



# Extension Development

## The cloud is the limit!



- **Introduction**
- **Extension Development**
- **Travis CI**
- **Scrutinizer**
- **Examples**
- **Questions**



## Tomas Norre Mikkelsen

- TYPO3 - 2004 (Version: 3.6)
- AOE - June 2013
- TYPO3.org, TER, Crawler, PHPUnit
- Golf, #t3runners
- @tomasnorre 





**Some people might think that  
extension development is hard,  
but it does not need to be!**



# Working with Open Source



- Pull request (patches)
- Code Reviews
- Code Tests / Validation



# Toolset



- PHP Unit (Unit / Functional tests)
- PHP Linting
- JavaScript Linting
- TypoScript Linting
- XML Linting





# Developers are lazy



# How can this be solved?



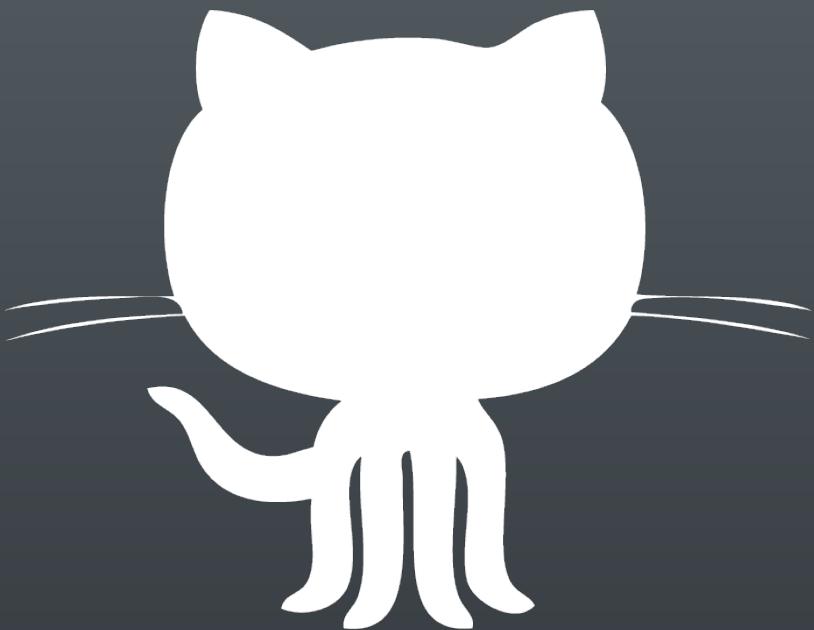
**Client-specific  
Extensions**



**Open Source  
Extensions**



# The benefits of using Github



- “All” have an account
- Public code
- Pull requests
- Get feedback
- Issue tracking
- Wiki page
- Travis CI integration (free)
- Scrutinizer integration (free)



# Travis



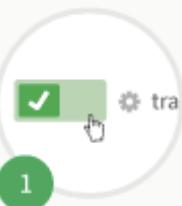


# Tomas Norre Mikkelsen

Sync

last synced less than a minute ago

We're only showing your public repositories. You can find your private projects on [travis-ci.com](https://travis-ci.com).



