

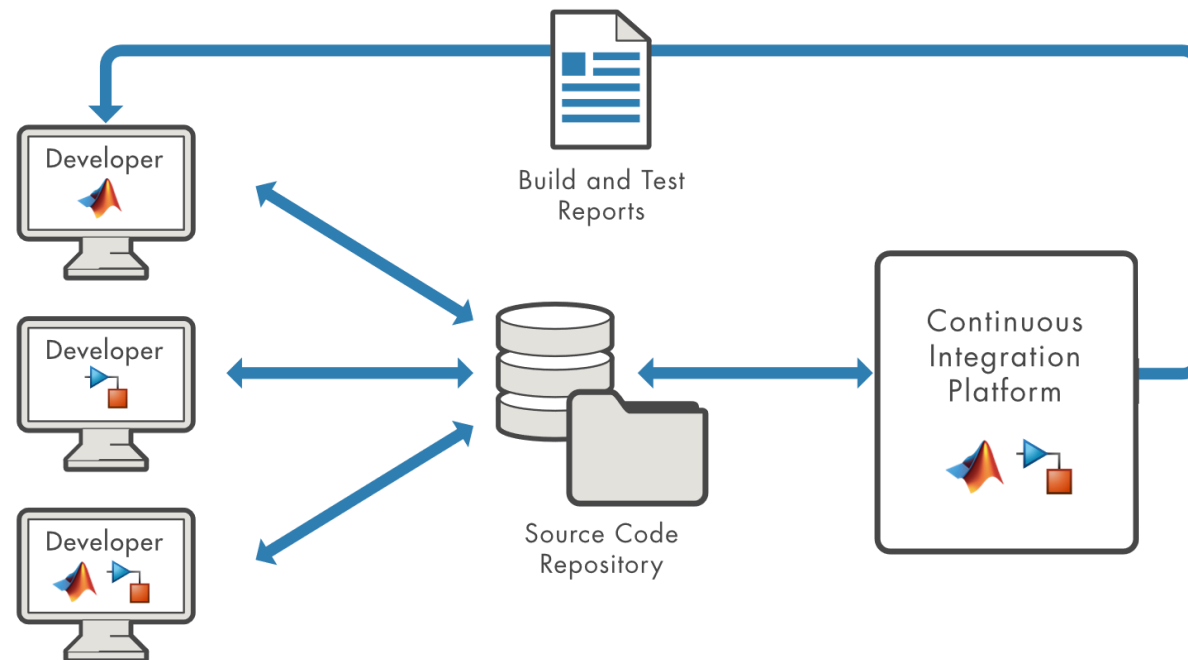
Continuous Integration with MATLAB and GitHub Actions

NOTE: Before we begin, please ensure you have both accounts:

- MathWorks: <https://www.mathworks.com/mwaccount/register>
- GitHub: <https://github.com/signup>

What is Continuous Integration (CI)?

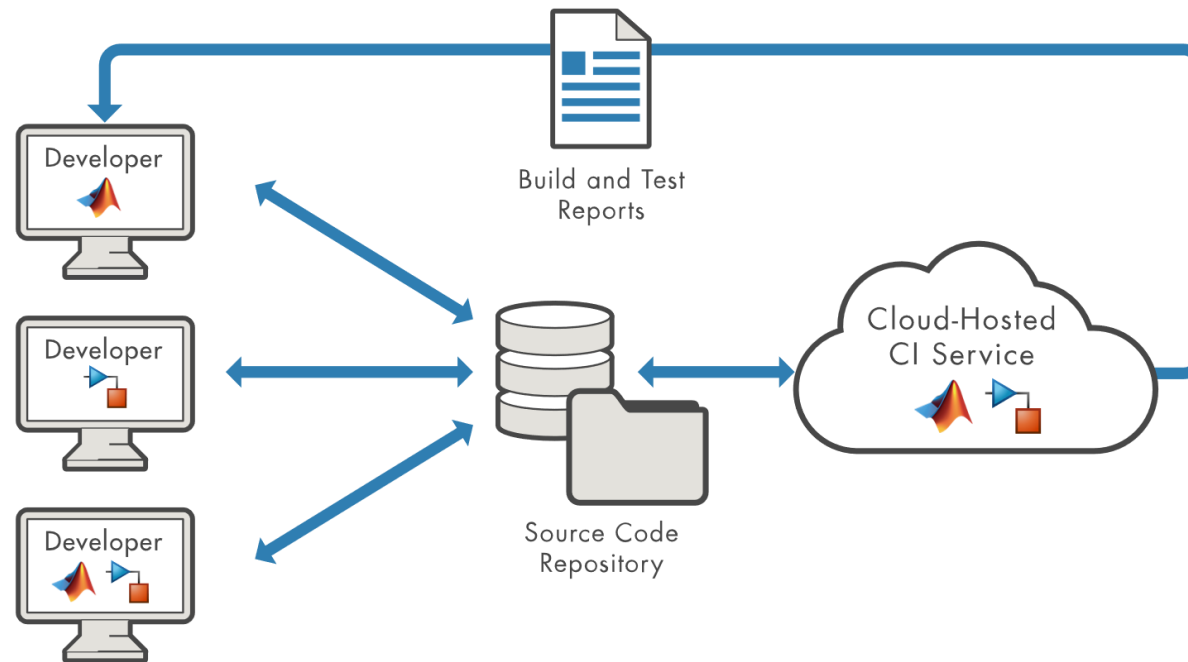
- Continuous Integration is the process of automating the building and testing of code



