



Why need CI&CD

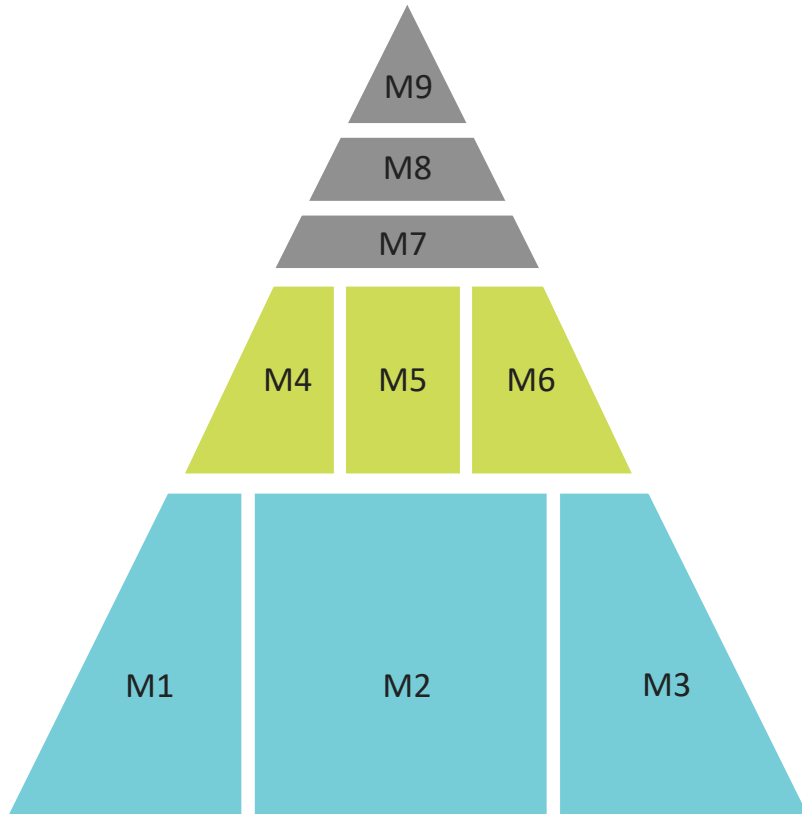
CI with Jenkins. DevTestOps training.