1  
Flick the repository  
switch on



2  
Add .travis.yml file to  
your repository



3  
Trigger your first build  
with a git push



tomasnorre/alfredworkflows



tomasnorre/blog-flow-app

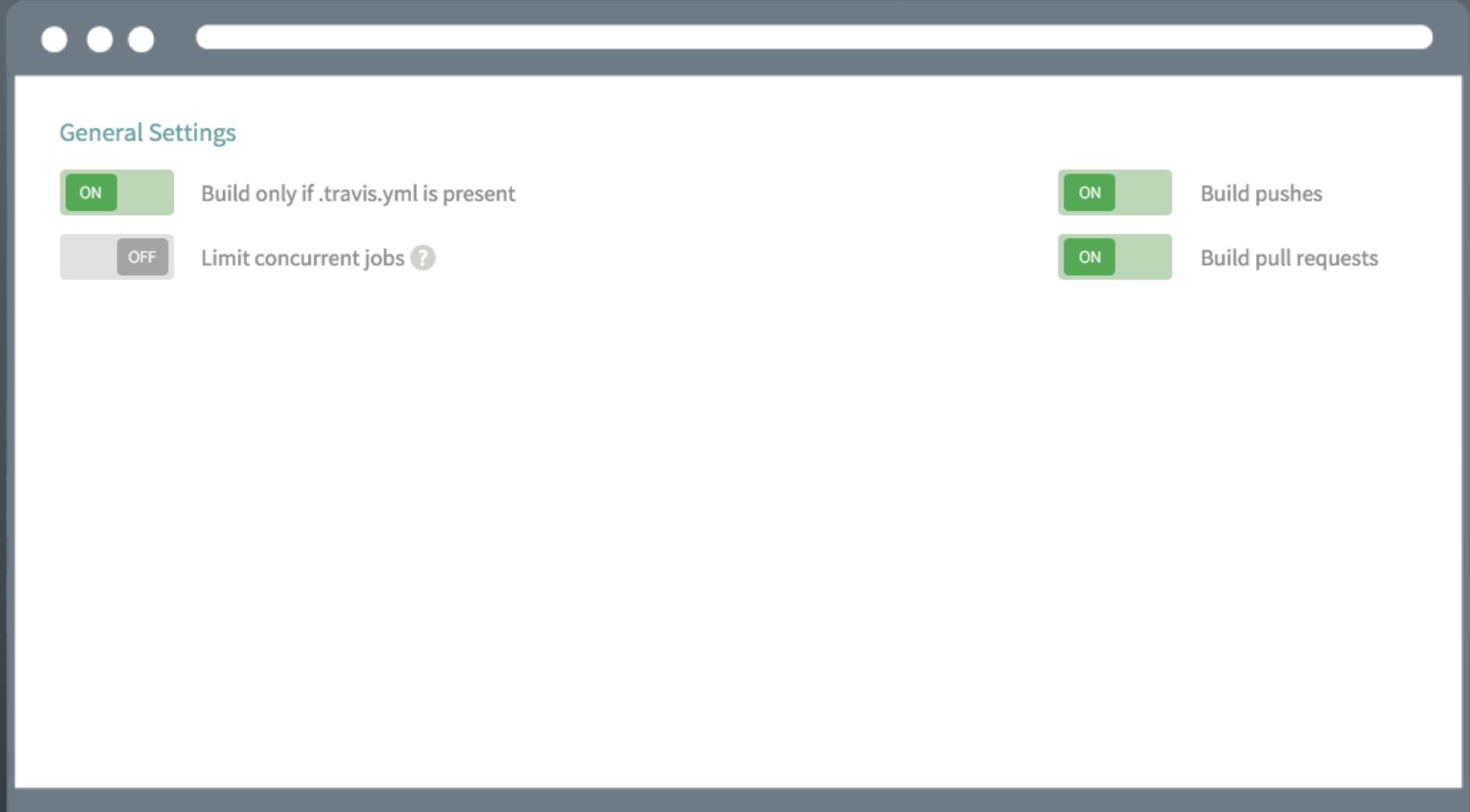


tomasnorre/blog-flow-base



tomasnorre/chef-pptpd\_vpn





A screenshot of a web-based continuous integration (CI) interface. At the top, there's a header bar with three dots on the left and a search bar on the right. Below the header, the repository name "tomasnorre / t3ee\_example" is displayed, followed by a circular icon with a play button and two status indicators: "build" (green) and "error" (red).

The main navigation bar includes links for "Current", "Branches", "Build History", "Pull Requests", and "Build #93", which is currently selected and underlined.

