5d9f90697ea9d  
author Linus Torvalds <torvalds@ppc970.osdl.org> 1113690036 -0700  
committer Linus Torvalds <torvalds@ppc970.osdl.org> 1113690036 -0700
```

Linux-2.6.12-rc2

Initial git repository build. I'm not bothering with the full history, even though we have it. We can create a separate "historical" git archive of that later if we want to, and in the meantime it's about 3.2GB when imported into git - space that would just make the early git days unnecessarily complicated, when we don't have a lot of good infrastructure for it.

Let it rip!

Define

commit

git log

--format="%H %d"

```
69bd420409aacb820d91d008aac01fd5bdd44cf2 (HEAD, tag: 2-739, tag: 2-738, tag: 2-73701, tag: 2-73602)
959f7c14ecb0fc00aef62b3c6fe7c1fd75bffd4d5
52462cdf7b1a0f42da1bdee5c5c27bbe08b29c5
13caf94d9ba64b5fc7228a7ca85849b21992f6e1
d32fa6c8c5aff9267bf79cb3737440d17afc6415
066df58a8a47ad5c006b89a118798564c074e99e (tag: 2-73601, tag: 2-73510)
ad7c2a911d4f6e3fce52c07cef5006e6b8544118
09a5004b94f51313c31083901f6bad6fddb0b78b
a370eb5d336396c391d0b0e427f22cd9dba351ec (tag: 2-73509)
ded40bc65391285f9ca25085bf3368c000eb92f3
af31a03ba5595dc9444c49f698e5623b670eedc0
f14882971ae5bb2eda52d6d7caedd9a0ef9c1cf0
aed06f81e2bc0e1273248d82eb799d1bce65a051
08c5c946250869cde995222a5aea102cabf65ab4
80e12fb1e663362036aefaf980f4a6ee01545a68
16a1a1042d5a4761d5c86b2aef52a13ea51397a7 (tag: 2-73508)
30f5aec9471414a5f7427a307dff26257225d8e0
02ae8ba72c6090ebcddcab637c4353844d456651
a81a328183cfcb267e6268836714e557d6d10fda
1272764170f17754e9de871babe8ea12f7f24355
a44c2286b8daef99f6f81032832a7d96801570c
4b6e4518c95459221294489ac8de1548800add2c
9ab2f6686f30b24f7a1d964669bf2f5f34887a6f
547e63bfc79d8440332949b8429edd04c2b69143
4cabca1e868c93526f14d6d1c859e7a81e62832a
bd42cfebfbdb13c85ca50276a763df15ef8f6da1
35c32106a470cf6335a51c51fd0b8a0e551fb90 (jmiesionczek/free-ram-fixes)
1a6f63b54de5439826a0ff6e702a04b0cb9242ae
79981c7f8067afd2e36f1d2b65e1236b3f7a1543 (jmiesionczek/new-mem-stuff)
e56a9ebd263b5d5e4acf8e27153ccd733c48c70b (tag: 2-73507)
a1816f8fdd8c61738181ac1114909deaf1eff528
c4e217d91e1b01729c19b530e11ec17e91a8a88c
b0361c99b9e3b3f2531bc03dea62fc259a24b33
525b6723e4e3a3a08ce3bc97d1daf84f1ac7e491
d6b3ebcc2449a8580e5020cbe935cc6f671aa26e
3a5a7dcd377f2c954ac911866167e482056321f0
4b21313f2aa19b5c0432ad97d775088af0641a5f
ea344865457aa6a502b72c2ade15ab5200663283 (tag: 2-73506)
b7a2f1fc570f360727eced2294e061f620e38267
caf1966937c22d7ad45ecf2c04e96c643e40f167
1a67b95897dcb6e6f89469e45cfd8e168866e99
627be4fb887d4526e4e0e732948eb6a1bdc659b5
6b32e95ae9a8e8e7dd5715a03e1710c2620b69be
7500e9e8e8d8ad7d2ab3871e29ff05c81eb99dc7 (tag: 2-73505)
cb97f0ecd52119a629487127f9dde595013d6bc3
ba03fe2fb43fe3f8379a2ddc705fd5b6b6b9c61
1889cd67e86c0d31ac63f81c320dde3db5fc4351 (tag: 2-73504)
1a484b99f99e2f791ff58fba50264097582e7d9a
9109f6e56b48285b714ab41c4d65244febfe9642 (tag: 2-73503)
99ba52142dd12f48b115324a3e30cde663a3fb72
.
█
[talk] 2:git* burges
```

Define

HEAD

Define

HEAD

moves via

commit checkout rebase merge

use the command line

use the command line

git has 62 porcelain commands
plenty more plumbing commands

... and a ton of --arguments

use the command line



We can't automatically merge this pull request.

Use [the command line](#) to resolve conflicts before continuing.

Merge pull request

use the command line



We can't automatically merge this pull request.

Use the [command line](#) to resolve conflicts before continuing.

Merge pull request

Checkout via command line

If you cannot merge a pull request automatically here, you have the option of checking it out via command line to resolve conflicts and perform a manual merge.

HTTP Git Patch `git://github-server.datto.lan:jgiacobbi/siris-os-2.git`

Step 1: Check out a new branch to test the changes — run this from your project directory

