

A background image showing a diverse group of people smiling and laughing. In the foreground, a woman with glasses and a man are prominently featured, both laughing heartily. Other people are visible in the background, also smiling.

# Jenkins Training

March 2016

# Ground Rules for Face-to-face Classrooms



# Ground Rules for Virtual Classrooms

## Participate actively in each session

Share experiences and best practices

Bring up challenges, ask questions

Discuss successes

Respond to whiteboards, polls, quizzes, chat boxes

Hang up if you need to take an urgent phone call, don't put this call on hold

## Communicate professionally with others

Mute when you're not speaking

Wait for others to finish speaking before you speak

Each time you speak, state your name

Build on others' ideas and thoughts

Disagreeing is OK –with respect and courtesy

**Be on time for each virtual session**

As a best practice...be just a few minutes early!

# Module at a Glance

SME to provide the details required in the table.

Target Audience:	
Course Level:	<i>Basic</i>
Duration (in hours):	30 mins
Pre-requisites, if any:	NA
Post-requisites, if any:	<i>Submit Session Feedback</i>
Relevant Certifications:	None

# Introductions (for Virtual Classrooms)

SME to provide the  
photos and names of  
the facilitators.

**Business Photo**

***Facilitator***  
**Name**  
**Role**

**Business Photo**

***Moderator***  
**Name**  
**Role**

# Agenda

- 1 What is Jenkins?
- 2 Installing Jenkins
- 3 Creating a Simple Job
- 4 Plug-ins
- 5 The Big Picture

# Module Objectives

Note to the SME : Please provide the module Objectives or validate the partially updated content



## What you will learn

At the end of this module, you will learn:

- What is Jenkins

## What you will be able to do

At the end of this module, you be able to:

- Understand what is Jenkins
- State how to install Jenkins
- Describe how to create a Simple Job in Jenkins
- List the Plug-ins used in Maven
- Explain the big picture of Jenkins





