Your Project

Christoph Matthies
christoph.matthies@hpi.de

Software Engineering II
WS 2018/19

Prof. Plattner, Dr. Uflacker
Enterprise Platform and Integration Concepts

SWT2 Schedule

Project

- Sprint 1: 9.11. (Kick-Off) - 23.11.
- **Weekly Stand-ups!**
- Sprint 1 review & retrospective + Sprint 2 planning: 23.11.

Meetings

- Exact dates for meetings should be **negotiated** with your tutor
- Sprint reviews and plannings for next sprint can be merged

- On demand: User Research with Customer

Let’s get started

POs

- Extract requirements + create user stories (GitHub tickets)
- Get an idea of the interaction workflows in the system (**mockups**?)
- Prepare Sprint plannings, inform yourselves on what the team is doing
- PO should roughly know what the team has done **before the review**

Developers

- Clone repository, get application working, **understand architecture**
- **If you were lead architect, how would you construct this?**
  - *What are some challenges with the problem domain?*
- **Play around** and try things out.
  - *Where does the system have problems?*
  - *What makes no sense to you?*

Let’s get started

SMs

- Part of your job is research and retrospection
  - What is working well in the team? What isn't?
  - What are good ways of how a team meeting can be structured?
- Every team is different. **Experiment!**

Meetings

- Regular meeting + work timeslot
- We have reserved **V1.15** and **"Glaskasten" Fridays 11:00-17:00** for you