CI helps you develop better code, faster!

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CI helps you develop better code, faster!

Free MATLAB CI support for public GitHub repositories

- MathWorks provides free CI support for MATLAB and Simulink if:
 1. your code and models are publicly available on GitHub and a supported CI platform
 2. you don't use any coder or compiler products (e.g., MATLAB Coder, MATLAB Compiler)
- Currently supported CI platforms:
 - Azure DevOps
 - Circle CI
 - **GitHub Actions**
 - Travis CI

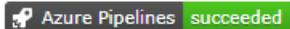
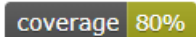

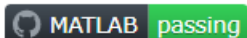



Getting started with our CI configuration examples

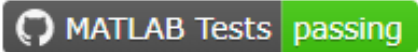
- Check out our example GitHub repo:
 - <https://github.com/mathworks/ci-configuration-examples>
- The example repository provides:
 - A quick start guide
 - Ready-to-use CI configuration files
 - Example MATLAB code and tests
 - CI badge examples, with helpful links

MATLAB CI Configuration Examples

This repository shows how to run MATLAB tests with a variety of continuous integration systems.

CI Platform	Badges	Badge Help
Azure DevOps	 	Blog with helpful information for setting up Azure DevOps badges
CircleCI		CircleCI documentation for setting up badges
GitHub Actions		GitHub Actions documentation for setting up badges
Travis CI		Travis CI documentation for setting up badges

Badges

GitHub® Actions	
Badges (static examples)	
Badge Code	<pre>[![MATLAB] (https://github.com/<i>GITHUB_USERNAME</i>/<i>GITHUB_REPO_NAME</i>/workflows/<i>GITHUB_WORKFLOW_NAME</i>) (https://github.com/<i>GITHUB_USERNAME</i>/<i>GITHUB_REPO_NAME</i>/actions? query=workflow%3A<i>GITHUB_WORKFLOW_NAME</i>)</pre>
Badge Help	GitHub Actions documentation for setting up badges

- Copy-paste the badge code into your README.md file
- Replace the ***VARIABLES*** with your values

A look at the GitHub Actions configuration

...

```
16 jobs:
17   # This workflow contains a single job called "build"
18   build:
19     # The type of runner that the job will run on
20     runs-on: ubuntu-latest
21
22     # Steps represent a sequence of tasks that will be executed as part of the job
23     steps:
24       # Checks-out your repository under $GITHUB_WORKSPACE, so your job can access it
25       - uses: actions/checkout@v2
26
27       # Sets up MATLAB on the GitHub Actions runner
28       - name: Setup MATLAB
29         uses: matlab-actions/setup-matlab@v1
30
31       # Runs a set of commands using the runners shell
32       - name: Run all tests
33         uses: matlab-actions/run-tests@v1
34         with:
35           source-folder: code
```

