Testing PHP with Perl

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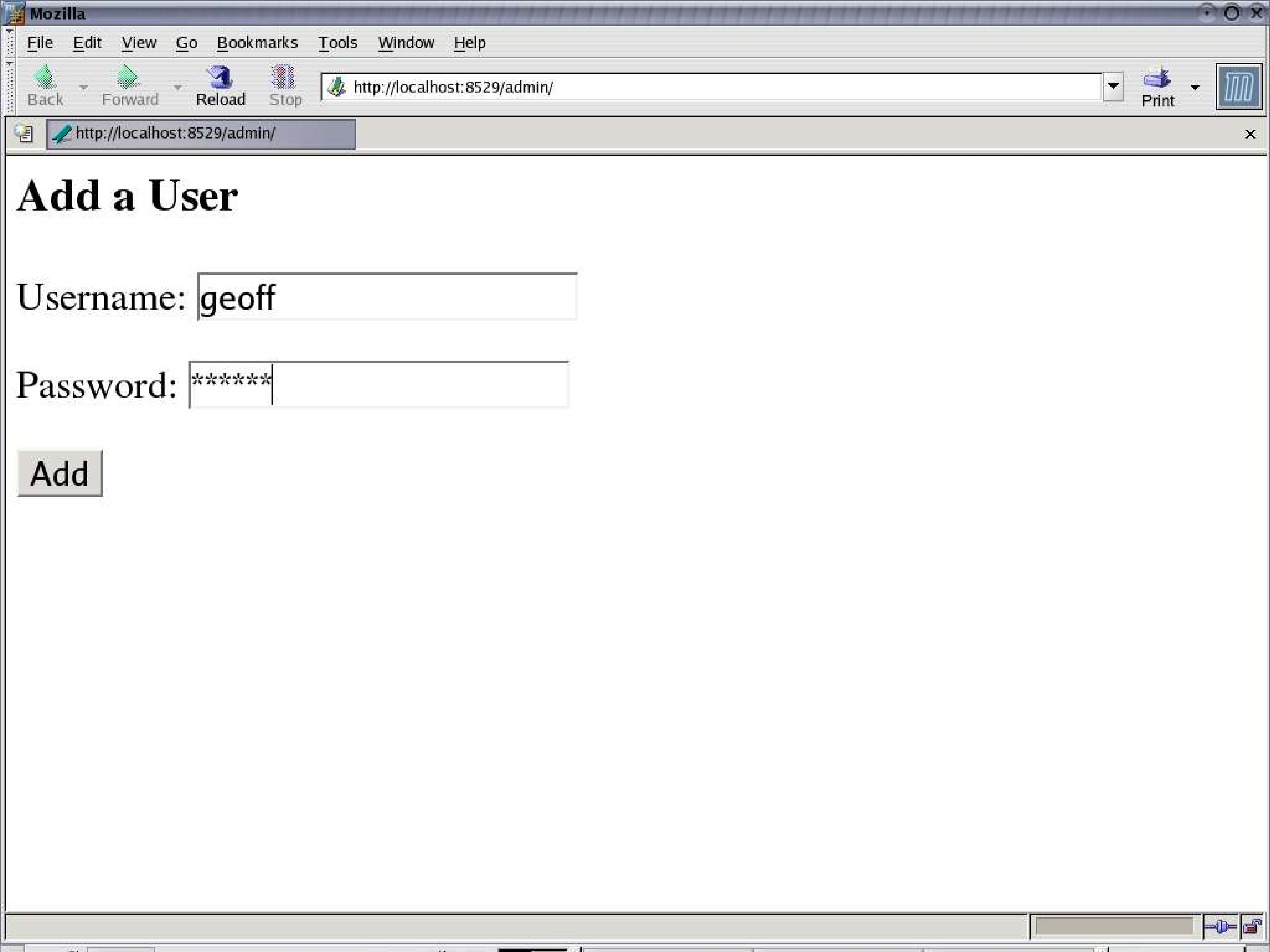
PHP and Perl?

- Testing a basic PHP application
- Using the `Apache-Test` framework



http://localhost:8529/admin/

Add a User

Username: geoff

Password: ******

Add

The Code

admin/add.php

```
<?php

include '../functions.inc';


...

if (add_user($_POST['username'], $_POST['password']))
{
    echo '<p>User Added</p>';
    echo '<p><a href="/admin/">Admin Home</a></p>';
}
?>
```

The Testing Paradigm

- Adopted from the time-tested Perl mythology (sic)
- `plan()` the number of tests
- call `ok()` for each test you plan
  - or `is()`, or `like()`, or `unlike()`, etc…
- Framework keeps track of the results and writes out the report
- Test Anything Protocol (TAP)

The Test

add_user.php

```php
<?php
require 'test-more.php';
require "{$_SERVER['DOCUMENT_ROOT']}/functions.inc";

plan(2);

{
    # no user or password
    $rc = add_user('', '');
    ok (!$rc, 'no user/pass fails');
}

{
    # some generic user/password
    $rc = add_user('user', 'password');
    ok ($rc, 'user/pass successfully added');

    # cleanup
    delete_user('user');
}
?>
```

