

Agile + DevOps **EAST**

A TECHWELL EVENT

DT2

Continuous Integration

Thursday, November 8th, 2018 10:00 AM

Embrace Our Robot Overlords: Make CI Work for You

Presented by:

Brian Thompson

Mindgrub

Brought to you by:



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Brian Thompson

Brian Thompson, a former outdoorsman turned web developer, currently leads a team of more than twenty developers in the creation and maintenance of digital experiences. As the director of web engineering at Mindgrub Technologies, Brian oversees all the web projects in addition to the odd robotics project. During his time as a tech guru, Brian has built and maintained websites across a variety of platforms and through a variety of traffic spikes. Through this work he has had to handle website availability for high-traffic video sharing websites (doing upwards of five million unique visitors per day), crowdfunding websites for Beyonce and other celebrities, and other e-commerce websites processing hundreds of thousands of orders per day. He can frequently be found writing code (PHP and NodeJS), maintaining infrastructure, managing his team, and baking—he has a reputation for delicious cakes and sweet treats.

EMBRACE OUR ROBOT OVERLORDS

Brian Thompson // @rvtraveller26

OBLIGATORY INTRODUCTION

- Director of Web Engineering
@ Mindgrub
- Working with web tech since
2006
- @rvtraveller26
- Baker, outdoorsman, tech
nerd



THE OLDEN DAYS


```

439 439 $handler->display->display_options['filters']
440 440 $handler->display->display_options['filters']
441 441 $handler->display->display_options['filters']
442 + /* Filter criterion: Content: Promoted to f
443 + $handler->display->display_options['filters']
444 + $handler->display->display_options['filters']
445 + $handler->display->display_options['filters']
446 + $handler->display->display_options['filters']
447 447
448 448 /* Display: Home Page Block */
449 449 $handler = $view->new_display('block', 'Home
450 450 $handler->display->display_options['link_url']
451 451 $handler->display->display_options['defaults']
452 452 - /* Sort criterion: Content: Promoted to fron
453 453 - $handler->display->display_options['sorts']
454 454 - $handler->display->display_options['sorts']
455 455 - $handler->display->display_options['sorts']
456 456 - $handler->display->display_options['sorts']
457 457 /* Sort criterion: Content: Post date */
458 458 $handler->display->display_options['sorts']
459 459 $handler->display->display_options['sorts']

```



Seems, patriotic, heavy aspects + emphasize the merry.
(But serious part 1?)

Shostakovich # 9 - (Heimer) (wrong notes)
1st joke: The fact that it is his 9th.

9ths are usually huge, topers of whole output.
Beeth, Bruckner, Mahler, Schubert.

(Brahms + Schumann only reached 4.

Mend 5, Chai 6. But if you can reach 9, it has better be a whopper.)

But Shostakovich's 7th + 8th were so big already (wartime pieces) that it was time for a joke. And he made it by making a 9th that was short + gay + merely amusing.

Symph - 28
opener -
Talk - 15

2nd joke - Material. ~~to~~ Wrong notes.

- 1) Haydn-esque, Neoclassic, with ^{missing} extra beats, etc.
- 2) Repeat of exposition; exact key-relations.
- 3) Whistling tune: Pic, solo.

17 1/2
19'
3 6 1/2
9
4 3 1/2

3rd joke Salon music in a symphony.

Even 2nd movement, melancholy, is rather a Valse Melancolique. Pretty, but is it symphonic?

4th joke Scherzo. Natural joke. Playful. Spanish tuncin'it.

5th joke Scherzo dies + turns solemn.

6th joke Pompous 4th movt. Tbn, Fg cadenza (cf. Beeth 9th recit) As if to introduce great utterance. (cf. same key - a real quote)

Slyly turns into route theme, still in Fg, making it even sneakier.



WHY AUTOMATE?

