

**FROM 4 RELEASES PER
YEAR TO 4 RELEASES
PER DAY**

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- CTO & Co-Founder of continuousphp©
- 15+ SysAdmin/PHP consultant background
- PHP Certified Engineer
- Continuous Delivery/Deployment Evangelist



- [@fdewinne](#)
- <https://www.drupal.org/u/fdewinne>

PIETER FRENSSSEN

- Drupal engineer at ONE Agency
- Consulting for European Commission
- Specialized in testing and automation
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BACKGROUND

- European Commission
- Hundreds of websites, many in static HTML
- Millions of pages, total is unknown
- Myriad of different technologies
- Single portal: <http://ec.europa.eu>

EUROPEAN COMMISSION

<http://ec.europa.eu/>

Europäische Kommission

Deutsch DE

Europäische Kommission

Suche

TOPAKTUELL

Digitalisierung der europäischen Industrie

EU Cloud
Unlocking the power of big data

Digital public services
Modern solutions for businesses and citizens

Standards
Connecting devices, industry and services

Arbeitsplätze, Wachstum, Investitionen

Freihandel EU-USA

Digitaler Binnenmarkt

Justiz und Grundrechte

Energieunion und Klimaschutz

Migration

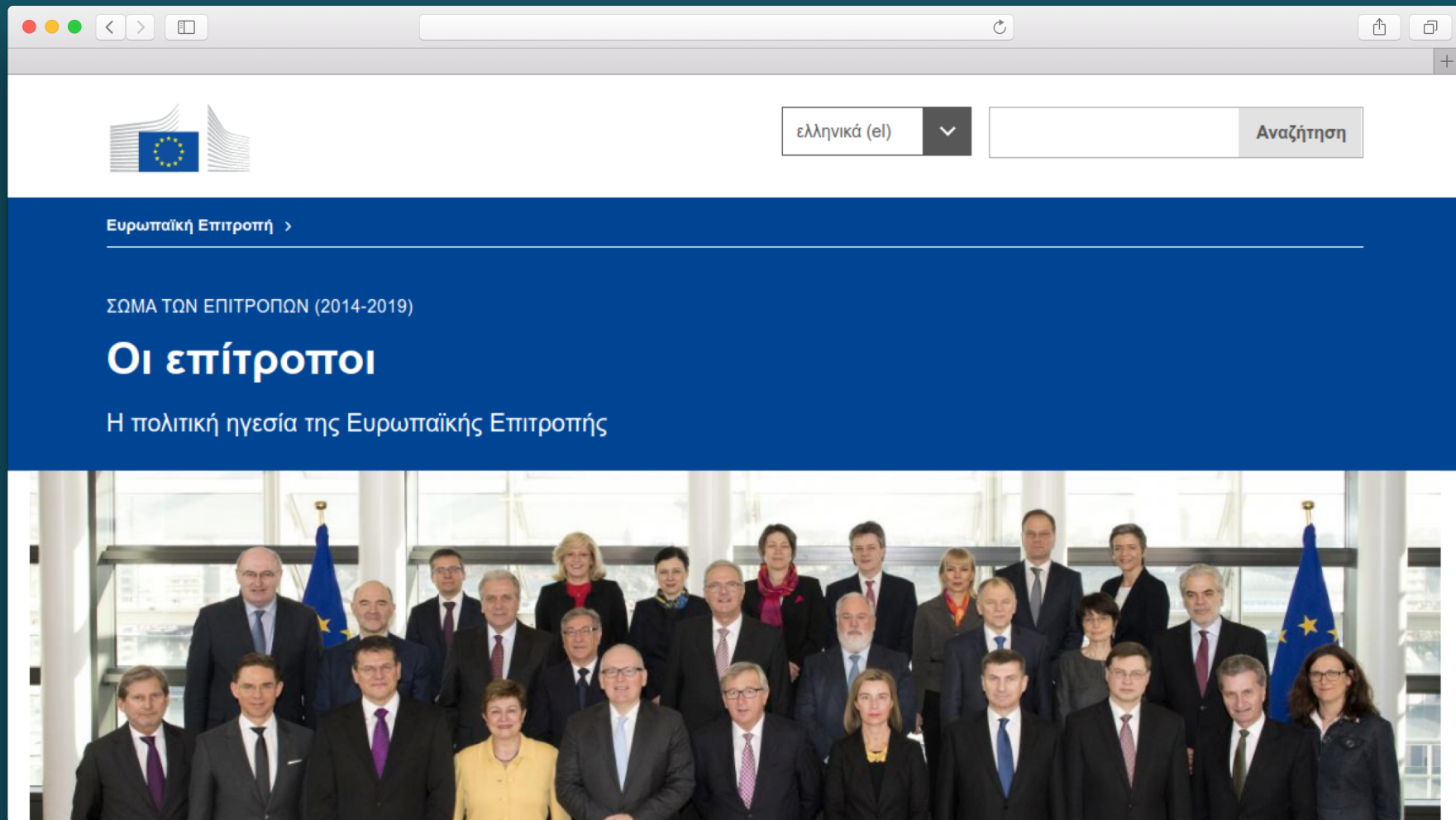
HORIZON 2020

<https://ec.europa.eu/programmes/horizon2020/>

The screenshot shows the Horizon 2020 website homepage. At the top, there is a navigation bar with links for 'Create An ECAS Account', 'Login', 'About', 'Contact', 'Legal notice', and 'Search'. The language is set to 'English (en)'. Below this is the main header with the European Commission logo and the text 'HORIZON 2020 The EU Framework Programme for Research and Innovation'. A secondary navigation bar includes a home icon and links for 'What is Horizon 2020?', 'Find Your area', 'How to Get funding?', 'News, Events & Publications', and 'Projects'. The main content area features a central banner for 'Designing the path' with the subtitle 'A strategic approach to EU agricultural research & innovation'. This banner includes the event details: 'Brussels, Charlemagne building, 26-28 January 2015' and a description: 'Three days to design the path towards future EU agricultural research and innovation. Over 500 delegates are expected in Brussels on 26-28 January to discuss the future of EU Agricultural research and innovation. #EU_AgriResearch'. To the left of the banner are three vertical panels: 'What is Horizon 2020?', 'Find Your area', and 'Horizon 2020 Programme'. To the right are a search bar, 'Project Stories', and 'Multimedia & Publications'. At the bottom of the banner area, there is a 'Latest news and events' section.

