Always Be Delivering

Jimmy Balmert

Jimmy Balmert

Director of Craftsmanship at
Manifest Solutions in
Columbus, OH

Software craftsman with
over 20 years experience in
IT across the banking,
insurance, and health care
industries.

Code PaLOUsa is made possible in part by these awesome sponsors!

elastic

COMPOSABLE SYSTEMS

MODIS

ups

vaco
Free Yourself

FocustApps

<code>
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Bastian
SOLUTIONS

Google

SOFTWARE GUILD

APPRISS
Knowledge for good™

Progress

HMB

INTERAPT

PIZZA
PAPA JOHN'S
BETTER INGREDIENTS.
BETTER PIZZA.

CBS Interactive

KiZAN

LogicNP Software

homecare
homebase
Empowering Exceptional Care

PROSOFT

TEKsystems

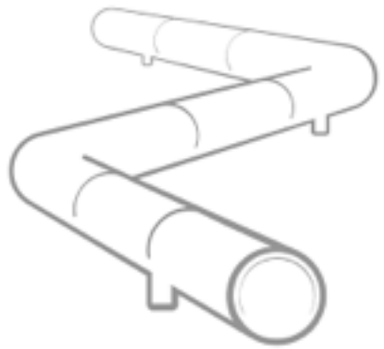
slingshot

TechSmith

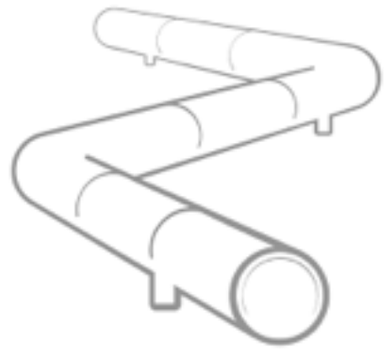
Agenda

- Introduction
  - Continuous Delivery/Deployment
  - What is a pipeline?
  - Benefits
  - Who Is using CDD?
- Building a pipeline
  - Sam automates the build
  - Sam adds versioning to the build
  - Sam pushes artifacts to Nexus
  - Sam adds tests to the build
  - Sam adds health checks to the app
  - Sam adds acceptance tests to the build
  - An aside about QA
  - Sam adds feature toggles to the app
  - Sam adds parallel tests to the build
  - Sam uses feature toggles for a/b testing
  - Sam automates deployments to production
  - Sam adds blue-green deployments
  - Bonus!

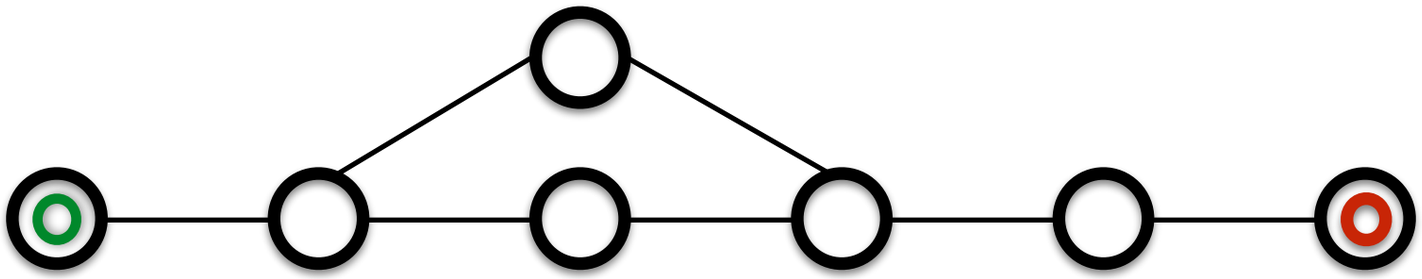
Continuous Delivery



Continuous Deployment

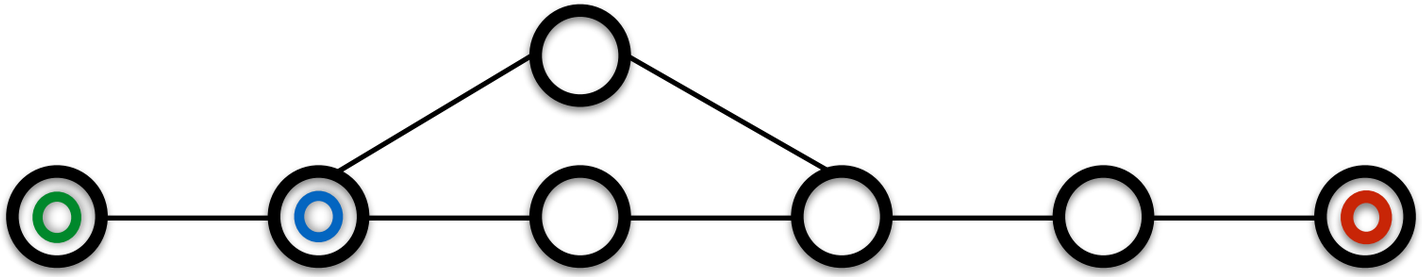


What is a pipeline?

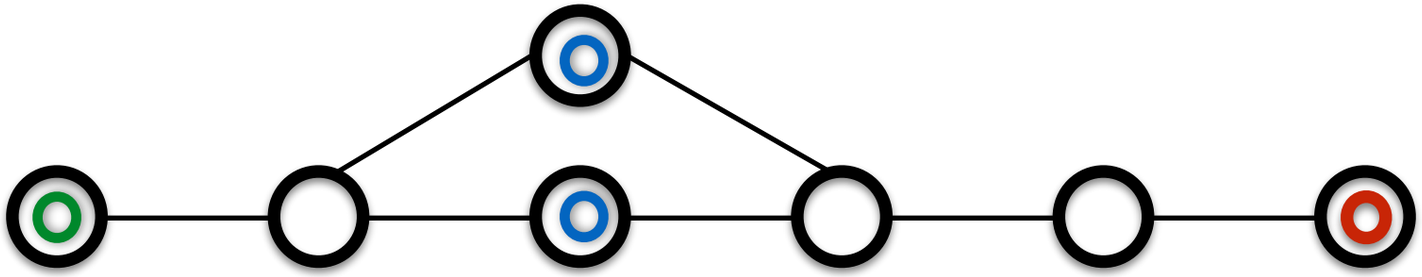


What is a pipeline?

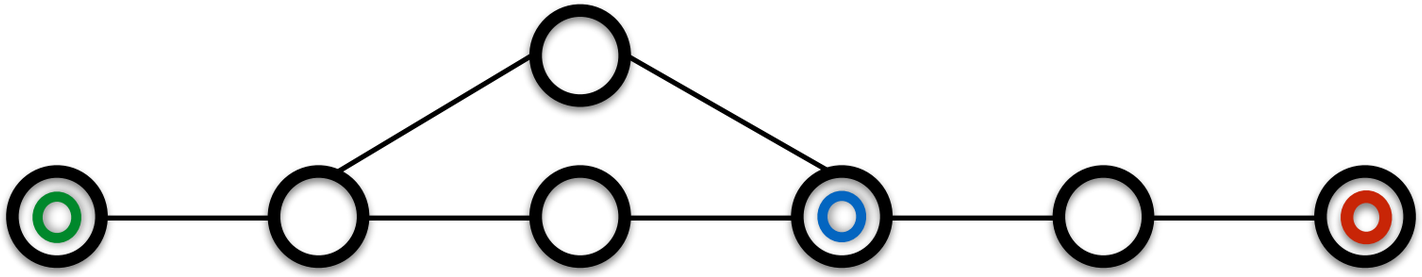
What is a pipeline?



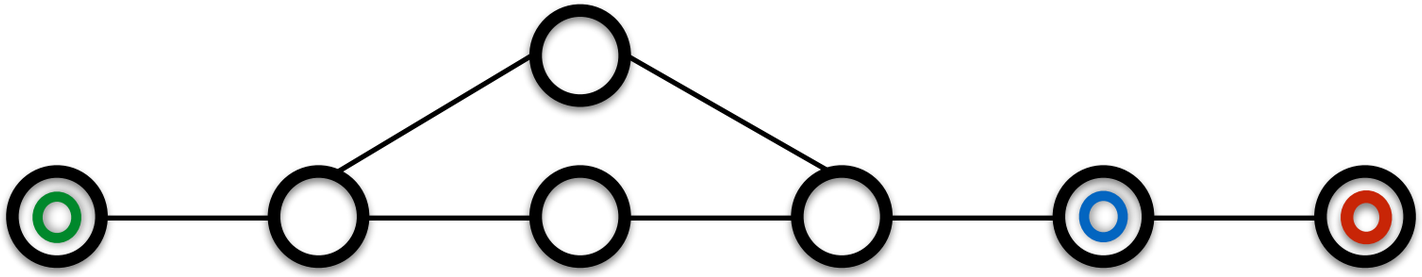
What is a pipeline?



What is a pipeline?



What is a pipeline?



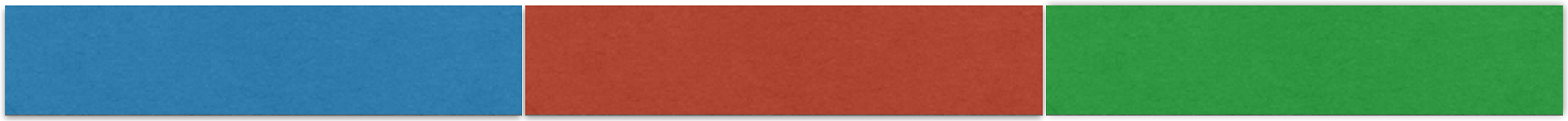
What is a pipeline?