`test-more.php`

- Automagically generated
- Interface into `Apache-Test`
- Provides simple, intuitive functions
  - `ok()`
  - `is()`
  - `like()`
- Takes care of bookkeeping
  - `plan()`

ok()

- Used for boolean comparisons

```
ok($foo == $bar, '$foo equals $bar');
```

- Gives some diagnostic output on failure

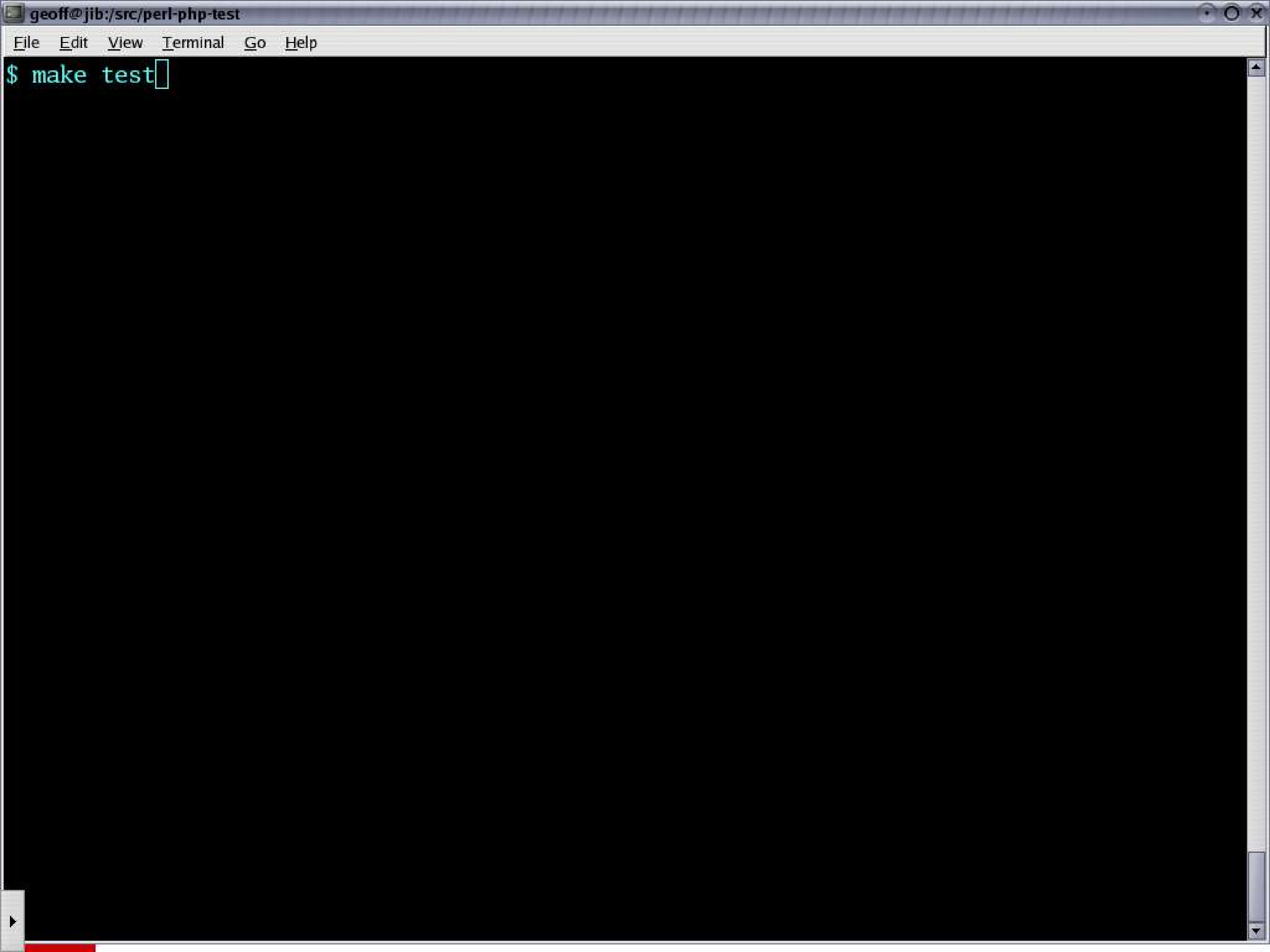
```
not ok 1 - no user/pass fails
#  Failed test (add_user.php at line 10)
```