THE COMMISSIONERS

https://ec.europa.eu/commission/2014-2019_en



The image is a screenshot of a web browser displaying the official website of the European Commission for the 2014-2019 term. The browser's address bar shows the URL https://ec.europa.eu/commission/2014-2019_en. The website header features the European Union flag on the left, a language selector set to "ελληνικά (el)" in the center, and a search bar labeled "Αναζήτηση" on the right. Below the header, a blue navigation bar contains the text "Ευρωπαϊκή Επιτροπή >". The main content area has a dark blue background with the text "ΣΩΜΑ ΤΩΝ ΕΠΙΤΡΟΠΩΝ (2014-2019)" and the large title "Οι επίτροποι". Underneath the title is the subtitle "Η πολιτική ηγεσία της Ευρωπαϊκής Επιτροπής". The bottom portion of the screenshot shows a group photograph of the 19 Commissioners of the European Commission, arranged in several rows, with two European Union flags on either side.

EUROPEAN YOUTH PORTAL

<https://europa.eu/youth/splash>

The screenshot displays the European Youth Portal interface. At the top, there is a header with the European Union flag, the text 'Portail européen de la jeunesse', and the URL 'europa.eu'. Navigation links include 'Avis juridique' and 'Nous contacter'. A language selector is set to '[fr] Français', and a search bar contains the text 'Rechercher'. Below the header, there are regional navigation options: 'Europa' with a home icon and 'Europe', and a country selector 'CHOISIR UN PAYS' set to '[EU] Europe'. The main content area features a large banner with the text 'PORTAIL EUROPÉEN DE LA JEUNESSE' in white on a red background. A vertical sidebar on the left lists various activities: FAIRE DU VOLONTARIAT, TRAVAILLER, APPRENDRE, PARTICIPER, CULTURE & CRÉATIVITÉ, SANTÉ, INCLUSION SOCIALE, PENSER GLOBAL, and VOYAGER. The central focus is a 'Participer' section with a blue header and a background image of young people shouting into megaphones. Below the header, the text reads: 'Donne ton avis sur la politique et la société, et participe au Dialogue structuré'.