Benefits

Standard development timeline

Development complete

Feature deployed to prod

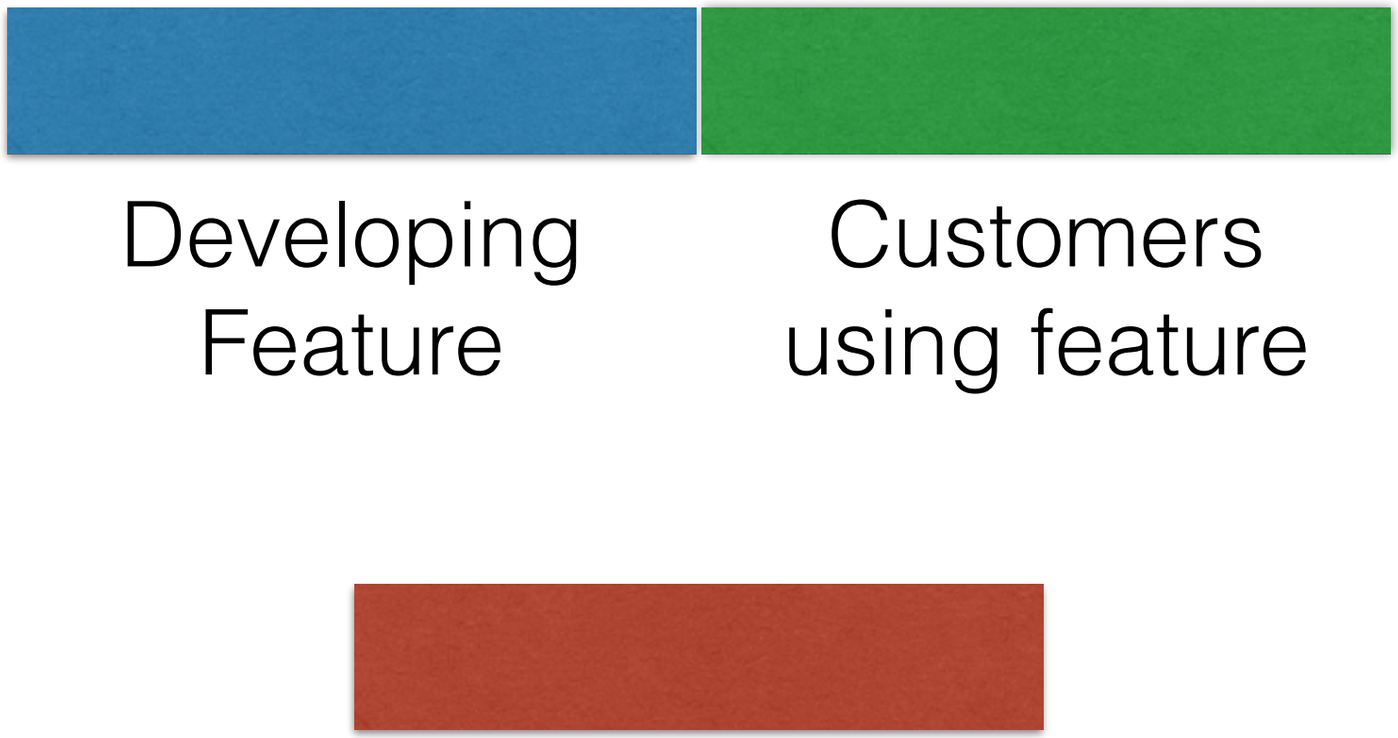


Developing Feature

Waiting

Customers using feature

Continuous Delivery timeline

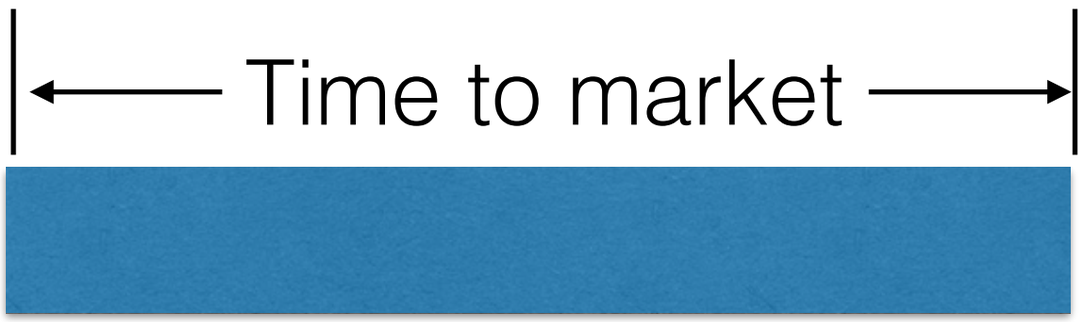


Developing Feature

Customers using feature

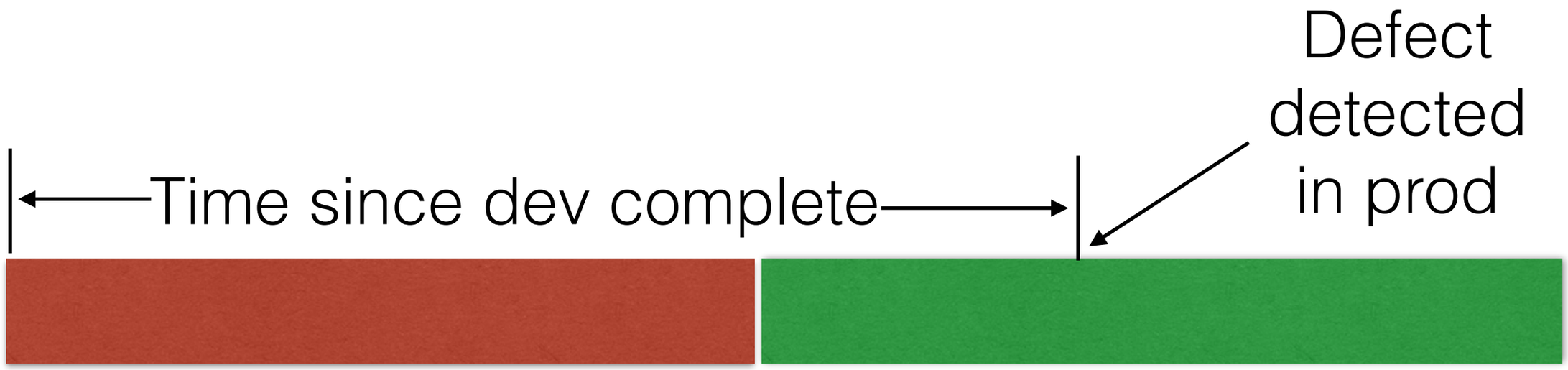
Standard timeline

Continous Delivery timeline

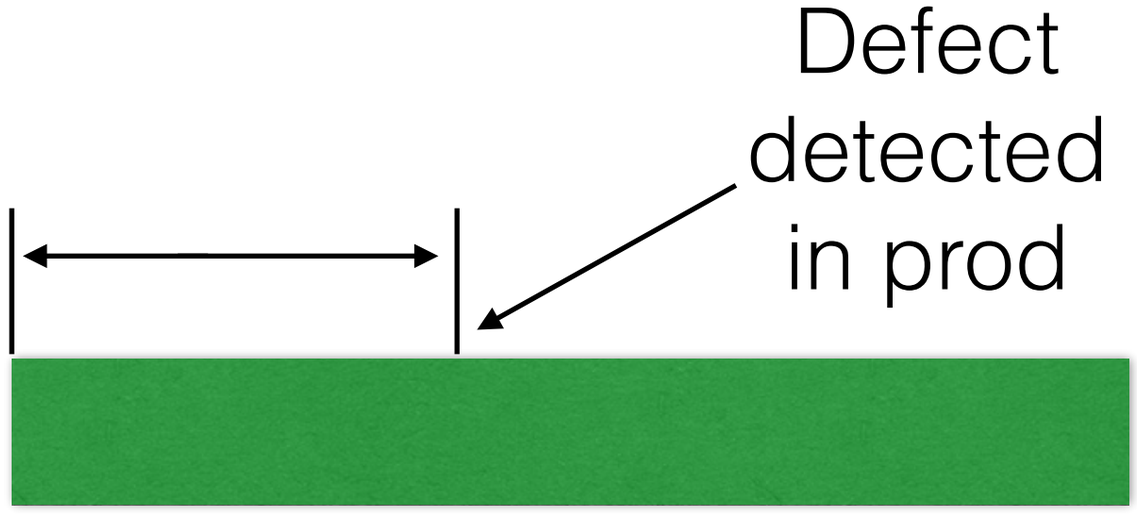


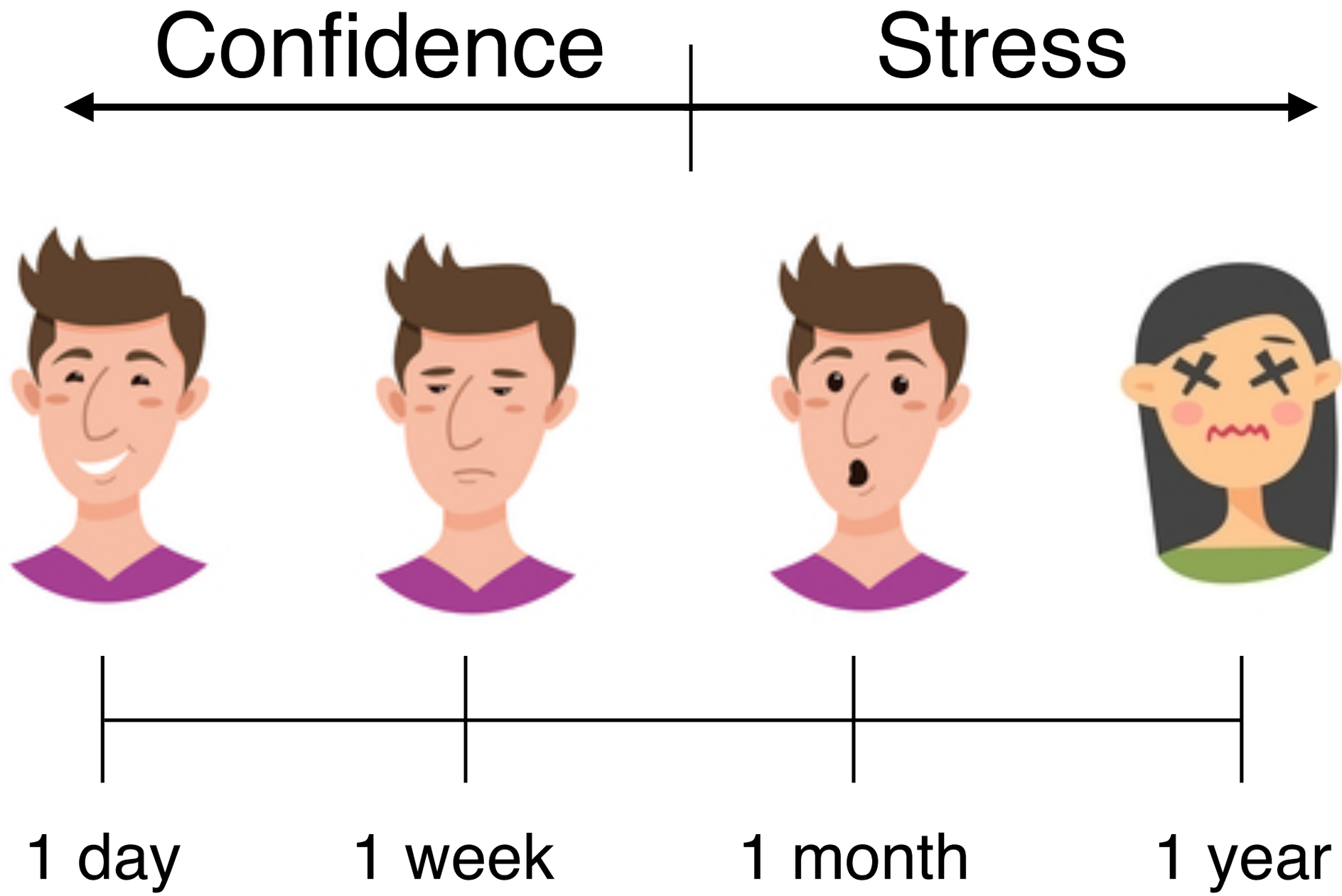
Get to market faster

Standard timeline



Continous Delivery timeline

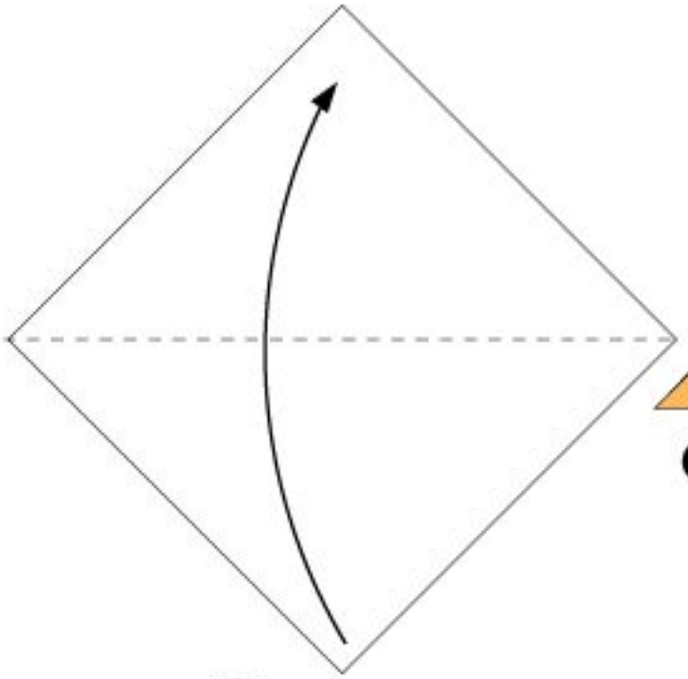




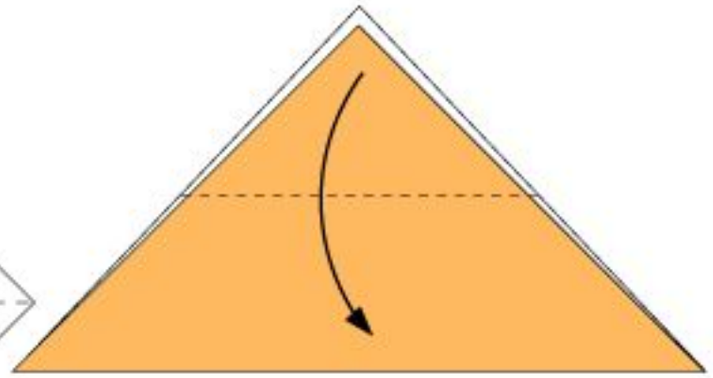
Time since you worked on a feature

Greater confidence

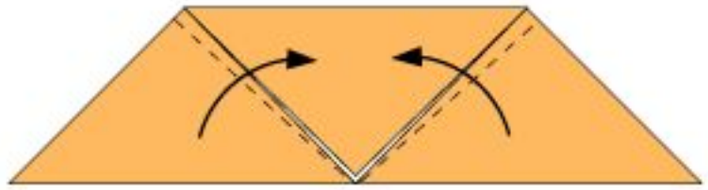
Lower stress



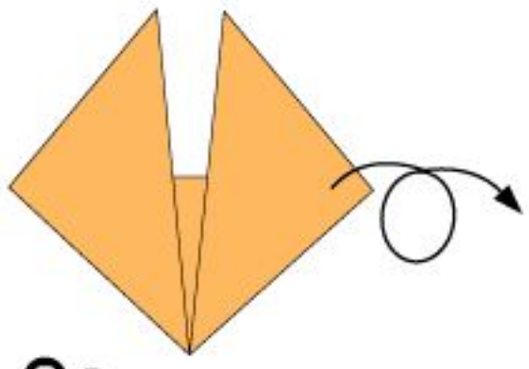
❶ Fold in half



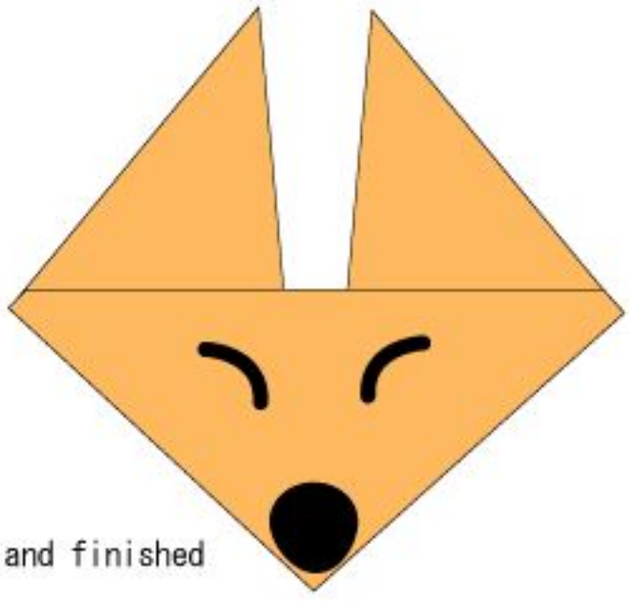
❷ Fold in the dotted line



❹ Fold in the dotted line



❸ Turn over



❺ Draw eyes, a nose and finished

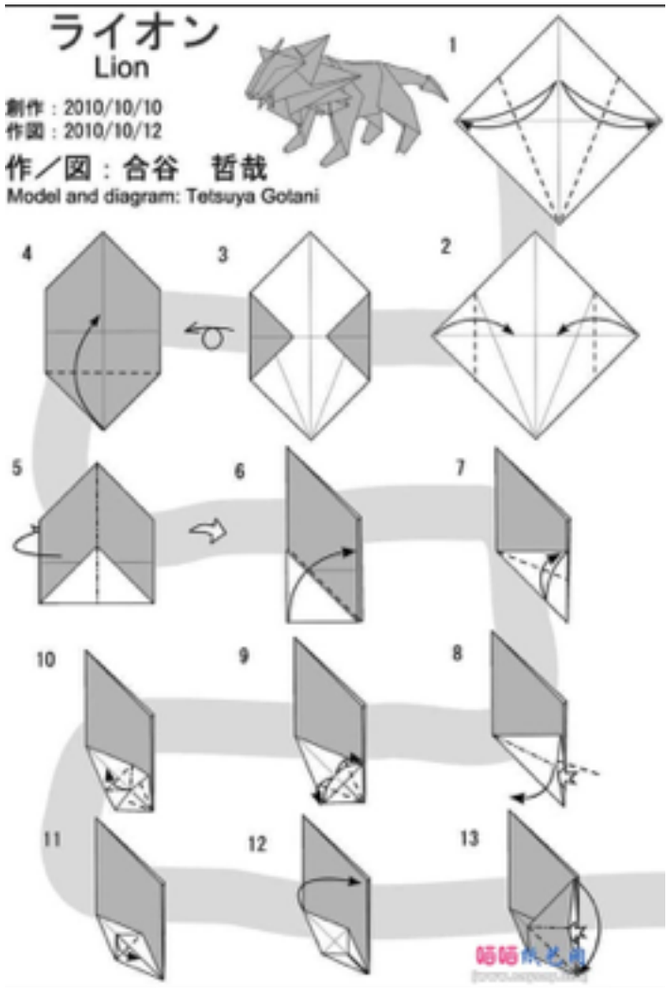
A Fox (face)

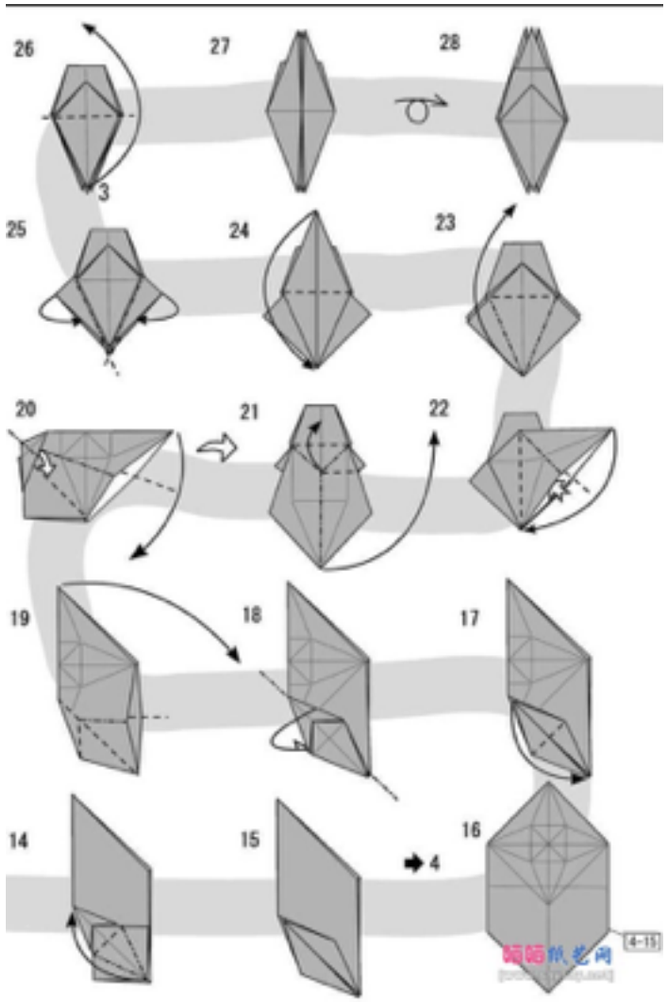
*Traditional
Diagram:Fumiaki Shingu

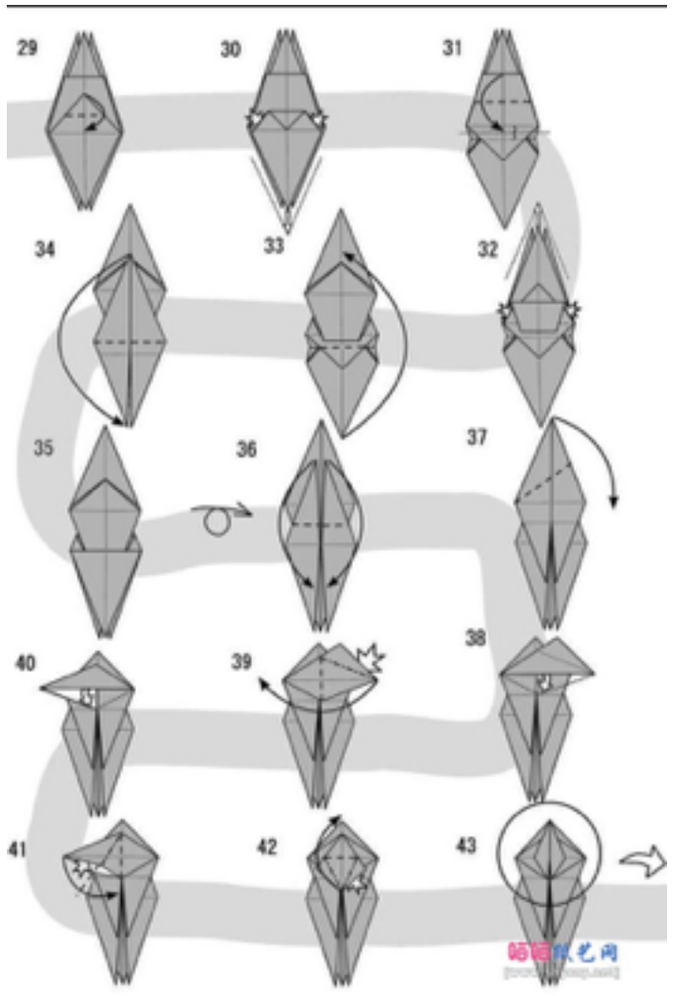
ライオン
Lion

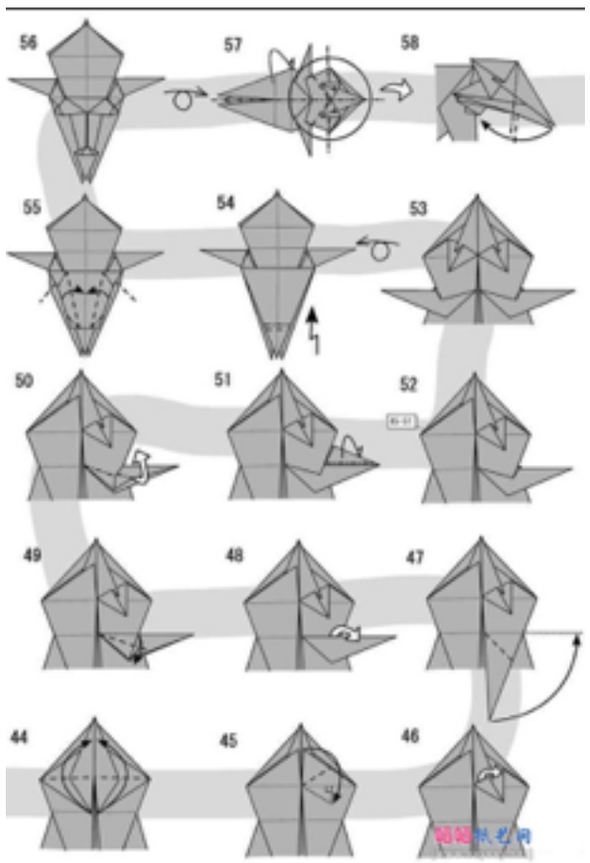
創作：2010/10/10
作図：2010/10/12

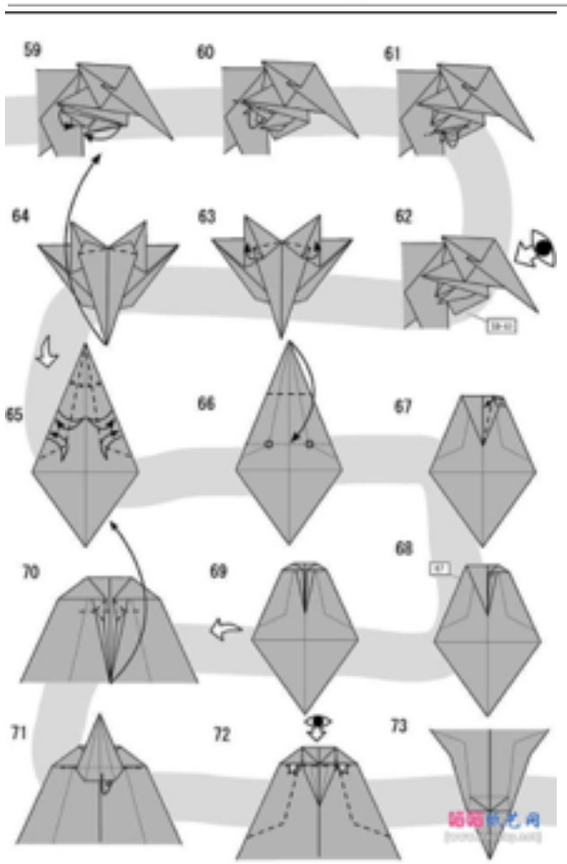
作／図：合谷　哲哉
Model and diagram: Tetsuya Gotani