Tutorium in this space after the lecture

- Ask any (Ruby [on Rails]) question
- Work together

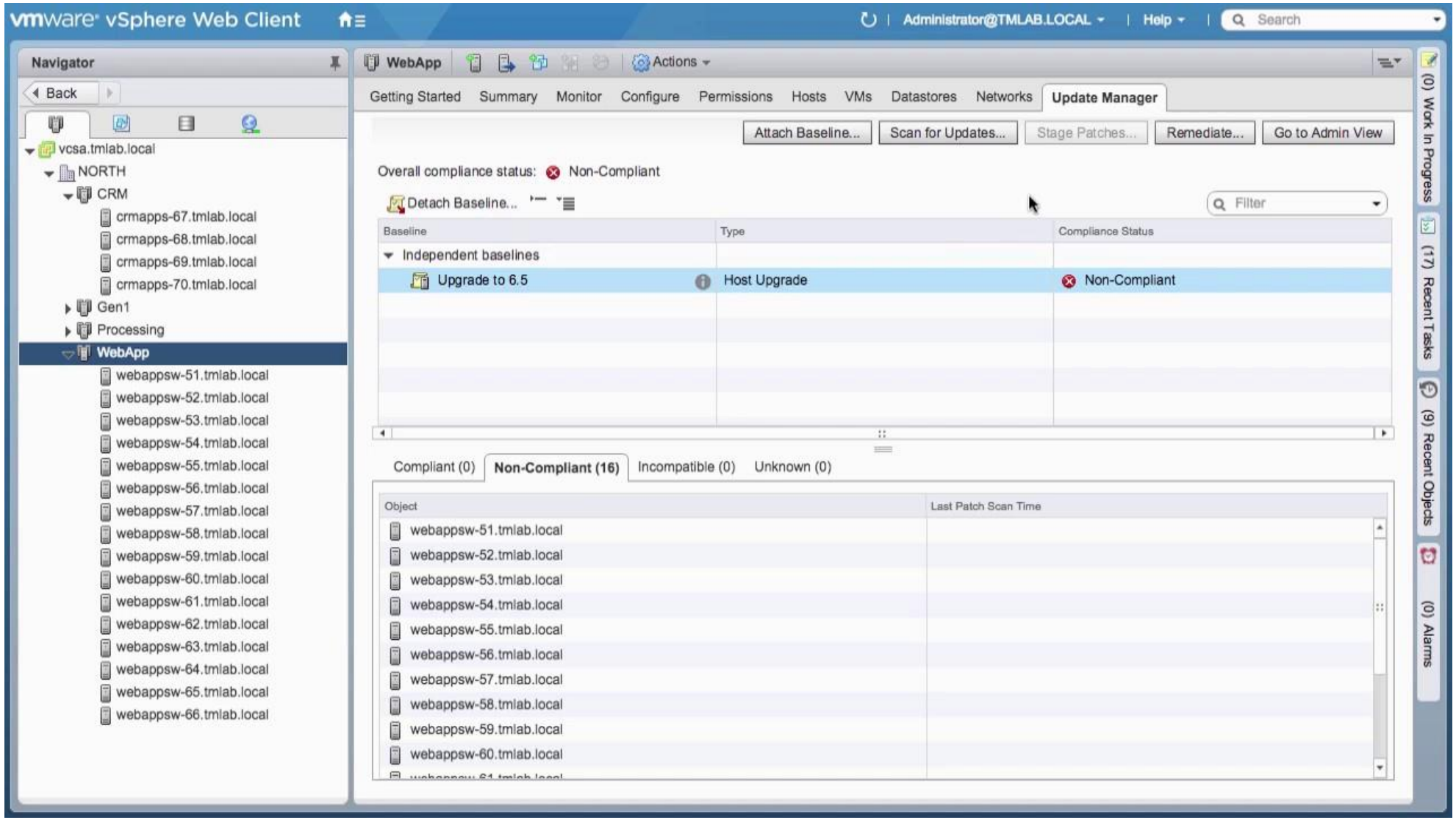
Project Infrastructure

VMware vSphere

VMware's cloud computing virtualization platform

- VMware says: "vSphere provides a powerful, flexible, and secure foundation for business agility that accelerates your digital transformation to hybrid cloud and success in the digital economy." (https://www.vmware.com/products/vsphere.html)
- It allows **managing VMs and resources** in an online interface
- The URL as well as the user and password were mailed to you
- The application uses a library called 'rbvmomi' to access vSphere (see the Gemfile)
- The vSphere Center is **only available within the HPI network!**

VMware vSphere



Communication Infrastructure

- Email lists
  - If you want: separate lists for each team (*lists.myhpi.de*)
  - Keep your teammates in the loop, add teaching team
  - Rules and filters help organizing your inbox
- **https://swt2-2018.slack.com**
- Ticket system for overview and feedback about current tasks and progress
- Wiki for lean and globally **accessible documentation**
- Telephone and personal contact for direct communication
- … be **creative**!

  (but let us know, we are interested in learning what might be useful in the future)

Time Management

Shared Calendar

- Available Everywhere
- Integration with Outlook & iCal
- Overview of team appointments
- SWT2 calendar access granted by teaching team

Project Management Tools

The Swiss army knife of software development

- Integrating tools for most common activities in **one place**
- Wiki, bug tracking, time management, project analytics, discussions, …

- Examples:
  - Microsoft Team Foundation Server
  - Redmine, Plan.io (SaaS based on Redmine)
  - Gitlab
  - **GitHub**

Version Control System

Repository to store development artifacts

Features:

- Versioning
- Dealing with variants: **branches**
- Access control
  - Authentication, authorization
  - Locking
  - **Concurrent** development
- Reporting and communication
  - How many versions, variants, changes, persons
  - History of changes