TARGET AUDIENCE

- 500 million people
- 28 countries
- 24 languages

WHY DRUPAL?

- Single technology serving all needs
- Cost efficient
- Powerful content management + data modeling
- Proven track record
- Flexible
- Stable, secure
- Scalable
- Large community
- No vendor lock-in
- Open source

NEXTEUROPA PLATFORM

- Drupal 7 distribution
- Base framework + optional features
- Multisite installation
- Drush make
- Best practices
- Development started 2012
- <https://github.com/ec-europa/platform-dev>

RISING CHALLENGES

Anno 2014

- Growing too fast
- Distributed teams
- Outdated practices
- Bottlenecks
- Regressions

GROWING TOO FAST

- 100 websites, 100 more planned
- 200+ developers
- 1000+ content editors
- 250 modules

DISTRIBUTED TEAMS

- Contractors in many countries
- Working in different ways
- Different operating systems
- Infrastructure behind DMZ

OUTDATED PRACTICES

- SVN
- Bash scripts
- Shared development server
- Quarterly release cycle

BOTTLENECKS

- Manual code review
- Manual deployment
- Manual updating every 3 months

REGRESSIONS

- High rate of code change
- No systematic automated testing

GOALS

- Reduce bottlenecks by automation
- Speed up the release cycle
- Adopt current best practices
- Universal build system
- External access
- Automated testing + QA

MOVE TO INDUSTRIALIZATION



DEFINE A TOOLSET



MOVING TO GIT

<https://github.com/ec-europa>

- Move to Github
- Git Flow
- Convert from SVN
- Clean up history
- Training and support

DEPENDENCY MANAGEMENT WITH COMPOSER

- Dependency Manager for PHP
- Focused on library dependencies
- Define PHP version and extension requirements
- <https://getcomposer.org>

```
{
  "require": {
    "php": ">=5.4.0",
    "drupal/coder": "dev-8.x-2.x",
    "drupal/drupal-extension": "~3.1.5",
    "phing/phing": "~2.10",
    "drupal/phing-drush-task": "1.0",
    "continuousphp/phing-tasks": "~0.1.3"
  },
  "autoload": {
    "psr-4": {
      "Drupal\\nexteuropa\\": "tests/src",
      "NextEuropa\\": "src"
    }
  }
}
```


MANAGING TASKS WITH PHING

- PHing Is Not GNU make
- PHP Project build tool
- based on Apache Ant
- written in PHP; easily extensible by PHP developers
- define sequences of tasks
- organized in targets
- easily drives Drush using additional tasks

<https://www.drupal.org/project/phingdrushtask>

```
<project name="My subsite" default="help">

  <target name="help" description="Phing target list">
    <exec executable="{phing.bin}"
          passthru="true">
      <arg value="-l"/>
    </exec>
  </target>

  <target name="generate-development-makefile"
          description="Generate the makefile for development module">
    <drushmakefile
      makeFile="{subsite.temporary.development.make}"
      coreVersion="{drupal.core.version}"
      projects="{development.modules.download}"
      defaultProjectDir="{development.modules.location}"
    </drushmakefile>
  </target>
</project>
```

CHECKING CODING RULES WITH PHPCODESNIFFER

- Custom ruleset
- Configuration generated with Phing
- Automated check on push

```
$ ./vendor/bin/phpcs
```

AUTOMATING TESTS WITH BEHAT

- inspired by Cucumber
- uses Gherkin syntax to define specs
- supports several web browser drivers through extensions