**What is Jenkins?**



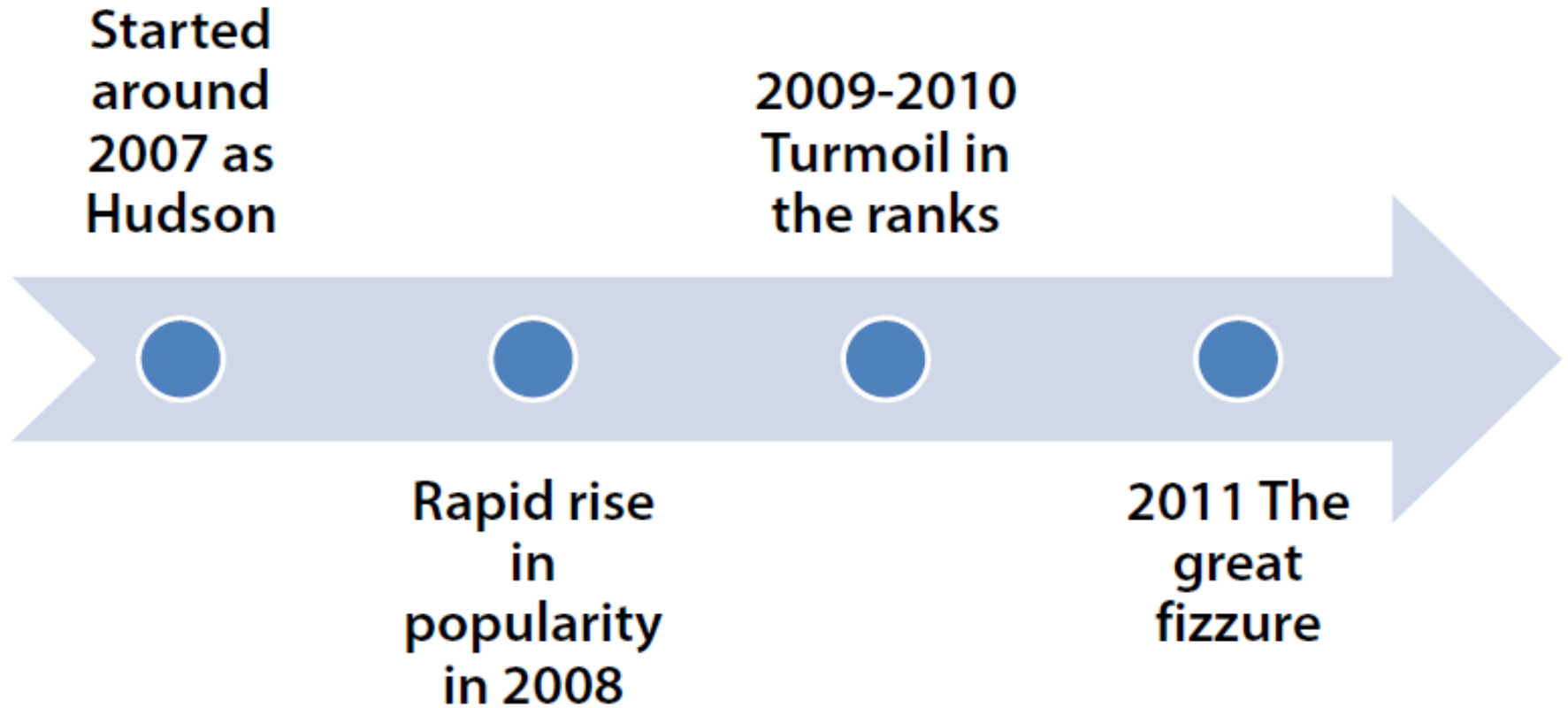
# About Jenkins

**Web Based Java Tool**

**Open Source**

**Highly Extensible**

# History

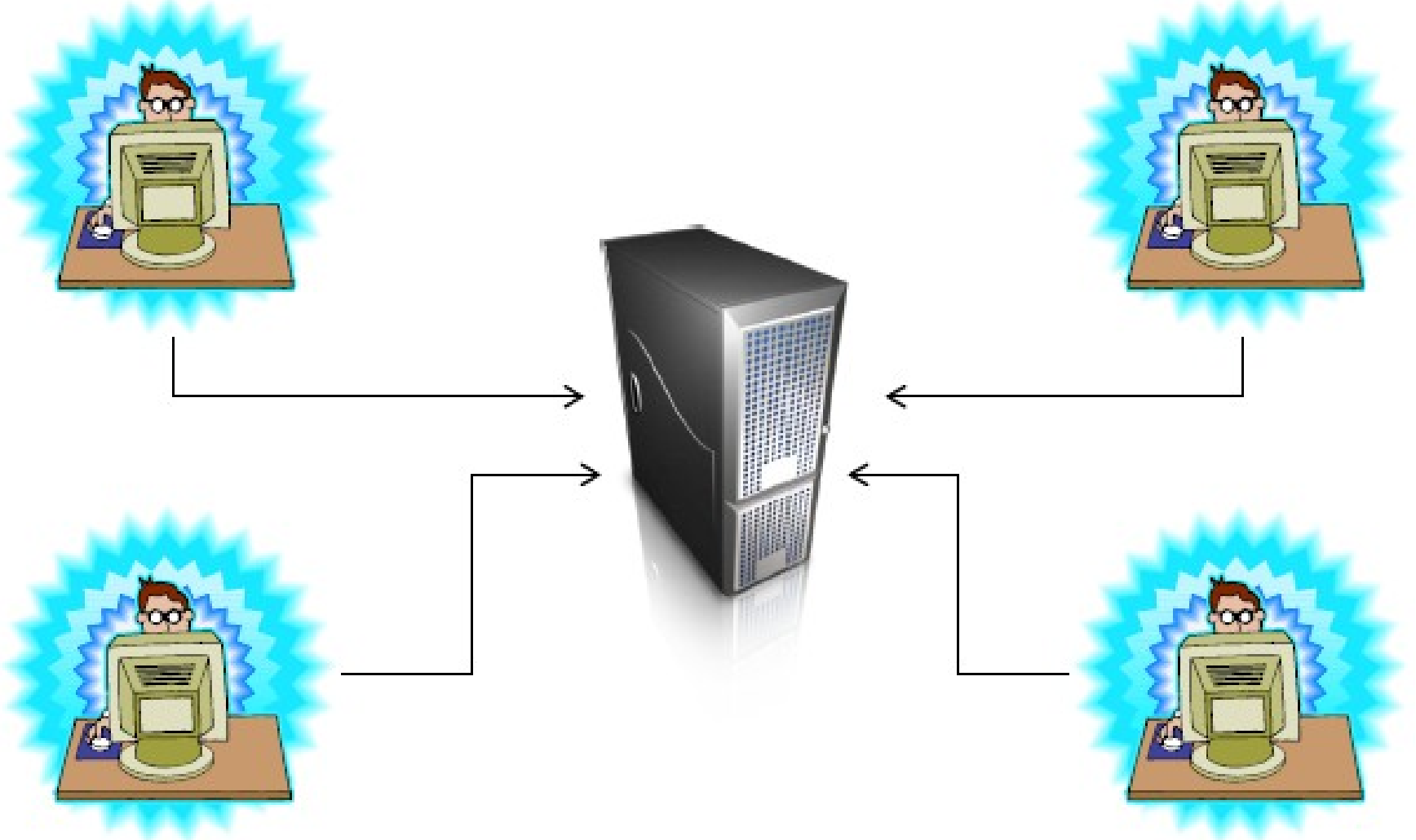


# The Problem!

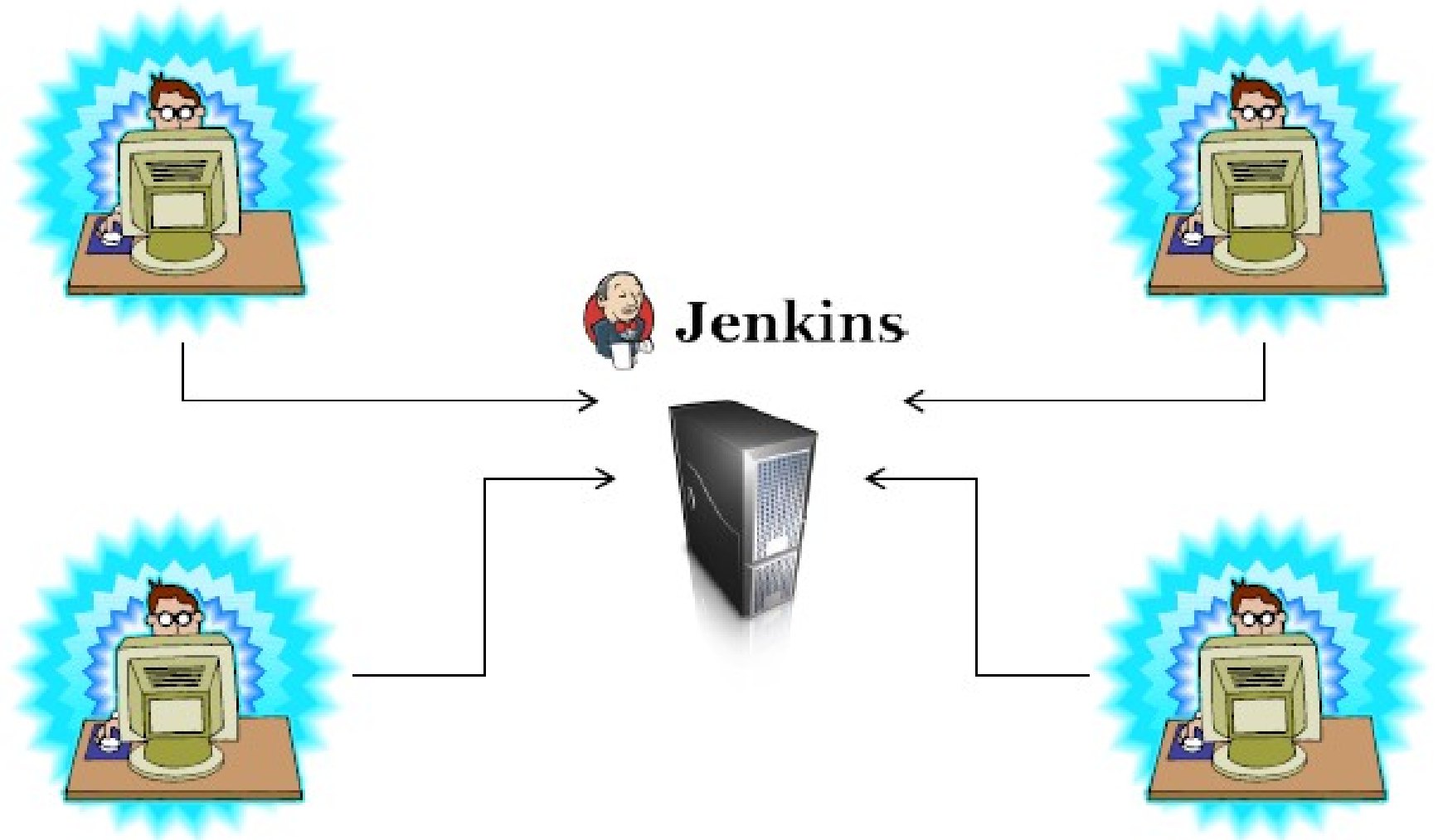
**Integration is painful!**



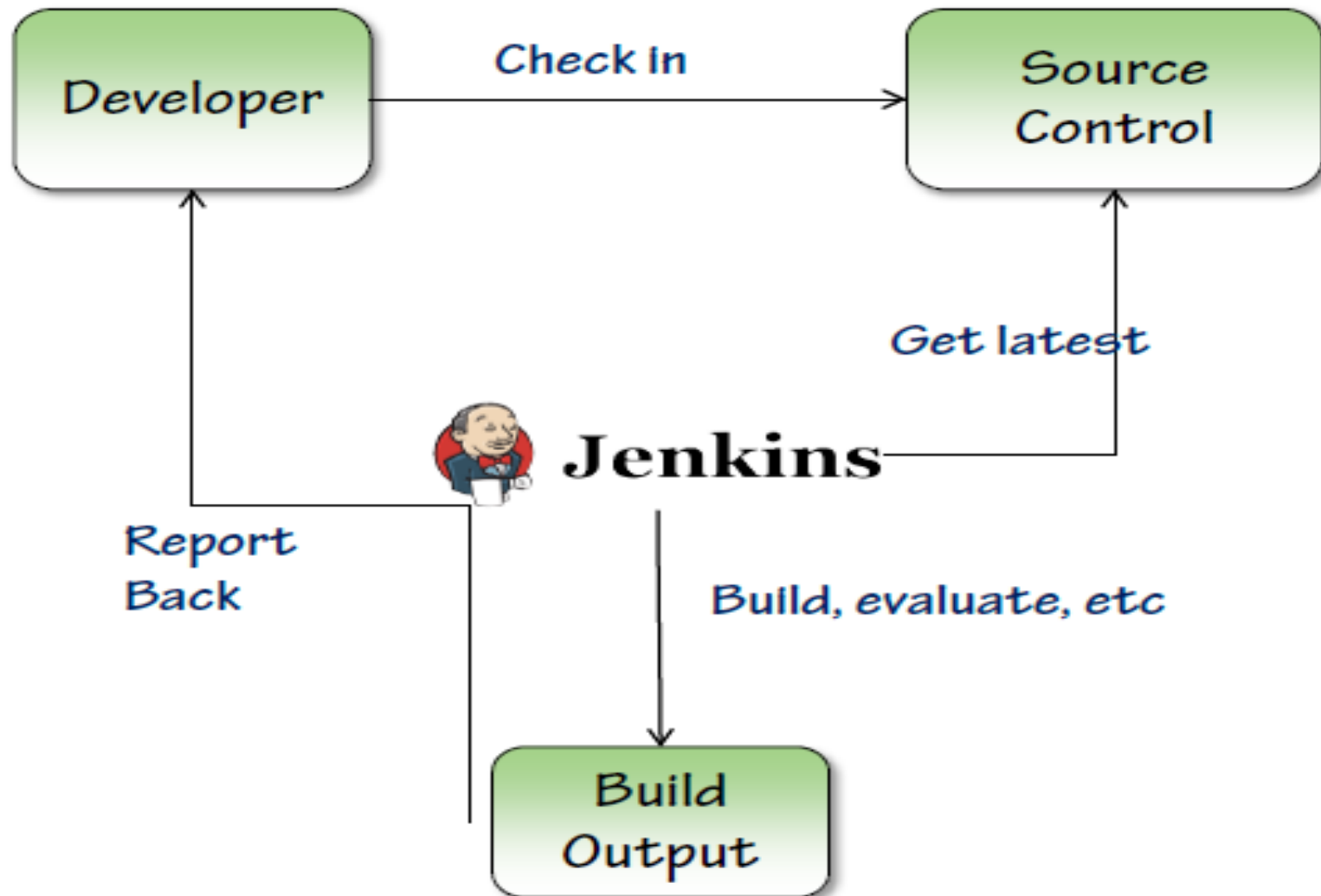