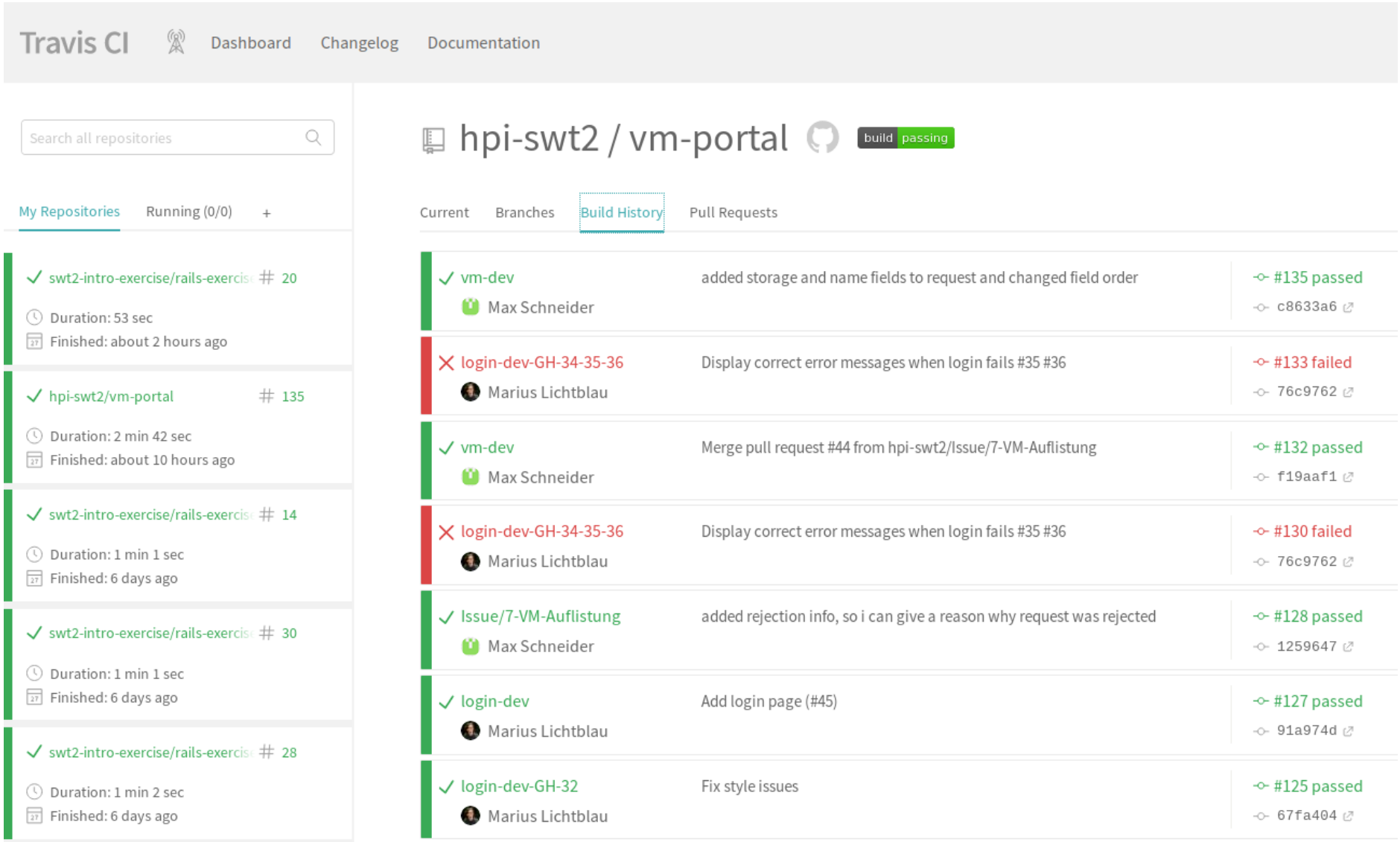
Continuous Integration

How do you make sure your software **always works**?

Continuous Integration!

- **Connected** to version control
- Customizable run scripts
- Ideally covering all development branches
- Examples:
  - CruiseControl
  - Anthill
  - Jenkins/Hudson
  - **Travis CI**

Travis CI


Travis CI
Dashboard
Changelog
Documentation
Search all repositories
My Repositories
Running (0/0)
+
swt2-intro-exercise/rails-exercis # 20
Duration: 53 sec
Finished: about 2 hours ago
hpi-swt2/vm-portal # 135
Duration: 2 min 42 sec
Finished: about 10 hours ago
swt2-intro-exercise/rails-exercis # 14
Duration: 1 min 1 sec
Finished: 6 days ago
swt2-intro-exercise/rails-exercis # 30
Duration: 1 min 1 sec
Finished: 6 days ago
swt2-intro-exercise/rails-exercis # 28
Duration: 1 min 2 sec
Finished: 6 days ago
hpi-swt2 / vm-portal
build passing
Current
Branches
Build History
Pull Requests
vm-dev
Max Schneider
added storage and name fields to request and changed field order
#135 passed
c8633a6
login-dev-GH-34-35-36
Marius Lichtblau
Display correct error messages when login fails #35 #36
#133 failed
76c9762
vm-dev
Max Schneider
Merge pull request #44 from hpi-swt2/Issue/7-VM-Auflistung
#132 passed
f19aaf1
login-dev-GH-34-35-36
Marius Lichtblau
Display correct error messages when login fails #35 #36
#130 failed
76c9762
Issue/7-VM-Auflistung
Max Schneider
added rejection info, so i can give a reason why request was rejected
#128 passed
1259647
login-dev
Marius Lichtblau
Add login page (#45)
#127 passed
91a974d
login-dev-GH-32
Marius Lichtblau
Fix style issues
#125 passed
67fa404

Application Deployment

How can you always have a **running version** available?
(why would you want to?)