The main content area shows a commit log entry:

- master** Updated README.md
- Tomas Norre Mikkelsen** authored and committed
- # 93 started**
- Commit bb41e35**
- Compare 39e84ea..bb41e35**
- running for 4 min 14 sec**
- 

Below this, a section titled "Build Jobs" lists three completed jobs:

Job Status	Job ID	Environment	Command	Duration
✓	# 93.1	PHP: 5.4	TYPO3_VERSION=6.2.15 COVERAGE=0	2 min 3 sec
✓	# 93.2	PHP: 5.5	TYPO3_VERSION=6.2.15 COVERAGE=0	1 min 49 sec
✓	# 93.3	PHP: 5.5	TYPO3_VERSION=7.5.0 COVERAGE=0	1 min 31 sec

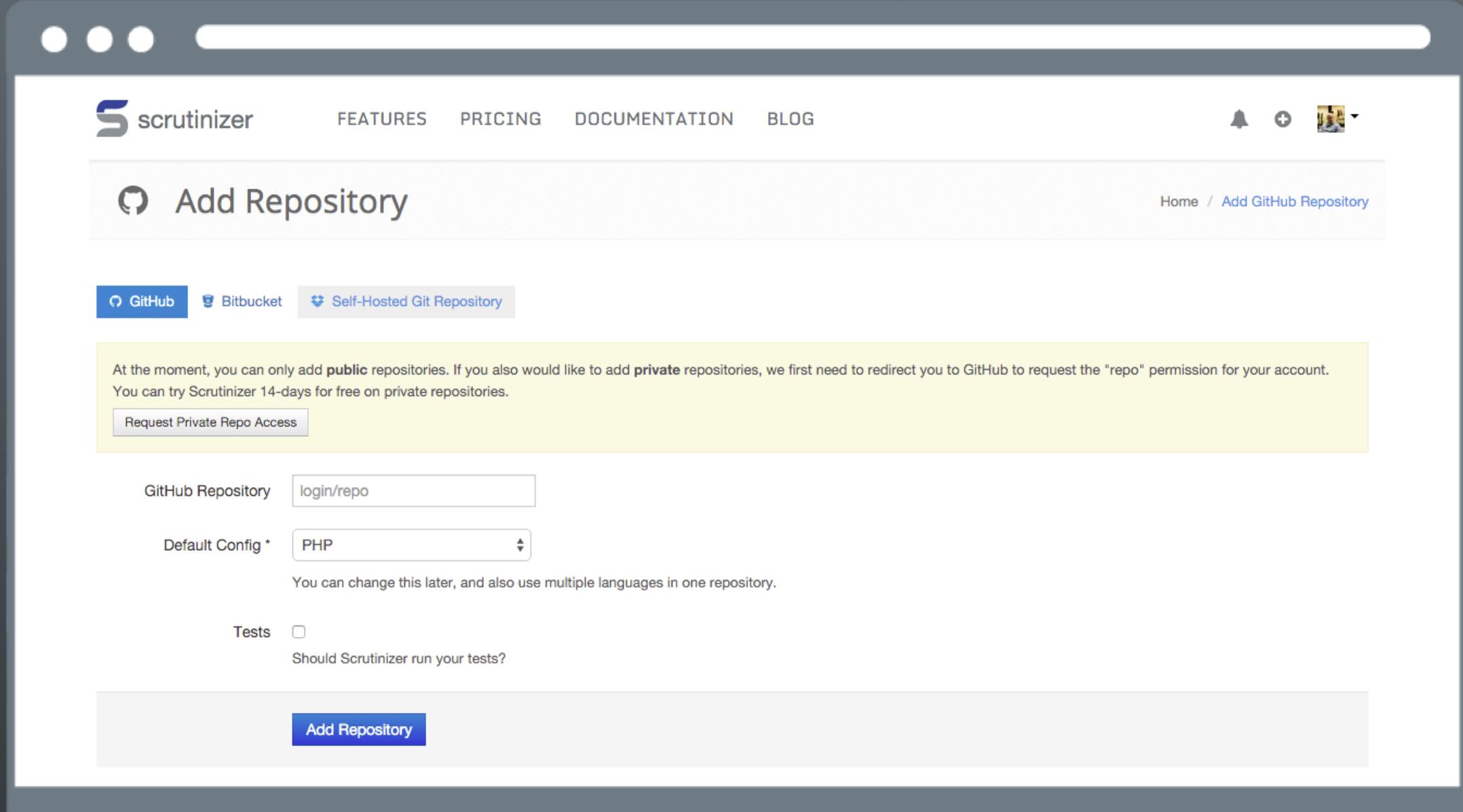


```
▶ 152 $ composer self-update
▶ 156 $ composer --version
▼ 158 $ composer require typo3/cms=$TYPO3_VERSION
159 ./composer.json has been updated
160 Loading composer repositories with package information
161 Updating dependencies (including require-dev)
162   - Installing typo3/cms-composer-installers (1.1.4)
163     Loading from cache
164
165   - Installing helhum/class-alias-loader (1.1.5)
166     Loading from cache
167
168   - Installing typo3/cms (6.2.15)
169     Loading from cache
170
171   - Installing sebastian/version (1.0.6)
172     Loading from cache
```