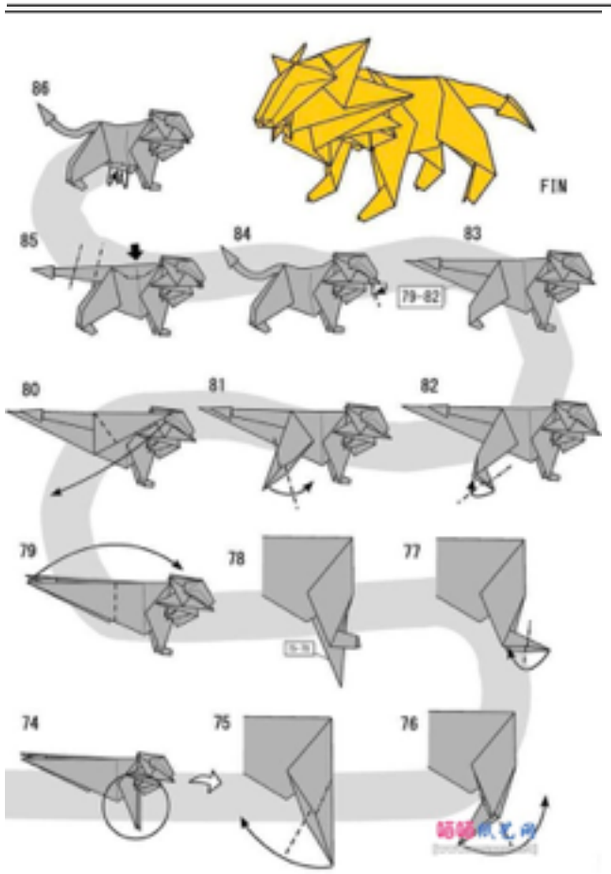






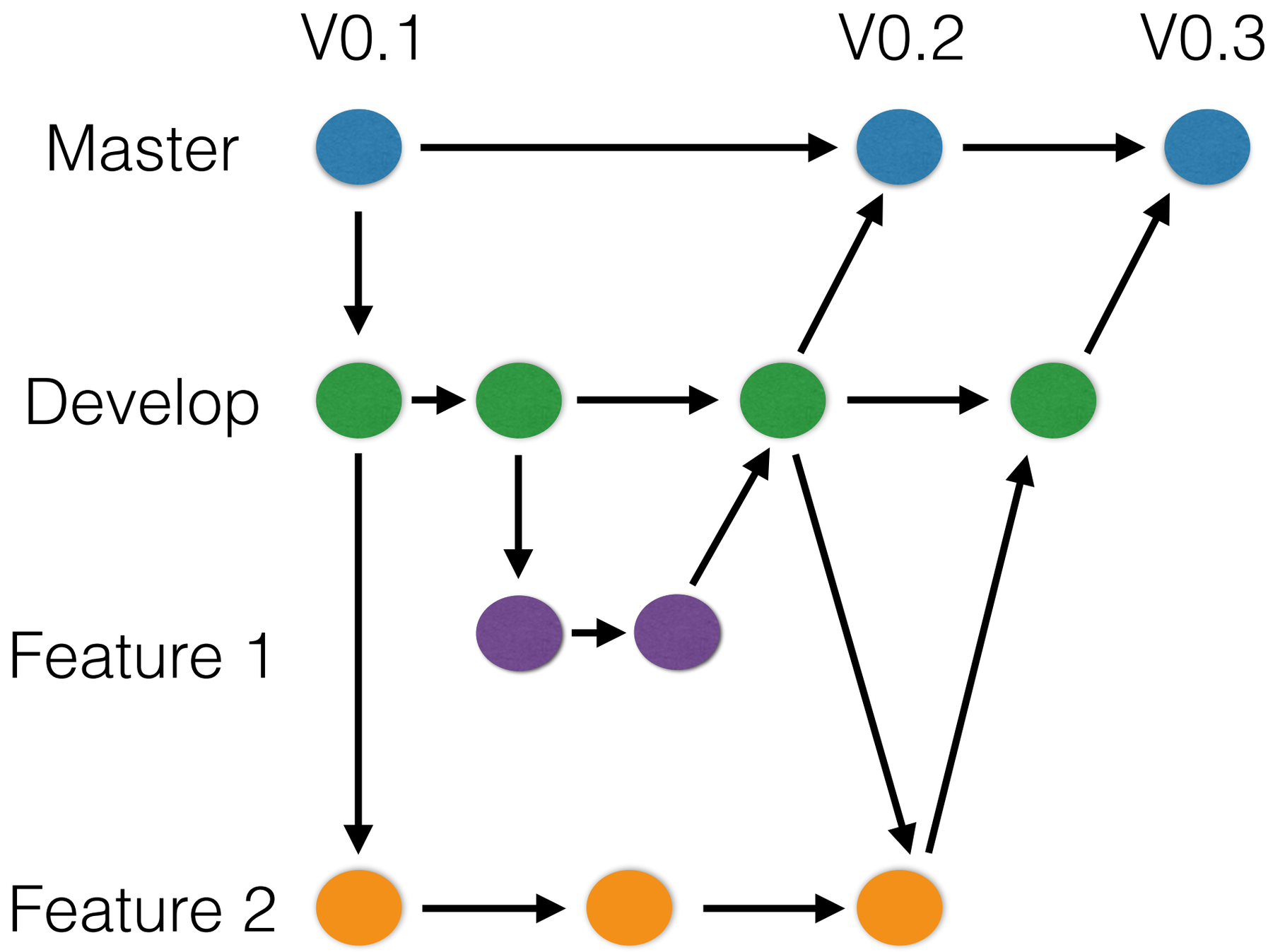






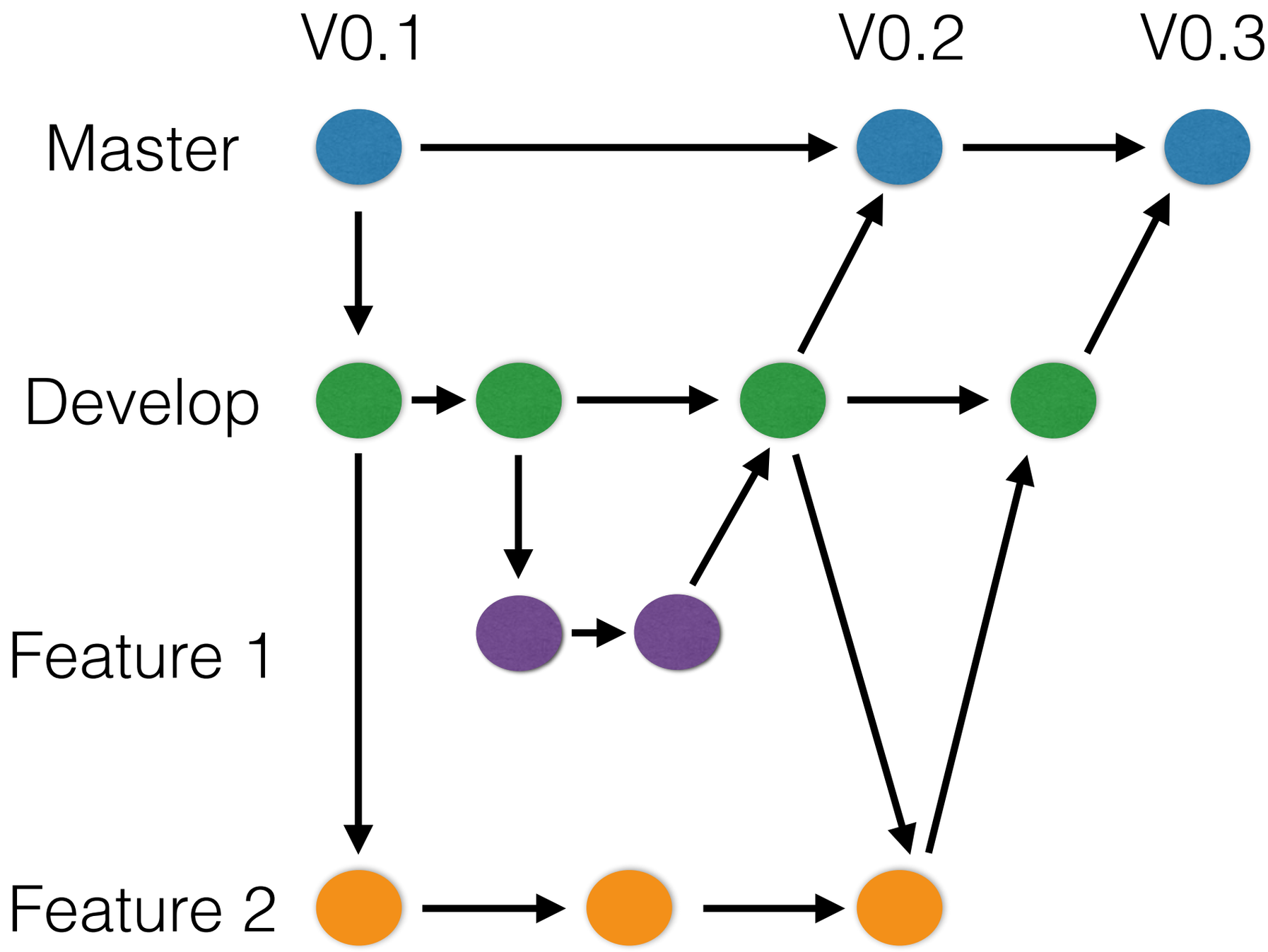
Smaller changes imply less risk

Master = Prod

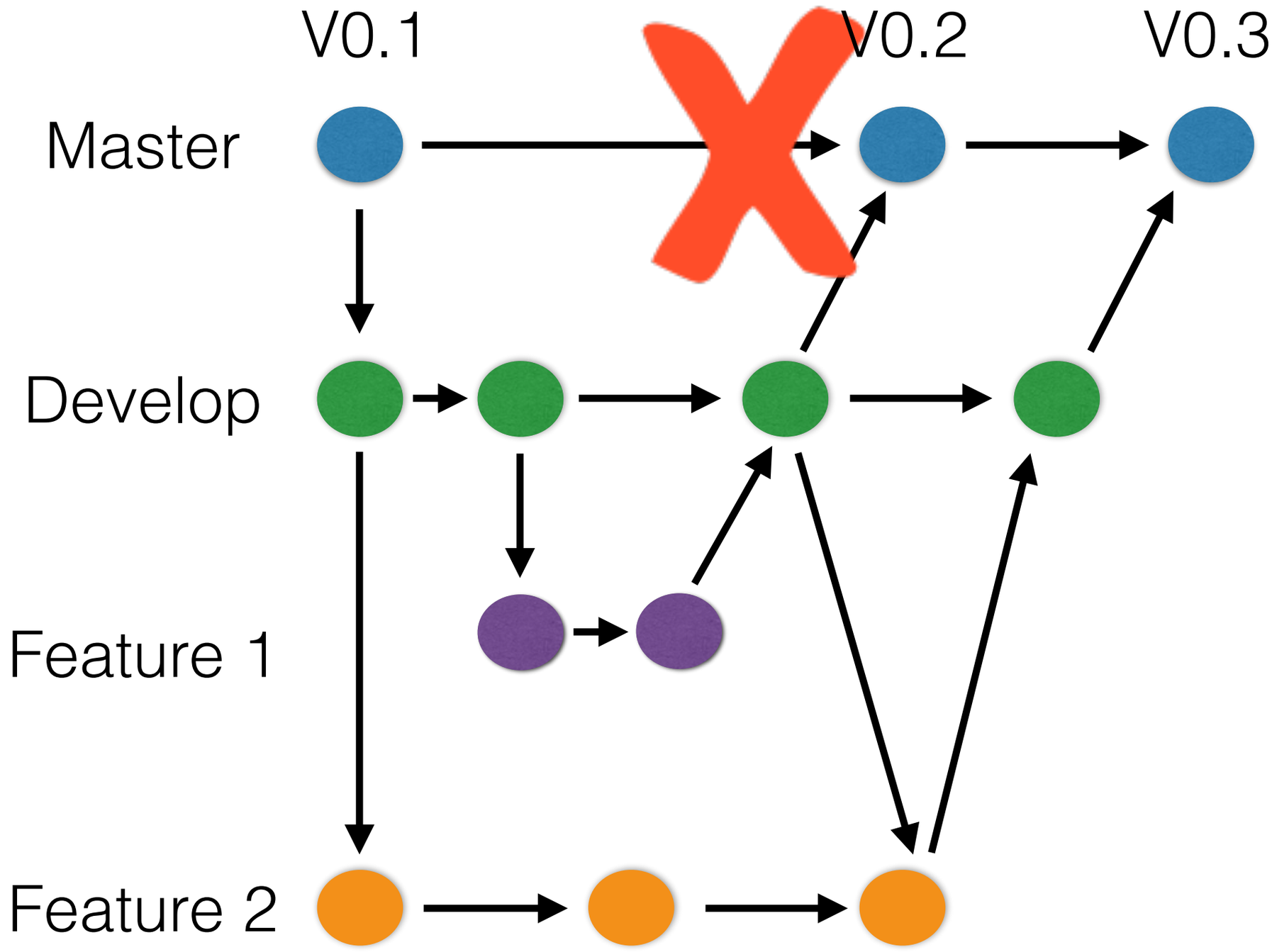


Master = Latest

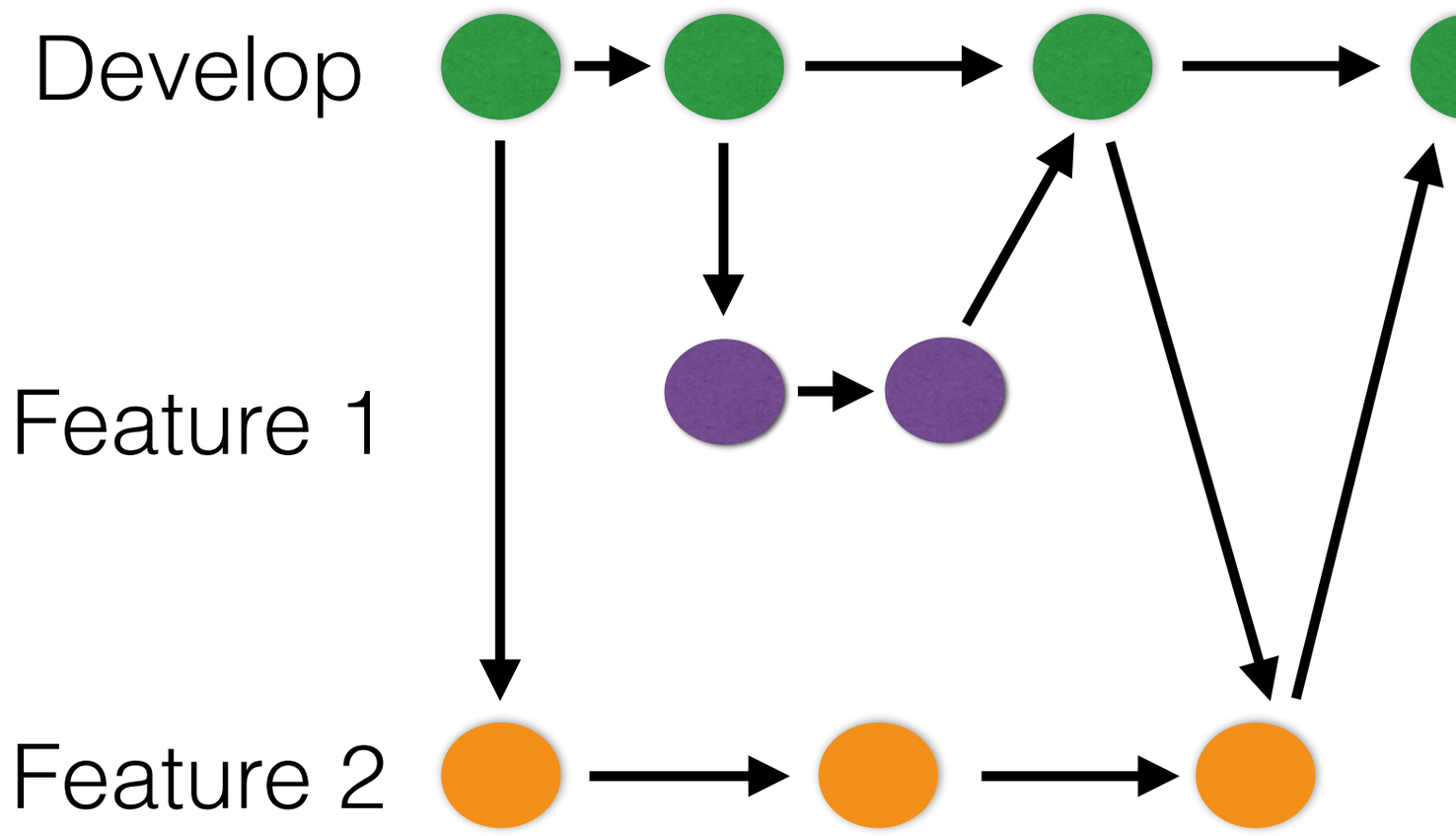
Master = Latest



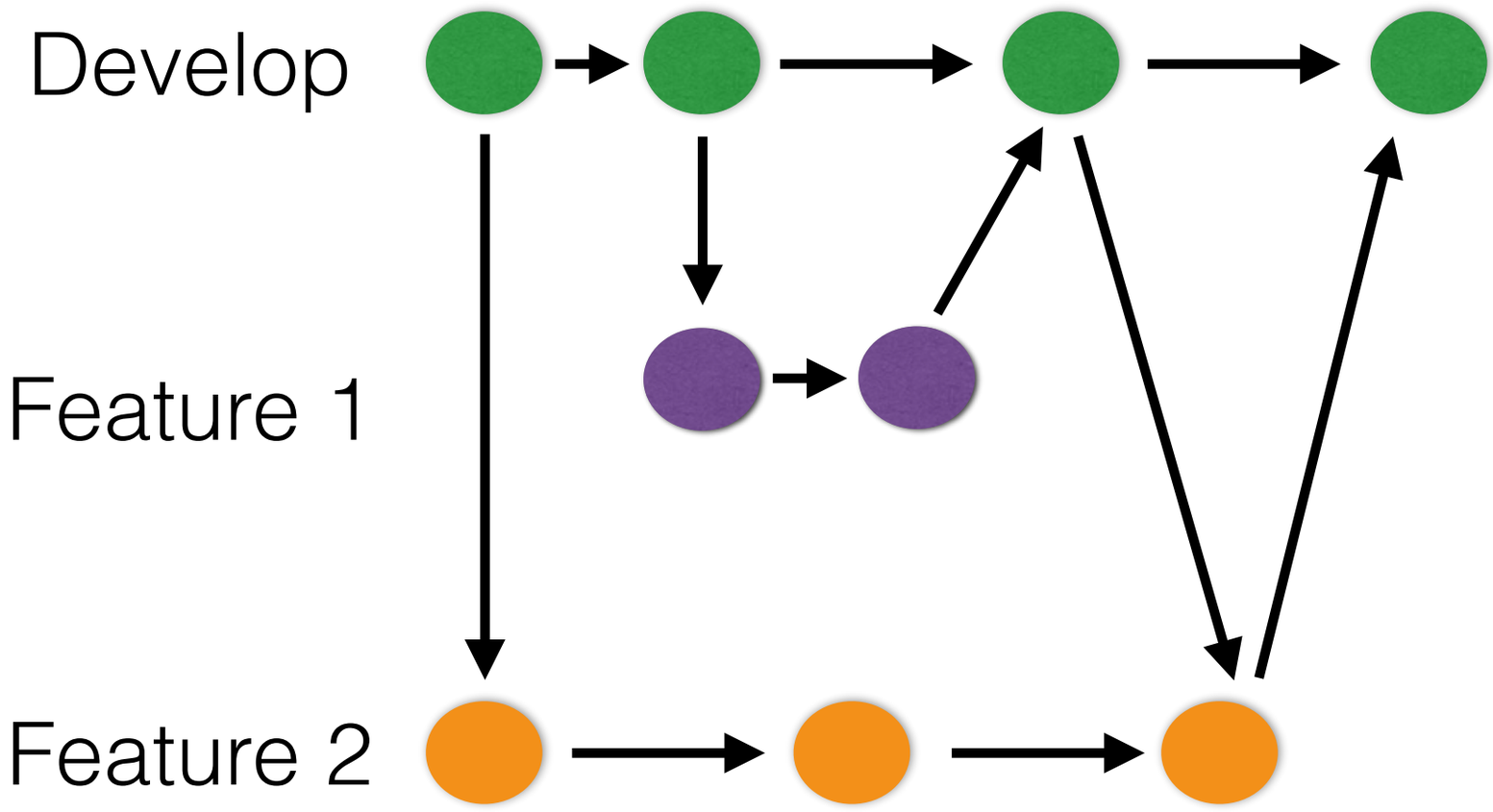
