

A horizontal banner with a red top bar and a grey bottom section. The grey section contains a blurred image of a computer screen with the text "to do" and a mouse cursor pointing at it.

# OpenEdge CI/CD – Getting Started

### **Development environments and challenges**

### **What is Continuous Integration & Continuous Delivery**

### **Continuous Integration flow**

### **Tools involved**

### **Demo**

## Development environments and challenges



# Distributed teams

- Multiple teams
- Multiple technologies
- Multiple countries



# Agile Development

- Daily/Weekly releases
- Cloud Platforms
- Short end cycles

## What is Continuous Integration?

„**Continuous Integration** is a software development practice where members of a team **integrate** their work **frequently**; usually each person integrates at least daily - leading to multiple integrations per day. Each integration is verified by an automated build (including test) to detect integration errors as quickly as possible.”

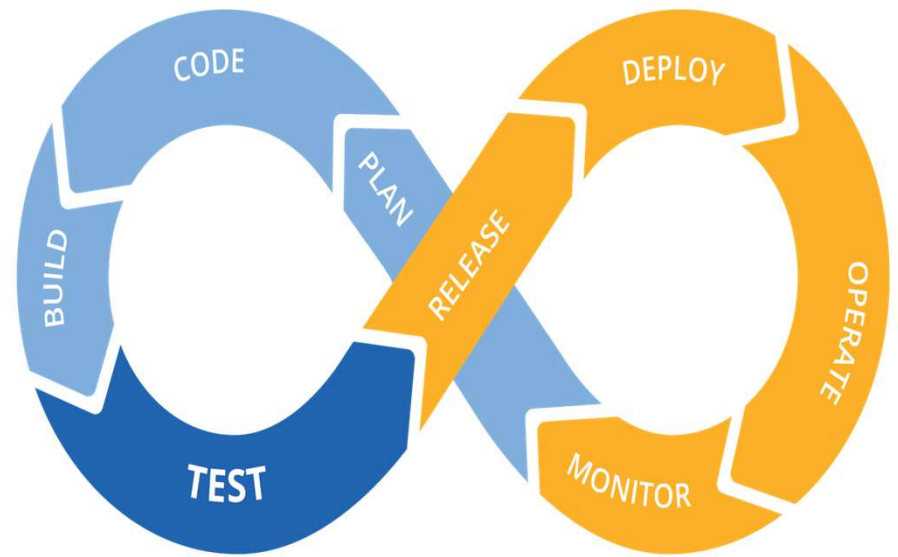
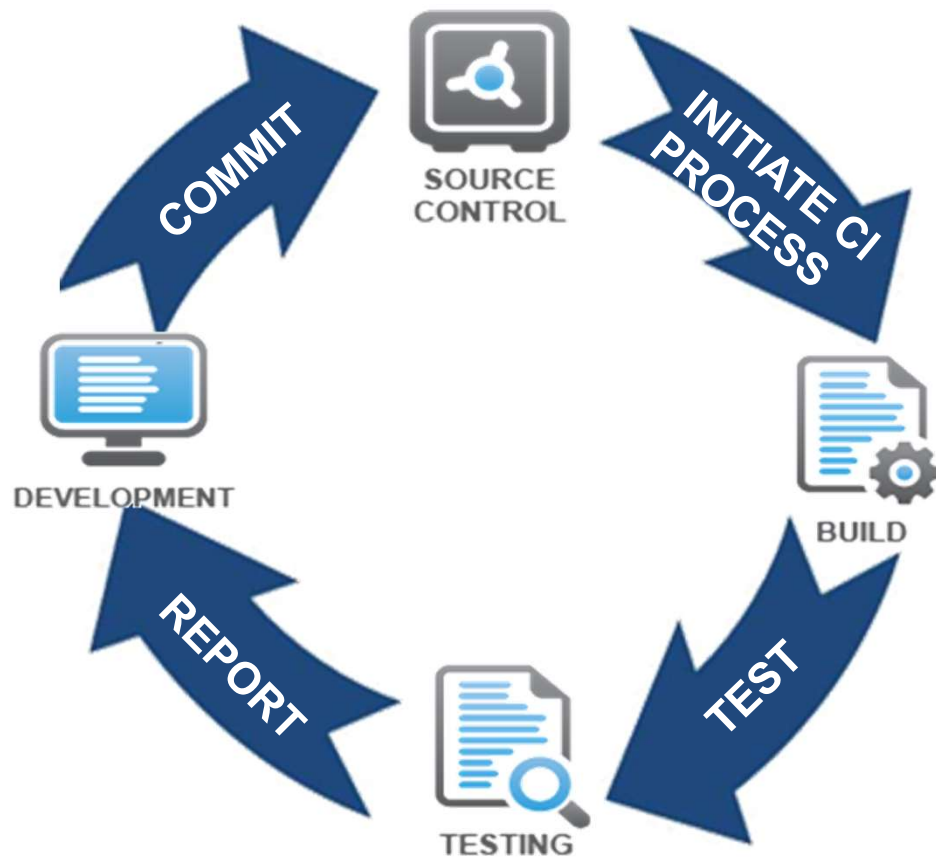
- **Martin Fowler**