Goodness

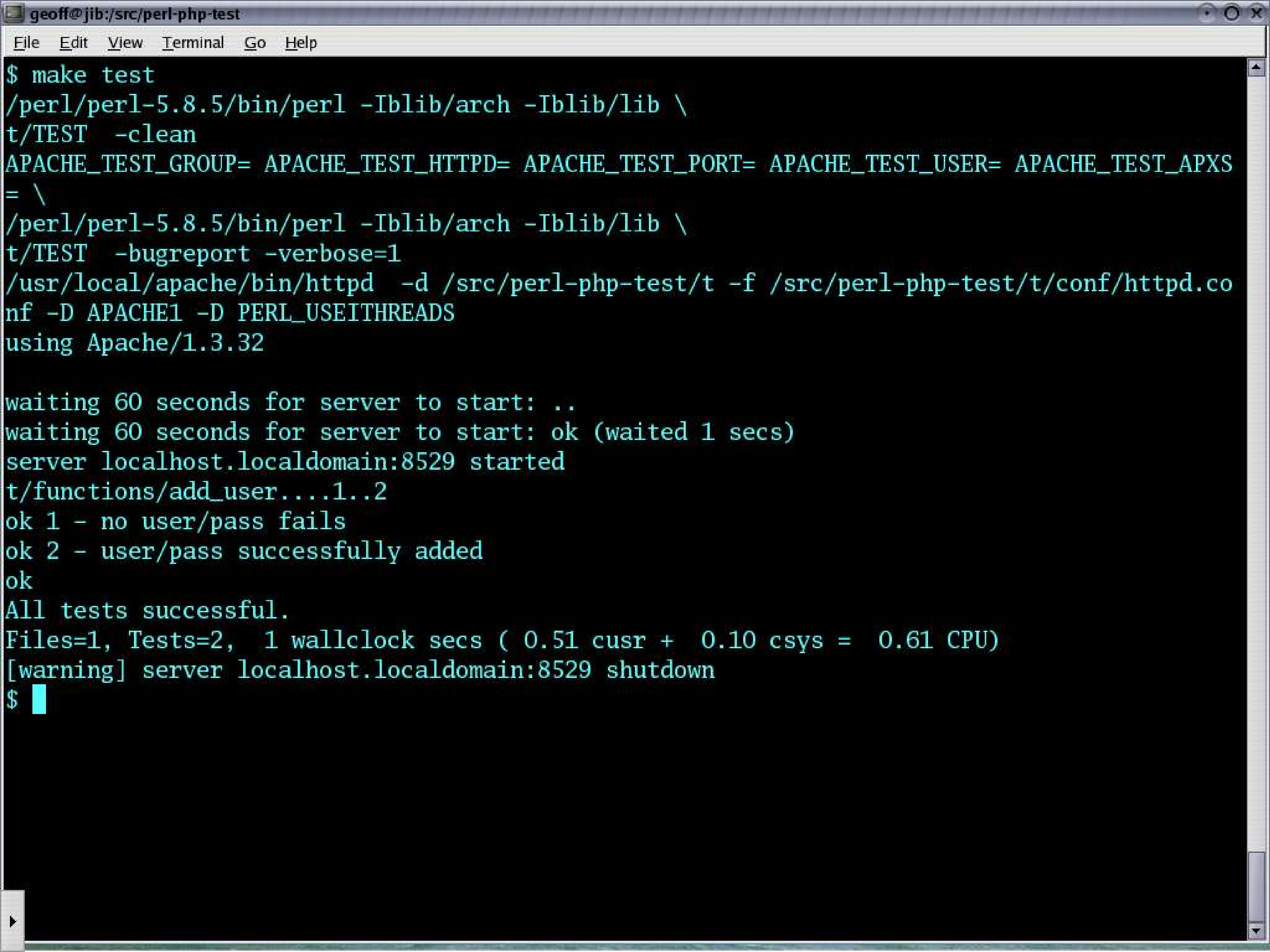
- No tests in application code
- Simple interface
- Repeatable
  - tests are self-contained
- No Perl involved
  - Chris particularly likes this aspect

Testing Ideology

- A good testing environment should provide
  - tools to make writing tests simple
  - a self-contained and pristine environment
  - test automation
- Basically do everything for you except write your tests



```
$ make test
```