Master = Latest



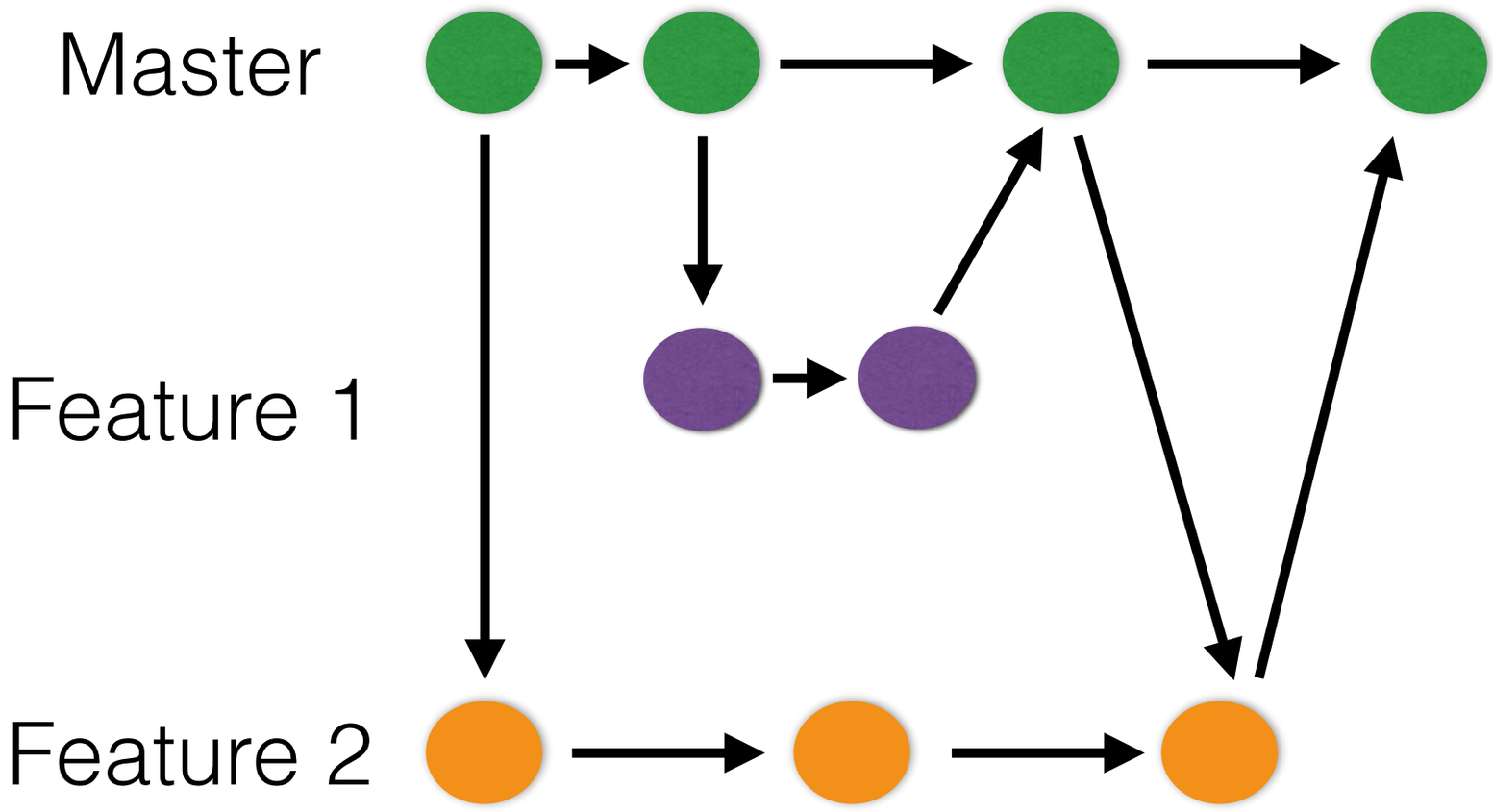
Master = Latest



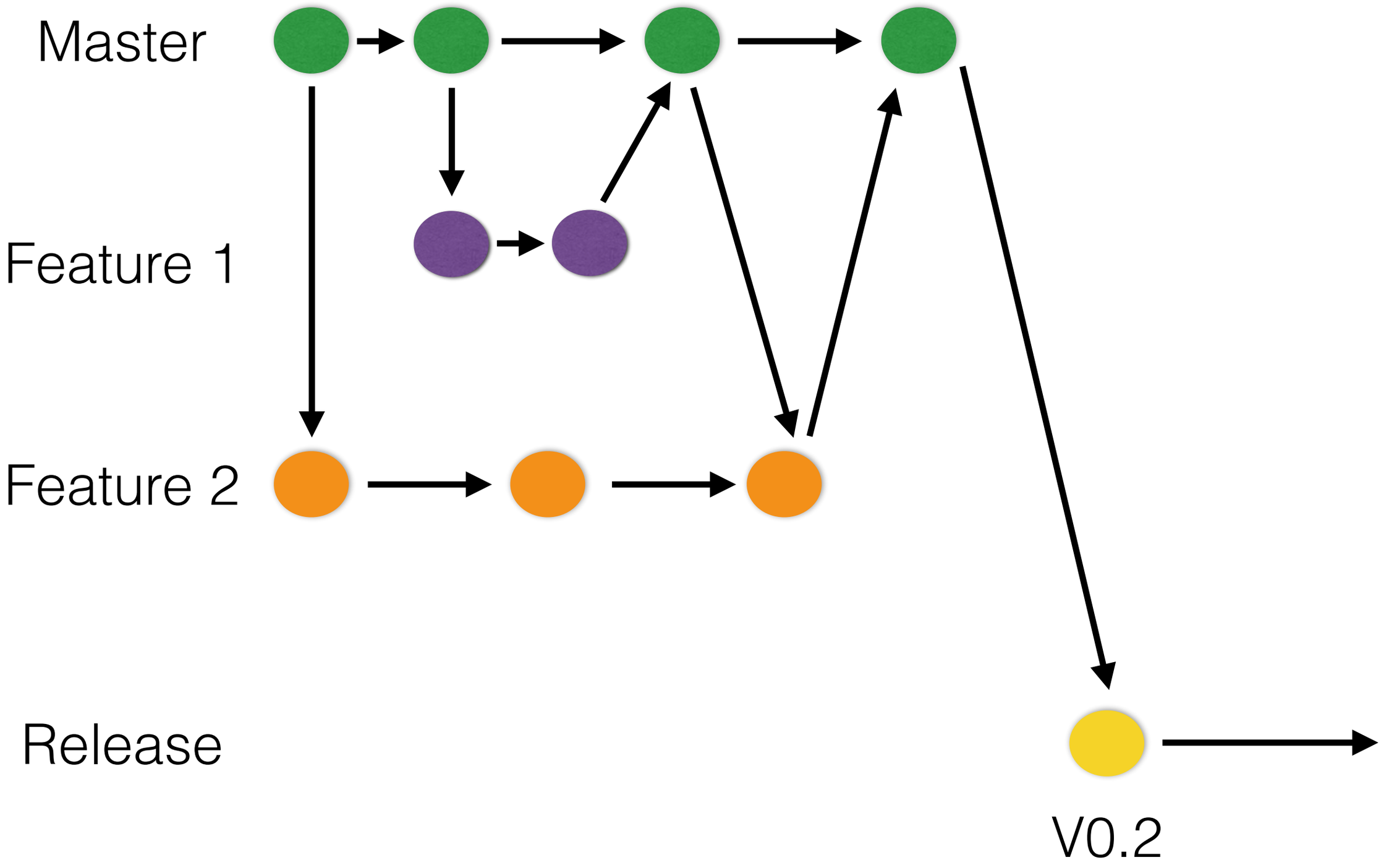
Master = Latest



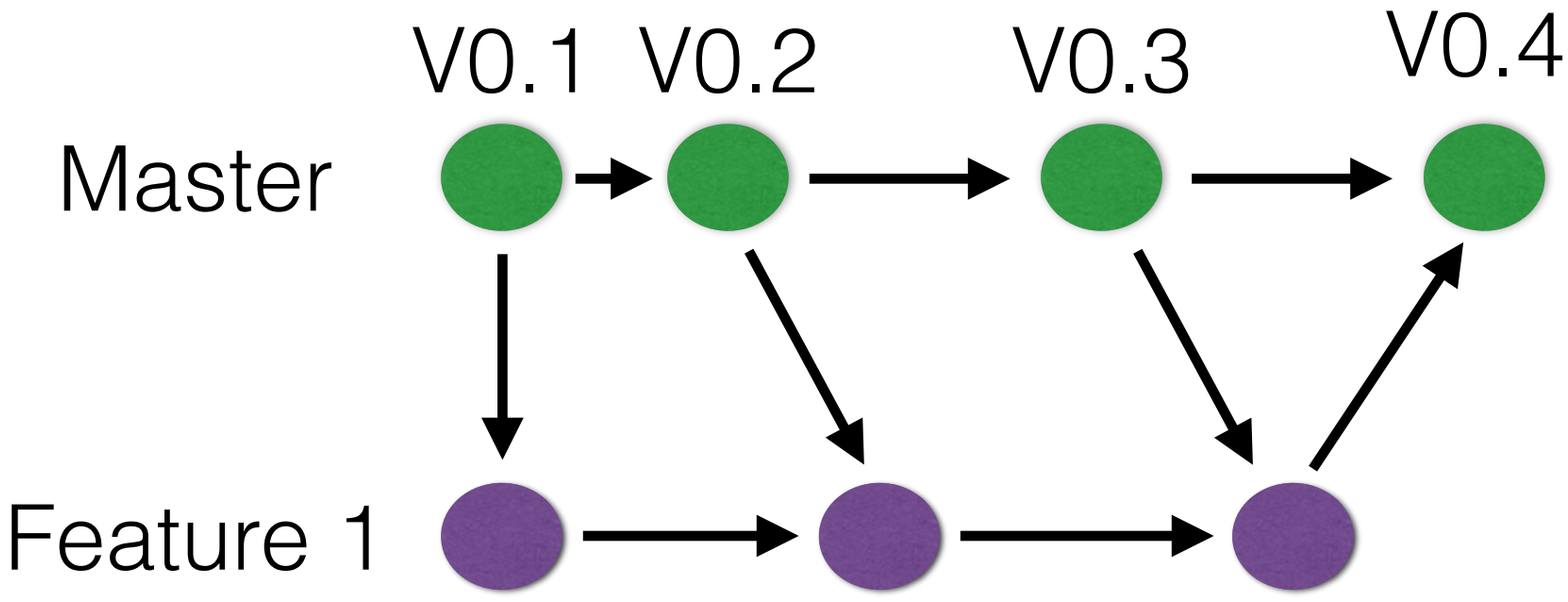
Master = Latest



Master = Latest



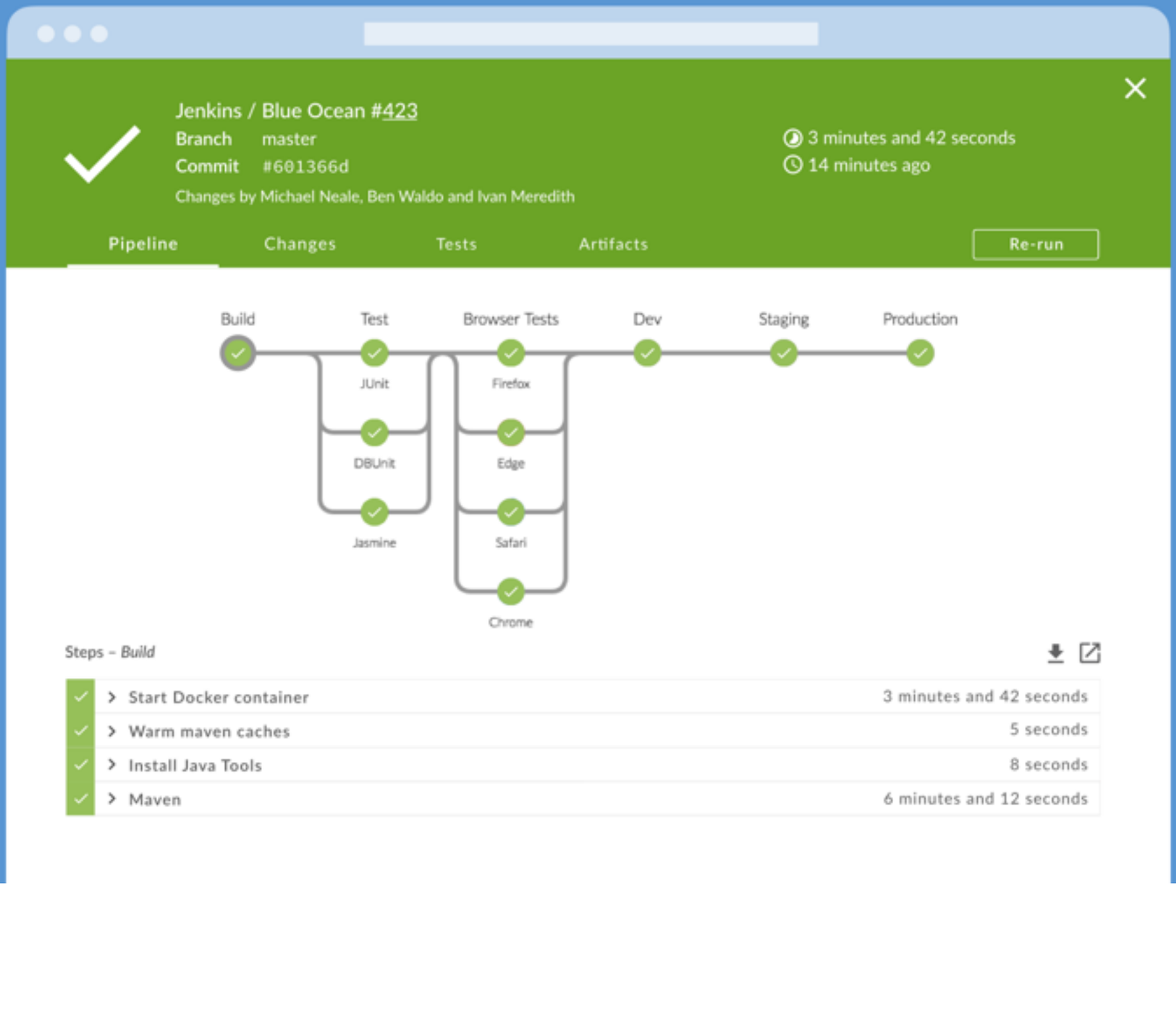
Master = Continuous Delivery



Simpler branch strategy

But, why a pipeline?