# What is Continuous Integration (CI)?



# Where Jenkins Fits In



# Where Jenkins Fits In (contd.)





# Installing Jenkins

# Prerequisites

**Java 1.5 or higher**

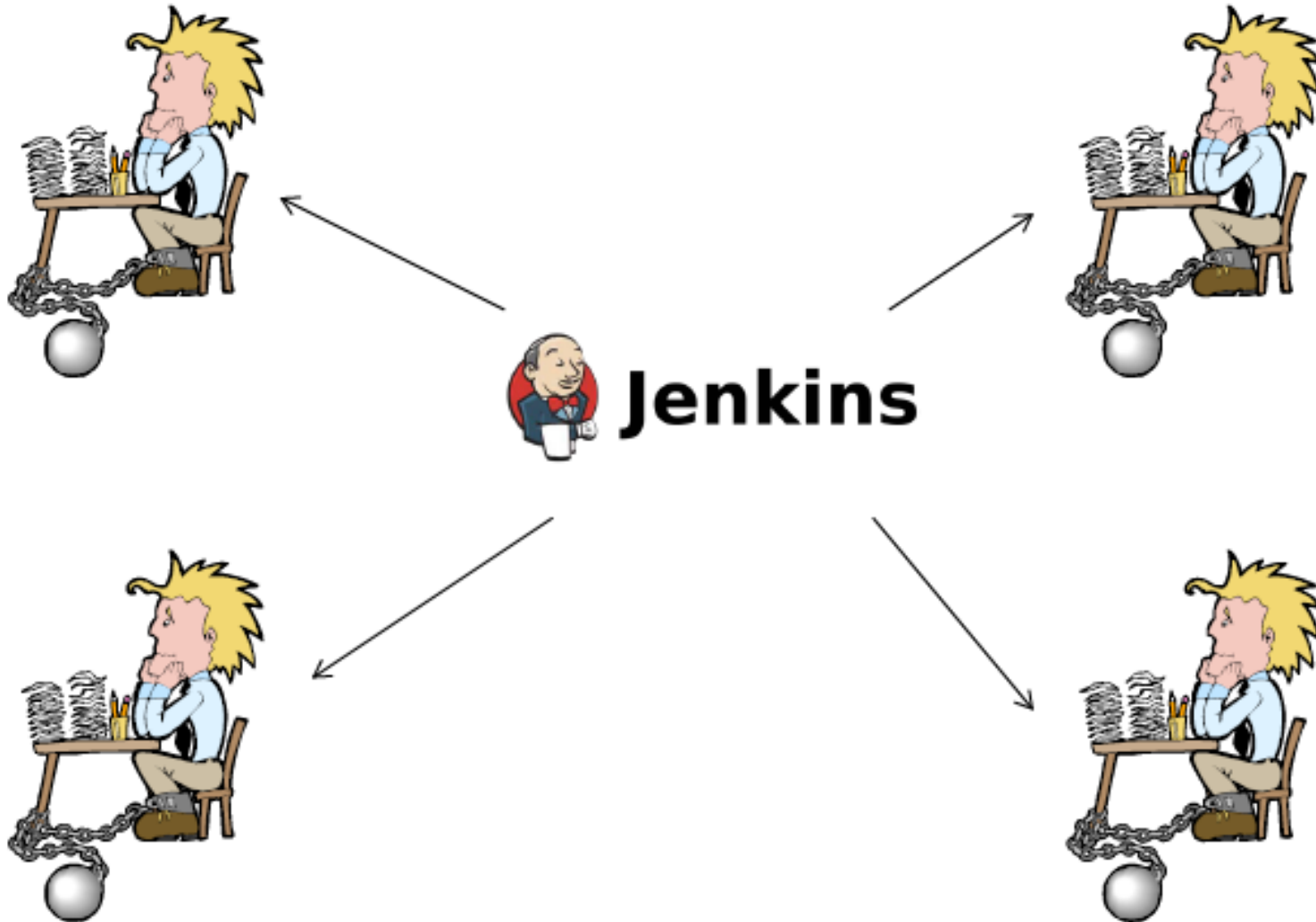
**Java in your path (optional, but preferred)**

**Web server (only if you want to host outside of Jenkins)**





# Nodes



# Node Uses



Run my automated tests, boy!