Feature: User authentication

In order to protect the integrity of the website
As a product owner
I want to make sure only authenticated users
can access the site administration

Scenario: Anonymous user can see the user login page

Given I am not logged in
When I visit "user"
Then I should see the text "ECAS Login"
And I should see the text "Request new password"
And I should see the text "Username"
And I should see the text "Password"
But I should not see the text "Log out"
And I should not see the text "My account"

PACKING SYSTEM IMAGES WITH PACKER

- immutable infrastructure approach
- virtualization abstraction layer
- versioned configuration

```
{
  "variables": {
    "site_type": "",
    "mysql_password": ""
  },
  "builders": [{
    "type": "amazon-ecs",
    "source_ami": "ami-*****",
    "ami_name": "{{user `site_type`}}-dev {{timestamp}}",
    "iam_instance_profile" : "acceptance"
  }],
  "provisioners":[ {
    "type": "salt-masterless",
    "local_state_tree": "salt"
  } ]
}
```

CREATING ON-DEMAND ENVIRONMENT WITH AWS

- coded infrastructure
- infrastructure as a dependency
- new environments deployed in a few minutes
- pay per use


```
[aws-cf-runstack] 2016-03-17T14:38:03+00:00: AWS::CloudFormation::Stack (CREATE_COMPLETE)
[aws-cf-runstack] 2016-03-17T14:38:25+00:00: AWS::EC2::SecurityGroup (CREATE_COMPLETE)
[aws-cf-runstack] 2016-03-17T14:38:25+00:00: AWS::EC2::EIP (CREATE_COMPLETE)
[aws-cf-runstack] 2016-03-17T14:39:02+00:00: AWS::Route53::RecordSet (CREATE_COMPLETE)
[aws-cf-runstack] 2016-03-17T14:39:20+00:00: AWS::IAM::Role (CREATE_COMPLETE)
[aws-cf-runstack] 2016-03-17T14:39:24+00:00: AWS::IAM::Policy (CREATE_COMPLETE)
[aws-cf-runstack] 2016-03-17T14:41:24+00:00: AWS::IAM::InstanceProfile (CREATE_COMPLETE)
[aws-cf-runstack] 2016-03-17T14:42:20+00:00: AWS::EC2::Instance (CREATE_COMPLETE)
[aws-cf-runstack]
WebServerIP: 52.19.236.43
WebServerURL: http://demo.subsite-starterkit.ec-europa.continuous.lu/
```

ORCHESTRATING DELIVERY PIPELINES WITH CONTINUOUSPHP

- no vendor lock-in
- not limited by worker model
- possibility to run tests in parallel
- specialized in php
- simplify our delivery workflow



Find a project or repository

ec-europa/subsite-starterkit

Status Image Reset hook

ALL TAG



SKELETON

<https://github.com/ec-europa/subsite-starterkit>

- Common starting point for all sites
- Project configuration
- Build system: Phing
- Development tools: PHPCS, Composer, Behat
- Continuous Integration support
- Good documentation

ADOPT A PRACTICE



CONTINUOUS INTEGRATION

- continuously merging developer branches into a common one
- part of *extreme programming* practice
- build and test every commit to prevent integration issues
- deploy every build on an integration server

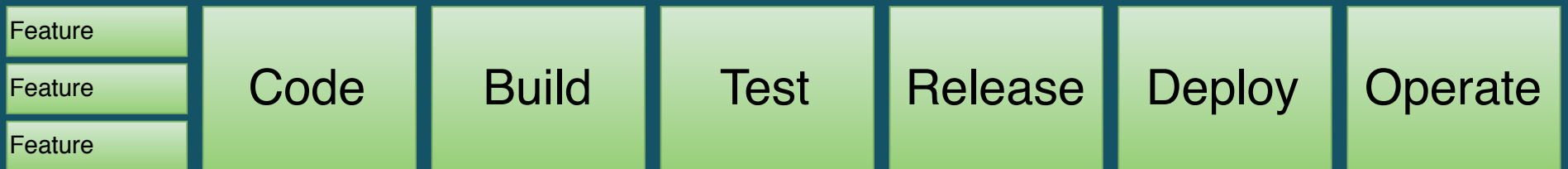
CONTINUOUS DELIVERY

- *Continuous Integration* is a part of CD
- Code is *packaged* by a build server every time a change is *committed*
- any *code commit* may be *released* to customers at any point
- implements *Scrum* Project Management

