



# Drupal Europe

## Darmstadt, Germany

Sep 10 - 14, 2018

[www.drupaleurope.org](http://www.drupaleurope.org)





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# Browser Testing with Nightwatch.js

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Salva Molina

Session URL: <https://www.drupaleurope.org/session/browser-testing-nightwatchjs>



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# Salva Molina

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PHP Engineer



@salva\_bg

Drupal.org: *slv\_*

Freelance

Drupal & Symfony.

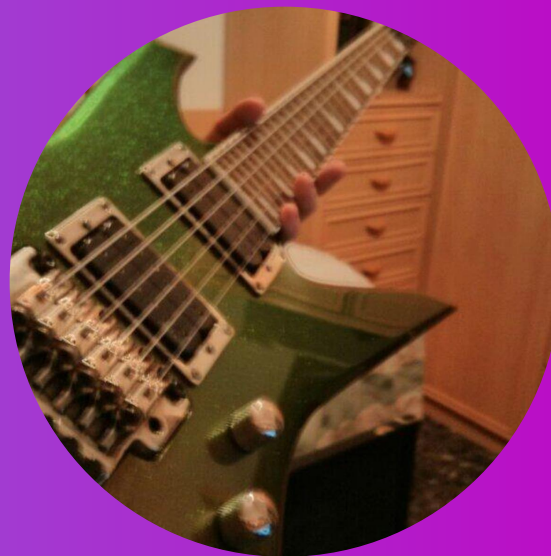
Security Audits.

Devops.

# Me



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# Nightwatch.js

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- Introduction & Motivation
- 4 Artifacts to rule them all
- Nightwatch & Drupal



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“

**The watermelon effect**”

*A somewhat familiar Friday for every developer.*

# Deploying to production (no tests)



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SENORGIF.COM





# Introduction

## What's Nightwatch.js



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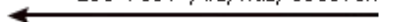
HTTP