## What is Continuous Delivery?

Continuous delivery (CD or CDE) is a software engineering approach in which teams produce software in short cycles, ensuring that the software can be reliably released at any time and, when releasing the software, doing so manually.

- **WIKI**

## Continuous integration flow



## Tools Involved

Development

Check-in

Build

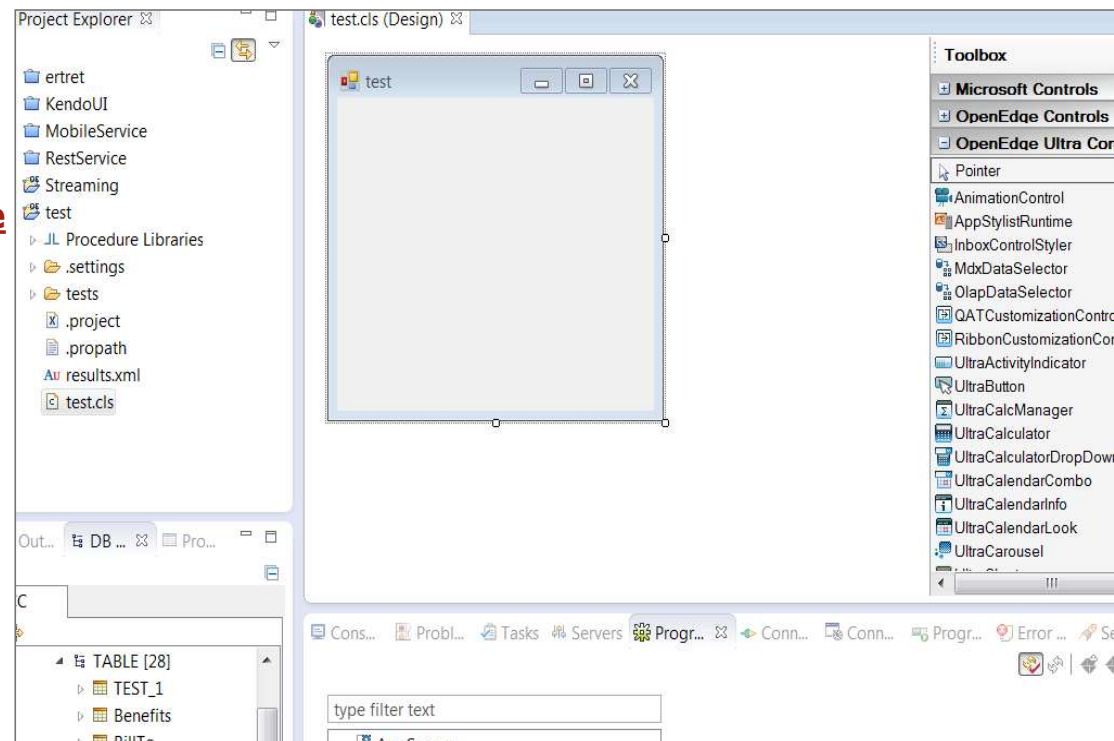
Generate  
artifacts

Test

Publish  
results

### Developing OpenEdge Applications

- Procedure Editor
- Progress Developer Studio for OpenEdge



## Tools Involved

Development

Check-in

Build

Generate  
artifacts

Test

Publish  
results

Tool	Availability	Eclipse Plug-in	Vendor
<b>GIT</b>	Open Source	Yes	Github, Gitlab, Bitbucket
SVN	Open Source	Yes	Apache
CVS	Open Source	Yes	GNU
Mercurial	Open Source	Yes	GNU
Team Foundation Server	Commercial	Yes (Teamprise)	Microsoft
Round Table	Commercial	Yes	TugBoat
AccuRev	Commercial	Yes	AccuRev
PerForce	Commercial	Yes	PerForce
Clearcase	Commercial	Yes	IBM