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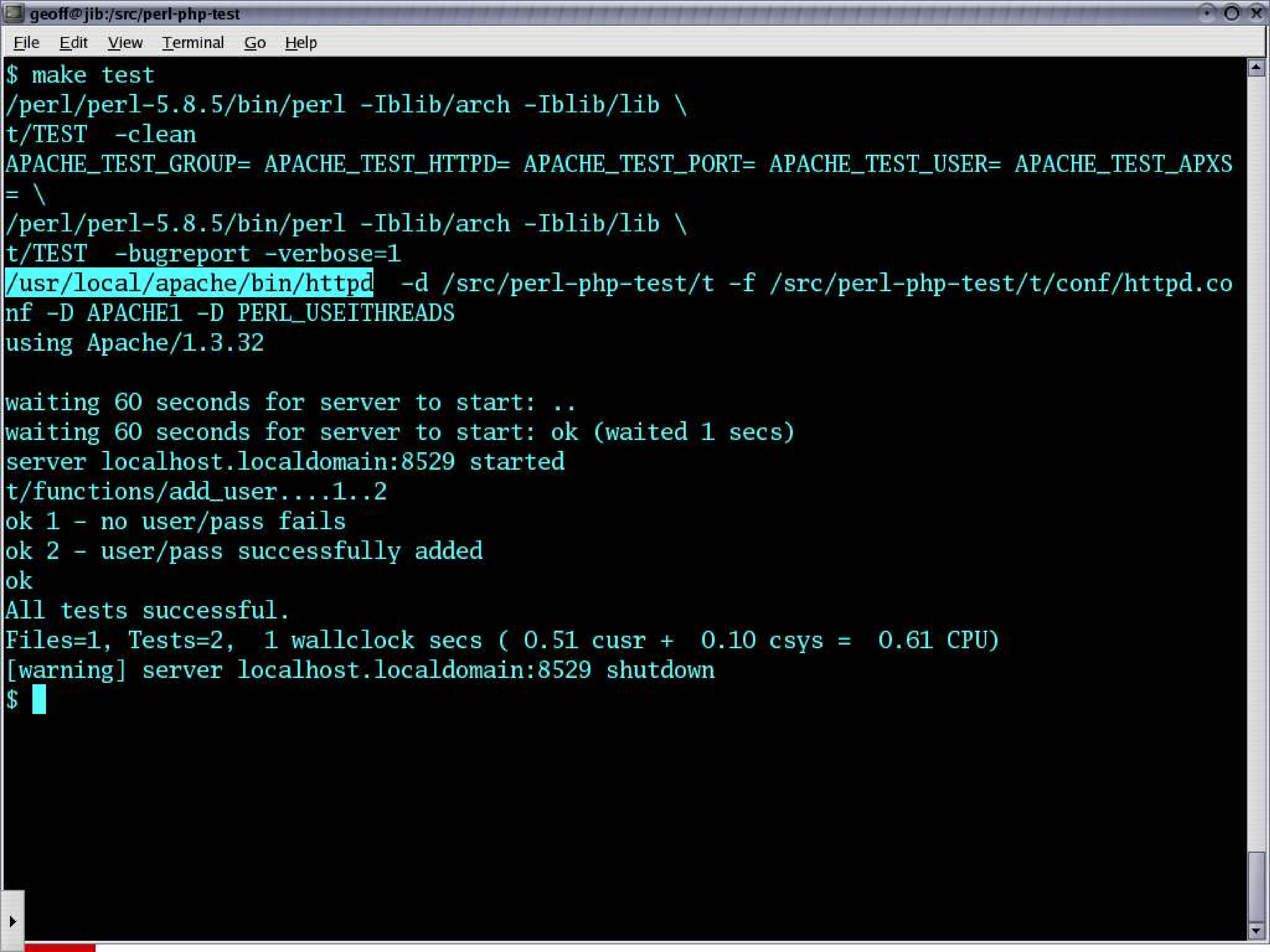
/usr/local/apache/bin/httpd  -d /src/perl-php-test/t -f /src/perl-php-test/t/conf/httpd.co
nf -D APACHE1 -D PERL_USEITHREADS
using Apache/1.3.32