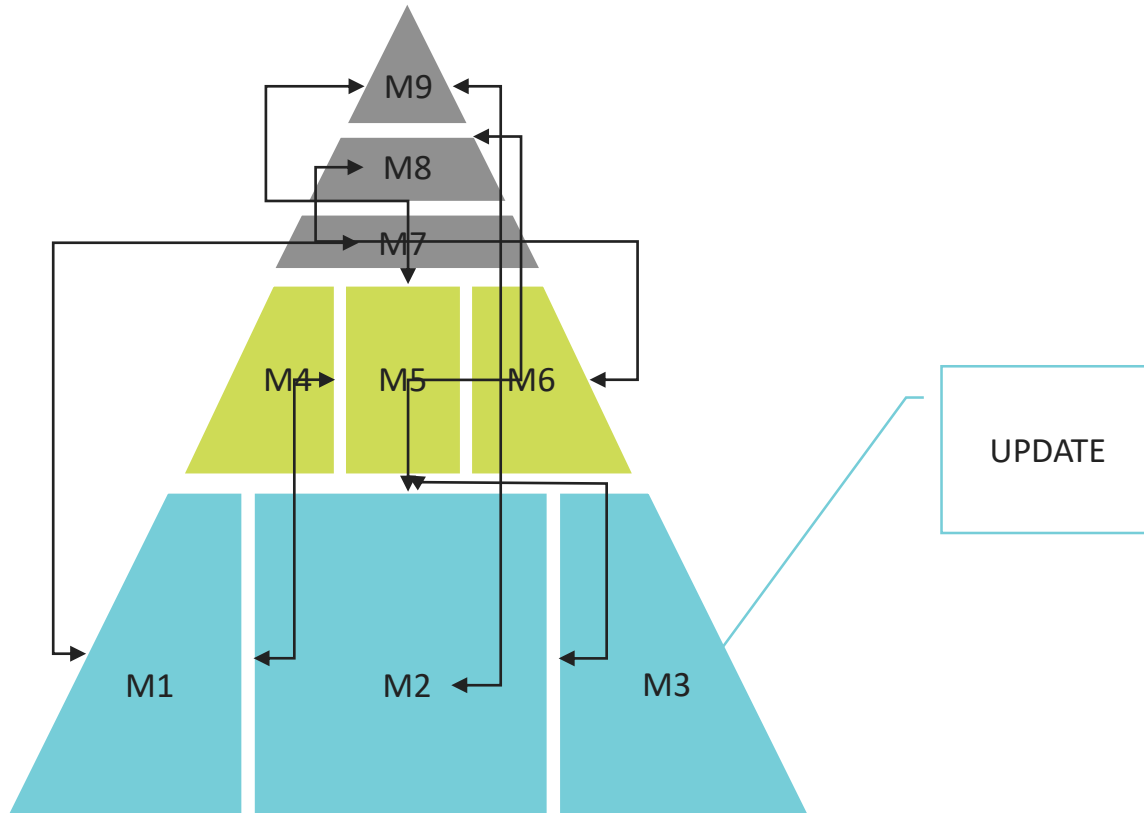
TRAINING
CENTER



Component Integration idea



Component Integration idea





CI & CD concept

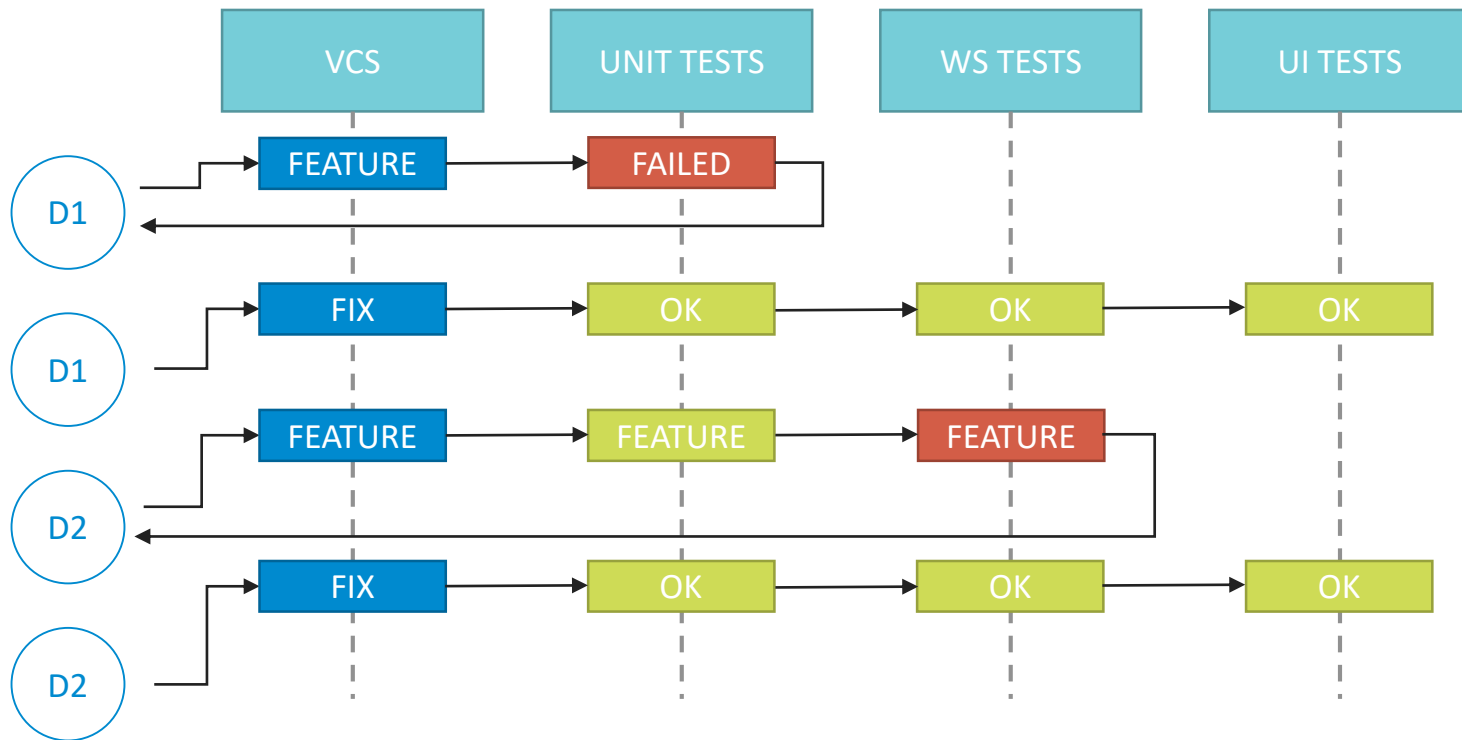
CI with Jenkins. DevTestOps training.