## Tools Involved

Development

Check-in

**Build**

Generate  
artifacts

Test

Publish  
results

### Build Environment

- **Virtual machine**
- **Containers**
- **Build Server**



## Tools Involved

Development

Check-in

**Build**

Generate  
artifacts

**Test**

Publish  
results

### Progress Compilation Tool (PCT)

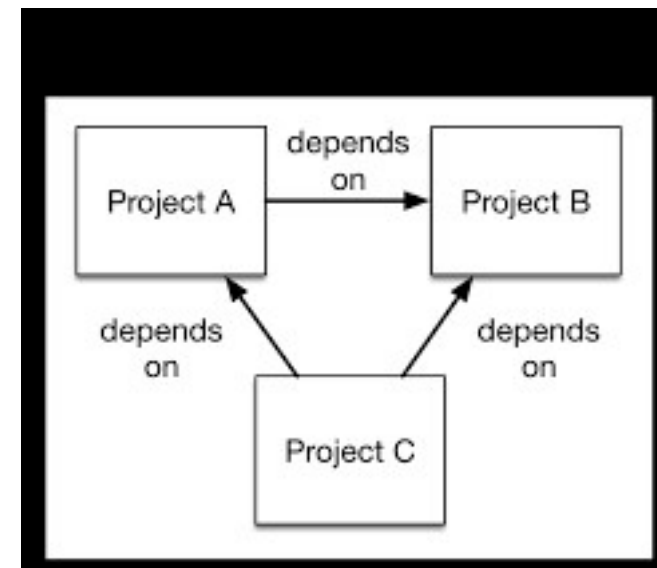
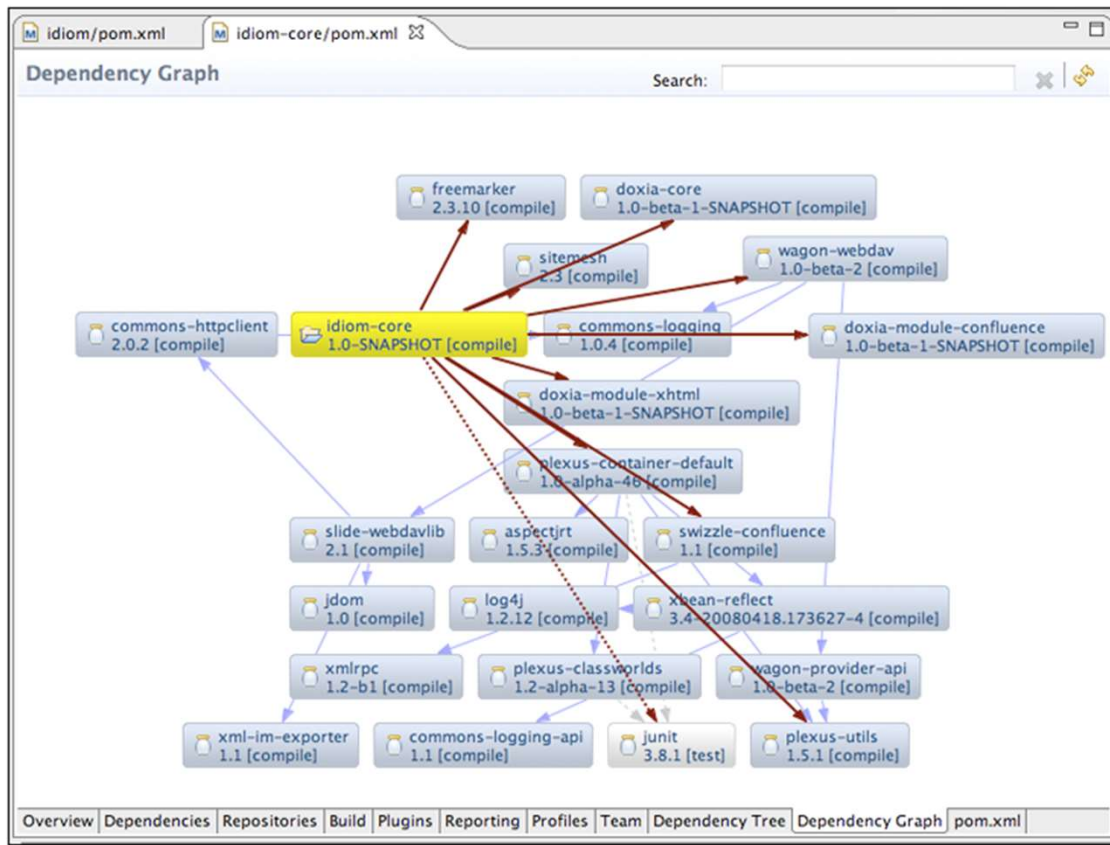
- **ANT Tasks**