```
git checkout -b jgiacobbi-misc/continuumCountry development
```

Step 2: Bring in jgiacobbi's changes and test

```
git pull git@github-server.datto.lan:jgiacobbi/siris-os-2.git misc/continuum
```

Step 3: Merge the changes and update the server

```
git checkout development
git merge jgiacobbi-misc/continuumCountry
git push origin development
```

command line git

bash aliases

github.com/stevenburgess/dotfiles/

.sab_bashrc

around line 22

command line git

using git you can bind

git s to git status

git l to git log --graph --decorate=short

easier to use bash to make them

gs

gl

command line git

```
git config core.editor "vim"
```

```
git config color.ui auto
```

command line git

gcom =

git commit -v

```
adds cludVM admin to the vhost update
```

```
Apparently this code gets replicated to both partners and admin, so this new vhost script places it in both halves.
```

```
# Please enter the commit message for your changes. Lines starting
# with '#' will be ignored, and an empty message aborts the commit.
# HEAD detached at 3eb475a
# Changes to be committed:
#   (use "git reset HEAD^1 <file>..." to unstage)
#
#       modified:   user/vhostUpdate.py
#
diff --git a/user/vhostUpdate.py b/user/vhostUpdate.py
index 02eeeb2..345dc25 100644
--- a/user/vhostUpdate.py
+++ b/user/vhostUpdate.py
@@ -30,11 +30,16 @@ repositories['Admin Portal'] = {
     'repository': 'admin-web',
     'destination': '/var/www/vhosts/admin.dattobackup.com/httpdocs/'
 }
-repositories['CloudVM UI'] = {
+repositories['CloudVM partners'] = {
     'organization': 'dfuhry',
     'repository': 'cloudvm-ui',
     'destination': '/var/www/vhosts/partners.dattobackup.com/httpsdocs/cloudvm-ui/'
 }
+repositories['CloudVM admin'] = {
+    'organization': 'dfuhry',
+    'repository': 'cloudvm-ui',
+    'destination': '/var/www/vhosts/admin.dattobackup.com/httpsdocs/cloudVM/'
+}
repositories['Partners Portal'] = {
    'organization': 'portal-team',
    'repository': 'partners-web',
```