# Scrutinizer CI





The image shows a screenshot of the Scrutinizer web interface. At the top, there is a navigation bar with three dots on the left, followed by the Scrutinizer logo and the word "scrutinizer". To the right of the logo are links for "FEATURES", "PRICING", "DOCUMENTATION", and "BLOG". On the far right of the navigation bar are icons for a bell (notifications), a plus sign (new repository), and a user profile picture.

The main title "Add Repository" is displayed prominently at the top left of the content area. Below it, there are three tabs: "GitHub" (selected), "Bitbucket", and "Self-Hosted Git Repository".

A message box contains the text: "At the moment, you can only add **public** repositories. If you also would like to add **private** repositories, we first need to redirect you to GitHub to request the "repo" permission for your account. You can try Scrutinizer 14-days for free on private repositories." Below this message is a button labeled "Request Private Repo Access".

The form fields for adding a GitHub repository are as follows:

- "GitHub Repository" input field: "login/repo"
- "Default Config \*" dropdown menu: "PHP"

A note below the dropdown says: "You can change this later, and also use multiple languages in one repository."

Below the configuration section, there is a "Tests" section with a checkbox and a question: "Should Scrutinizer run your tests?".

At the bottom of the form is a large blue "Add Repository" button.



• • •

# tomasnorre / t3ee\_example

5 days ago  
Inspected Merge pull request #3 from tom...

5 new patches (Indentation) are available.

2 added classes/operations

A TalkRepository::initializeObject() added

A SpeakerRepository::initializeObject() added

15 days ago  
Inspected [CGL] Removed a space between...

1 new patch (Indentation) is available.

15 days ago  
Inspected [CGL] Added spaces after class...

2 new patches (Indentation, Spacing) are available.



( very good )

### Badges

Scrutinizer	10.00	i
coverage	100 %	i
build	passed	i

### Latest Alerts

Good job, no alerts here.



Completed Push – bb41e3...ca2e9d passed – Build

Summary Code Patches 7 Log

Status

All Patches 7 New 0

Category Indentation 7

Classes/Controller/TalkController.php 1 patch

Indentation +12 added lines, -12 removed lines

```
@@ -7,17 +7,17 @@
 7 7   */
 8 8 class TalkController extends \TYPO3\CMS\Extbase\Mvc\Controller\ActionC
 9 9
10 -    /**
11 -     * @var \TNM\T3eeExample\Domain\Repository\TalkRepository
12 -     * @inject
13 -     */
14 -    protected $talkRepository;
10 +    /**
11 +     * @var \TNM\T3eeExample\Domain\Repository\TalkRepository
12 +     * @inject
13 +     */
14 +    protected $talkRepository;
```