waiting 60 seconds for server to start: ..
waiting 60 seconds for server to start: ok (waited 1 secs)
server localhost.localdomain:8529 started
t/functions/add_user....1..2
ok 1 - no user/pass fails
ok 2 - user/pass successfully added
ok
All tests successful.
Files=1, Tests=2,  1 wallclock secs ( 0.51 cusr +  0.10 csys =  0.61 CPU)
[warning] server localhost.localdomain:8529 shutdown
$ 
```



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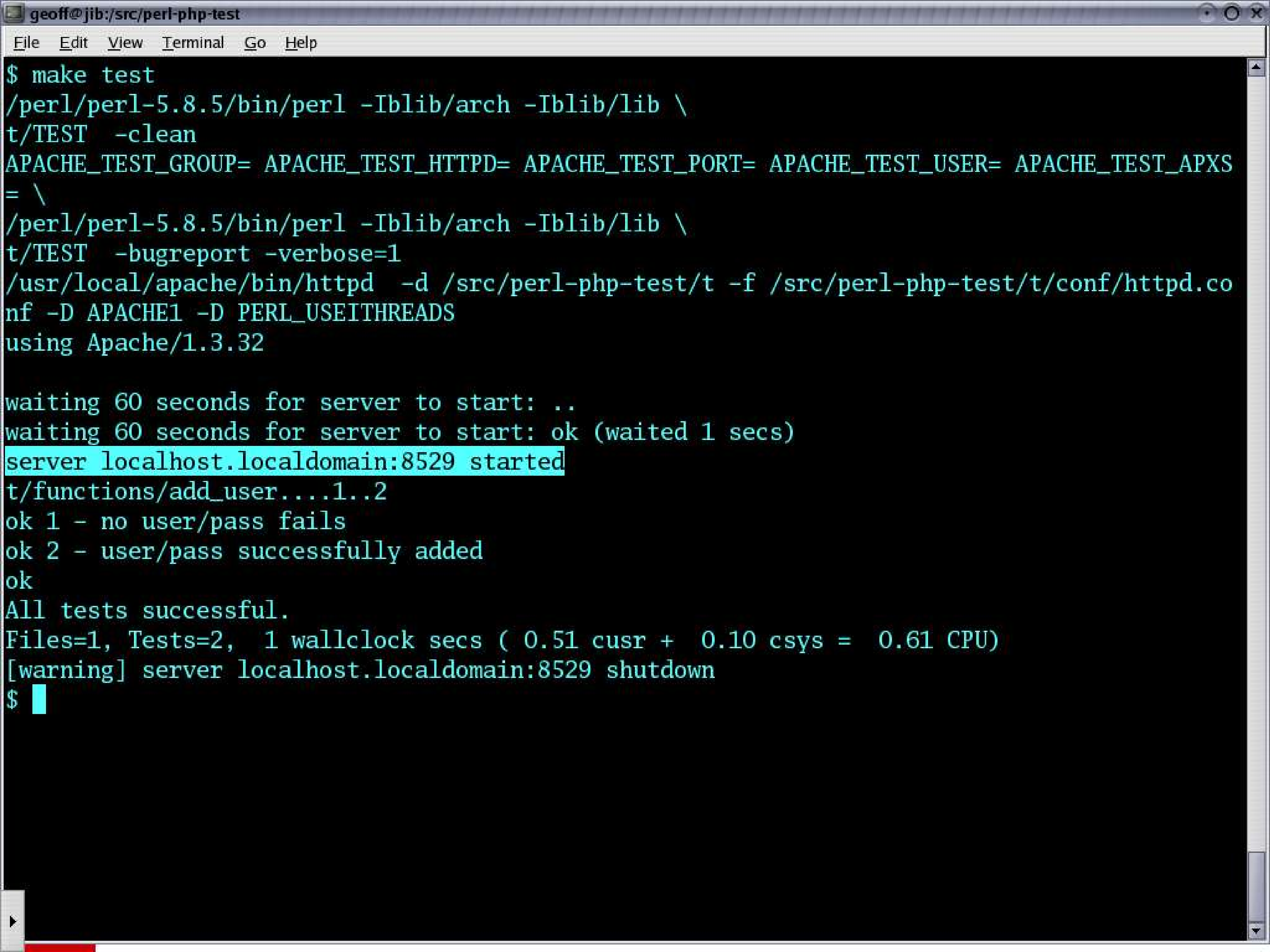