LOTS OF COMPLEXITY

LOTS OF DETAIL

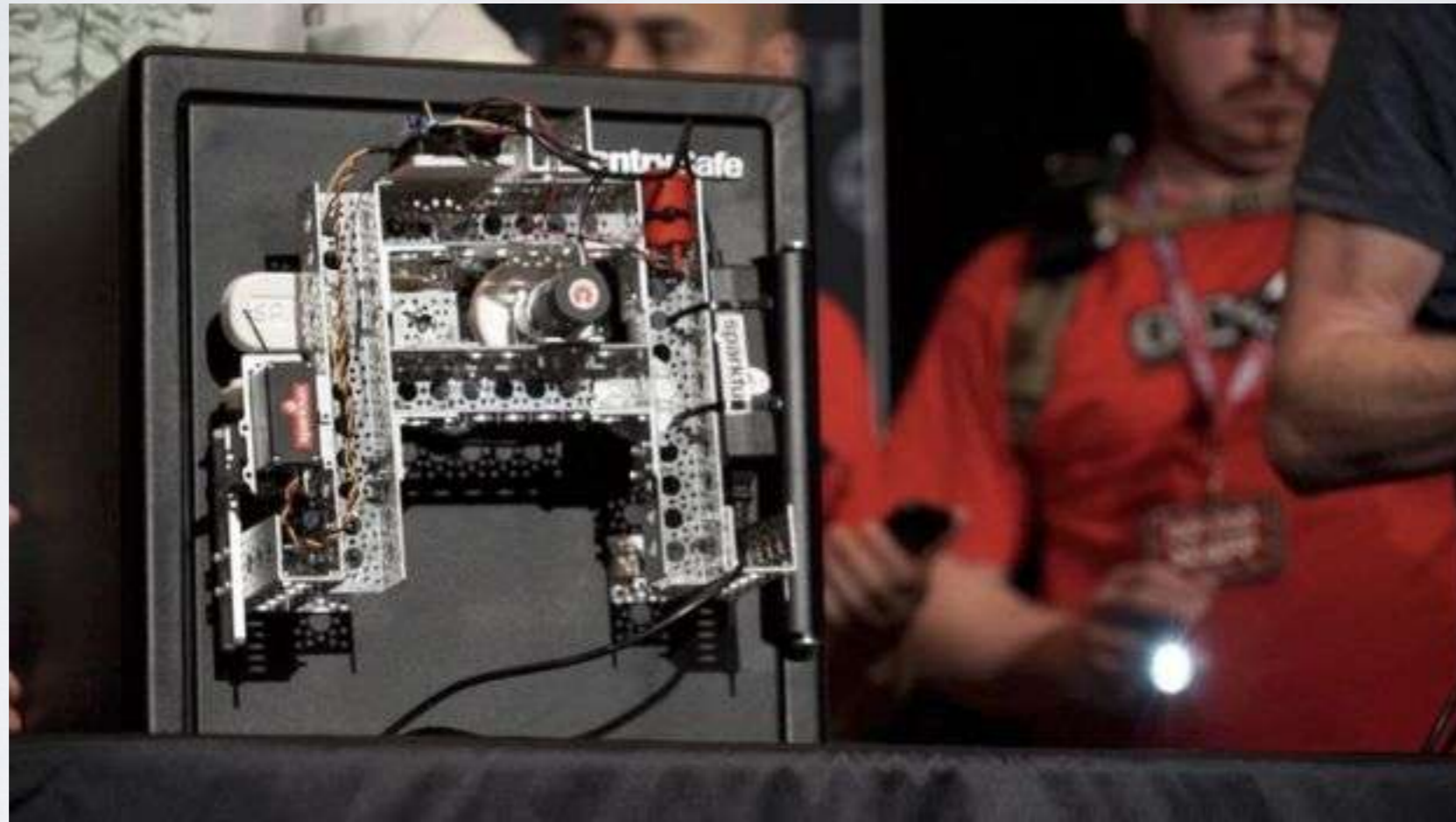
LOTS OF TEDIUM

HUMAN BEINGS ARE NOT
GOOD AT ROBOT WORK

**MAKE THE ROBOTS DO
THE WORK!**

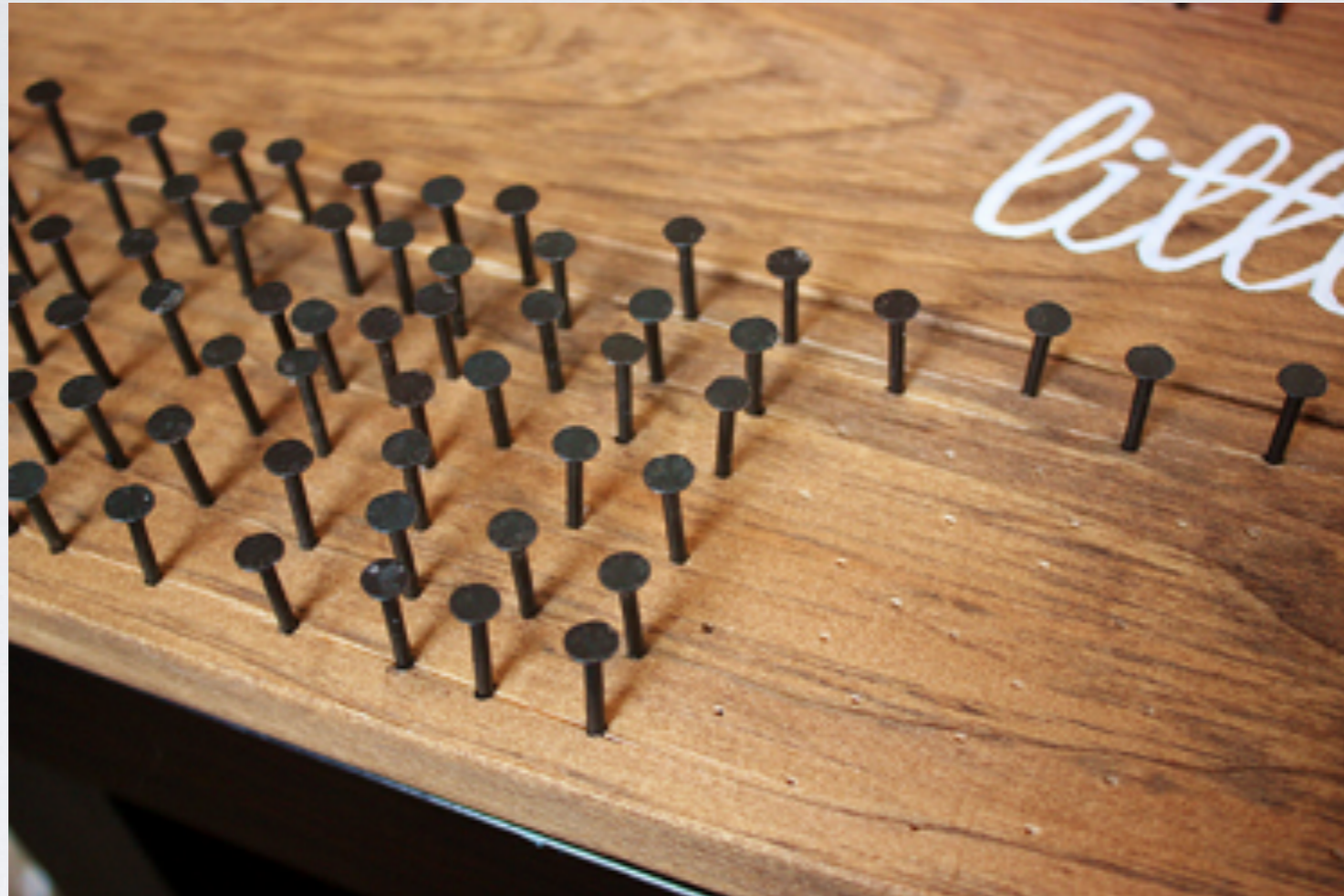






AUTOMATION BENEFITS

- Frees developer time to improve quality, skills, or deliver features faster
- Machines aren't prone to human error