# How to use it?

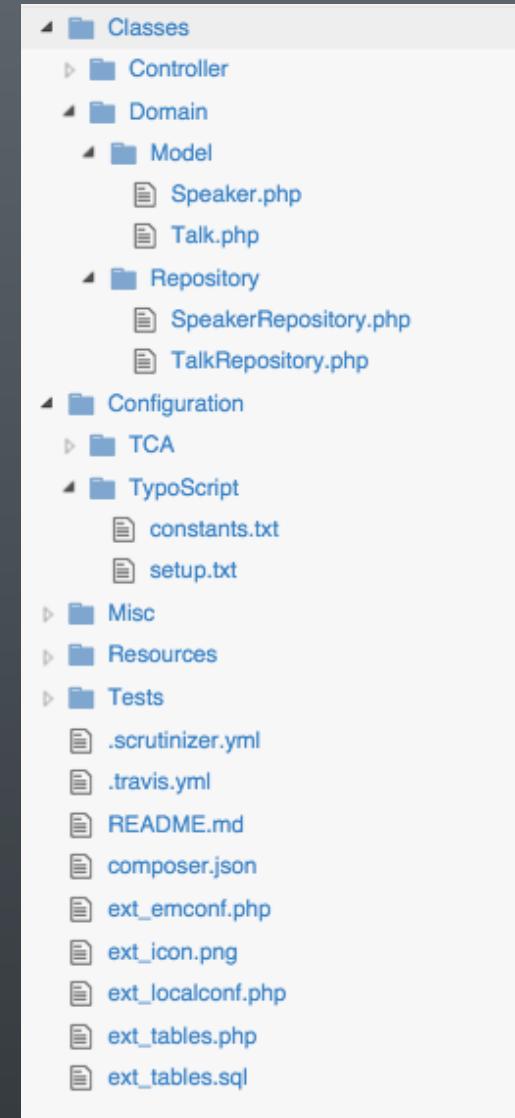


# Extension t3ee\_example



[https://github.com/tomasnorre/t3ee\\_example](https://github.com/tomasnorre/t3ee_example)

- Simple Domain Model
- Unit / Functional Test Coverage
- Xliff, TypoScript, JavaScript
- Travis CI
- Scrutinizer



# Version Metrics

PHP/ TYPO3	6.2.15	7.6 (LTS)	dev-master
5.4	x	-	-
5.5	x	x (c)	?
5.6	x	x	?
7.0	?	?	?
hhvm	x	x	?



Build Jobs				
✓	# 97.1	 PHP: 5.4	 TYPO3_VERSION=6.2.15 COVERAGE=0	⌚ 1 min 17 sec
✓	# 97.2	 PHP: 5.5	 TYPO3_VERSION=6.2.15 COVERAGE=0	⌚ 1 min 30 sec
✓	# 97.3	 PHP: 5.5	 TYPO3_VERSION=7.6 COVERAGE=0	⌚ 1 min 35 sec
✓	# 97.5	 PHP: 5.6	 TYPO3_VERSION=6.2.15 COVERAGE=0	⌚ 1 min 22 sec
✓	# 97.6	 PHP: 5.6	 TYPO3_VERSION=7.6 COVERAGE=0	⌚ 48 sec
✓	# 97.11	 PHP: hhvm	 TYPO3_VERSION=6.2.15 COVERAGE=0	⌚ 2 min 35 sec
✓	# 97.12	 PHP: hhvm	 TYPO3_VERSION=7.6 COVERAGE=0	⌚ 1 min 50 sec
✓	# 97.14	 PHP: 5.5	 TYPO3_VERSION=7.6 COVERAGE=1	⌚ 2 min 29 sec