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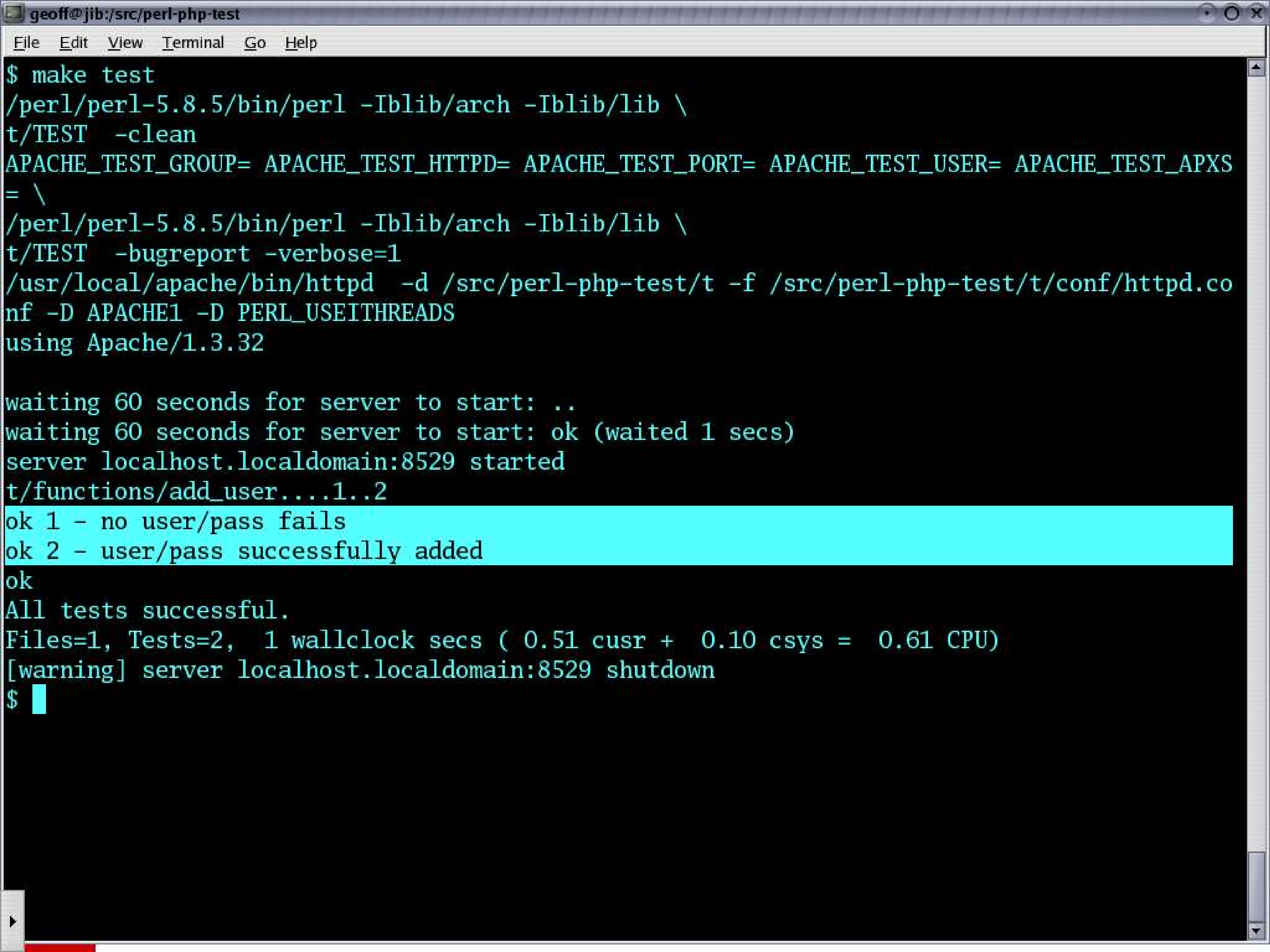

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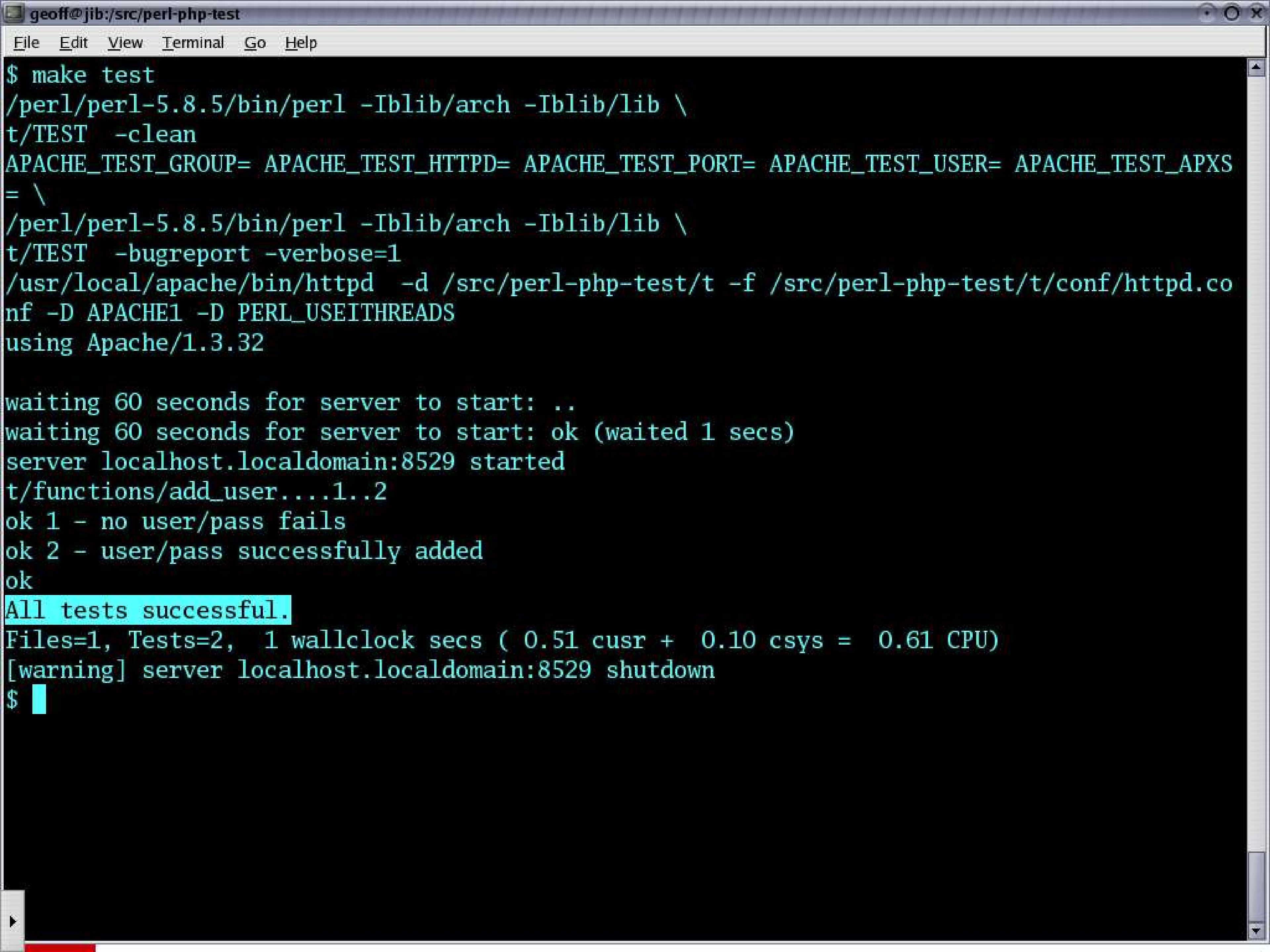

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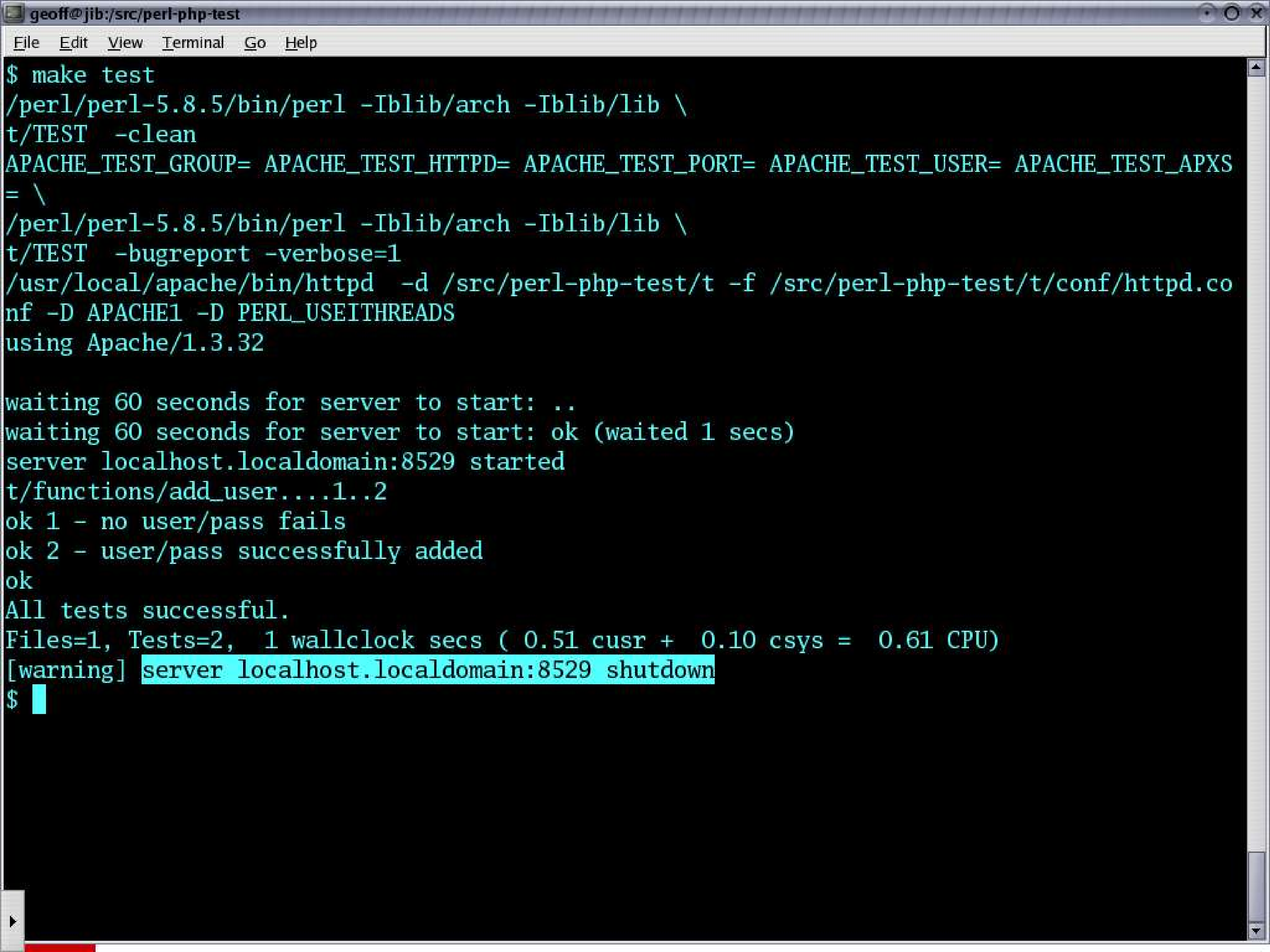

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Behold the Power of Perl

- How did we do it?
- `Apache-Test`

Apache-Test

- Framework for testing Apache-based application components
- Part of the `httpd-test` ASF project
- Provides tools to make testing Apache simple
- Written in Perl

Apache Foo

- Apache needs a basic configuration to service requests
  - `ServerRoot`
  - `DocumentRoot`
  - `ErrorLog`
  - `Listen`
- `Apache-Test` "intuits" these and creates its own `httpd.conf`
- Uses an `httpd` binary you specify
  - patience, young grasshopper

Cross Pollination

- `Apache-Test` provides a default `php.ini`
  - `php.ini-recommended`
- Also provides `test-more.php`