Deploy your application!

- Simple solution: test deployment on local machine
- Deployment on separate machine:
  - Dedicated Servers
  - Infrastructure-as-a-Service
  - Platform-as-a-Service, e.g. Heroku
- **Continuous Deployment:**
  Deployment **automatically** triggered by successful CI build
  - Deployment config is part of the project
  - No extra effort

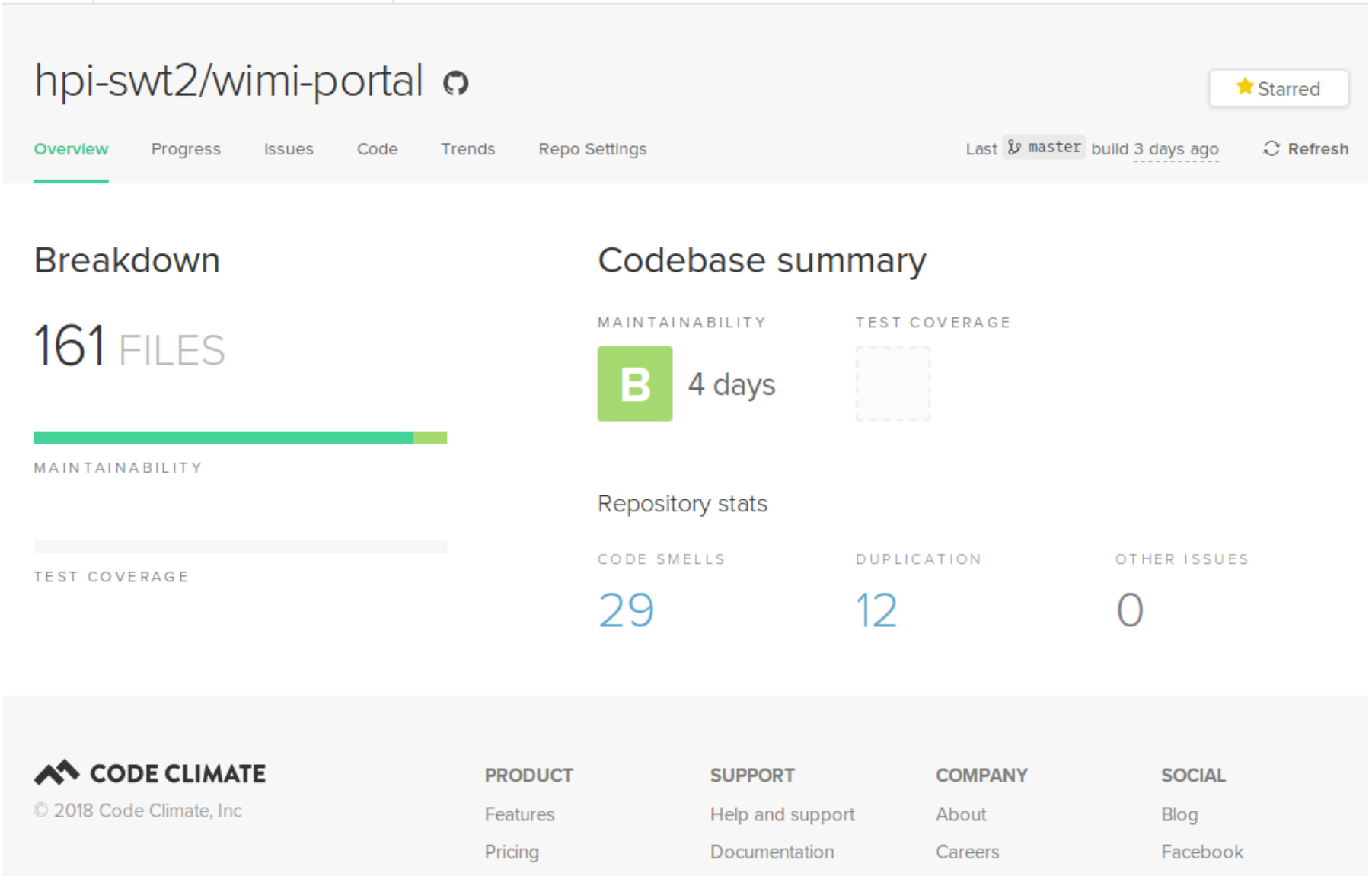
Code Quality

How can you ensure that the software adheres to certain **quality standards** (complexity, test coverage, etc.)?