### GRADLE (OE 12.2)

### MAVEN

```
<property environment="env" />
<taskdef resource="PCT.properties"/>
<DlcHome value="${DLC}"/>
<target name="build" description="Builds source
files">
  <mkdir dir="build"/>
  <PCTCompile destDir="build">
    <fileset dir="src">
      <include name="**/*.cls" />
      <include name="*.p" />
    </fileset>
  </PCTCompile>
</target>
```

# Dependency management



## Tools Involved

Development

Check-in

Build

Generate  
artifacts

Test

Publish  
results

**Generate Procedure Libraries**

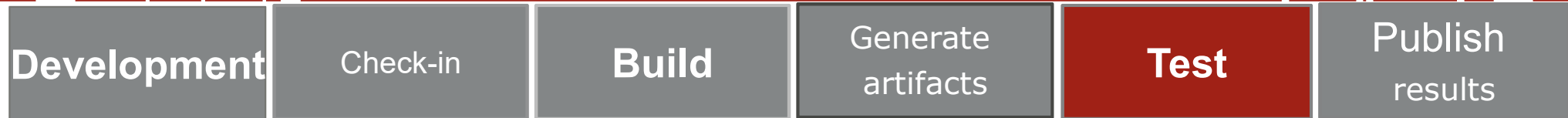
**Assemble WAR Files (ANT)**

**Generate Documentation for ABL Code**

**Dockerfiles, AWS Cloudformation Template**

**Code analysis (OpenEdge SonarCube plugin)**

## Tools Involved



Tool	Supported test cases (Files Types)	Availability
ProUnit	Procedures	Open Source
OEUnit	Classes	Open Source
<b>ABLUnit</b>	Procedures and Classes	PDS OE



## Tools Involved

Development

Check-in

Build

Generate  
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## Artifacts to Artifact Repository