POST /wd/hub/session



200 POST /wd/hub/session

{"sessionId": "123..."}



WebDriver API



Selenium Server

{create session}

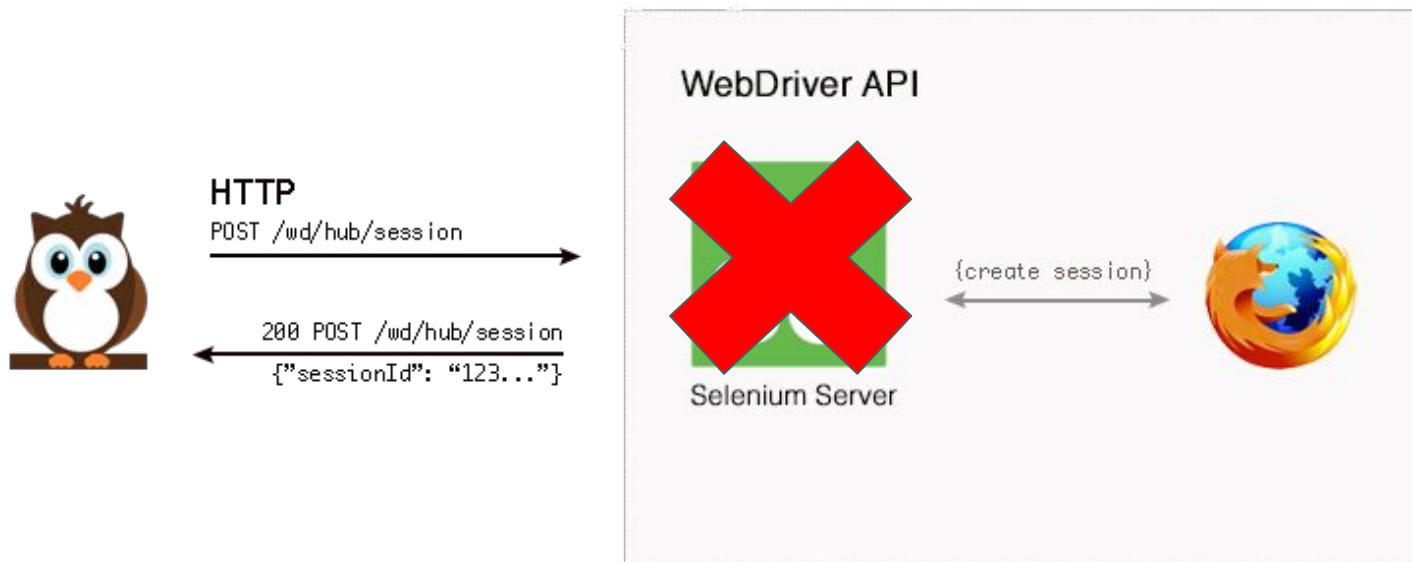


# Introduction

## What's Nightwatch.js



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# Main Features

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The bread and butter

- Test Runner with parallel execution support.
- JUnit-compliant XML reports.
- assert-like and expect-like validations.
- Hooks: before, beforeEach, after, afterEach.
- Unit Testing support.



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# First Stop: Nightwatch.json

## Paths



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```
"src_folders" : [  
  "./tests/nightwatch/tests/"  
],  
"output_folder" : "{...}/reports",  
"custom_commands_path" : "{...}/commands",  
"custom_assertions_path" : "{...}/assertions",  
"page_objects_path" : [  
  "{...}/pages/example"  
],  
"globals_path" : "{...}/global.js",
```

# First Stop: Nightwatch.json

## Selenium and Webdrivers



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```
"selenium" : {  
  "start_process" : true,  
  "server_path" :  
  "./tests/bin/selenium-server-standalone-3.13.0.jar",  
  "log_path" : "",  
  "port" : 34567,  
  "cli_args" : {  
    "webdriver.chrome.driver" : "./tests/bin/chromedriver"  
  }  
},
```

# First Stop: Nightwatch.json

## Environments



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```
"dev" : {  
  "launch_url" : "http://127.0.0.1:8000",  
  "selenium_port" : 9515,  
  "selenium_host" : "127.0.0.1",  
  "default_path_prefix" : "",  
  "desiredCapabilities": {  
    "browserName": "chrome"  
  }  
}
```

# Fully-customized setup

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Nightwatch.conf.js



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```
var selenium = require('selenium-server');
var chromedriver = require('chromedriver');

module.exports = (function(settings) {
  settings.selenium.server_path = selenium.path;
  settings.selenium.cli_args["webdriver.chrome.driver"] = chromedriver.path;

  return settings;
})(require('./nightwatch.json'));
```



4 Artifacts to rule them all



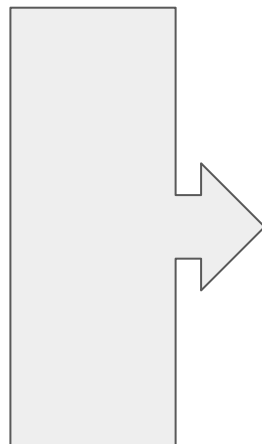
# Artifacts

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- Commands.
- Page Objects.
- Asserts.
- Global Data.



Tests.

# Commands

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Generic actions to perform across the site

- Many provided by default, like:
  - `.closeWindow.`
  - `.setValue.`
  - `.saveScreenshot.`
  - `.click.`



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# Custom Commands

commands/clickWithMessage.js



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```
exports.command = function (selector, message) {
  // Click and display a message for the action.
  this.click(selector, function() {

    if (this.globals.test_settings.disable_colors === true) {
      console.log(' ✓ ' + message);
    }
    else {
      console.log('\033[92m ✓ \033[0m' + message);
    }
  });

  return this;
};
```



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**Page objects are a classic example of encapsulation – they hide the details of the UI structure and widgetry from other components (the tests).”**

*Martin Fowler.*

# Page Objects

pages/myPage.js



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Nightwatch Demo - Page Objects

https://my-dashboard.com/security-contacts

Security Contact 1 [Select all](#)

Security Contact 2

Security Contact 3

Enter Subject...

Email Content

Submit

# Page Objects

pages/myPage.js



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Nightwatch Demo - Page Objects - Elements

https://my-dashboard.com/security-contacts

Security Contact 1 [Select all](#)

Security Contact 2

Security Contact 3

Enter Subject...

Email Content

Submit