```
~/projects/webteam-scripts/.git/COMMIT_EDITMSG[gitcommit] 1,3/35 All
```

```
".git/COMMIT_EDITMSG" 35L, 1225C
```

```
[talk] 1:git*
```

```
burgess
```


command line git

gcom =

git commit -v

~~git commit -am~~

```
adds cludVM admin to the vhost update
```

```
Apparently this code gets replicated to both partners and admin, so this new vhost script places it in both halves.
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```
# Please enter the commit message for your changes. Lines starting
# with '#' will be ignored, and an empty message aborts the commit.
# HEAD detached at 3eb475a
# Changes to be committed:
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#
#       modified:   user/vhostUpdate.py
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diff --git a/user/vhostUpdate.py b/user/vhostUpdate.py
index 02eeeb2..345dc25 100644
--- a/user/vhostUpdate.py
+++ b/user/vhostUpdate.py
@@ -30,11 +30,16 @@ repositories['Admin Portal'] = {
     'repository': 'admin-web',
     'destination': '/var/www/vhosts/admin.dattobackup.com/httpdocs/'
 }
-repositories['CloudVM UI'] = {
+repositories['CloudVM partners'] = {
     'organization': 'dfuhry',
     'repository': 'cloudvm-ui',
     'destination': '/var/www/vhosts/partners.dattobackup.com/httpsdocs/cloudvm-ui/'
 }
+repositories['CloudVM admin'] = {
+    'organization': 'dfuhry',
+    'repository': 'cloudvm-ui',
+    'destination': '/var/www/vhosts/admin.dattobackup.com/httpsdocs/cloud
VM/'
+    }
repositories['Partners Portal'] = {
    'organization': 'portal-team',
    'repository': 'partners-web',

```

```
~/projects/webteam-scripts/.git/COMMIT_EDITMSG[gitcommit] 1,3/35 All
```

```
".git/COMMIT_EDITMSG" 35L, 1225C
```

```
[talk] 1:git*
```

```
burgess
```

command line git

git log

--format=short

```
commit 9e897e13bd46fa03485468609741974259a8c573
Merge: 4ba8526 1f16630
Author: Linus Torvalds <torvalds@linux-foundation.org>

Merge branch 'for-linus' of git://git.open-osd.org/linux-open-osd

commit 4ba85265790ba3681deef73f018c0eb829a7341
Merge: dd76a78 562c7ce
Author: Linus Torvalds <torvalds@linux-foundation.org>

Merge branch 'for_linus' of git://cavan.codon.org.uk/platform-drivers-x86

commit dd76a786af1f09e9122e150d30156e094e2a94b4
Merge: e7990d4 360f92c
Author: Linus Torvalds <torvalds@linux-foundation.org>

Merge branch 'for-linus' of git://git.kernel.dk/linux-block

commit e7990d45bb88c2f0565b5ee4c32eeef81653faff
Merge: 190a399 a5065eb
Author: Linus Torvalds <torvalds@linux-foundation.org>

Merge tag 'sound-fix-3.15-rc1' of git://git.kernel.org/pub/scm/linux/kernel/git/t

commit 190a3998be3ede25d6145e187d6d321f504d28fb
Merge: 4162877 9477165
Author: Linus Torvalds <torvalds@linux-foundation.org>

Merge branch 'next' of git://git.kernel.org/pub/scm/linux/kernel/git/rzhang/linux

commit 562c7cec1e92be85ade6f65fff107651e10ee2ed
Author: Mario Limonciello <mario_limonciello@dell.com>

alienware-wmi: cover some scenarios where memory allocations would fail

commit 4162877d3ffa900b618c369c490c7faa6af60e47
Merge: 6c61403 14f5716
Author: Linus Torvalds <torvalds@linux-foundation.org>

Merge branch 'for-next' of git://git.kernel.org/pub/scm/linux/kernel/git/cooloney

commit 6c61403a446b5ee54c21cecabdc821acf06f96bf
Merge: edf2377 8673bce
Author: Linus Torvalds <torvalds@linux-foundation.org>