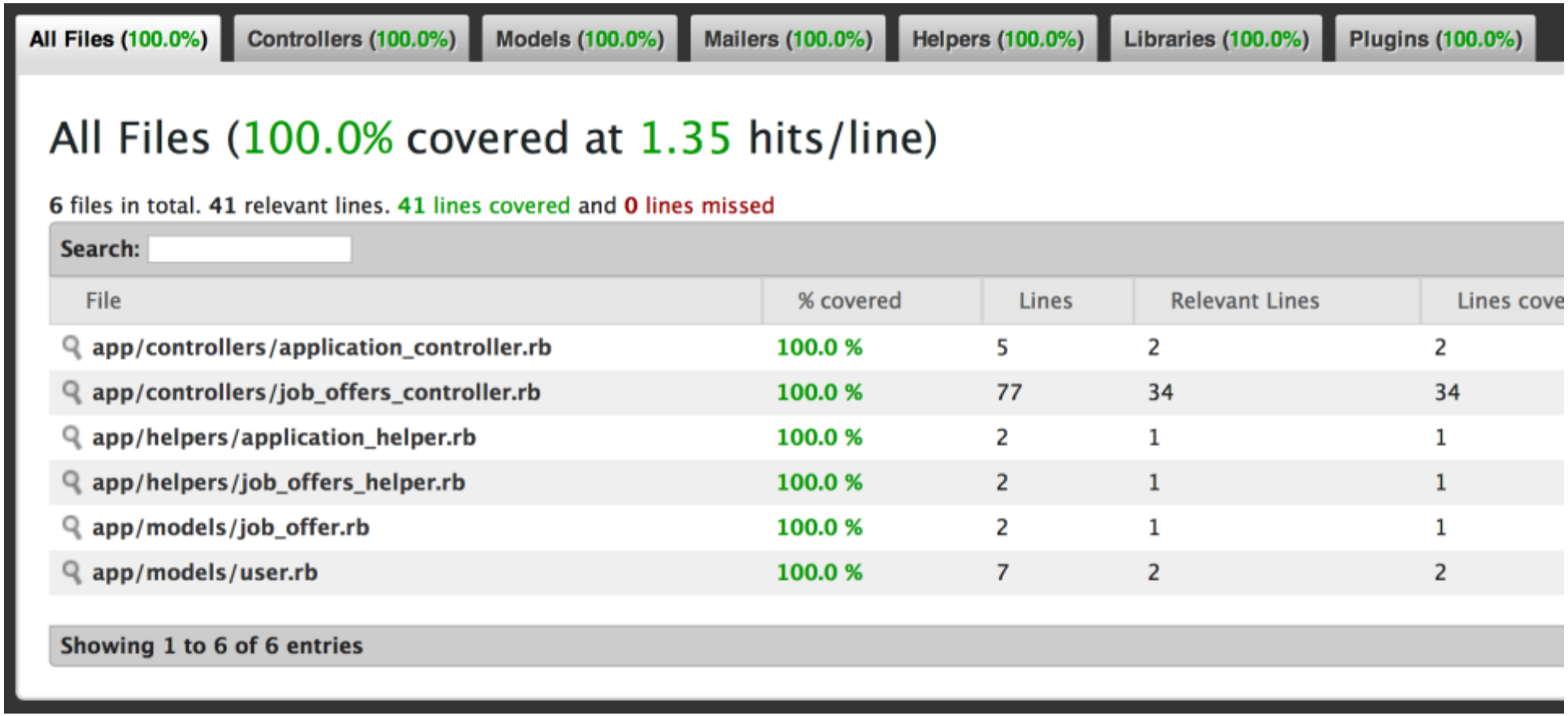
Check for compliance

- Self-control, code reviews
- **Automatic** checks
  - Hosted tools: e.g. CodeClimate, Codefactor, Codebeat
  - Local code coverage: SimpleCov (http://www.simplecov.org/)
    - Can run automatically during each test run
    - coverage/index.html in your application folder
  - Local code smells: RuboCop (https://www.rubocop.org)

Hosted Code Quality Checks



SimpleCov Code Coverage



Your Project

1. VMware vSphere
2. Communication infrastructure
3. Continuous Integration
4. Continuous Deployment
5. Code quality

6. Any other tools you want to add
   But, your team is not the only one using it, communicate.

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