# References

## Installation options

- <https://wiki.jenkins-ci.org/display/JENKINS/Starting+and+Accessing+Jenkins>

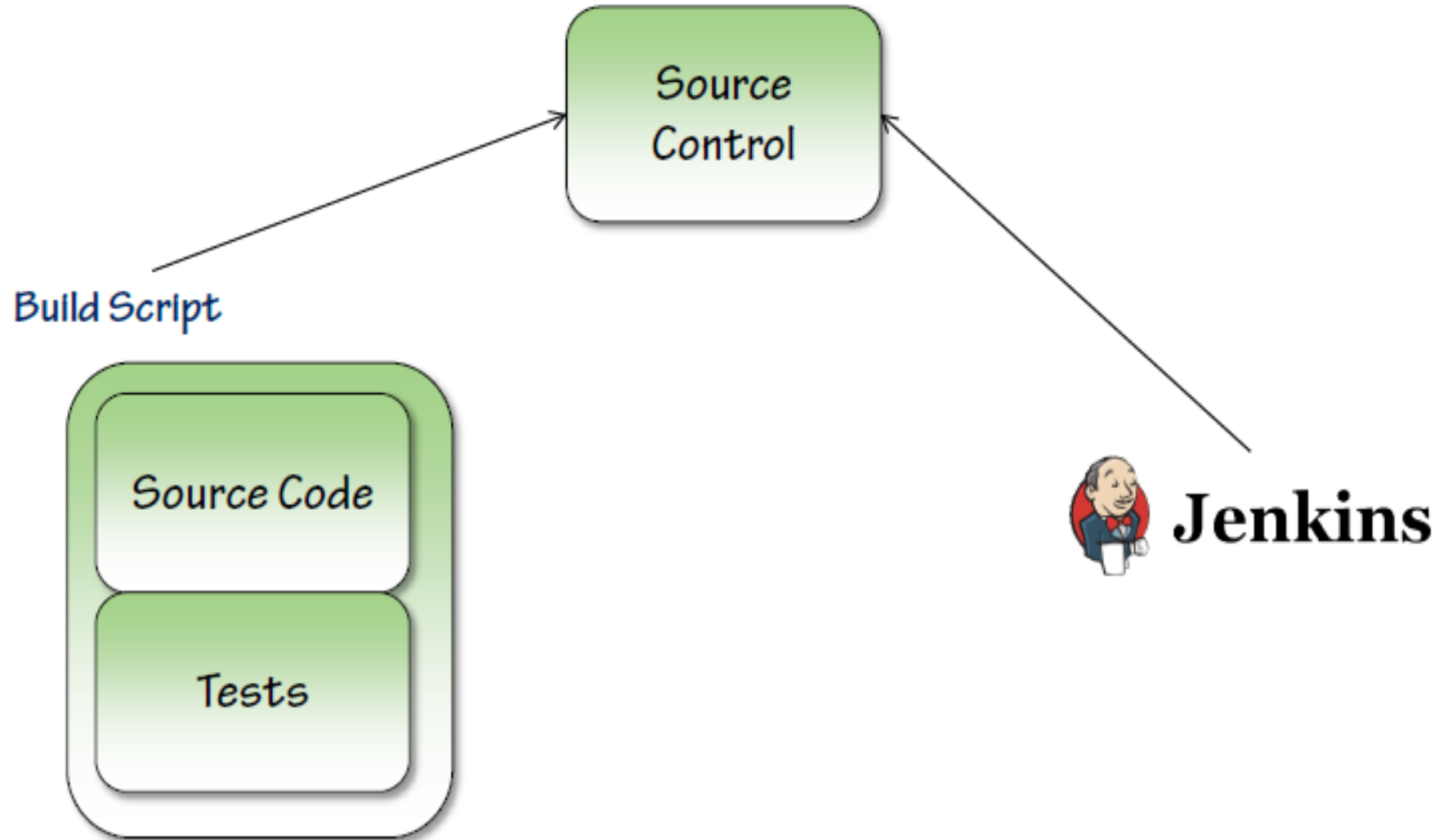
## Node info

- <https://wiki.jenkins-ci.org/display/JENKINS/Distributed+builds>

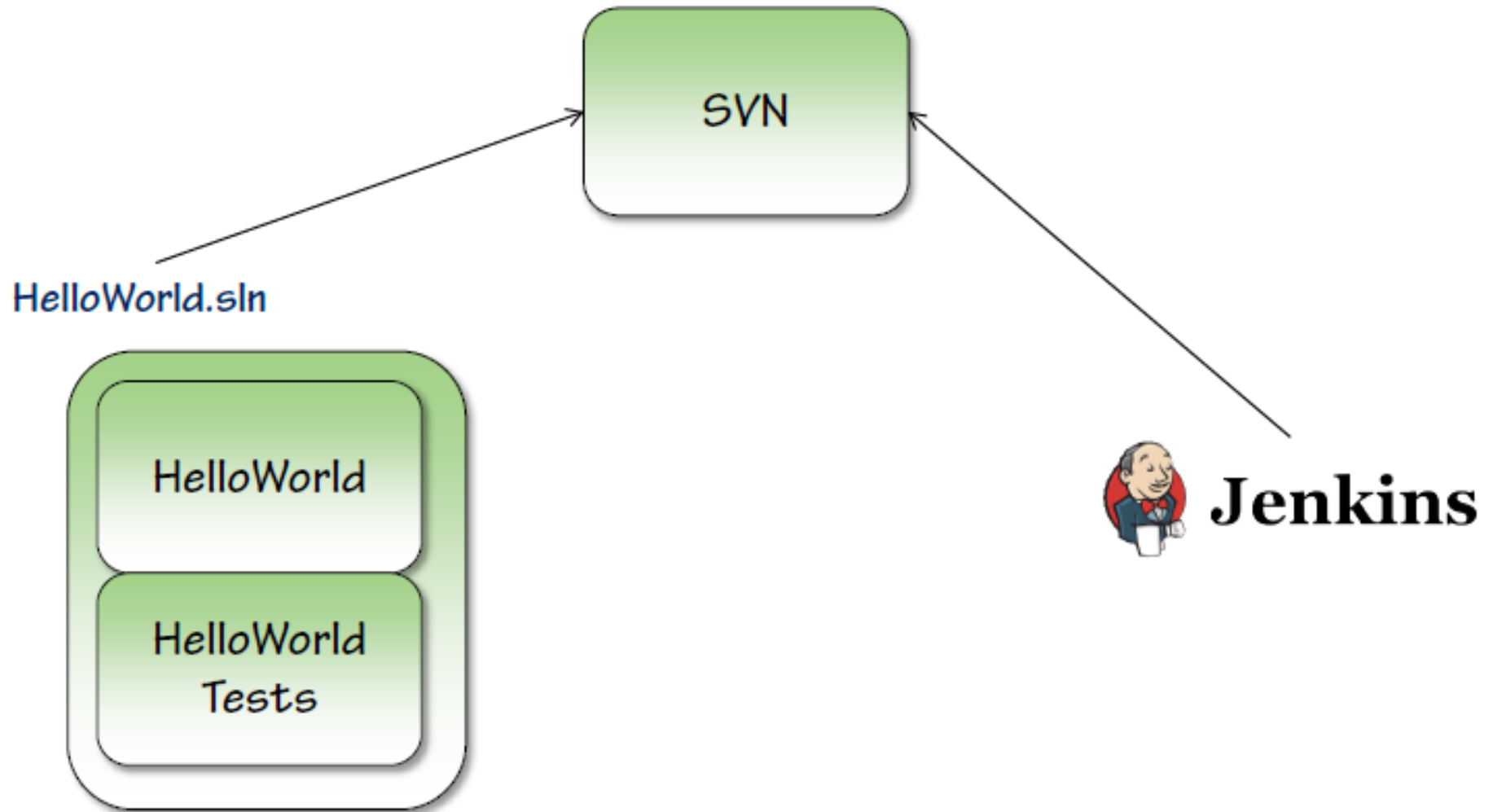


# Creating a Simple Job

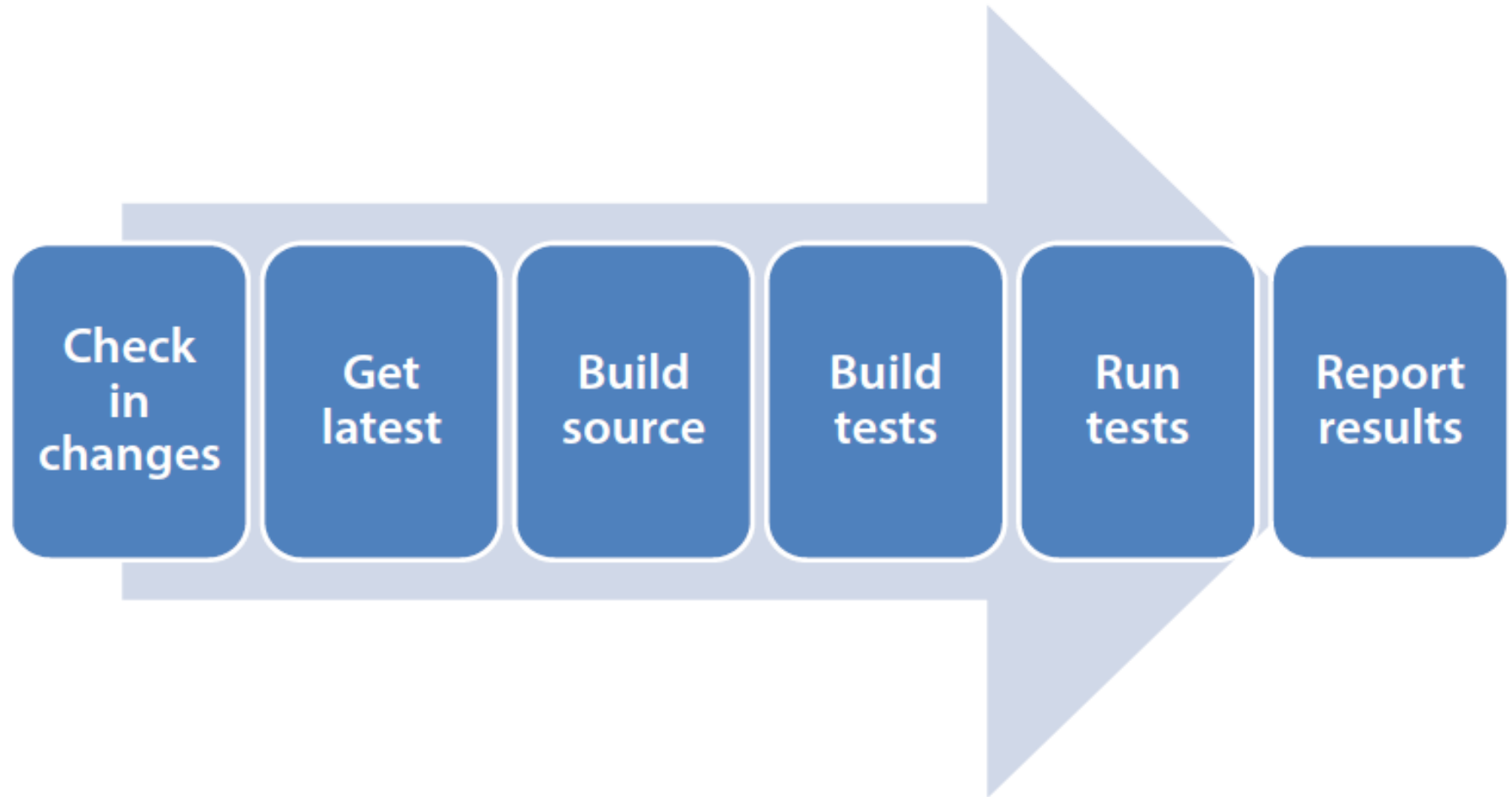
# Our Project



# Our Project (contd.)



# Our Build Process



# Moving to Jenkins

**Diagram manual process.**

**Follow manual steps.**

**Get most basic automation working.**

**Add each step.**

**Never leave the build in a failed state.**



# Build Triggers



After other projects

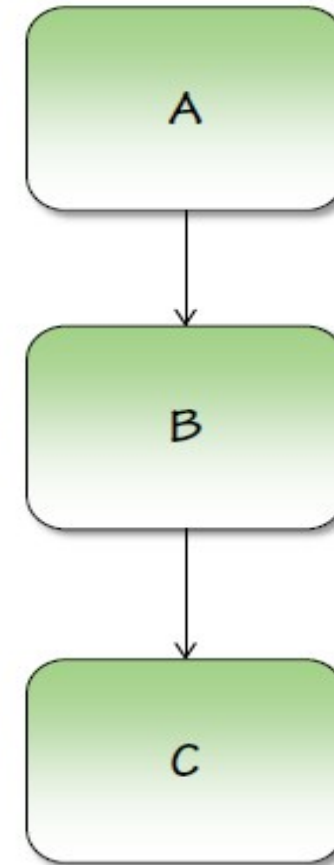


Periodically



Poll source control

# Build Steps



# Post Build Actions



*Suzle's parent's were so proud of her successful building of her enterprise application*

# Summary

The screenshot shows the Jenkins web interface for a project named 'Hello World'. The browser address bar indicates the URL is `localhost:8080/job/Hello%20World/`. The Jenkins logo is at the top left, and a search bar is at the top right. Below the header, there's a navigation bar with 'Jenkins' and 'Hello World' tabs, and an 'ENABLE AUTO REFRESH' button.

On the left side, there's a sidebar with various links: 'Back to Dashboard', 'Status', 'Changes', 'Workspace', 'Build Now', 'Delete Project', 'Configure', 'Subversion Polling Log', and 'Build History (trend)'. The 'Build History' section shows a list of builds with their status (blue for success, red for failure) and timestamps.

The main content area is titled 'Project Hello World'. It contains several links: 'Workspace', 'Recent Changes', and 'Latest Test Result (no failures)'. There's also a 'Test Result Trend' chart showing a red triangle on a blue background, indicating a trend of failures. The chart has a y-axis labeled 'count' and an x-axis labeled '#'. Below the chart, there's a link '(just show failures) enlarge'. At the bottom right of the chart area, there are buttons for 'add description' and 'Disable Project'.