	build	test: integration-&-quality	test: functional	test: load-&-security	approval	deploy: prod
Average stage times: (Average full run time: ~5s)	836ms	20min 43s	9ms	7ms	89ms	5ms
#17 Sep 22 15:05 — No Changes — Retry — Download	538ms master	10s master	10ms master	8ms master	72ms (paused for 7s) master	4ms master
#16 Sep 22 15:04 — No Changes — Retry — Download	479ms master	6s master	9ms master	9ms master	74ms (paused for 6s) master	5ms master
#15 Sep 22 15:03 — No Changes — Retry — Download	922ms master	6s master	10ms master	9ms master failed		
#14 Sep 22 15:03 — No Changes — Retry — Download	1s master	8s master	12ms master	9ms master	80ms (paused for 5s) master	5ms master
#13 Sep 22 15:02 — No Changes — Download	942ms master	9s master	13ms master failed			
#12 Sep 22 15:02 — No Changes — Retry — Download	1s master	6s master	13ms master	11ms master	111ms (paused for 5s) master aborted	


Jenkins / Blue Ocean #423
Branch master
Commit #601366d
Changes by Michael Neale, Ben Waldo and Ivan Meredith
3 minutes and 42 seconds
14 minutes ago
Pipeline
Changes
Tests
Artifacts
Re-run
Build
Test
Browser Tests
Dev
Staging
Production
JUnit
DBUnit
Jasmine
Firefox
Edge
Safari
Chrome
Steps – Build
Start Docker container
3 minutes and 42 seconds
Warm maven caches
5 seconds
Install Java Tools
8 seconds
Maven
6 minutes and 12 seconds

Visibility

Google

TESLA

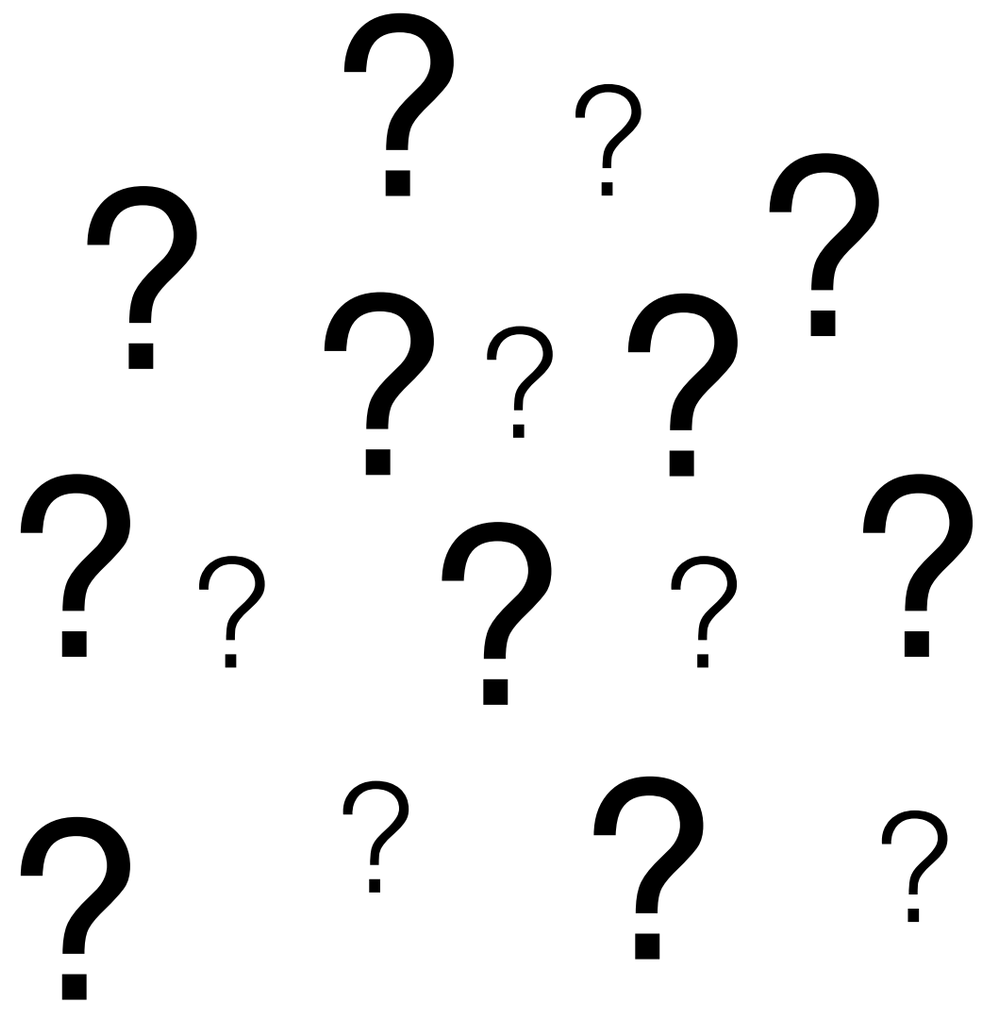
NETFLIX

PDF

Meet The Team

Sam

Tech lead



Diane
Developer

Quinn
QA Lead

Todd
Tech ops

Sam automates the build

What is our build process?

What is our
build process?

We use

What is our
build process?

We start the build
after we commit code.

What is our
build process?

The build creates a
standalone jar.

What is our
build process?

We start a deploy
job to push to QA.

What is our
build process?

We test and approve
or reject the build.

Hmmm…

Could we start the build after each commit?


localhost:8080
Jenkins
Jenkins
New Item

Enter an item name

build

» *Required field*

Freestyle project

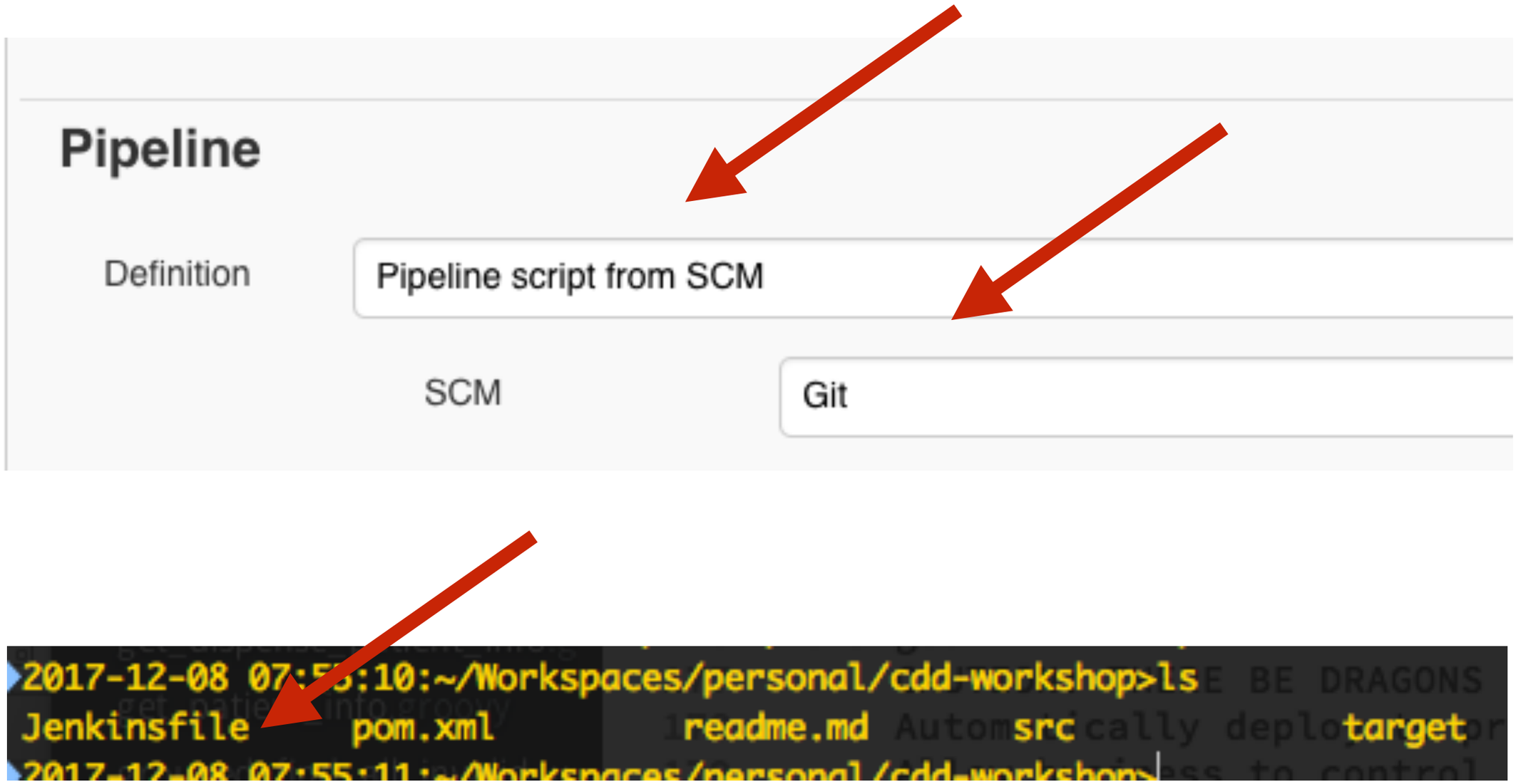
This is the central feature of Jenkins. Jenkins will build your project, combining any SCM with any build system, and this can be even used for something other than software build.

Maven project

Build a maven project. Jenkins takes advantage of your POM files and drastically reduces the configuration.

Pipeline

Orchestrates long-running activities that can span multiple build slaves. Suitable for building pipelines (formerly known as workflows) and/or organizing complex activities that do not easily fit in free-style job type.


Pipeline
Definition
Pipeline script from SCM
SCM
Git
2017-12-08 07:55:10:~/Workspaces/personal/cdd-workshop>ls
Jenkinsfile
pom.xml
readme.md
src
target

```
pipeline {
```

```
}
```

```
pipeline {
    agent any
}
```

```
pipeline {
    agent any

    tools {

    }

}
```

```
pipeline {
    agent any

    tools {
        maven 'M3'
    }

}
```

```
pipeline {
   agent any

   tools {
      maven 'M3'
   }

   stages {
    }
}
```

```
stage('Build') {

}
```

```
stage('Build') {
    steps {

    }
}
```

```
stage('Build') {
    steps {
        sh '
        '
    }
}
```

```
stage('Build') {
    steps {
        sh 'mvn
                '
    }
}
```

```
stage('Build') {
    steps {
        sh 'mvn -B
        '
    }
}
```

```
stage('Build') {
    steps {
        sh 'mvn -B clean
            package
                    '
        }
}
```

```
stage('Build') {
    steps {
        sh 'mvn -B clean
            package
            -DskipTests'
    }
}
```

Sam adds versioning to the the build

Hello?

Hello?

The application is not responding!

I think I know what’s happening.

The wrong version of the app was deployed.

I’ll deploy the correct one now.

There! It’s working now.

Confirmed. The app is behaving normally now.

Hmmm…

How can we know we are deploying the right jar?

How can we know we are deploying the right jar?

We could version each build that we give to QA.

And we could tag revisions in source control.

We could version each build that we give to QA.

```
stage('Build') {




}
```

```
stage('Build') {
   steps {


   }
}
```

```
stage('Build') {
   steps {
      sh 'ci/updateGitForPush.sh'



   }
}
```

```
stage('Build') {
   steps {
      sh 'ci/updateGitForPush.sh'
      sh 'ci/incrementPomVersion.sh'



   }
}
```

```
stage('Build') {
   steps {
      sh 'ci/updateGitForPush.sh'
      sh 'ci/incrementPomVersion.sh'
      sh 'mvn -B clean package
         -DskipTests'
   }
}
```


Jenkinsfile
ci
pom.xml
readme.md
src

updateGitForPush.sh

```
#/bin/bash
```

updateGitForPush.sh

```
#/bin/bash

git checkout master
```

updateGitForPush.sh

```
#/bin/bash

git checkout master
git reset --hard origin/master
```

updateGitForPush.sh

```
#/bin/bash

git checkout master
git reset --hard origin/master
git pull
```

incrementPomVersion.sh

```
#/bin/bash
```

incrementPomVersion.sh

```
#/bin/bash

mvn -B
```

incrementPomVersion.sh

```
#/bin/bash

mvn -B build-helper:parse-version
```

incrementPomVersion.sh

```
#/bin/bash

mvn -B build-helper:parse-version
   versions:set
```

incrementPomVersion.sh

```
#/bin/bash

mvn -B build-helper:parse-version
   versions:set -DnewVersion=
```

incrementPomVersion.sh

```
#/bin/bash

mvn -B build-helper:parse-version
   versions:set -DnewVersion=
   \${parsedVersion.majorVersion}.
```

incrementPomVersion.sh

```
#/bin/bash

mvn -B build-helper:parse-version
   versions:set -DnewVersion=
   \${parsedVersion.majorVersion}.
   \${parsedVersion.minorVersion}.
```

incrementPomVersion.sh

```
#/bin/bash

mvn -B build-helper:parse-version
   versions:set -DnewVersion=
   \${parsedVersion.majorVersion}.
   \${parsedVersion.minorVersion}.
   \${parsedVersion.nextIncrementalVersion}
```

incrementPomVersion.sh

```
#/bin/bash

mvn -B build-helper:parse-version
   versions:set -DnewVersion=
   \${parsedVersion.majorVersion}.
   \${parsedVersion.minorVersion}.
   \${parsedVersion.nextIncrementalVersion}
   versions:commit
```

```
stage('Tag') {




}
```

```
stage('Tag') {
    steps {


    }
}
```

```
stage('Tag') {
   steps {
      sh 'ci/commitPomVersion.sh'

   }
}
```

```
stage('Tag') {
   steps {
      sh 'ci/commitPomVersion.sh'
      sh 'ci/tag.sh'
   }
}
```

commitPomVersion.sh

```
#/bin/bash
```

commitPomVersion.sh

```
#/bin/bash

git add pom.xml
```

commitPomVersion.sh

```
#/bin/bash

git add pom.xml
git commit -m
```

commitPomVersion.sh

```
#/bin/bash

git add pom.xml
git commit -m
   "[skip ci] Updating pom.xml version"
```

commitPomVersion.sh

```
#/bin/bash

git add pom.xml
git commit -m
   "[skip ci] Updating pom.xml version"
git push origin master
```

tag.sh

```
#/bin/bash
```

tag.sh

```
#/bin/bash

NEXT_VER=$(

                    )
```

tag.sh

```
#/bin/bash

NEXT_VER=$(
   grep

                    )
```

tag.sh

```
#/bin/bash

NEXT_VER=$(
  grep '^    <version>.*</version>$'
           )
```

tag.sh

```
#/bin/bash

NEXT_VER=$(
  grep '^    <version>.*</version>$'
  pom.xml
             )
```

tag.sh

```
#/bin/bash

NEXT_VER=$(
  grep '^    <version>.*</version>$'
  pom.xml | awk -F'[><]'
            )
```

tag.sh

```
#/bin/bash

NEXT_VER=$(
  grep '^    <version>.*</version>$'
  pom.xml | awk -F'[><]'
  '{print $3}' )
```

tag.sh

```
#/bin/bash

NEXT_VER=$(
  grep '^    <version>.*</version>$'
  pom.xml | awk -F'[><]'
  '{print $3}' )
git tag -a $NEXT_VER -m
```

tag.sh

```
#/bin/bash

NEXT_VER=$(
  grep '^    <version>.*</version>$'
  pom.xml | awk -F'[><]'
  '{print $3}' )
git tag -a $NEXT_VER -m
"[skip ci] Tagging build as $NEXT_VER"
```

tag.sh

```
#/bin/bash

NEXT_VER=$(
  grep '^    <version>.*</version>$'
  pom.xml | awk -F'[><]'
  '{print $3}' )
git tag -a $NEXT_VER -m
  "[skip ci] Tagging build as $NEXT_VER"
git push origin --tags
```

Sam pushes artifacts to Nexus

Hello

Hello

It’s good that we’re tagging builds, but…

Hello

We need to be able to prove which artifact we are deploying.