CONTINUOUS DEPLOYMENT

- *Continuous Delivery* is a part of *Continuous Deployment*
- every successful build is deployed to a *Production Environment*
- any completed, working feature is delivered to production as soon as possible
- implements *Kanban* Process Management

CONTINUOUS COMPARISON



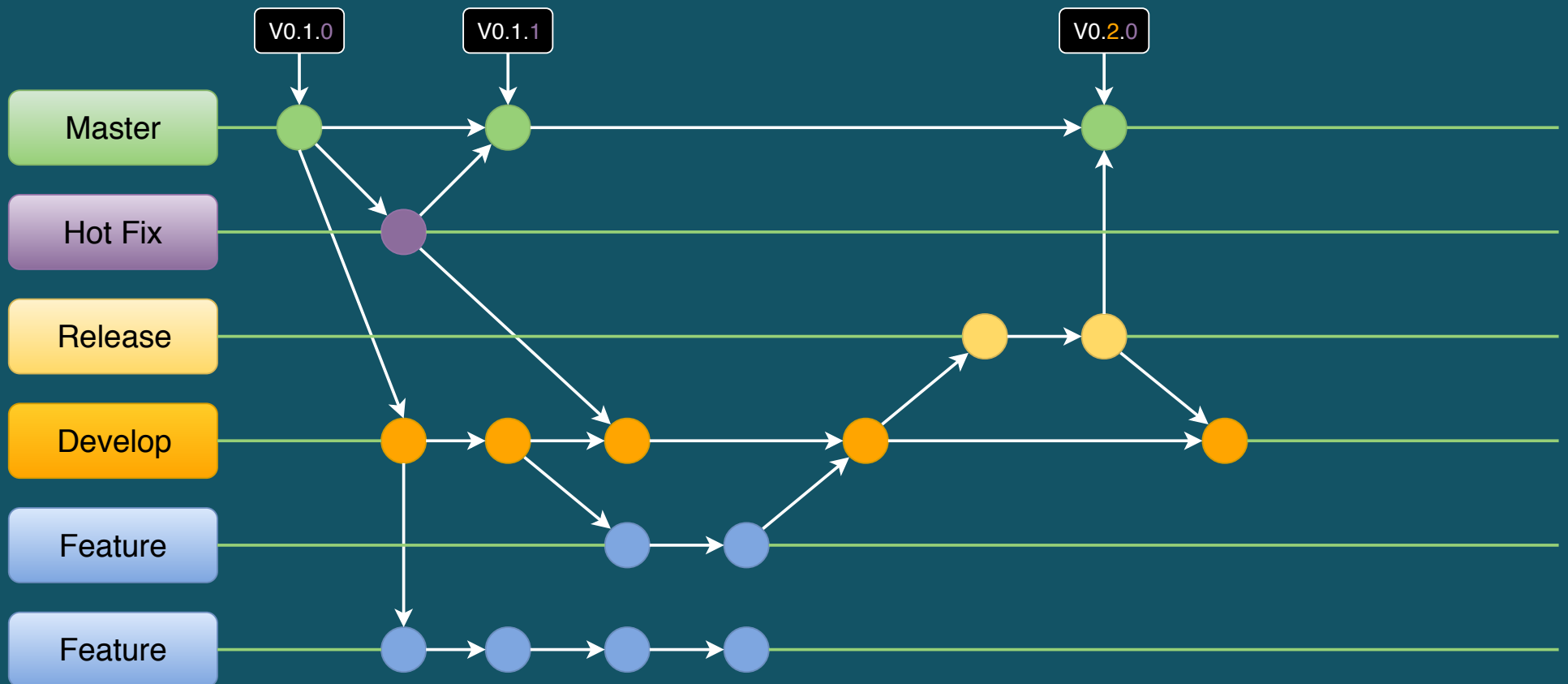
Agile Development →

Continuous Integration →

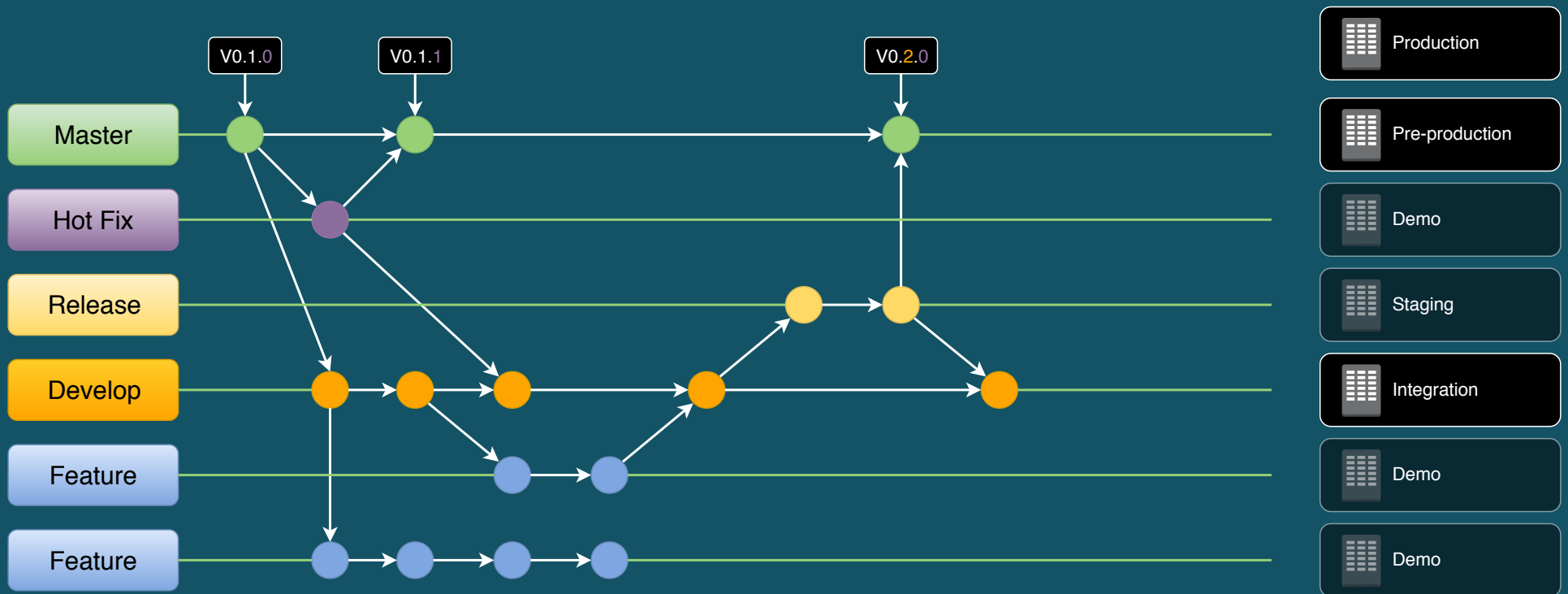
Continuous Delivery →

Continuous Deployment →

BRANCHING MODEL



ENVIRONMENT MANAGEMENT



ACHIEVEMENTS

- Drastically decreased the time to market
- Multiple releases per day
- Overall software quality improved
- Bottlenecks have decreased
- Online & inline code review
- Improved test coverage catches regressions
- Easy "one-step" building and installing of any site
- User acceptance testing on ephemeral environments
- Early detection of common problems

THANK YOU

QUESTIONS?

Slides: <http://slideshare.net/continuousphp/from-4-releases-per-year-to-4-releases-per-day-61474837>

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