Allowed Failures				
✓	# 97.4	PHP: 5.5	TYPO3_VERSION=dev-master COVERAGE=0	⌚ 1 min 37 sec
✓	# 97.7	PHP: 5.6	TYPO3_VERSION=dev-master COVERAGE=0	⌚ 1 min 13 sec
✓	# 97.8	PHP: 7	TYPO3_VERSION=6.2.15 COVERAGE=0	⌚ 1 min 39 sec
✓	# 97.9	PHP: 7	TYPO3_VERSION=7.6 COVERAGE=0	⌚ 1 min 13 sec
✓	# 97.10	PHP: 7	TYPO3_VERSION=dev-master COVERAGE=0	⌚ 1 min 41 sec
✓	# 97.13	PHP: hhvm	TYPO3_VERSION=dev-master COVERAGE=0	⌚ 1 min 53 sec



# .travis.yml



# Which versions to use?



# Exclude/Include matrix

```
matrix:  
  exclude:  
    - env: TYPO3_VERSION=7.6 COVERAGE=0  
      php: 5.4  
    - env: TYPO3_VERSION=dev-master COVERAGE=0  
      php: 5.4  
  include:  
    - php: 5.5  
      env: TYPO3_VERSION=7.6 COVERAGE=1  
  allow_failures:  
    - env: TYPO3_VERSION=dev-master COVERAGE=0  
    - php: 7.0
```



# What do we need to run the planned test? 1/3

```
addons:  
  apt:  
    packages:  
      - parallel  
      - libxml2-utils  
      - nodejs  
      - npm  
  cache:  
    directories:  
      - $HOME/.composer/cache  
  
before_install:  
  - composer self-update  
  - composer --version
```



# What do we need to run the planned test? 2/3

```
before_script:  
- composer require typo3/cms=$TYPO3_VERSION  
# Install TypoScript Linter  
- mkdir -p scripts  
- cd scripts  
- git clone https://github.com/tomasnorre/  
typo3-typoscript-lint.git tslint  
- cd tslint  
- composer install  
- cd ../../  
# Restore composer.json  
- git checkout composer.json  
- export TYPO3_PATH_WEB=$PWD/.Build/Web
```



# What do we need to run the planned test? 3/3

```
# Before-script continued  
# Locating UnitTests.xml  
- export "UNIT_XML"=`find . -name  
'UnitTests.xml' -type f`  
# Location FunctionalTests.xml  
- export "FUNCTIONAL_XML"=`find . -name  
'FunctionalTests.xml' -type f`
```



# Still awake?



# Linting | Xliff

```
echo;  
echo "Running xmllint (Xliff)";  
find Resources/Private/Language/ -name '*.xlf'  
-type f | xargs xmllint --noout --schema Misc/  
Validation/Xliff.xsd
```

```
352 Running xmllint (Xliff)  
353 Warning: program compiled against libxml 208 using older 207  
354 Resources/Private/Language/Backend/Locallang_db.xlf validates  
355 Resources/Private/Language/Backend/Tca.xlf validates  
356  
357 The command "echo; echo "Running xmllint (Xliff)"; find Resources/Private/Language/ -name '*.xlf' -type f |  
xargs xmllint --noout --schema Misc/Validation/Xliff.xsd  
358 " exited with 0.
```



# Linting | PHP

```
echo;
echo "Running php lint";
find . -name \*.php ! -path "./.Build/*" ! -
path "./scripts/*" ! -path "./typo3_src/*" |
parallel --gnu php -d display_errors=stderr -l
{} > /dev/null \;
```

```
362 Running php lint
363
364 The command "echo; echo "Running php lint"; find . -name \*.php ! -path "./.Build/*" ! -path "./scripts/*" !
-path "./typo3_src/*" | parallel --gnu php -d display_errors=stderr -l {} > /dev/null \;
365 " exited with 0.
```