Why is that?

We need to be able to prove which artifact we are deploying.

Why is that?

Auditing. Artifacts must be stored where developers only have read access.

We could push to a Nexus repo as part of the build.

Auditing. Artifacts must be stored where developers only have read access.

```
stage('Push jar to Nexus') {



}
```

```
stage('Push jar to Nexus') {
    steps {

    }
}
```

```
stage('Push jar to Nexus') {
   steps {
      sh 'mvn -B deploy -DskipTests'
   }
}
```

Sam adds tests to the build

Hello?

Tech Ops

Hello?

The application is not responding again!

Tech Ops

I think I’ve figured it out. I’ll need to deploy a fix.

All done. The app is back up.

Confirmed. Everything is back to normal.

Hmmm…

How do we reduce the risk of bugs making it into production?

How do we reduce the risk of bugs making it into production?

Well, we have unit tests…

How do we reduce the risk of bugs making it into production?

but some of them are broken.

How do we reduce the risk of bugs making it into production?

We run them locally…

How do we reduce the risk of bugs making it into production?

but, we ignore the failures.

Let’s fix or remove any broken tests.

Let’s fix or remove any broken tests.

And we can run the tests as a part of each build.

Can we pair up with QA to automate tests of our most critical features?

Can we pair up with QA to automate tests of our most critical features?

Sure. We can do one scenario per sprint.

```
stage(‘Build’) {…}
```

```
stage (‘Tag’){…}
```

```
stage(‘Build’) {…}

stage ('Test') {

}

stage (‘Tag’){…}
```

```
stage(‘Build’) {…}

stage ('Test') {
   steps {

   }
}

stage (‘Tag’){…}
```

```
stage(‘Build’) {…}

stage ('Test') {
   steps {
      sh 'mvn -B test'
   }
}

stage (‘Tag’){…}
```

```
stage(‘Build’) {…}

stage ('Test') {
   steps {
      sh 'mvn -B test'
      sh ‘mvn -B
         failsafe:
          integration-test'
   }
}

stage (‘Tag’){…}
```

Sam adds health checks to the app

Who detected the outages?

Who detected the outages?

Customers called in because they couldn’t access the site.

Hmmm…

Can we detect issues before our customers?

Can we detect issues before our customers?

We could add health checks and monitors.

And we could use the health checks to detect bad deployments before they go live.

We could add health checks and monitors.

```
stage('Deploy for test') {



}
```

```
stage('Deploy for test') {
    steps {

    }
}
```

```
stage('Deploy for test') {
    steps {
        sh 'ci/deploy.sh test 8091'
    }
}
```

deploy.sh

```
#!/bin/bash
```

deploy.sh

```
#!/bin/bash
DIR="$( cd "$( dirname “$
      {BASH_SOURCE[0]}" )" && pwd )"
```

deploy.sh

```
#!/bin/bash
DIR="$( cd "$( dirname “$
      {BASH_SOURCE[0]}" )" && pwd )"
target=$1
port=$2
```

deploy.sh

```
#!/bin/bash
DIR="$( cd "$( dirname “$
      {BASH_SOURCE[0]}" )" && pwd )"
target=$1
port=$2
$DIR/shutdown.sh $port || true
```

deploy.sh

```
#!/bin/bash
DIR="$( cd "$( dirname “$
      {BASH_SOURCE[0]}" )" && pwd )"
target=$1
port=$2

$DIR/shutdown.sh $port || true
$DIR/startup.sh $target $port
```

deploy.sh

```
#!/bin/bash
DIR="$( cd "$( dirname “$
      {BASH_SOURCE[0]}" )" && pwd )"
target=$1
port=$2
$DIR/shutdown.sh $port || true
$DIR/startup.sh $target $port
while $DIR/isDown.sh $port
do



done
```

deploy.sh

```
#!/bin/bash
DIR="$( cd "$( dirname “$
      {BASH_SOURCE[0]}" )" && pwd )"
target=$1
port=$2

$DIR/shutdown.sh $port || true
$DIR/startup.sh $target $port
while $DIR/isDown.sh $port
do
  echo "Waiting on http://localhost:
        $port"

done
```

deploy.sh

```
#!/bin/bash
DIR="$( cd "$( dirname “$
      {BASH_SOURCE[0]}" )" && pwd )"
target=$1
port=$2

$DIR/shutdown.sh $port || true
$DIR/startup.sh $target $port
while $DIR/isDown.sh $port
do
  echo "Waiting on http://localhost:
        $port"
  sleep 5
done
```

Sam adds acceptance tests to the build

I analyzed the last issue that caused an outage.

I analyzed the last issue that caused an outage.

What did you find out?

Our unit and integration tests wouldn’t have caught it.

What did you find out?

Our unit and integration tests wouldn’t have caught it.

It’s time to start running our acceptance test suite with each build.

Thanks QA!!!!

Thanks QA!!!!

No problem. Let’s see those tests in action.

```
stage('Run acceptance tests') {
}
```

```
stage('Run acceptance tests') {
  steps {


  }
}
```

```
stage('Run acceptance tests') {
  steps {
    sh 'ci/
      checkoutAcceptanceTests.sh'


  }
}
```

```
stage('Run acceptance tests') {
  steps {
    sh 'ci/
      checkoutAcceptanceTests.sh'
    sh 'cd ../acceptance-tests'


  }
}
```

```
stage('Run acceptance tests') {
  steps {
    sh 'ci/
      checkoutAcceptanceTests.sh'
    sh 'cd ../acceptance-tests'
    sh 'mvn clean install
        -Dport=8091'
  }
}
```

checkoutAcceptanceTests.sh

```
#!/bin/bash
```

checkoutAcceptanceTests.sh

```
#!/bin/bash

if [[ ! -d ../acceptance-tests ]];
then

fi
```

checkoutAcceptanceTests.sh

```
#!/bin/bash

if [[ ! -d ../acceptance-tests ]];
then
  git clone git://localhost:9418/cdd-
workshop-acceptance-tests
fi
```

checkoutAcceptanceTests.sh

```
#!/bin/bash

if [[ ! -d ../acceptance-tests ]];
then
  git clone git://localhost:9418/cdd-
workshop-acceptance-tests
  ../acceptance-tests
fi
```

checkoutAcceptanceTests.sh

```
#!/bin/bash

if [[ ! -d ../acceptance-tests ]];
then
  git clone git://localhost:9418/cdd-
workshop-acceptance-tests
  ../acceptance-tests
fi

cd ../acceptance-tests
```

checkoutAcceptanceTests.sh

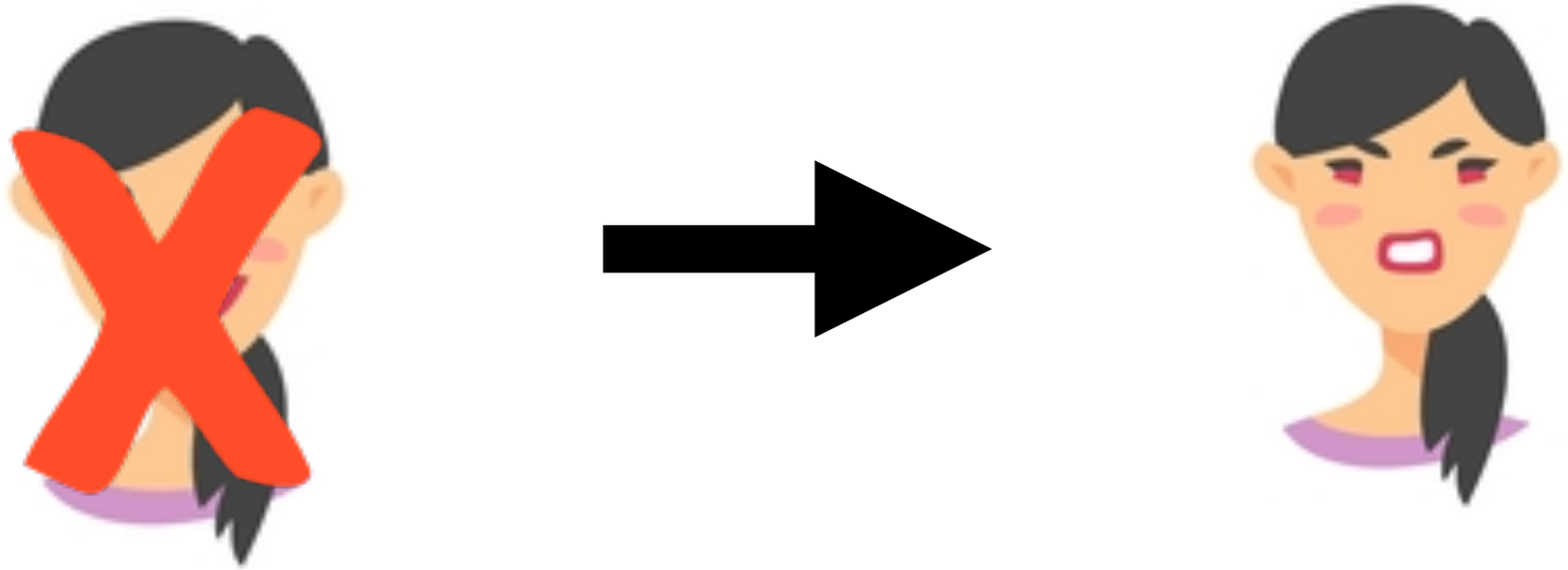
```
#!/bin/bash

if [[ ! -d ../acceptance-tests ]];
then
  git clone git://localhost:9418/cdd-
workshop-acceptance-tests
  ../acceptance-tests
fi

cd ../acceptance-tests
git pull
```

An aside about QA…


JAR




JAR


JAR

Sam adds feature toggles to the app

I’ve noticed our stories are taking a long time to develop.

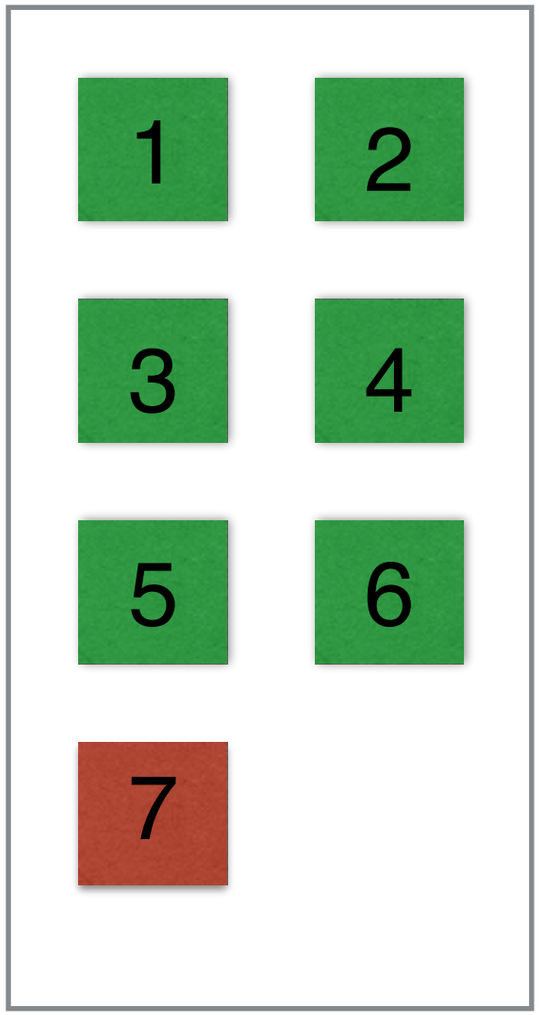
We break them down to the smallest feature that delivers value.

Why can’t we make stories smaller than a feature?

Well, how would we deploy partial features?

Hmmm…

Feature Flags



1 = active

2 = active

3 = active

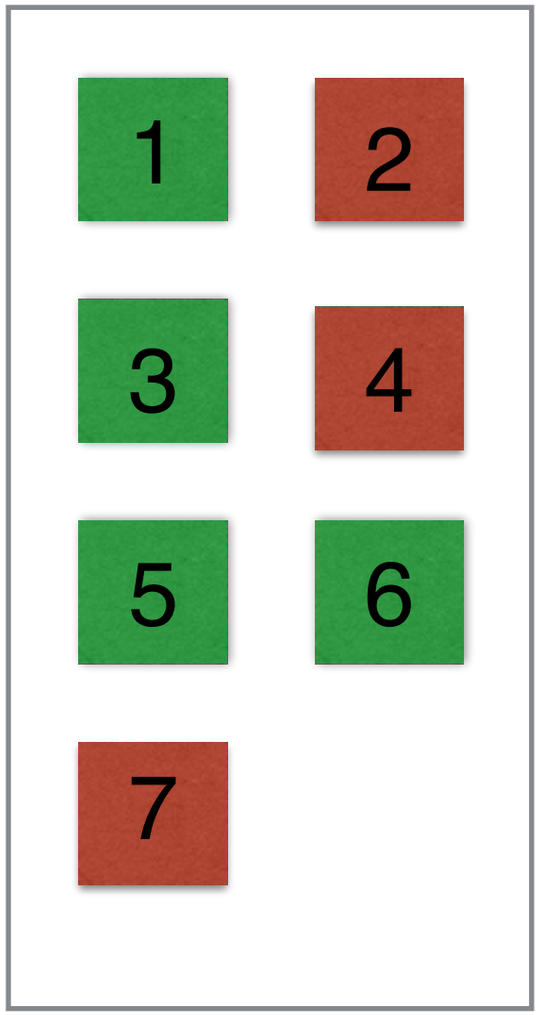
4 = active

5 = active

6 = active

7 = not active

Feature Flags



1 = active

2 = not active

3 = active

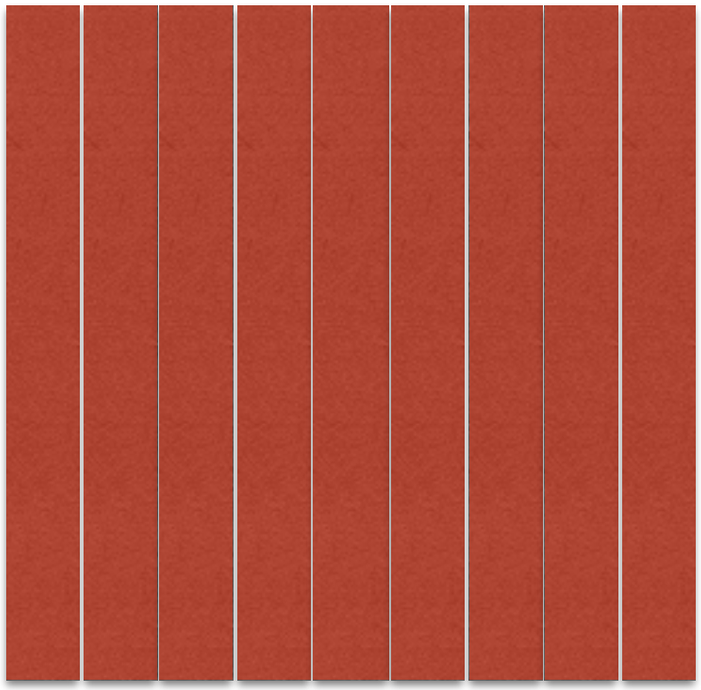
4 = not active

5 = active

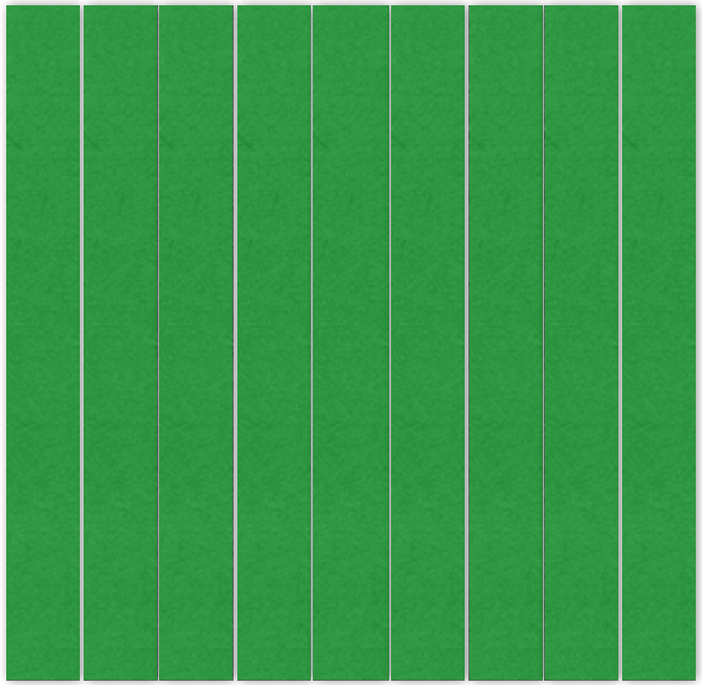
6 = active

7 = not active

Feature Complete!



Feature Activated!



Sam adds parallel tests to the build

The builds are slowing down.

We keep adding integration and acceptance tests.

I’ve looked at the tests and the ones we have are all appropriate.

What can we do make them run faster?