```
elements: {  
  select_all: {  
    selector: '#email-send-form .select-all-link'  
  },  
  security_contacts_select: {  
    selector: '#email-send-form > select'  
  },  
  message: {  
    selector: '#security-contacts-email-message'  
  },  
  submit: {  
    selector: '#email-send-form > input'  
  }  
}
```

# Page Objects

pages/myPage.js



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Nightwatch Demo - Page Objects - Commands

← → X 🏠  🔍

Security Contact 1 [Select all](#)

Security Contact 2

Security Contact 3

Email Content

```
var SecurityContactsPageCommands;

SecurityContactsPageCommands = {
  sendMessage: function (subject, body) {
    this.api
      .setValue('@subject', subject)
      .setValue('@message', body)
      .click('@submit');
    return this;
  }
};
```

# Page Objects

pages/myPage.js



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```
Nightwatch Demo - Page Objects
https://my-dashboard.com/security-contacts

pages/security-contacts.js

module.exports = {
  url: function() {
    return this.api.launchUrl + '/dashboard/security-contacts';
  },
  commands: SecurityContactsPageCommands,
  sections: {},
  elements: {
    ... {},
    ... {}
  }
};
```



# Assertions

assertions/myAssertion.js



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```
exports.assertion = function(selector, comparedValue, msg) {  
  
  this.message = msg || util.format('Testing if value of <%s> does not equal: "%s".',  
selector, comparedValue);  
  this.expected = comparedValue;  
  
  this.command = function(callback) {};  
  
  this.value = function(result) {};  
  
  this.pass = function(value) {};  
};
```

# BDD Expect Assertions

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- Language Chains: to, be, been, is, that, which, and, has, have, with, at, does, of.

```
checkFieldAttribute: function(fieldName, attr, Value) {  
  this  
  .expect.element(fieldName).to.have.attribute(attr).equals(Value);  
  return this;  
},
```

# Global Data

data/globals.js



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```
user: {
  username: 'test3',
  password: 'AcceptableUserPassword_-',
},
unexisting_user: {
  username: 'nightwatch_' + Date.now(),
  firstname: 'NW_First',
  display_name: 'NW_First' + 'Surname' + Date.now(),
  email: 'nightwatch_' + Date.now() + '@.example.net'
},
```



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# Demo 1

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Simple Test with & w/o Page Objects.

# Remote testing via Jenkins

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Dependencies on the remote Server