TRAINING
CENTER



CI concept



MUST HAVE FOR CI

1 **VERSION CONTROL**

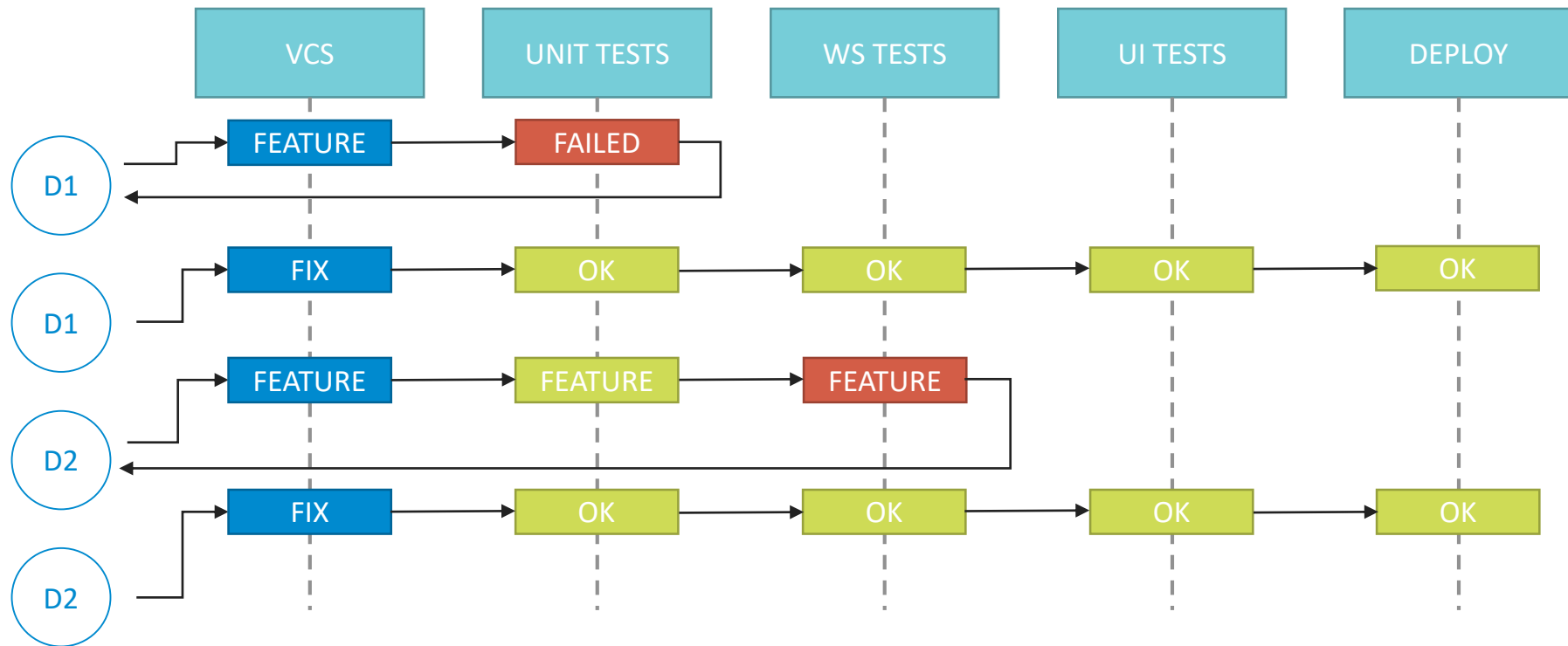
2 **BUILD AUTOMATION**

3 **TEST AUTOMATION**

4 **OFTEN COMMITS**

5 **BUILD ON CHANGE**

Continuous Delivery



BENEFITS

1 DEFECT EARLY DISCOVERY

2 AUTOMATIC APPLICATION DEPLOY

3 TRANSPARENT HEALTH MONITOR

4 TEST PIPELINE CUSTOMIZATION

5 BUILT-IN PARALLEL EXECUTION



Why Jenkins

CI with Jenkins. DevTestOps training.



TRAINING
CENTER



Why Jenkins



- Free & open source
- Cross-platform
- 1000+ plugins

JetBrains research, 2018, <https://www.jetbrains.com/research/devecosystem-2018/team-tools/>

<epam>

Download, install, configure

CI with Jenkins. DevTestOps training.



TRAINING
CENTER

— <epam> —

Download, install, configure

DOWNLOAD & INSTALL

- Ensure Java 8 installed
- Download binary from here: <https://jenkins.io/download/>
- Follow the guide & install it

CONFIGURE

- Port number
- Run type (service or .war)
- Install plugins



Create first Jenkins job

CI with Jenkins. DevTestOps training.



TRAINING
CENTER





Build triggers

CI with Jenkins. DevTestOps training.



TRAINING
CENTER



Build triggers

Most common:

- On-demand run
- Other job finish
- Cron schedule
- SCM check

<epam>

Cron syntax

CI with Jenkins. DevTestOps training.



TRAINING
CENTER

— <epam> —

Cron syntax

* * * * * command to execute

T T T T T

| | | | |

| | | | |

| | | | _____ day of week (0 - 7) 6=Saturday 0,7=Sunday

| | | _____ month (1 - 12)

| | _____ day of month (1 - 31)

| _____ hour (0 - 23)

_____ min (0 - 59)

***/5** * * * * - every 5 minutes

0 */2 * * mon-fri - every two hours at the top of the hour Monday through Friday