```
<?php require 'test-more.php'; ?>
```

  - modified `include_path`
- Fertile soil so your PHP can grow

Altering the Defaults

- `httpd.conf` and `php.ini` are autogenerated
  - don't touch them
- Supplement default `httpd.conf` and `php.ini` with custom configurations
- Create `t/conf/extra.conf.in`

`extra.conf.in`

- Same directives as `httpd.conf`
- Pulled into `httpd.conf` via `Include`
- Allow for some fancy variable substitutions

extra.conf.in

```
AddType application/x-httpd-php .php
DirectoryIndex index.php index.html

<IfModule @PHP_MODULE@>
    php_flag register_globals On
</IfModule>
```

extra.conf

```
AddType application/x-httpd-php .php
DirectoryIndex index.php index.html

<IfModule mod_php5.c>
    php_flag register_globals On
</IfModule>
```

So Far...

- We have
  - PHP test script (`add_user.php`)
  - test library (`test-more.php`)
  - `httpd.conf`
  - `php.ini`
  - local overrides
- We still need
  - a client to call the PHP script
  - a running server

The Gory Details

The Gory Details

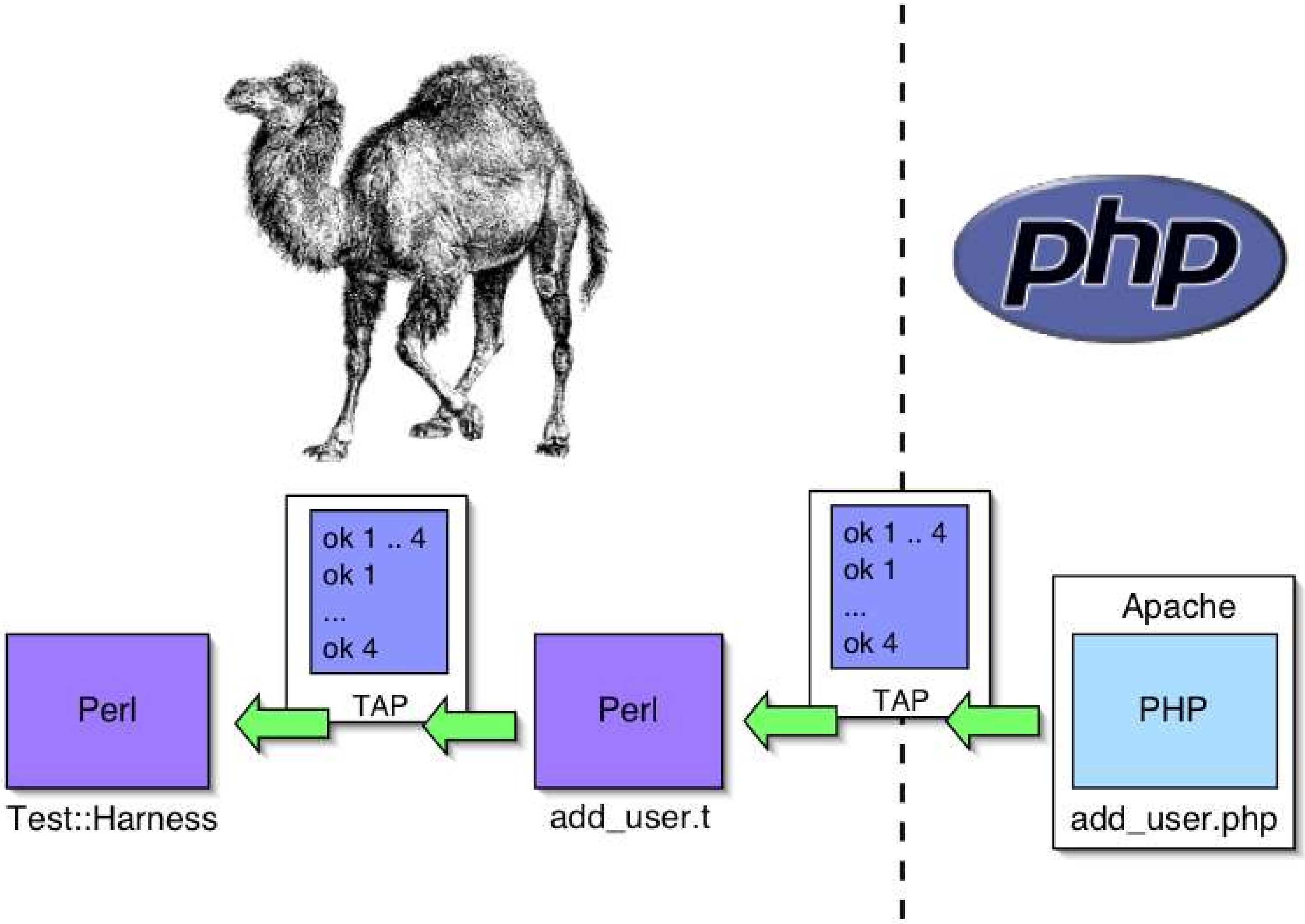
- Create PHP scripts as

  `t/response/TestFunc/add_user.php`

- `Apache-Test` will automagically create a client script that calls `add_user.php`

  `t/func/add_user.t`

- `make test` will
  - run `add_user.t`
  - which will request `add_user.php`
  - which will send data to `Apache-Test`


Perl
Test::Harness
ok 1 .. 4
ok 1
...
ok 4
TAP
Perl
add_user.t
ok 1 .. 4
ok 1
...
ok 4
TAP
Apache
PHP
add_user.php

Makefile.PL

- We still need to create the `Makefile`
  - so `make test` works
- We also need to choose an Apache installation
- Taken care of in one single step

```
perl Makefile.PL -httpd /path/to/httpd
```

Cool!

- The glory will sink in tomorrow
  - we hope
- PHP development will never be the same
- See what happens when a Perl guy and a PHP guy start drinking?

Code

- All the code from this presentation can be found here

`http://www.modperlcookbook.org/~geoff/slides/ApacheCon/2004/perl-php-test.tar.gz`

- Be sure to read the README and INSTALL docs

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