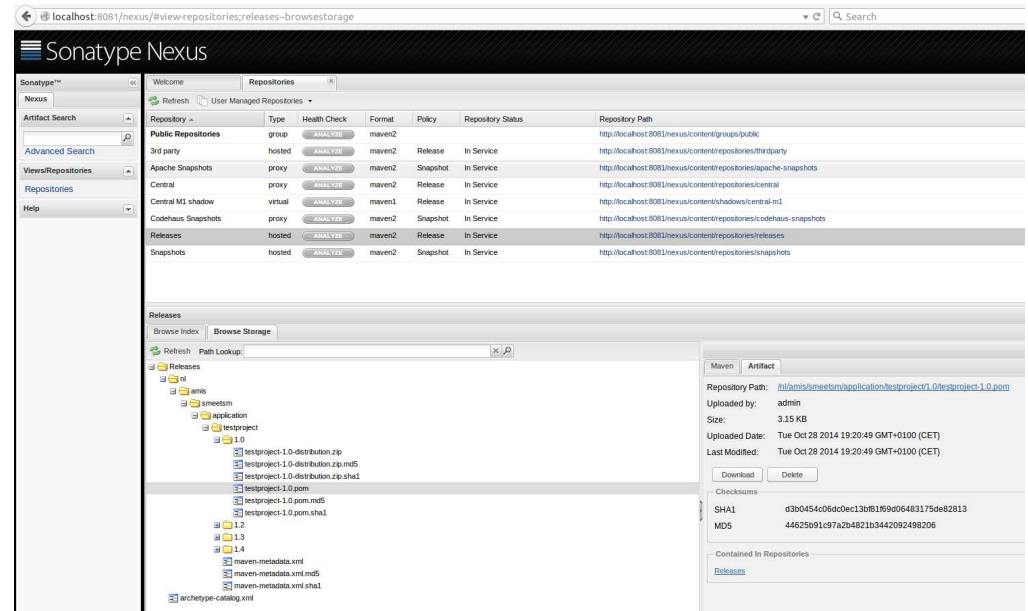
### Tool

Artifactory

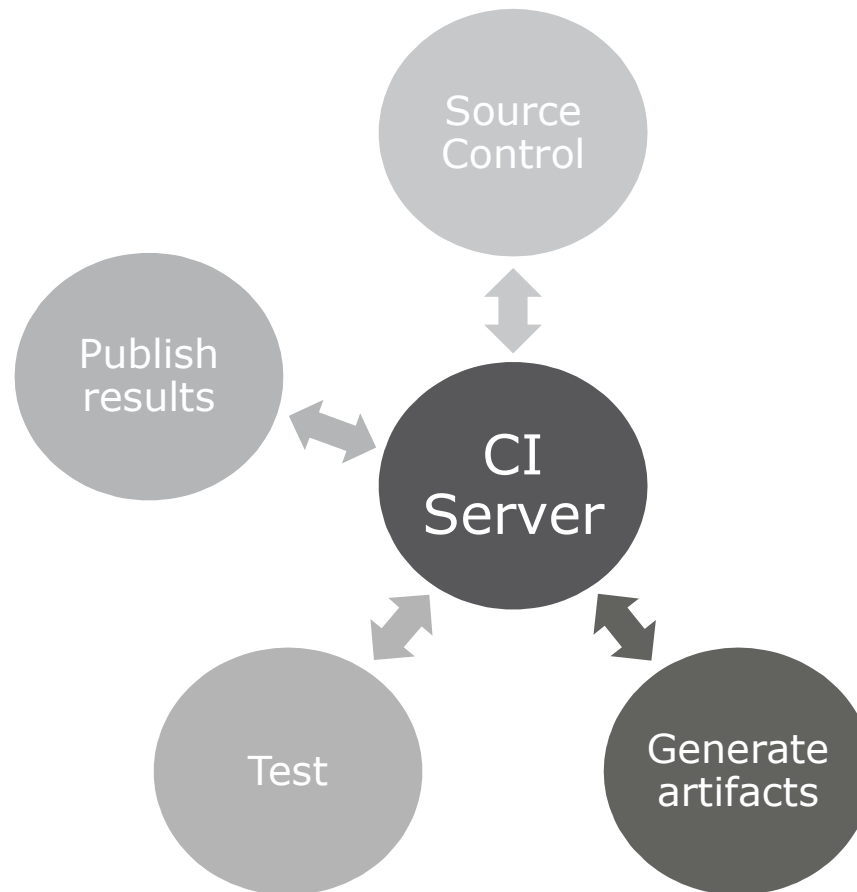
Sonatype Nexus

File system?

Maven Artifact repository



## Components Involved - Tools : CI Server





## Tools Involved : CI Server

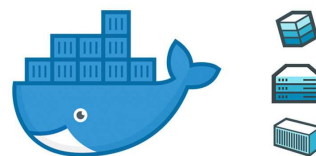
Tool	Vendor	Availability	Cloud / OnPremise
Jenkins	-	Open Source	No/Yes
Team City	JetBrains	Free / Commercial	No/Yes
BitBucket pipelines	Atlassian Bitbucket	Free / Commercial	Yes/No
Circle CI	CircleCI	Free / Commercial	Yes/Yes
Azure	Microsoft	Commercial	Yes/No