# Linting | JavaScript

```
echo;
echo "Running JavaScript lint";
npm install -g jslint;
find Resources/Public/JavaScript/ -name '*.js'
-type f | xargs jslint
```

```
369 Running JavaScript lint
370 -e/travis/.nvm/v0.10.36/bin/jslint -> /home/travis/.nvm/v0.10.36/lib/node_modules/jslint/bin/jslint.js
371 jslint@0.9.5 /home/travis/.nvm/v0.10.36/lib/node_modules/jslint
372 └── exit@0.1.2
373 ├── nopt@3.0.4 (abbrev@1.0.7)
374 └── readable-stream@1.0.33 (inherits@2.0.1, isarray@0.0.1, string_decoder@0.10.31, core-util-is@1.0.1)
375   └── glob@4.5.3 (inherits@2.0.1, once@1.3.2, inflight@1.0.4, minimatch@2.0.10)
376
377 Resources/Public/JavaScript/example.js is OK.
378
379 The command "echo; echo "Running JavaScript lint"; npm install -g jslint; find Resources/Public/JavaScript/
  -name '*.js' -type f | xargs jslint
380 " exited with 0.
```



# Linting | TypoScript

```
384 Running TypoScript lint
385 Linting input file Configuration/TypoScript/constants.txt.
386 => Executing sniff Helmich\TypoScriptLint\Linter\Sniff\IndentationSniff.
387 => Executing sniff Helmich\TypoScriptLint\Linter\Sniff\DeadCodeSniff.
388 => Executing sniff Helmich\TypoScriptLint\Linter\Sniff\OperatorWhitespaceSniff.
389 => Executing sniff Helmich\TypoScriptLint\Linter\Sniff\RepeatingRValueSniff.
390 => Executing sniff Helmich\TypoScriptLint\Linter\Sniff\DuplicateAssignmentSniff.
391 => Executing sniff Helmich\TypoScriptLint\Linter\Sniff\NestingConsistencySniff.
392 Linting input file Configuration/TypoScript/setup.txt.
393 => Executing sniff Helmich\TypoScriptLint\Linter\Sniff\IndentationSniff.
394 => Executing sniff Helmich\TypoScriptLint\Linter\Sniff\DeadCodeSniff.
395 => Executing sniff Helmich\TypoScriptLint\Linter\Sniff\OperatorWhitespaceSniff.
396 => Executing sniff Helmich\TypoScriptLint\Linter\Sniff\RepeatingRValueSniff.
397 => Executing sniff Helmich\TypoScriptLint\Linter\Sniff\DuplicateAssignmentSniff.
398 => Executing sniff Helmich\TypoScriptLint\Linter\Sniff\NestingConsistencySniff.
399
400 CHECKSTYLE REPORT
401
402 SUMMARY
403 0 warnings in total.
404
405 The command "echo; echo "Running TypoScript lint"; find Configuration/TypoScript/ -name '*.txt' -type f |
        xargs scripts/tslint./typoscript-lint -e -c Misc/Validation/tslint.yml
406 " exited with 0.
```



# Dreaming?



# PHPUnit (Unit)

```
if [[ "$COVERAGE" == "1" ]]; then
    echo;
    echo "Running unit tests";
    .Build/bin/phpunit
        --coverage-clover=unittest-coverage.clover
        --colors -c $UNIT_XML Tests/Unit/
fi
```



# PHPUnit (Functional)

```
if [[ "$COVERAGE" == "1" ]]; then
    echo;
    echo "Running functional tests";
    export typo3DatabaseName="typo3";
    export typo3DatabaseHost="localhost";
    export typo3DatabaseUsername="root";
    export typo3DatabasePassword="";
    find 'Tests/Functional' -wholename '*Test.php' |
        parallel --gnu 'echo; echo "Running functional test
        suite {}"; .Build/bin/phpunit --coverage-clover={}
        functionaltest-coverage.clover --colors  -c
        $FUNCTIONAL_XML {}'
fi
```