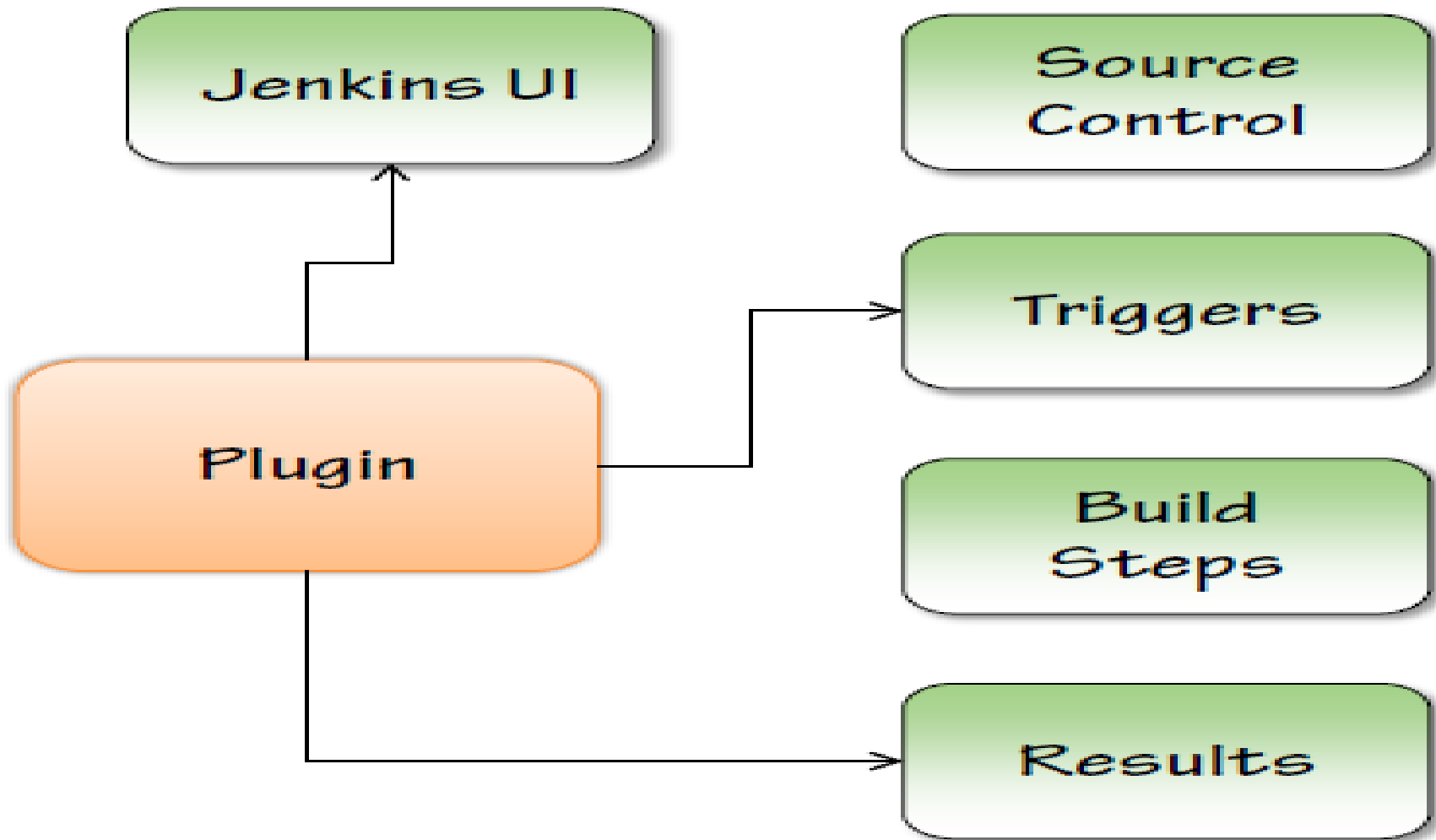
Below the main content area, there's a 'Permalinks' section with a list of links: 'Last build (#7), 4 min 51 sec ago', 'Last stable build (#7), 4 min 51 sec ago', 'Last successful build (#7), 4 min 51 sec ago', 'Last failed build (#6), 2 hr 32 min ago', and 'Last unsuccessful build (#6), 2 hr 32 min ago'.

At the bottom of the page, there's a footer with 'Page generated: Feb 3, 2013 12:12:39 PM', 'REST API', and 'Jenkins ver. 1.500'.



Plug-ins

# Plug-in Architecture





# Useful Plug-ins Overview



# Source Code

**Git**  
**Mecurial**  
**TFS**





# Triggers

## Github Pull Request Join Locks and Latches



# Build Tools



- **Copy artifacts**
- **Fitness**
- **MSBuild**
- **MSTest Runner**
- **NAnt**
- **Powershell**
- **Promoted Builds**

# Wrappers

**Selenium RC**  
**VMWare**  
**VirtualBox**



# Notifiers

**Hipchat**

**IRC**

**Twitter**

**Jabber**



# Reporting

REPORT CARD				
GRADING PERIOD	1	2	3	4
READING	A			
WRITTEN COMMUNICATION	A			
MATHEMATICS	C			
SCIENCE/HEALTH	B			
SOCIAL STUDIES	B			
ART	A			
MUSIC	A			
PHYSICAL EDUCATION	C			
Grade Average	B			
Attendance:	48			
Present				
Absent	0			
Tardy	1			

A = Excellent • B = Good • C = Satisfactory • N = Needs Improvement  
U = Unsatisfactory • I = Insufficient / Incomplete

Student: \_\_\_\_\_ Grade: \_\_\_\_\_ Year: \_\_\_\_\_

- Cobertura
- Findbugs
- MStest
- Ncover
- PMD

# Artifacts / UI

**Artifact deployer**

**Deploy**

**Chuck Norris**

**Emotional Jenkins**

**Claim**

**CI Game**

# Summary

## Jenkins Wiki

- **Extend Jenkins:** <https://wiki.jenkins-ci.org/display/JENKINS/Extend+Jenkins>
- **Plugin List:** <https://wiki.jenkins-ci.org/display/JENKINS/Plugins>

## MSBuild

- <https://wiki.jenkins-ci.org/display/JENKINS/MSBuild+Plugin>

## MSTest

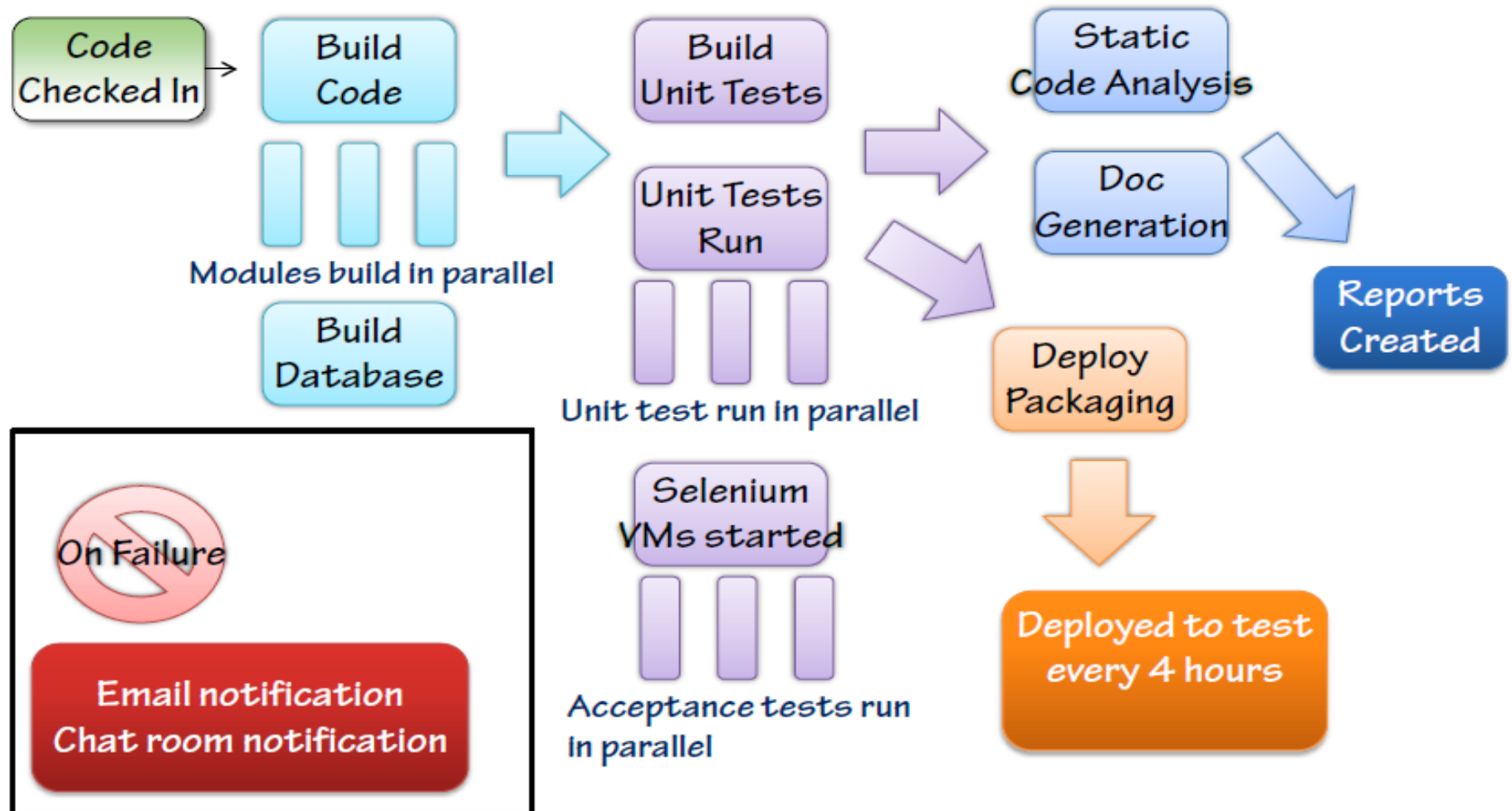
- <http://msdn.microsoft.com/en-us/library/ms182486.aspx>