- Improves project visibility through dependable notifications



WHAT DO WE AUTOMATE?

THINGS WE AUTOMATE

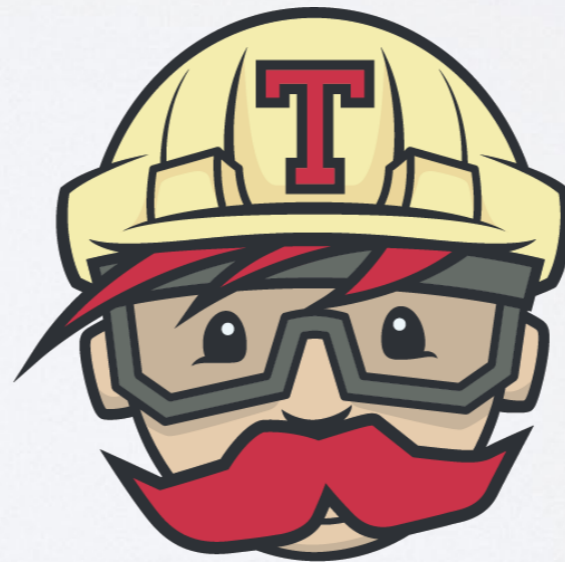
- Deploying code
- Updating the database
- Sanitizing the database
- Syntax Checking
- Automated Testing
- Building and Deploying Sites via Docker Containers
- Front-end Build Scripts
- Team Messaging



WHAT TOOLS CAN WE USE?