# Scrutinizer Upload

```
if [[ "$COVERAGE" == "1" ]]; then
    echo;
    echo "Uploading code coverage results";
    wget https://scrutinizer-ci.com/ocular.phar
    php ocular.phar code-coverage:upload --
        format=php-clover unittest-coverage.clover
        find 'Tests/Functional' -wholename '*Test.php'
        -exec php ocular.phar code-coverage:upload --
            format=php-clover {}functionaltest-
            coverage.clover \;
fi
```



# .scrutinizer.yml



# Scrutinizer (.scrutinizer.yml)

```
tools:
    external_code_coverage:
        timeout: 700
        runs: 1
    php_code_sniffer:
        enabled: true
        config:
            standard: TYPO3CMS
    php_cs_fixer:
        enabled: true
    php_mess_detector:
        enabled: true
        config:
            controversial_rules:
                superglobals: false
```



A screenshot of a GitHub repository page for 't3ee\_example'. The page shows a list of commits from user 'tomasnorre' on the 'master' branch. The commits are as follows:

File / Commit Type	Description	Time Ago
Updated README.md	[TASK] Setup frontend rendering etc.	5 days ago
Configuration	[TASK] Setup frontend rendering etc.	5 days ago
Misc/Validation	[TASK] Add TypoScript Linting	12 days ago
Resources	[TASK] Setup frontend rendering etc.	5 days ago
Tests	[TASK] Setup frontend rendering etc.	5 days ago
.scrutinizer.yml	[TASK] Setting up the initials for the extension and Travis-CI	15 days ago
.travis.yml	[TASK] Setup frontend rendering etc.	5 days ago
README.md	Updated README.md	30 minutes ago
composer.json	[TASK] Changed composer Dependencies from typo3/cms-core to typo3/cms	15 days ago
ext_emconf.php	[TASK] Setting up the initials for the extension and Travis-CI	15 days ago
ext_icon.png	[TASK] Setting up the initials for the extension and Travis-CI	15 days ago
ext_localconf.php	[TASK] Setup frontend rendering etc.	5 days ago
ext_tables.php	[TASK] Setup frontend rendering etc.	5 days ago
ext_tables.sql	[TASK] Setup frontend rendering etc.	5 days ago

The repository page also displays the file 'README.md' which contains the text 't3ee\_example'.

Build status indicators at the bottom show: build passing, Scrutinizer 10.00, and coverage 100%.

This is a small example "extension", for demostration of the possibilities with Travis CI and Scrutinizer.



[TASK] Updated .travis.yml to TYPO3 7 LTS #5

[Open](#) tomasnorre wants to merge 1 commit into master from TYPO37LTS

Conversation 0 Commits 1 Files changed 1

tomasnorre commented 18 minutes ago

No description provided.

Owner

[TASK] Updated .travis.yml to TYPO3 7 LTS ✓ d84bb44

Add more commits by pushing to the TYPO37LTS branch on tomasnorre/t3ee\_example.

All checks have passed

3 successful checks

Hide all checks

✓ Scrutinizer — No new issues Details

✓ continuous-integration/travis-ci/pr — The Travis CI build passed Details

✓ continuous-integration/travis-ci/push — The Travis CI build passed Details

This branch is up-to-date with the base branch

Merging can be performed automatically.

Merge pull request You can also open this in GitHub Desktop or view command line instructions.



# Test coverage



## PHP Unit

- 15 Unit tests run
- 1 Functional test run

## Scrutinizer



- Code Coverage
- Code Sniffer
- Mess Detection

## Lint Tests

- 15 Xliff Runs
- 15 PHP Runs
- 15 TypoScript Runs
- 15 Javascript Runs

## Total

- 76 Test runs





The cloud  
is the limit!



# Questions?



@tomasnorre



tomas.mikkelsen@aoe.com



# Links

- [https://github.com/tomasnorre/t3ee\\_example](https://github.com/tomasnorre/t3ee_example)
- <https://travis-ci.org/>
- <https://scrutinizer-ci.com/>
- <https://github.com/tomasnorre/typo3-typoscript-lint>

Done by: Martin Helmich