Merge branch 'for-linus' of git://git.infradead.org/users/vkoul/slave-dma

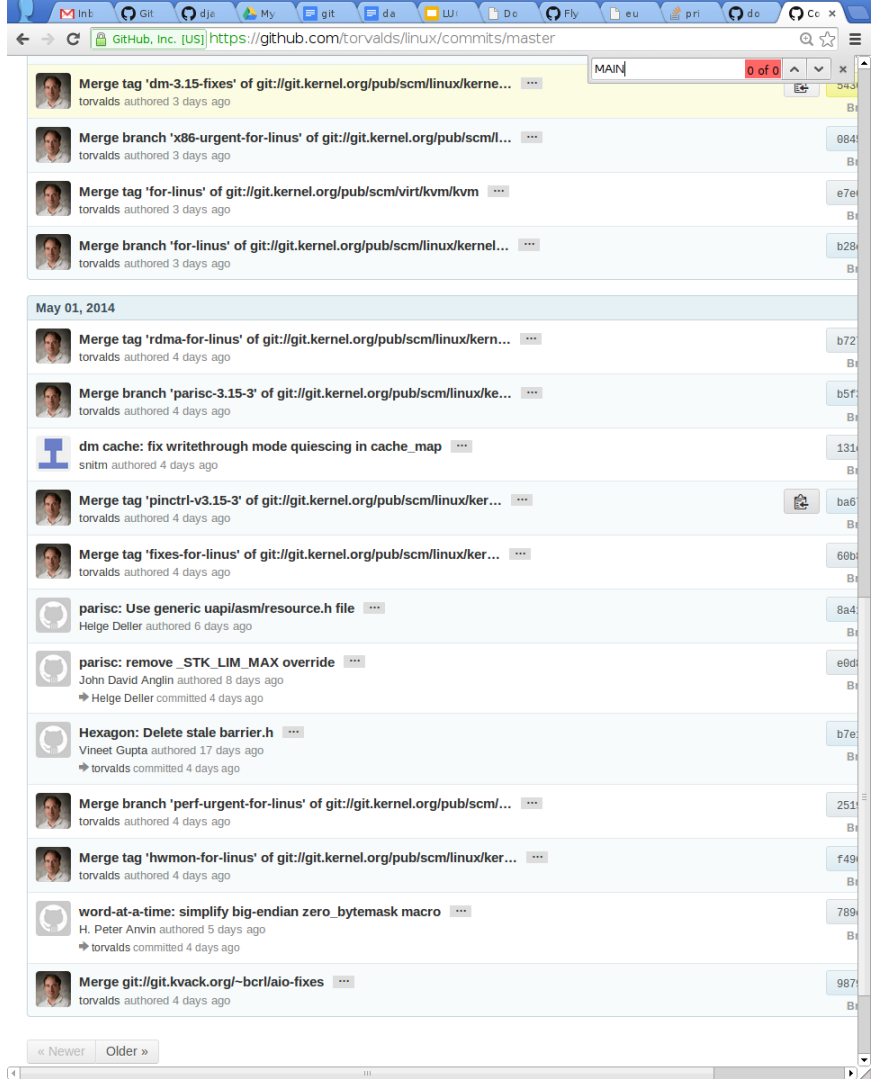
commit edf2377c4776ce20ae990f27f0248e88a37e25c4
Merge: 39de65a f1740e4
Author: Linus Torvalds <torvalds@linux-foundation.org>
:[]
[talk] 1:git*
burgess
```

command line git

git log

--format=short

Same As GitHub UI



The screenshot shows the GitHub interface for the `linux` repository. The commit history is displayed in a list format, showing the most recent commits at the top. The commits are grouped by date, with a section for `May 01, 2014`. The commits include merge tags, merge branches, and direct commits. The commit messages are truncated with ellipses. The interface includes a search bar at the top right, a navigation bar with the repository name, and a footer with navigation links for `< Newer` and `Older >`.

Commit history (from top to bottom):

- Merge tag 'dm-3.15-fixes' of git://git.kernel.org/pub/scm/linux/kerne... (torvalds authored 3 days ago)
- Merge branch 'x86-urgent-for-linus' of git://git.kernel.org/pub/scm/li... (torvalds authored 3 days ago)
- Merge tag 'for-linus' of git://git.kernel.org/pub/scm/virt/kvm/kvm... (torvalds authored 3 days ago)
- Merge branch 'for-linus' of git://git.kernel.org/pub/scm/linux/kernel... (torvalds authored 3 days ago)
- May 01, 2014
- Merge tag 'rdma-for-linus' of git://git.kernel.org/pub/scm/linux/kern... (torvalds authored 4 days ago)
- Merge branch 'parisc-3.15-3' of git://git.kernel.org/pub/scm/linux/ke... (torvalds authored 4 days ago)
- dm cache: fix writethrough mode quiescing in cache_map (snlrm authored 4 days ago)
- Merge tag 'pinctrl-v3.15-3' of git://git.kernel.org/pub/scm/linux/ker... (torvalds authored 4 days ago)
- Merge tag 'fixes-for-linus' of git://git.kernel.org/pub/scm/linux/ker... (torvalds authored 4 days ago)
- parisc: Use generic uapi/asm/resource.h file (Helge Deller authored 6 days ago)
- parisc: remove_STK_LIM_MAX override (John David Anglin authored 8 days ago, Helge Deller committed 4 days ago)
- Hexagon: Delete stale barrier.h (Vineet Gupta authored 17 days ago, torvalds committed 4 days ago)
- Merge branch 'perf-urgent-for-linus' of git://git.kernel.org/pub/scm/li... (torvalds authored 4 days ago)
- Merge tag 'hwmon-for-linus' of git://git.kernel.org/pub/scm/linux/ker... (torvalds authored 4 days ago)
- word-at-a-time: simplify big-endian zero_bytemask macro (H. Peter Anvin authored 5 days ago, torvalds committed 4 days ago)
- Merge git://git.kvack.org/~bcr/laio-fixes (torvalds authored 4 days ago)

command line git

git log

--format=short