AUTOMATION TOOLS

- Jenkins
- CircleCI
- Travis
- GitLab
- Hosting Provider Platform Hooks
 - Quicksilver
 - Cloud Hooks



GITLABCI

YAML FILES

```
image: ruby:2.1
services:
  - postgres

before_script:
  - bundle install

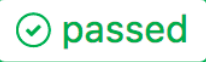
























































after_script:
  - rm secrets

stages:
  - build
  - test
  - deploy

job1:
  stage: build
  script:
    - execute-script-for-job1
  only:
    - master
  tags:
    - docker
```

<https://docs.gitlab.com/ee/ci/yaml/>


```
13 # Default Cache Directories
14 cache:
15   paths:
16     - /composer/cache
17
18   stages:
19     - pre-test
20     - build
21     - test
22     - deploy
23
24 before_script:
25   # See https://docs.gitlab.com/ee/ci/ssh_keys/README.html
26   - eval $(ssh-agent -s) && ssh-add <(echo "$SSH_PRIVATE_KEY")
27   # Avoid ssh prompting when connecting to new ssh hosts
28   - mkdir -p $HOME/.ssh && echo "StrictHostKeyChecking no" >> "$HOME/.ssh/config"
29   # Git Config
30   - git config --global user.email "$GITLAB_USER_EMAIL"
31   - git config --global user.name "Gitlab CI"
32   # Composer and Terminus Setup
33   - export PATH="/composer/vendor/bin:$PATH"
34   - composer global require "hirak/prestissimo:^0.3"
35   - composer global require "consolidation/cgr"
36   - cgr "pantheon-systems/terminus:~1" --stability beta
37   - cgr "drush/drush:~8"
38   - terminus --version
39   - mkdir -p ~/.terminus/plugins
40   - composer create-project -n -d ~/.terminus/plugins pantheon-systems/terminus-build-tools-plugin:^1
41   - composer create-project -n -d ~/.terminus/plugins pantheon-systems/terminus-secrets-plugin:~1
42   - terminus auth:login --machine-token=$TERMINUS_TOKEN
43   - composer install
44   - bin/phpcs --config-set installed_paths vendor/drupal/coder/coder_sniffer
45
46 php_code_sniffer:
47   stage: pre-test
48   script:
49     - bin/phpcs --extensions="inc,php,module" --standard=Drupal --ignore=*views_handler* --ignore=*/dixon_import* --ignore=*/vendor/*
50
```