Hmmm…

What if we partition the tests and run them in parallel?

```
stage ('Test') {

}
```

```
stage ('Test') {
    steps {

    }
}
```

```
stage ('Test') {
   steps {
      parallel( unitTests: {

      },
      }
}
```

```
stage ('Test') {
   steps {
      parallel( unitTests: {
         sh 'mvn -B test'
      },
      }
}
```

```
stage ('Test') {
   steps {
      parallel( unitTests: {
         sh 'mvn -B test'
      },
      integrationTests: {

      },
```

```
      }
}
```

```
stage ('Test') {
   steps {
      parallel( unitTests: {
         sh 'mvn -B test'
      },
      integrationTests: {
         sh 'mvn failsafe:integration-test'
      },
      }
}
```

```
stage ('Test') {
   steps {
      parallel( unitTests: {
         sh 'mvn -B test'
      },
      integrationTests: {
         sh 'mvn failsafe:integration-test'
      },
      acceptanceTests: {


      })
   }
}
```

```
stage ('Test') {
  steps {
    parallel( unitTests: {
      sh 'mvn -B test'
    },
    integrationTests: {
      sh 'mvn failsafe:integration-test'
    },
    acceptanceTests: {
      sh 'ci/
          checkoutAcceptanceTests.sh'
      sh 'cd ../acceptance-tests'
      sh 'mvn clean install
        -Dport=8091'
    })
  }
}
```

Sam uses feature toggles for a/b testing

How can I help?

How can I help?

We can’t agree on how to build this feature.

How can I help?

Which way should we do it?

Hmmm…

Which way should we do it?

We could implement the feature both ways.

Which way should we do it?

We could implement the feature both ways.

How?

We’ll leverage feature toggles to switch between implementations.

How?

We'll leverage feature toggles to switch between implementations.

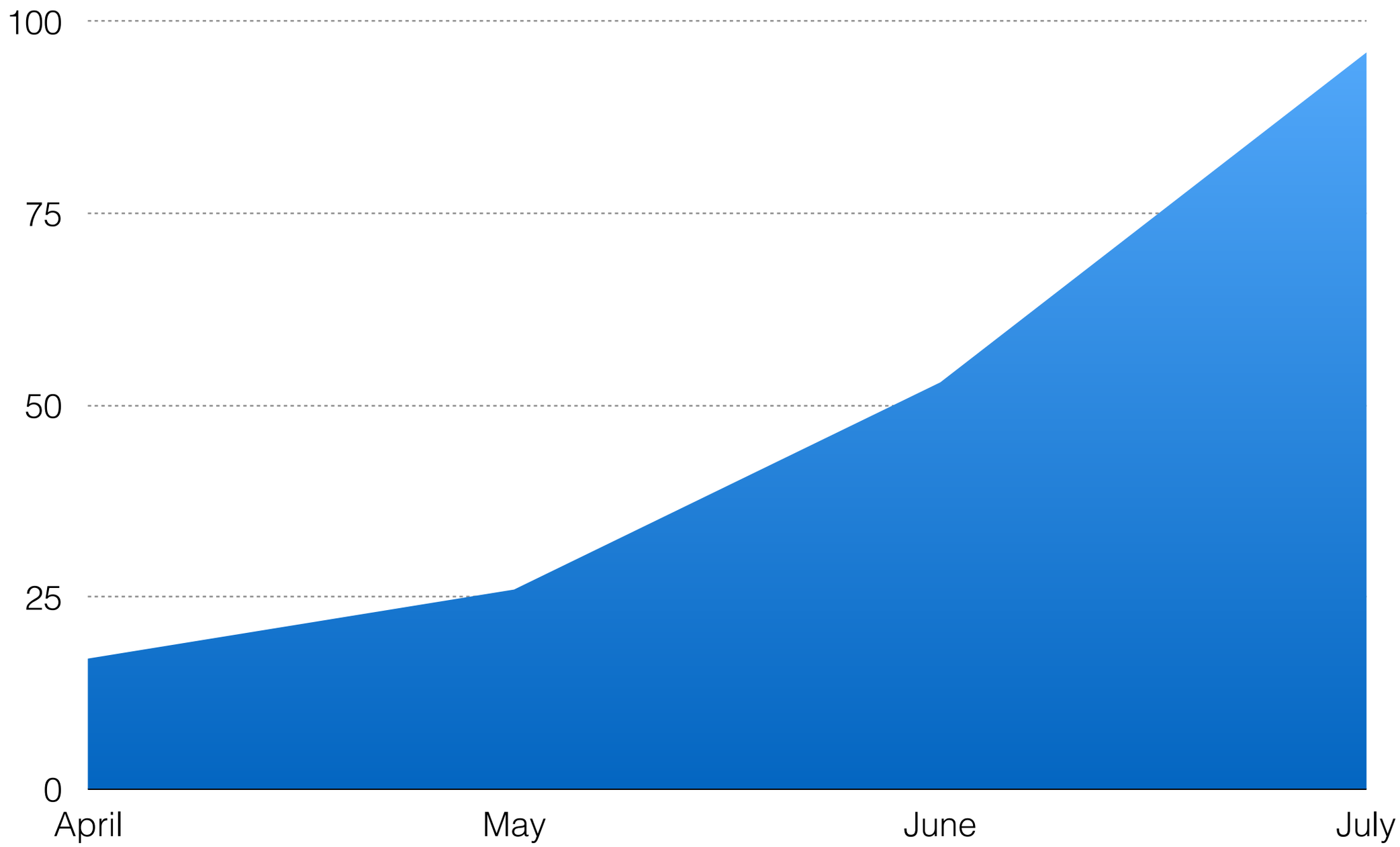
How will we know which feature to keep?

We’ll gather metrics of each feature from users and evaluate.

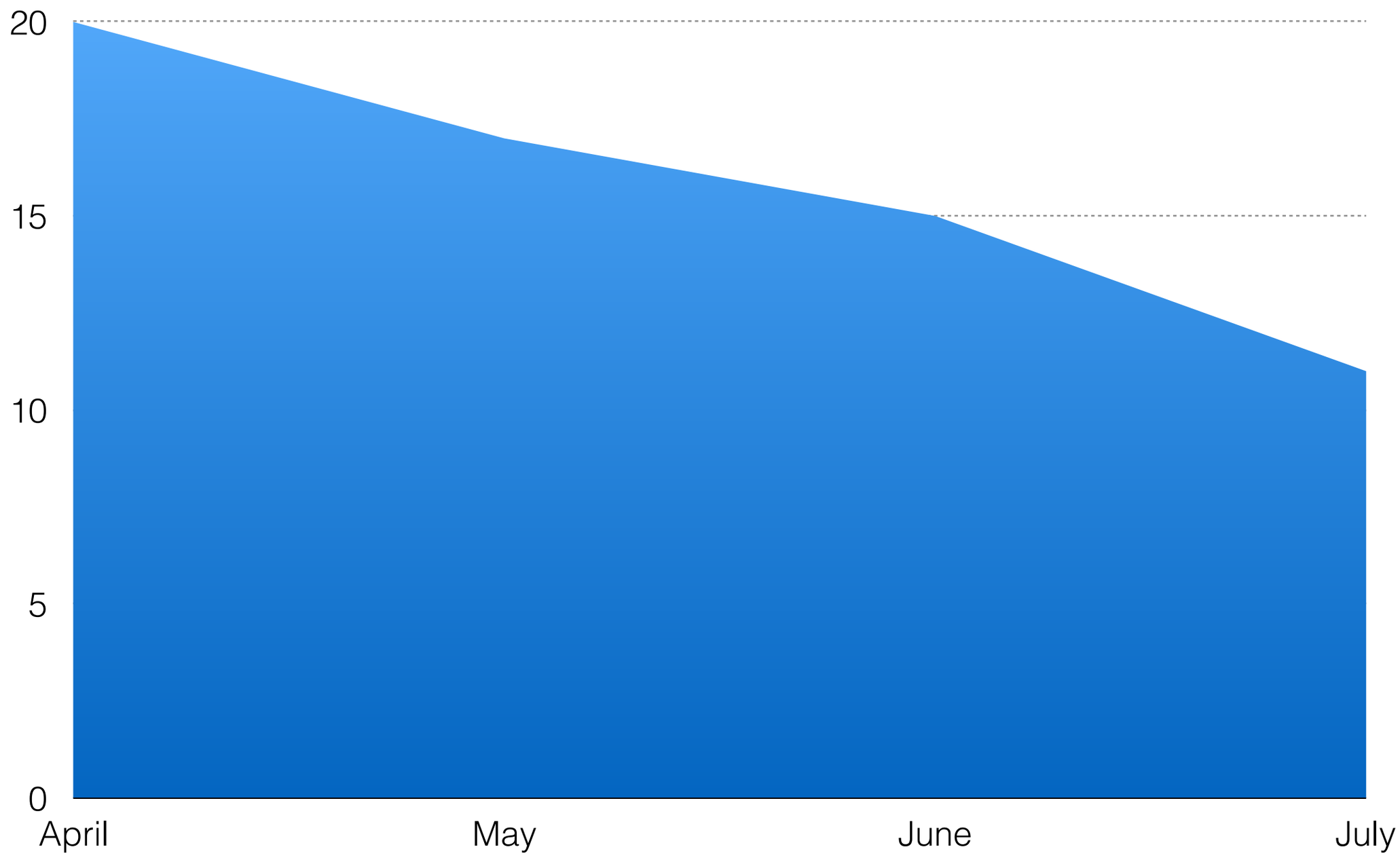
How will we know which feature to keep?

Sam automates deployments to production

Code Coverage



Code Complexity



It has been 163 days since our last deployment failure.

The team has really stepped up. We're ready.

The team has really stepped up. We're ready.

Ready for what?

Continuous deployment.

Ready for what?

Caution!

There be dragons here!

The business should control when we deploy.

The business should control when we deploy.

You’re right, but you can still have control.

How?

You’re right, but you can still have control.

How?

We will deploy our changes as soon as they pass quality checks, but…

How?

You decide when changes are activated in production.

So, I control when features go live like I've always done?

You decide when changes are activated in production.

So, I control when features go live like I've always done?

That's right!

```
stage(‘Deploy to prod') {




}
```

```
stage('Deploy to prod') {
    steps {


    }
}
```

```
stage('Deploy to prod') {
    steps {
        sh 'ci/deploy.sh prod 9001’


    }
}
```

```
stage('Deploy to prod') {
   steps {
      sh 'ci/deploy.sh prod 9001’
      sh 'ci/deploy.sh prod 9002’
   }
}
```

```
stage('Deploy to prod') {
   steps {
      sh 'ci/deploy.sh prod 9001’
      sh 'ci/deploy.sh prod 9002’
   }
}
```

Sam adds blue-green deployments

$10,000

$100,000

Business Partner

Oh? I'll talk to my team.

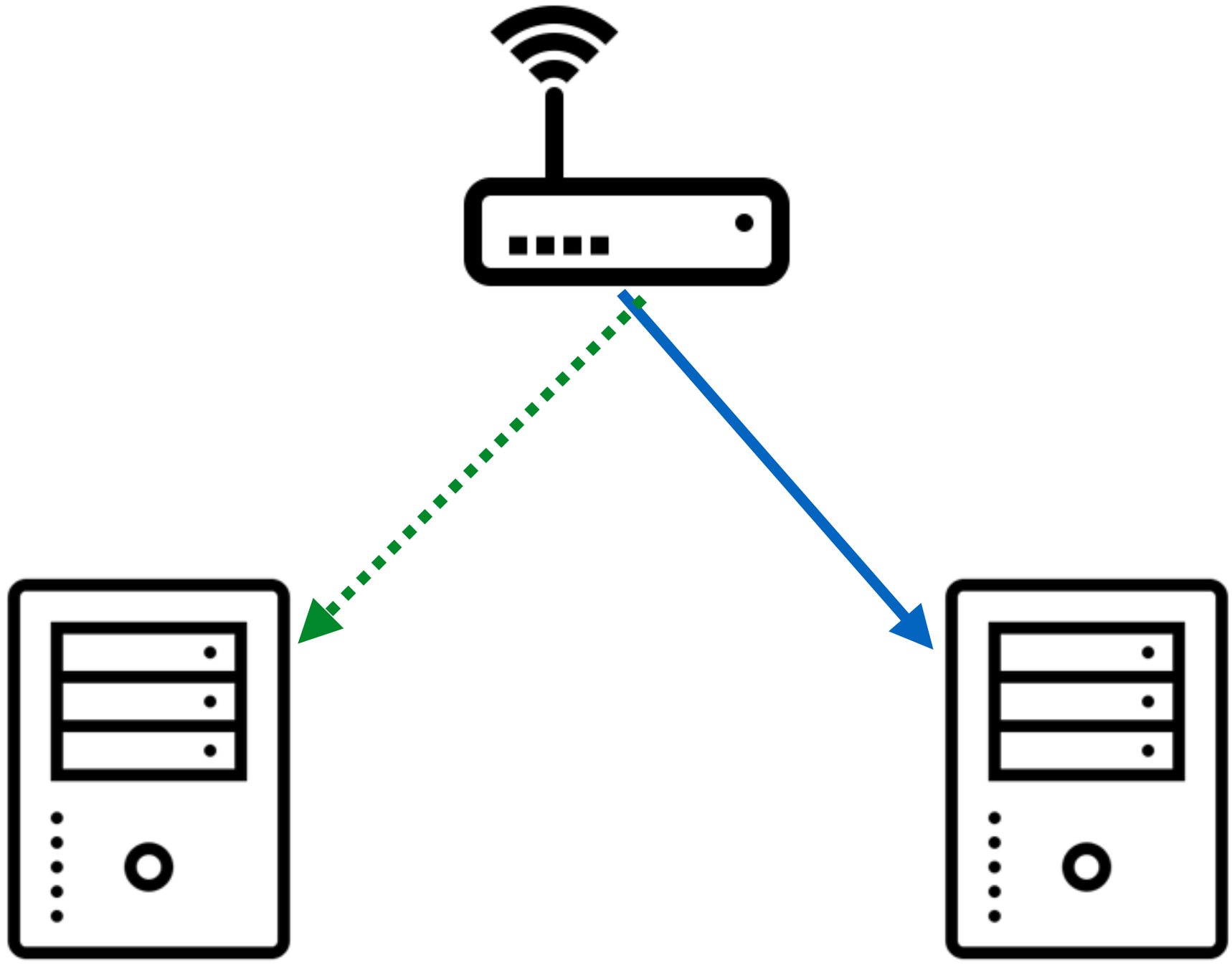
Hmmm…

We need to prevent downtime during our deployments.

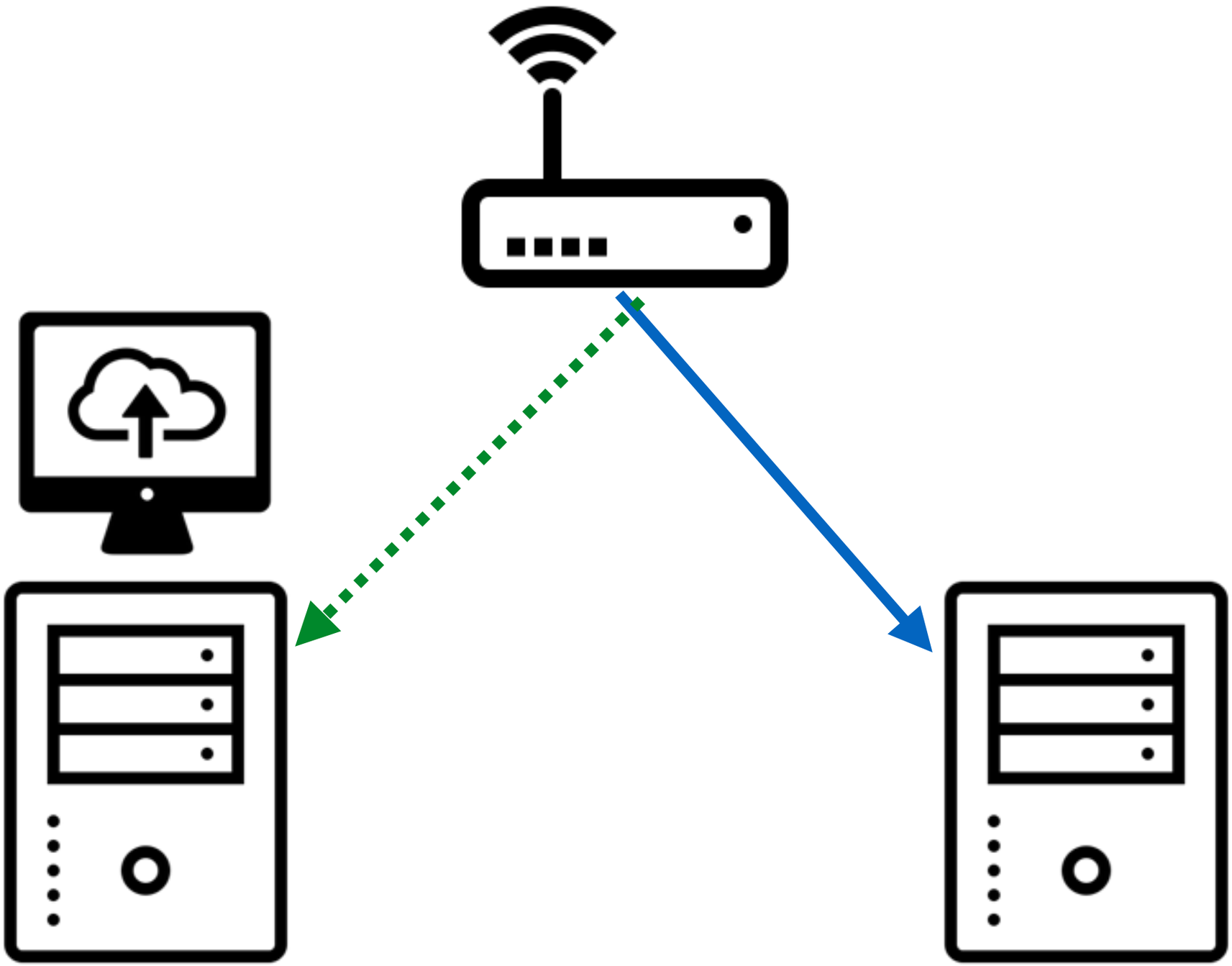
We need to prevent downtime during our deployments.