```
commit 9e897e13bd46fa03485468609741974259a8c573
Merge: 4ba8526 1f6630
Author: Linus Torvalds <torvalds@linux-foundation.org>

Merge branch 'for-linus' of git://git.open-osd.org/linux-open-osd

commit 4ba85265790ba3681deef73f018c0eb829a7341
Merge: dd76a78 562c7ce
Author: Linus Torvalds <torvalds@linux-foundation.org>

Merge branch 'for_linus' of git://cavan.codon.org.uk/platform-drivers-x86

commit dd76a786af1f09e9122e150d30156e094e2a94b4
Merge: e7990d4 360f92c
Author: Linus Torvalds <torvalds@linux-foundation.org>

Merge branch 'for-linus' of git://git.kernel.dk/linux-block

commit e7990d45bb88c2f0565b5ee4c32eeef81653faff
Merge: 190a399 a5065eb
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Merge tag 'sound-fix-3.15-rc1' of git://git.kernel.org/pub/scm/linux/kernel/git/t

commit 190a3998be3ede25d6145e187d6d321f504d28fb
Merge: 4162877 9477165
Author: Linus Torvalds <torvalds@linux-foundation.org>

Merge branch 'next' of git://git.kernel.org/pub/scm/linux/kernel/git/rzhang/linux

commit 562c7cec1e92be85ade6f65fff107651e10ee2ed
Author: Mario Limonciello <mario_limonciello@dell.com>

alienware-wmi: cover some scenarios where memory allocations would fail

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Merge branch 'for-linus' of git://git.infradead.org/users/vkoul/slave-dma

commit edf2377c4776ce20ae990f27f0248e88a37e25c4
Merge: 39de65a f1740e4
Author: Linus Torvalds <torvalds@linux-foundation.org>
:[]
[talk] 1:git*
burgess
```

command line git

git log

--format=short

--graph

```
* commit 9e897e13bd46fa03485468609741974259a8c573
| Merge: 4ba8526 f1f6630
| Author: Linus Torvalds <torvalds@linux-foundation.org>
|
| Merge branch 'for-linus' of git://git.open-osd.org/linux-open-osd
* commit f1f6630b53e702648a248fecdd881f3df5968a31a
| Author: Benny Halevy <bhalevy@primarydata.com>
|
| MAINTAINERS: Update email address for bhalevy
* commit 0961f02a3799e1f0acb3185567185a80265ef36b
| Author: Rashika Kheria <rashika.kheria@gmail.com>
|
| fs: Mark functions as static in exofs/ore RAID.c
* commit af8d0cc0d2271f45b0967578f9310b3ee9b9082a
| Author: Rashika Kheria <rashika.kheria@gmail.com>
|
| fs: Mark function as static in exofs/super.c
* commit 4ba85265790ba3681deef73f018c0eb829a7341
| Merge: dd76a78 562c7ce
| Author: Linus Torvalds <torvalds@linux-foundation.org>
|
| Merge branch 'for_linus' of git://cavan.codon.org.uk/platform-drivers-x86
* commit 562c7cec1e92be85ade6f65fff107651e10ee2ed
| Author: Mario Limonciello <mario_limonciello@dell.com>
|
| alienware-wmi: cover some scenarios where memory allocations would fail
* commit a46ad0f13bc32a9601f3c5dff43fafdc2c598814
| Author: Mario Limonciello <mario_limonciello@dell.com>
|
| Add WMI driver for controlling AlienFX features on some Alienware products
* commit 71db1183d4c661eaedc299b721526160bf304bd3
| Author: Scott K Logan <logans@cottsay.net>
|
| fujitsu-tablet: add support for Lifebook T901 and T902
* commit 48d8b96c7201b4bf9c7f58e932ea14aa7a01f161
| Author: Borislav Petkov <bp@suse.de>
|
| x86, platform: Make HP_WIRELESS option text more descriptive
* commit a4d44ba1266a04cdfda4b2c4ee496d684a47f567
| Author: Behan Webster <behanw@converseincode.com>
|
|
:~
[talk] 1:git* burges
```

command line git

git =

git log

--graph

--decorate=short

[--stat,--all]