0 0 1,10,15 * * – midnight on 1st ,10th & 15th of month

@midnight – some time between 12:00 AM and 2:59 AM



Git integration

CI with Jenkins. DevTestOps training.



TRAINING
CENTER



Git integration

1. Install Git plugin
2. Let Jenkins know where Git is installed (%GIT_HOME%\cmd\git.exe)



Maven execution

CI with Jenkins. DevTestOps training.



TRAINING
CENTER



<epam>

Artifacts

CI with Jenkins. DevTestOps training.



TRAINING
CENTER

— <epam> —

<epam>

Build pipeline view

CI with Jenkins. DevTestOps training.



TRAINING
CENTER

— <epam> —

<epam>

Parameterized jobs

CI with Jenkins. DevTestOps training.



TRAINING
CENTER

— <epam> —



Jenkins security

CI with Jenkins. DevTestOps training.



TRAINING
CENTER



If you locked yourself out

1. Go to **\$JENKINS_HOME** in the file system and find **config.xml** file.
2. Look for the `<useSecurity>true</useSecurity>` element in this file. Replace true with **false**
3. Remove the elements `authorizationStrategy` and `securityRealm`
4. Restart Jenkins

<epam>

Nodes

CI with Jenkins. DevTestOps training.



TRAINING
CENTER

— <epam> —



Nodes on Linux

CI with Jenkins. DevTestOps training.



TRAINING
CENTER



Linux node

1. Create a node on master (from Jenkins UI)
2. Connect linux slave and install OpenJDK
3. Wget **agent.jar** from master node
4. Run slave from command line



Jenkins backup

CI with Jenkins. DevTestOps training.



TRAINING
CENTER





Uninstall Jenkins

CI with Jenkins. DevTestOps training.



TRAINING
CENTER



<epam>

Extras

CI with Jenkins. DevTestOps training.



TRAINING
CENTER

— <epam> —

What to read

- “Jenkins. The Definitive Guide” by John Smart
- “Jenkins 2: Up and Running” by Brent Laster