## Automated deployment

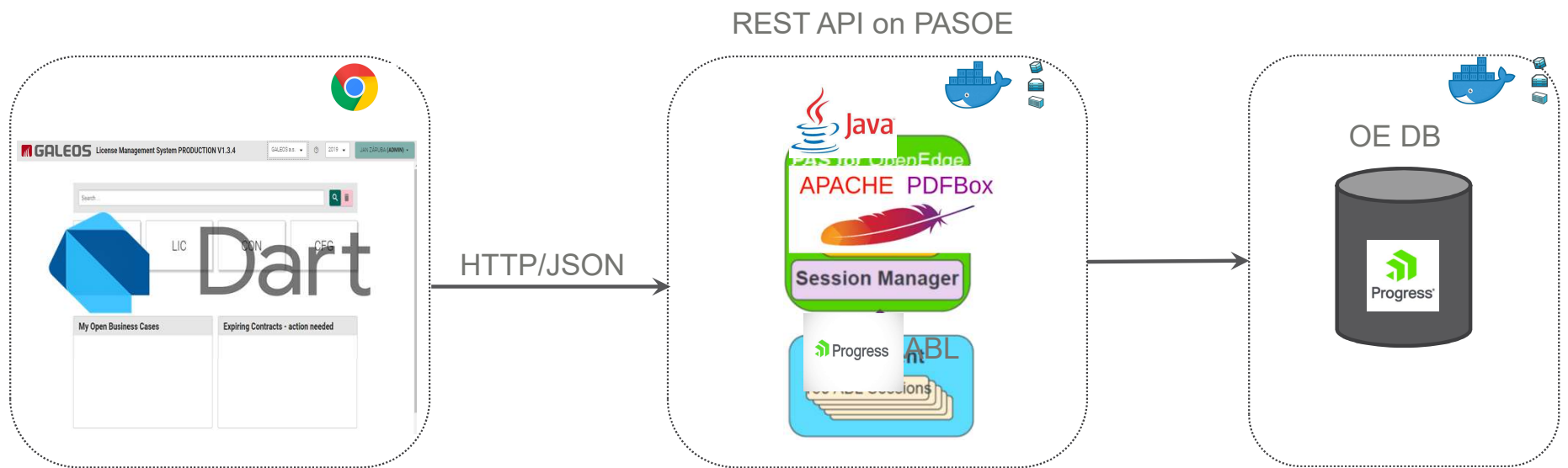
- **Virtual machines (vmware for example)**
- **Use clean VM with prerequisites being installed**
- **Use snapshots**
- **Docker for server side deployment**
- **Run deploy script against static Production Server**



## Build Environment

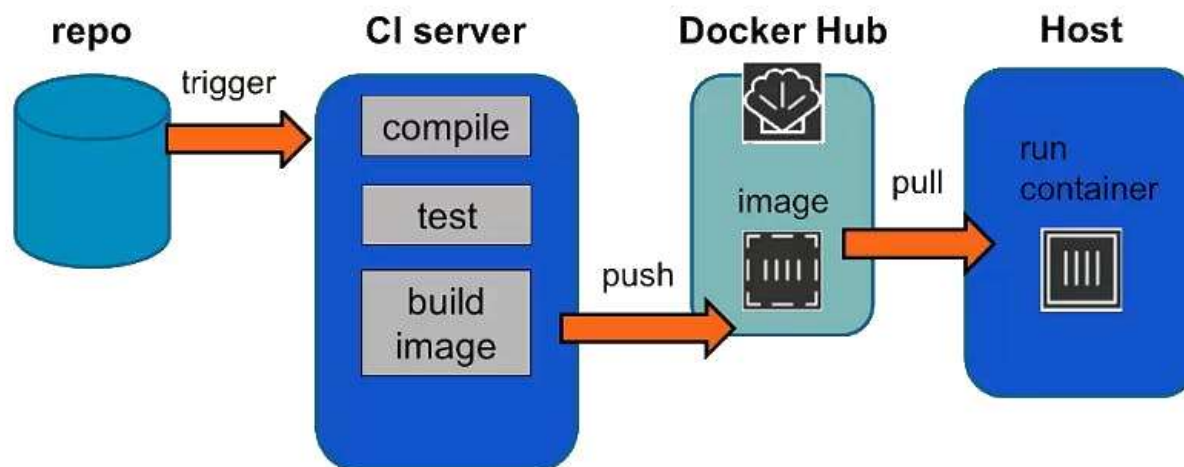


# Demo



## Jak je aplikace nasazována

CI server builds Docker image and pushes into Docker Hub



A decorative horizontal bar spanning the width of the slide. It consists of a solid red top layer and a grey bottom layer. The grey layer contains a faint, pixelated image of a hand cursor pointing at a computer screen with the text "to do" visible.

**Děkuji Vám za pozornost**