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# Scenario

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# Scenario

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1



# Scenario

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1

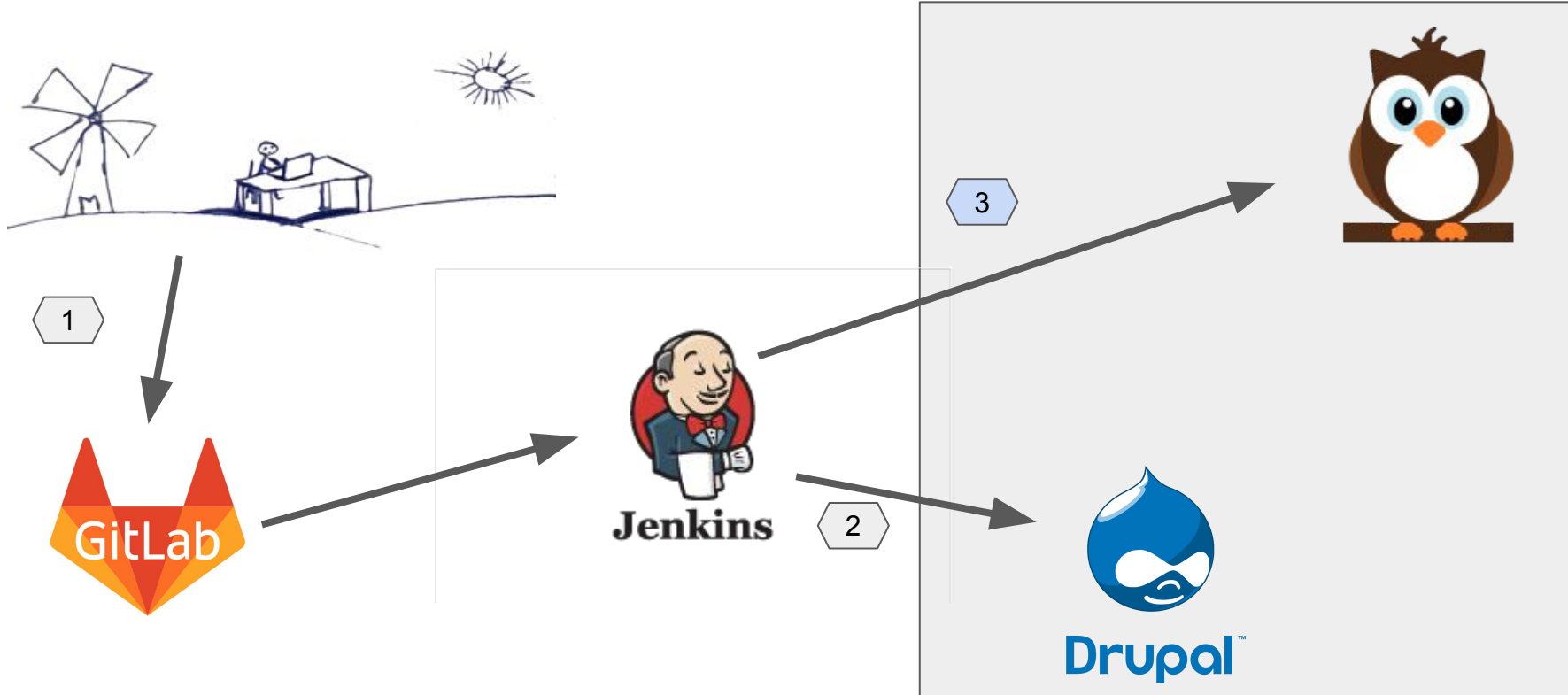


2

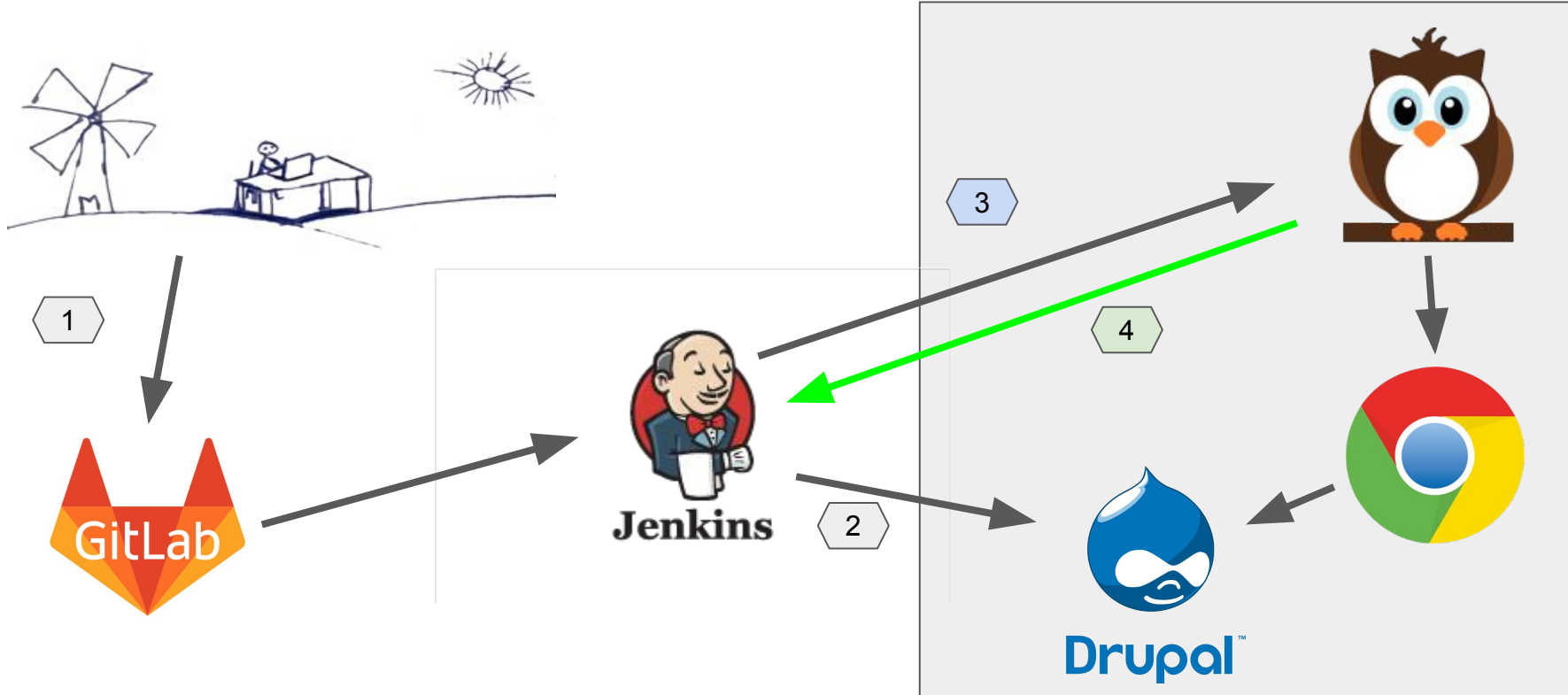




# Scenario



# Scenario



# CI Configuration

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```
"ci" : {  
  "launch_url" : "http://{http_auth_user}:{http_auth_pass}@127.0.0.1:8000",  
  "selenium_port" : 9515,  
  "selenium_host" : "127.0.0.1",  
  "default_path_prefix" : "",  
  "selenium" : {  
    "start_process": false  
  },  
  "desiredCapabilities": {  
    "browserName": "chrome",  
    "chromeOptions": {  
      "args": ["--headless"]  
    }  
  }  
}
```

**LIVE DEMO:  
Graphical representation**





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# Demo 2

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Remote Testing via Jenkins



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# Nightwatch & Drupal

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Drupal commands

# Commands

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Available in 8.6.0

■ CreateRole, CreateUser, Login, Logout,  
RelativeURL, UsersLoggedIn.



Web-based

■ Install, LoginAsAdmin, Uninstall.



Script-based

# Drupal Setup

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## Pros

- Don't need to go through any Nightwatch documentation.
- Very simple and fast setup. No custom package.json needed:

```
yarn install
```

```
yarn test:nightwatch
```



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# Drupal Setup

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## Cons

- Page Objects not supported yet.
- Some use cases not covered (no multiple env setup).
- Need to download some other npm dependencies that you might not want for remote testing.
- Still lots to do. Can't easily enable modules, place blocks, etc.

# Commands

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So, should I use Core commands for my tests?

- Module developer: YES! or... yes?

- For customer sites: I would not.

Instead: Use your own setup, and simply point its config to the commands provided by core that are somewhat usable outside of core testing.

# Why Nightwatch?



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# Why Nightwatch?

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# Resources

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Some links, tools and interesting reads

- Official Docs!
- Quick install: <https://github.com/salvamomo/nightwatch-starter>.
- [Phéna Proxima on Testing](#).
- [Nightwatch after 12000 tests and 3000 hours](#).



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## DevOps + Infrastructure

TRACK SUPPORTED BY





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# Questions?

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# Danke fürs Kommen

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