Status	Pipeline	Commit	Stages	
 passed	#2030 by  latest	 features/dvus-...  44181ebf  Removing unused default views cod...		 00:00:50  about 10 hours ago
 passed	#2029 by 	 features/dvus-...  3a74f877  Adding missing modules		 00:00:53  about 10 hours ago
 passed	#1986 by  latest	 dev  49142604  Merge branch 'features/dvus-581' in...	 	 00:03:42  a day ago
 passed	#1984 by 	 features/dvus-...  6fb8493c  DVUS-581: updated computed displ...		 00:01:00  a day ago
 passed	#1979 by 	 dev  c1ce337c  Update README-docksal.md	 	 00:03:10  a day ago
 passed	#1977 by 	 dev  3f1f7e14  Merge branch 'features/dvus-580' i...	 	 00:03:13  a day ago
 passed	#1938 by 	 search-20  fa01e0fc		 00:00:51

```
$ mkdir -p ~/.terminus/plugins
$ composer create-project -n -d ~/.terminus/plugins pantheon-systems/terminus-build-tools-plugin:^1
Installing pantheon-systems/terminus-build-tools-plugin (1.3.9)
  - Installing pantheon-systems/terminus-build-tools-plugin (1.3.9) Downloading: Connecting... Downl
ding: 60% Downloading: 75% Downloading: 80% Downloading: 85% Downloading: 100%
Created project in /root/.terminus/plugins/terminus-build-tools-plugin
Loading composer repositories with package information
Updating dependencies (including require-dev)
Nothing to install or update
Generating autoload files
$ composer create-project -n -d ~/.terminus/plugins pantheon-systems/terminus-secrets-plugin:~1
Installing pantheon-systems/terminus-secrets-plugin (1.2.1)
  - Installing pantheon-systems/terminus-secrets-plugin (1.2.1) Downloading: Connecting... Downloadi
Created project in /root/.terminus/plugins/terminus-secrets-plugin
Loading composer repositories with package information
Updating dependencies (including require-dev)
Nothing to install or update
Generating autoload files
$ terminus auth:login --machine-token=$TERMINUS_TOKEN
[notice] Logging in via machine token.
$ composer install
Loading composer repositories with package information
Installing dependencies (including require-dev) from lock file
Nothing to install or update
Generating autoload files
$ bin/phpcs --config-set installed_paths vendor/drupal/coder/coder_sniffer
Config value "installed_paths" updated successfully; old value was "vendor/drupal/coder/coder_sniffer
$ bin/phpcs --extensions="inc,php,module" --standard=Drupal --ignore=*views_handler* --ignore=*/dixc
ustom/dixon_contact_us/* --ignore=web/sites/all/modules/custom/dixon_swivel_quick_quote/* --ignore=w
__SmtMailSystem.mail.inc --ignore=web/sites/all/modules/custom/dixon_commerce/modules/dixon_product
m/dixon_resources/modules/dixon_publications/dixon_flipbook/README.md --ignore=web/sites/all/modules
all/modules/custom
Creating cache default...
Created cache
Job succeeded
```



```
$ bin/phpcs --config-set installed_paths vendor/drupal/coder/coder_sniff
Config value "installed_paths" updated successfully; old value was "vendor/drupal/coder/coder_sniff"
$ bin/phpcs --extensions="inc,php,module" --standard=Drupal --ignore=web/sites/all/modules/custom/dixon_contact_us/* --ignore=web/sites/all/modules/custom/dixon_contact_us/__SmtplibSystem.mail.inc --ignore=web/sites/all/modules/custom/dixon_contact_us/m/dixon_resources/modules/dixon_publications/dixon_flipbook/README.md --ignore=web/sites/all/modules/custom
```

```
FILE: ...dmin/modules/dixon_admin_products/dixon_admin_products.pages.php
```

```
-----
FOUND 0 ERRORS AND 1 WARNING AFFECTING 1 LINE
```

```
-----
2365 | WARNING | Code after RETURN statement cannot be executed
-----
```

```
FILE: ...tom/dixon_migrate/migration/DixonFacetValueTaxonomyMigration.php
```

```
-----
FOUND 4 ERRORS AND 2 WARNINGS AFFECTING 4 LINES
```

```
-----
59 | ERROR   | [x] Line indented incorrectly; expected 4 spaces,
   |         |     found 0
59 | ERROR   | [ ] Comment indentation error, expected only 1 spaces
62 | ERROR   | [ ] Comment indentation error, expected only 4 spaces
66 | WARNING | [ ] Line exceeds 80 characters; contains 102
   |         |     characters
66 | WARNING | [x] There must be no blank line following an inline
   |         |     comment
69 | ERROR   | [x] Functions must not contain multiple empty lines
   |         |     in a row; found 2 empty lines
-----
```

```
PHPCBF CAN FIX THE 3 MARKED SNIFF VIOLATIONS AUTOMATICALLY
-----
```

```
Time: 11.19 secs; Memory: 88.03Mb
```

```
ERROR: Job failed: exit code 1
```

```
1 image: rvtraveller/axeci:1.0
2
3 # Default Variables
4 variables:
5   ADMIN_EMAIL: drupalsupport@mindgrub.com
6   TERMINUS_ENV: ci-$CI_PIPELINE_ID
7   TERMINUS_ENV_LABEL: CI-$CI_PIPELINE_ID
8
9 stages:
10  - test
11
12 run_chrome_headless:
13   stage: test
14   script:
15     - axe https://www.mindgrub.com --exit
16
```



```
$ axe https://www.rvtraveller.net --exit
```

```
Running axe-core 2.6.1 in chrome-headless
```

```
Testing https://www.rvtraveller.net ... please wait, this may take a minute.
```

```
Violation of "color-contrast" with 2 occurrences!
```

```
Ensures the contrast between foreground and background colors meets WCAG 2 AA contrast thresholds. Correct invalid elements at:
```

- .speakers__title > span:nth-child(2)
- .contact__title > span:nth-child(2)

```
For details, see: https://dequeuniversity.com/rules/axe/2.6/color-contrast
```

```
Violation of "image-alt" with 1 occurrences!
```

```
Ensures <img> elements have alternate text or a role of none or presentation. Correct elements at:
```

- .hero__bg > img.hero__bg-tablet

```
For details, see: https://dequeuniversity.com/rules/axe/2.6/image-alt
```

```
Violation of "label" with 3 occurrences!
```

```
Ensures every form element has a label. Correct invalid elements at:
```