# The Big Picture



# The Flow



# Areas of Discipline

**Unit Testing**

**Test Coverage**

**Acceptance Testing**

**Code Quality Metrics**

**Notifications**

**Documentation**

**Deployments**

# Unit Testing



- **Depends on source code being built**
- **Never let them fail**
- **Keep them unit size**
- **Keep them short**

# Test Coverage



- **Coverage doesn't mean quality!**
- **Perhaps fail the build.**

# Acceptance Testing



# Acceptance Testing

**Can be slow.**

**Takes serious effort.**

**Blog series:**

- <http://simpleprogrammer.com/getting-up-to-bat-series/>

# Code Quality Metrics

## Static Analysis

### Java Tools

- PMD
- FindBugs

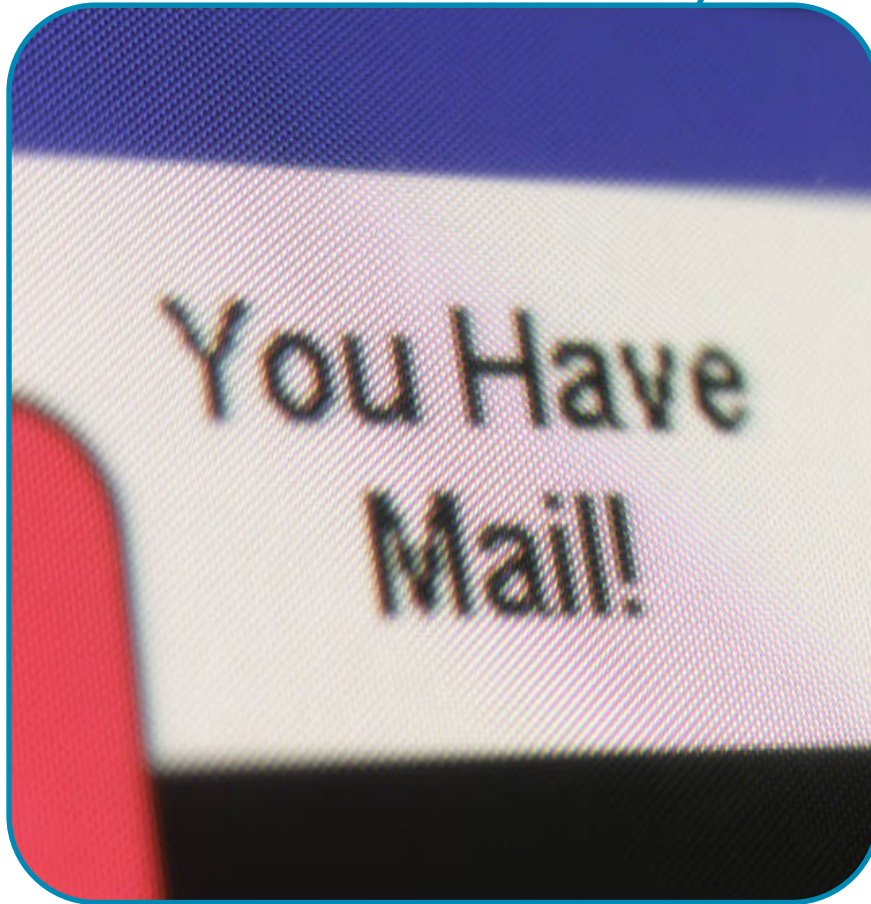
### .NET Tools

- FxCop
- StyleCop

### Set a threshold

- Things should not get worse.

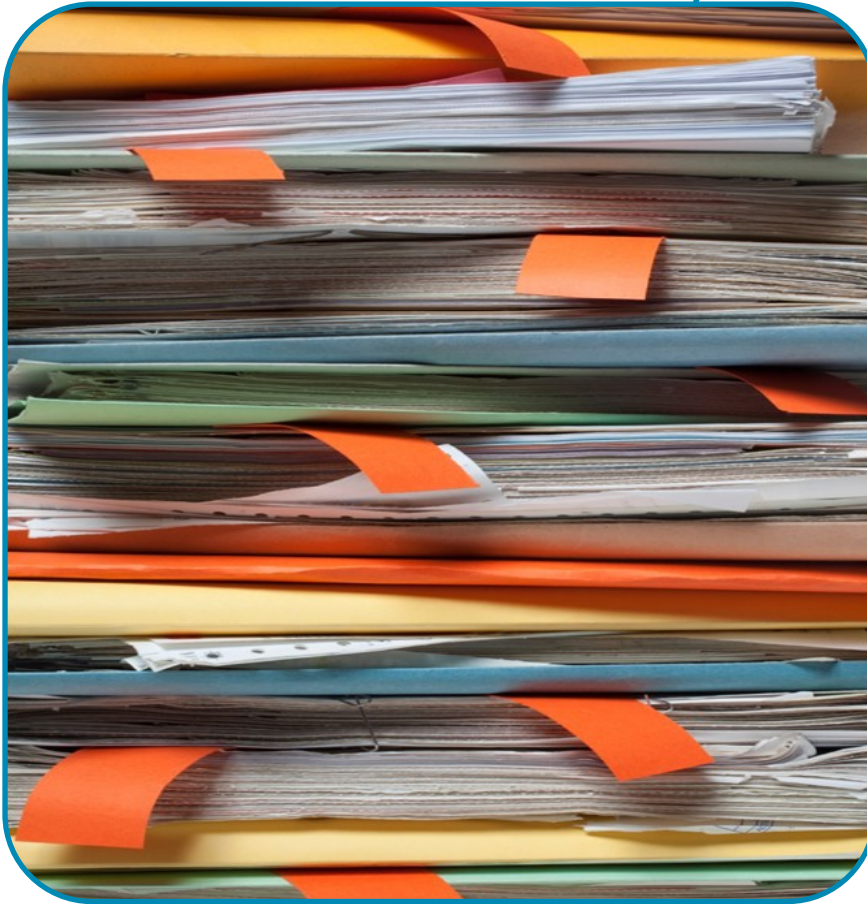
# Notifications



- Make failures known
- **Don't false fail**
- **Multiple channels**
- **Analyze failures**



# Documentation



- **Source code doc generators**
- **Help file generation**
- **API documentation**