Check out your code

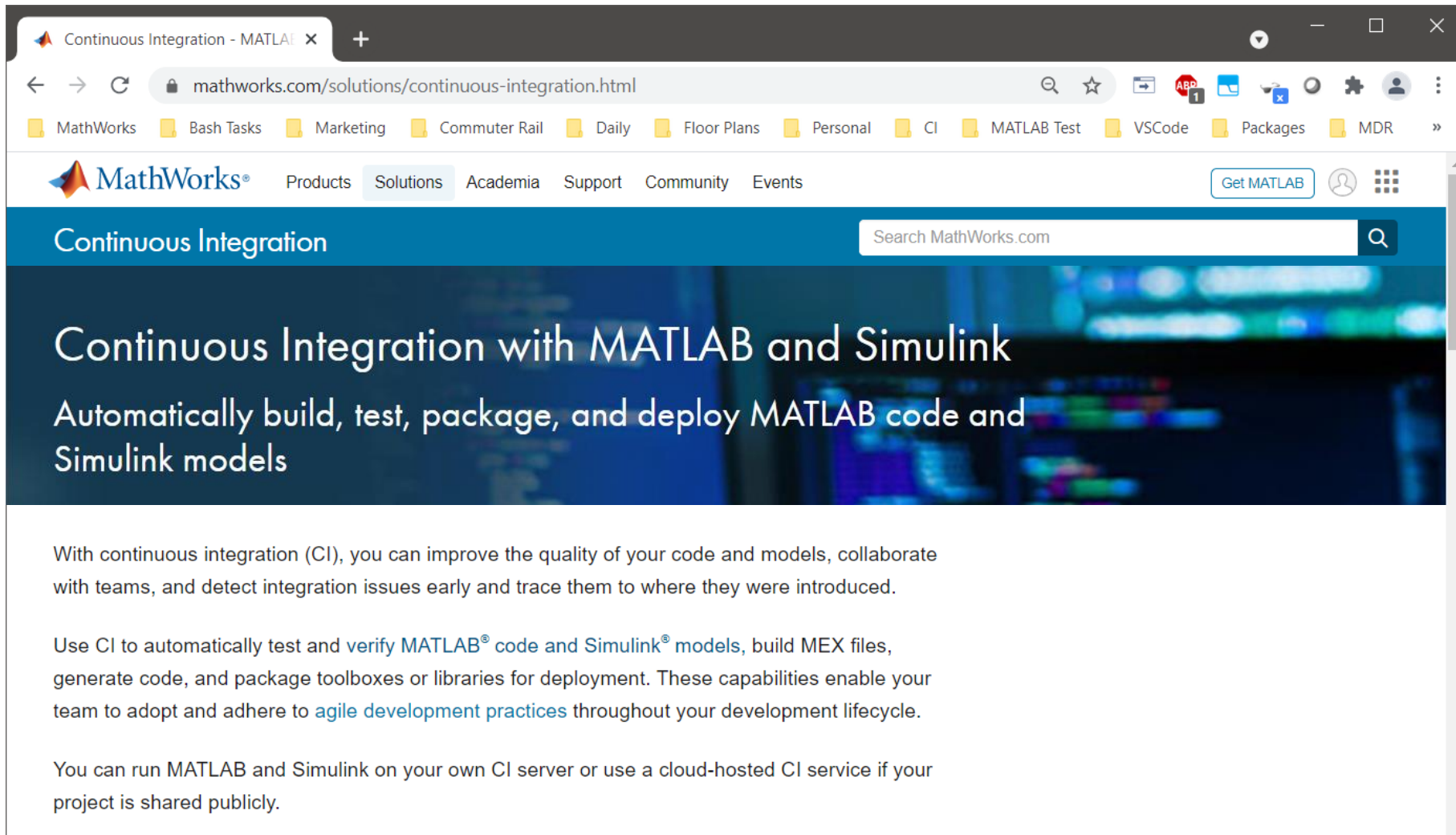
Make MATLAB available

Run all tests

...

Learn more about CI with MATLAB and Simulink

<https://www.mathworks.com/solutions/continuous-integration.html>

A screenshot of a web browser displaying the MathWorks Continuous Integration page. The browser's address bar shows the URL 'mathworks.com/solutions/continuous-integration.html'. The page features a blue header with the MathWorks logo and navigation links. The main content area has a dark blue background with the title 'Continuous Integration with MATLAB and Simulink' and a subtitle 'Automatically build, test, package, and deploy MATLAB code and Simulink models'. Below this, there is a paragraph explaining the benefits of CI, followed by a list of capabilities and a note about running CI on a local server or a cloud-hosted service.

Continuous Integration - MATLAB x

mathworks.com/solutions/continuous-integration.html

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Continuous Integration with MATLAB and Simulink

Automatically build, test, package, and deploy MATLAB code and Simulink models

With continuous integration (CI), you can improve the quality of your code and models, collaborate with teams, and detect integration issues early and trace them to where they were introduced.

Use CI to automatically test and verify MATLAB® code and Simulink® models, build MEX files, generate code, and package toolboxes or libraries for deployment. These capabilities enable your team to adopt and adhere to agile development practices throughout your development lifecycle.

You can run MATLAB and Simulink on your own CI server or use a cloud-hosted CI service if your project is shared publicly.

Summary

- MathWorks offers free CI support for public MATLAB GitHub repositories
- Getting started with CI is easy with our plugins and example code!

Get started with CI and MATLAB today!