- form > input[type="text"][name="contactName"]
- form > input[type="email"][name="email"]
- form > textarea[name="comments"]

```
For details, see: https://dequeuniversity.com/rules/axe/2.6/label
```

```
Violation of "landmark-one-main" with 2 occurrences!
```

```
Ensures a navigation point to the primary content of the page. If the page contains
```

BUILDING SITES WITH AUTOMATION

HEROKU/DEIS

- Project repo in GitLab, “built” repo in Heroku/Deis
- GitLabCI “builds” the site and commits to the “built” repo
- Uses Dpl for deployment

HEROKU/DEIS

```
1 image: ruby:2
2 deploy_staging:
3   stage: deploy
4   environment:
5     name: staging
6   script:
7     - gem install dpl
8     - dpl --provider=deis --controller=$DEIS_CONTROLLER --app=$DEIS_APP --username="$DEIS_USERNAME" --password="$DEIS_PASSWORD" --cli_version=$DEIS_VERSION
9   only:
10    - deis
```


AWS S3

```
1 image: publysher/hugo
2
3 production:
4   type: deploy
5   before_script:
6     - apt-get update
7     - apt-get -qq install python python-pip ca-certificates
8     - pip install awscli
9   script:
10    - aws s3 sync . s3://$AWS_BUCKET --exclude ".gi*"
11  artifacts:
12    paths:
13      - .
14  only:
15    - master
```

OTHER USES

- Kubernetes Deployments
 - Now built into GitLab 10
- Create Docker containers
- Scheduled jobs

SCHEDULED JOBS

```
1 # We would normally use BusyBox but it doesn't include git. So let's use one
2 # that includes a bare box + git.
3 image: indiehosters/git:latest
4
5 # We set the push REPO URL here so we can access it later. Since CI Runners
6 # can't push code.
7 variables:
8   CI_REPOSITORY_URL: https://$GIT_ACCESS_USER:$GIT_ACCESS_TOKEN@gitlab.com/$CI_PROJECT_PATH.git
9
10 # Set some default variables so git doesn't complain.
11 before_script:
12   - git config --global user.email "ci@mindgrub.com"
13   - git config --global user.name "Mindgrub CI Automation"
14
15 # We set this build to only run on the master branch of the repository and only
16 # as a scheduled build.
17 merge_pantheon:
18   stage: build
19   only:
20     - schedules
21     # This is explicitly set down here to make sure it persists through copies of
22     # this repository.
23     - master@web/legacy-upstreams/Pantheon_WordPress_Core
24   script:
25     - git remote rm upstream || echo "Upstream removed if existed."
26     - git remote add upstream $CI_UPSTREAM_URL
27     - git status
28     - git fetch upstream
29     - git merge upstream/master origin/$CI_COMMIT_REF_NAME
30     - git status
31     - git push $CI_REPOSITORY_URL HEAD:$CI_COMMIT_REF_NAME
```

SCHEDULED JOBS

- Building database containers



CHATOPS

INCOMING WEBHOOK

Webhook URL

Send your JSON payloads to this URL.

[Show setup instructions](#)

`https://hooks.slack.com/services/T02P`

JUST WRITE CODE

```
48 {
49   "text": "Another day, another deployment. We just pushed
50     out some new code.",
51   "username": "Mater",
52   "icon_emoji": ":tow_truck:",
53   "channel": "proj-cruz"
54 }
```



Brian Thompson 🧑‍💻 3:20 PM

alright, sounds good



@dwikoff: looks like we are ready to push. You ready on your side?



Dave Wikoff 🧑‍💻 3:26 PM

All set here, here's the key! 🔑



Pantheon APP 3:27 PM ☆

Deployment initiated for automation-demo by @bthompson



Pantheon-Quicksilver APP 3:27 PM

Deploying 🚀

Site

automation-demo

By

bthompson@mindgrub.com

View Dashboard

[View Dashboard](#)

Environment

test

Workflow

After deploy

Deploy Message

Deploy to the test environment of automation-demo by bthompson@mindgrub.com complete and features have been reverted! [View Dashboard](#)

DEPLOY MESSAGE: Deployed via Slack by user [bthompson](#).



Pantheon APP 3:28 PM

Deployed code to "test"



jenkins APP 3:28 PM

Pantheon » automation_drupal_website_code_checks - #27 Success after 8.2 sec (</job/Pantheon/job/automation_drupal_website_code_checks/27/|Open>)

QUESTIONS?

- Brian Thompson, Director of Web Engineering
- @rvtraveller26