How?

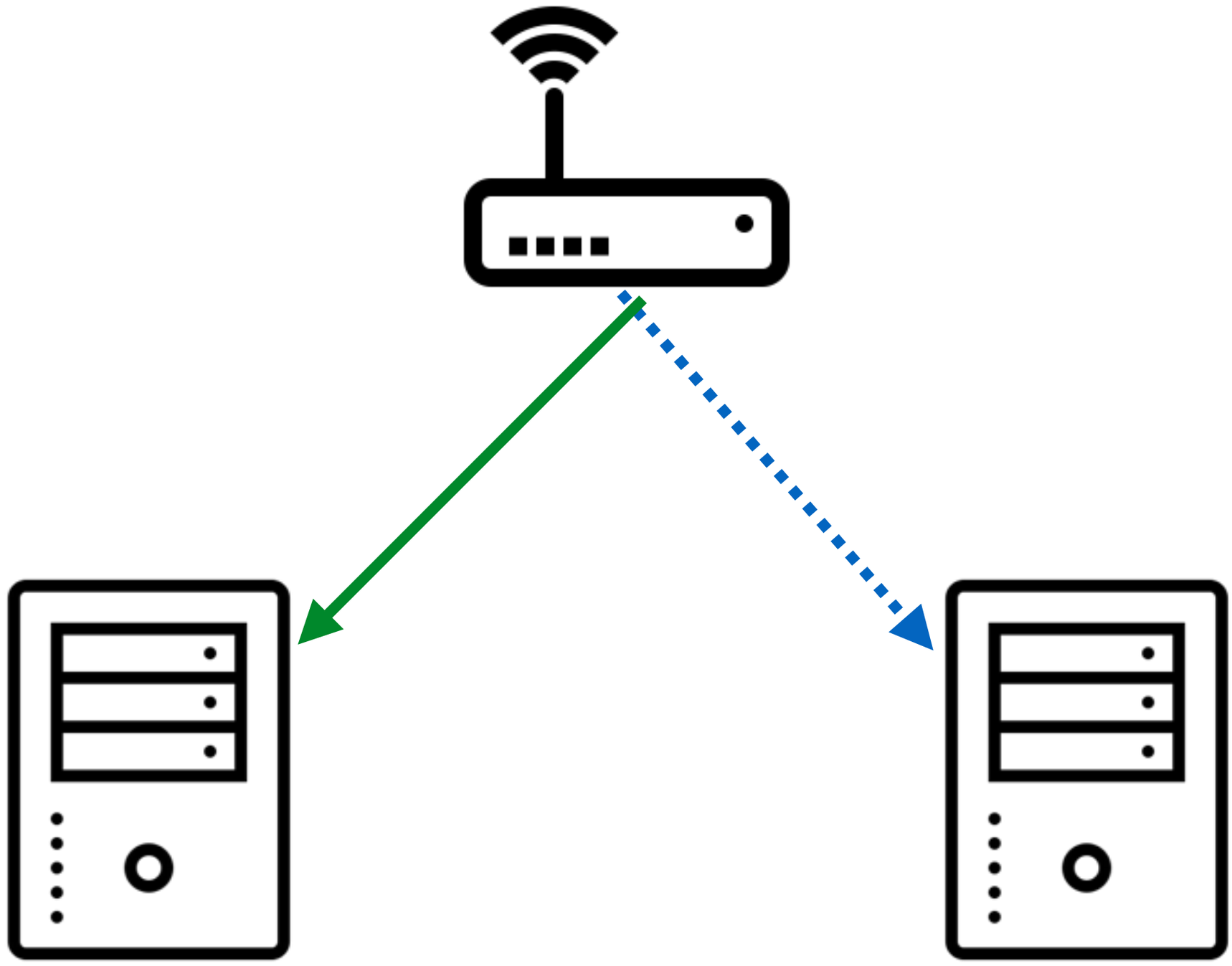
Blue-green



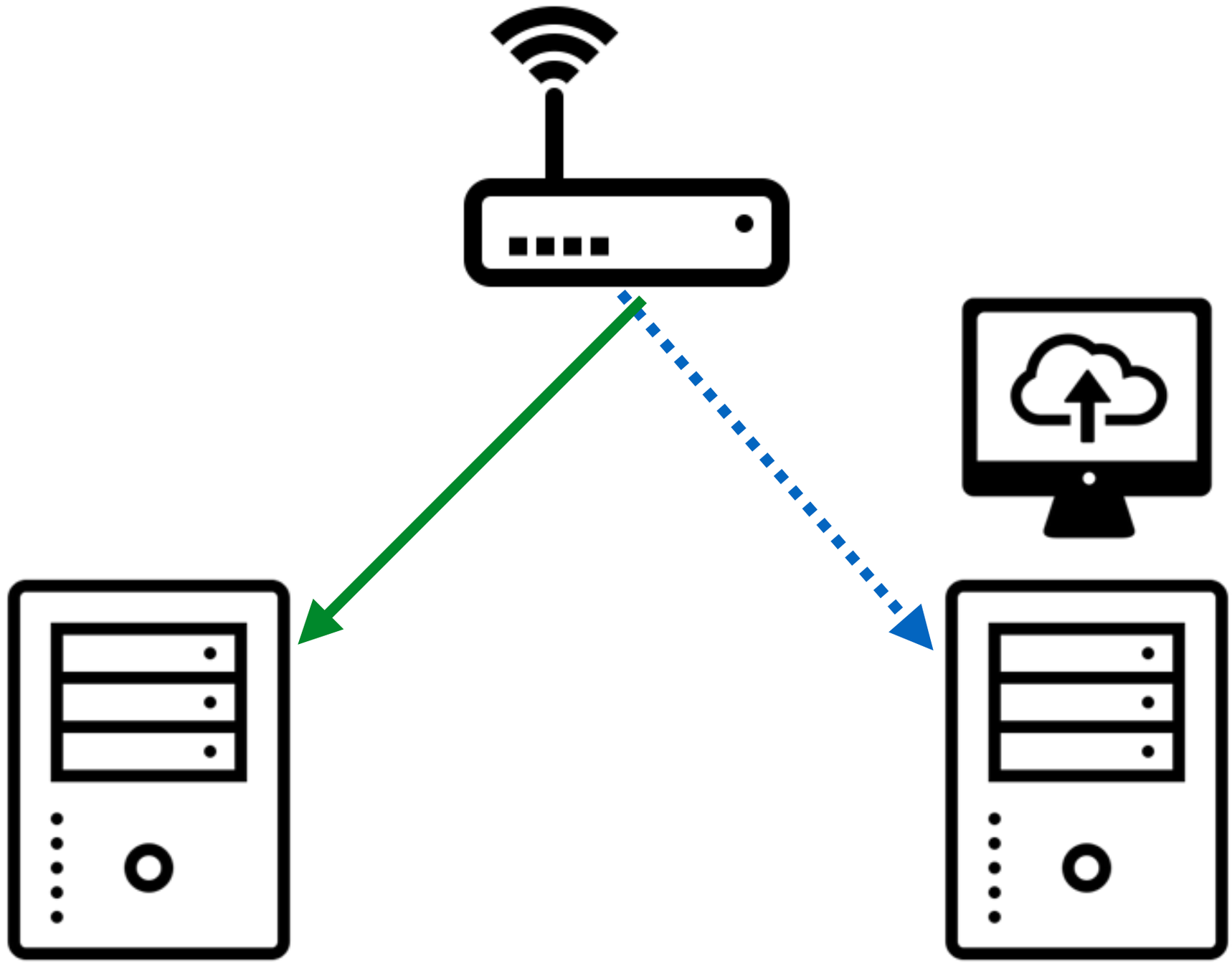
Blue-green



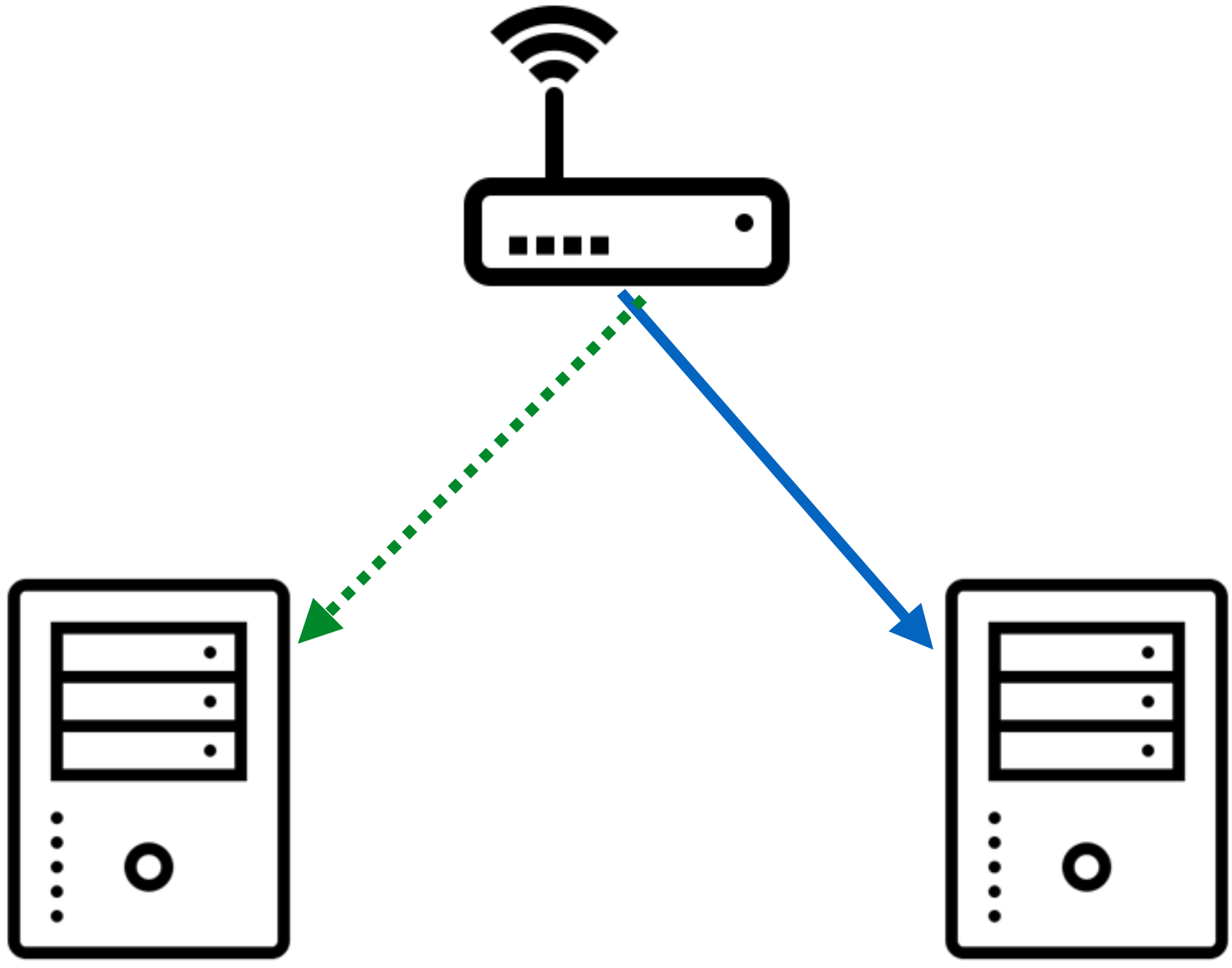
Blue-green



Blue-green



Blue-green



```
stage('Deploy to prod') {
   steps {
      sh 'ci/deploy.sh prod 9001’
      sh 'ci/deploy.sh prod 9002’
   }
}
```

```
stage('Deploy to prod') {
  steps {
    //move traffic to 9002 only
    sh 'ci/deploy.sh prod 9001’

    sh 'ci/deploy.sh prod 9002’

  }
}
```

```
stage('Deploy to prod') {
   steps {
      //move traffic to 9002 only
      sh 'ci/deploy.sh prod 9001’
      //move traffic to 9001 only
      sh 'ci/deploy.sh prod 9002’

   }
}
```

```
stage('Deploy to prod') {
  steps {
    //move traffic to 9002 only
    sh 'ci/deploy.sh prod 9001’
    //move traffic to 9001 only
    sh 'ci/deploy.sh prod 9002’
    //resume traffic to both
  }
}
```

Bonus stage!

Jenkins

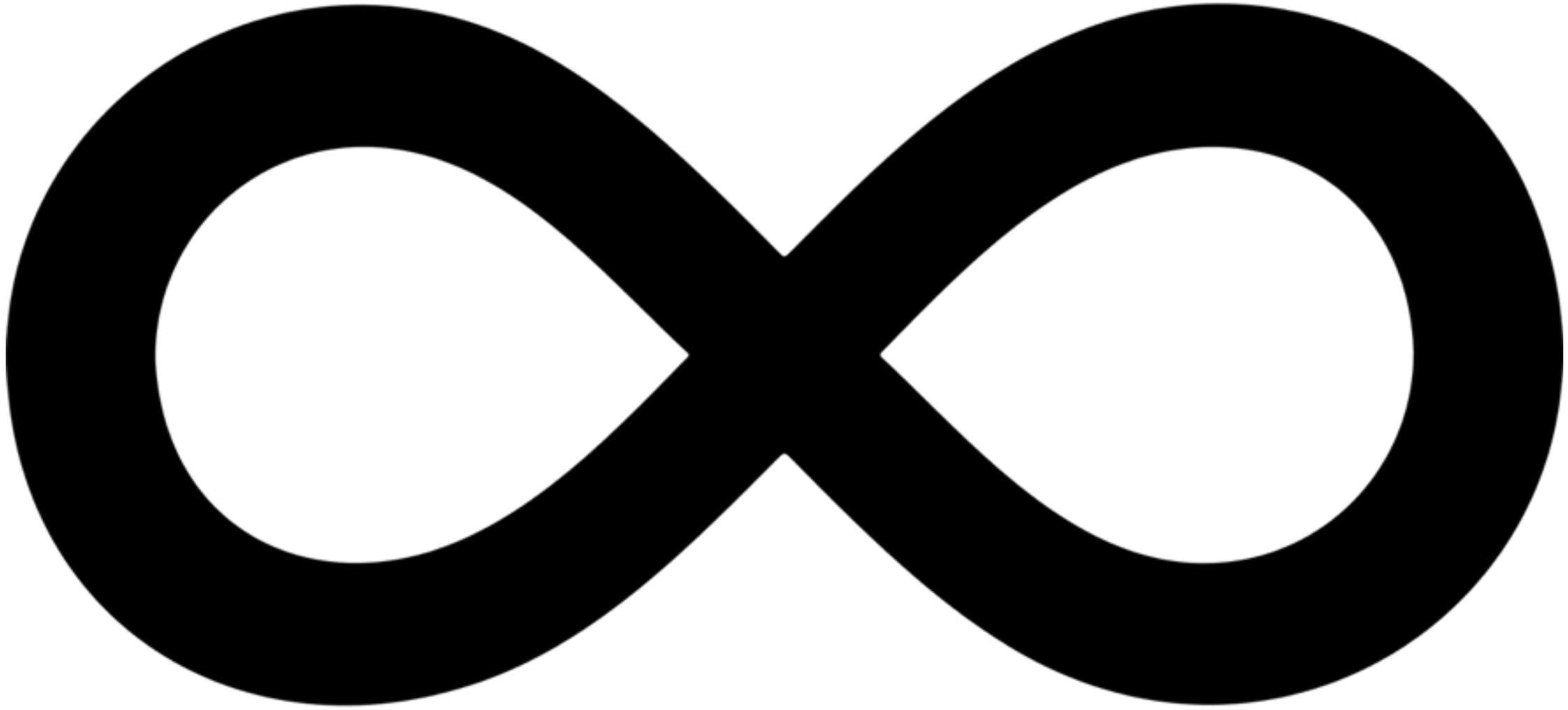
+

Maven

+

Versioning

=



Enter an item name

pipeline_launcher

pipeline_launcher

Freestyle project

This is the central feature of Jenkins. Jenkins will build your project, combin
system, and this can be even used for something other than software build.

Source Code Management

None

Git

Repositories

Repository URL: git://localhost:9418/cdd-workshop

Credentials: - none - | Add

Advanced...

Add Repository

Branches to build

X

Branch Specifier (blank for 'any'): */master

Add Branch

Build Triggers

- [ ] Trigger builds remotely (e.g., from scripts)
- [ ] Build after other projects are built
- [ ] Build periodically
- [ ] GitHub hook trigger for GITScm polling
- [x] Poll SCM

Schedule `H/5 * * * *`

Would last have run at Saturday, March 24, 2018 10:50:45 PM EDT; would next run at Saturday, March 24, 2018 10:55:45 PM EDT.

- [ ] Ignore post-commit hooks

Build

Execute shell

Command

```
if git log -1 --pretty=format:\'%an | grep -q "Jenkins"; then
  echo "Build triggered by version update.  Aborting..."
  exit
fi
```

See the list of available environment variables

Advanced...

Post-build Actions

X

Build other projects

Projects to build: cdd-pipeline

- (•) Trigger only if build is stable
- ( ) Trigger even if the build is unstable
- ( ) Trigger even if the build fails

Add post-build action

Thank You!

For full slides:

https://github.com/jbalmert/always_be_delivering