```
they no longer push to stage.

They are using machines in the office to test changes, and the dev
branch is the culmination of those changes.

* commit 1fcb910393f851cada37bc2dbf57cd94061e19ab
 / Author: Steven Burgess <sburgess@dattobackup.com>
 / Date:   Fri Mar 14 10:08:14 2014 -0400

    adds the usr lib section

* commit 2f578cffeaa6a02a39b366443db7f83c04cf1ff3 (dato-common)
 | Author: Steven Burgess <sburgess@dattobackup.com>
 | Date:   Fri Mar 14 10:08:14 2014 -0400
 |
 |     adds the usr lib section
 |
 * commit e89563fb1ca2d8abdd6c256b8e7ad1c087cfadf5 (origin/store-web)
 / Author: Steven Burgess <sburgess@dattobackup.com>
 / Date:   Wed Mar 12 17:57:09 2014 -0400
 |
 |     adds store-web
 |
 *   commit 1fe095a2aa8b57d04ba9d32e0821dd8756b5d3ab (refs/stash)
 | \ Merge: 5438680 9f0e499
 |   Author: Steven Burgess <sburgess@dattobackup.com>
 |   Date:   Wed Mar 12 17:52:02 2014 -0400
 |
 |     On namedtuples: the botom half
 |
 *   commit 9f0e499aaf5067075fe58ce825a6c5de64dc31fc
 / Author: Steven Burgess <sburgess@dattobackup.com>
 / Date:   Wed Mar 12 17:52:02 2014 -0400
 |
 |     index on namedtuples: 5438680 covert the top half to using named tuples
 |
 *   commit 5438680b445cab4a93206a1c1b3f12fe5cc296eb (HEAD, origin/namedtuples, namedtuples)
 / Author: Steven Burgess <sburgess@dattobackup.com>
 / Date:   Mon Mar 10 18:04:22 2014 -0400
 |
 |     covert the top half to using named tuples
 |
 *   commit 372ac5e1aaf4c01a26eb37c365da4d733ffc706
 | Author: Steven Burgess <sburgess@dattobackup.com>
 | Date:   Mon Mar 10 13:28:17 2014 -0400
 |
 |     adds tv-stats
 |
 *   commit 50d39aab350f203cbf31d3d9b2b0113afd699f4d
 | Author: Steven Burgess <sburgess@dattobackup.com>
 |

```

{work} 1:ssh 2:connection-tests 3:dev-virt-103 4:ADMIN 5:zfs-tests 6:vim- 7:log* burges

command line git

Interact with other repos

command line git

Interact with other repos

fetch

push

command line git

git fetch

--all

-p

command line git

```
git push remote local_branch:remote_branch
```

command line git

```
git push remote local_branch:remote_branch
```

```
git push github docs:readme_fix
```

command line git

```
git push remote local_branch:remote_branch
```

```
git push github master:readme_fix
```

the .git directory

the .git directory

```
cat .git/HEAD
```

```
vim .git/config
```

the .git directory

~~cat .git/HEAD~~

git show HEAD

~~vim .git/config~~

git remote [-v | add]

git branch -v

git checkout -b branch remote/ref

test area

```
git clone git@github.com:user/repo TEST
```


how

<http://git-scm.com/book>

<http://tom.preston-werner.com/2009/05/19/the-git-parable.html>