# Deployments

**Jenkins is great for deploying**

**Periodic deployments**

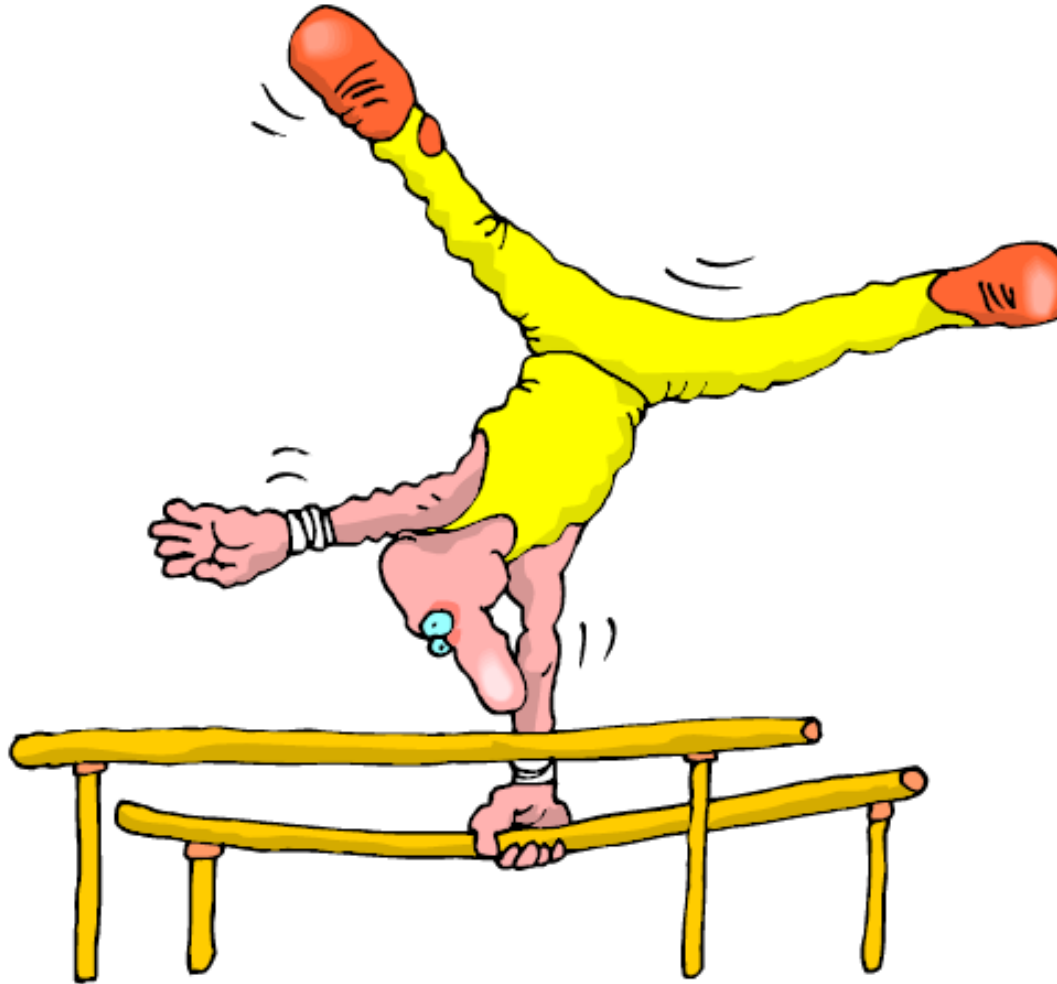
**Manual deployments**

**Reporting built in**

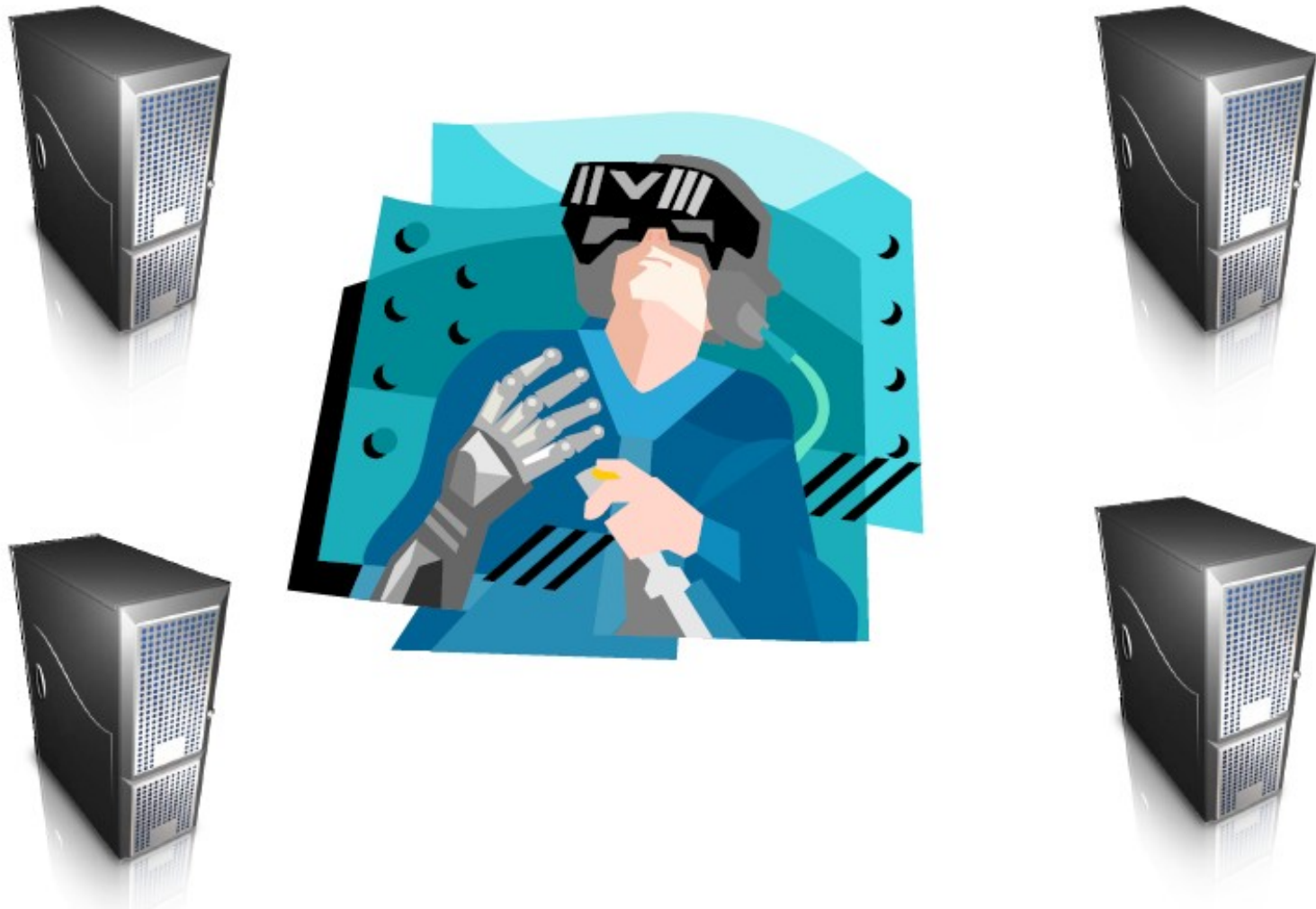
# Growing



# Parallelization is Key



# VMs are Your Friend





# To the Cloud!



People matter, results count.

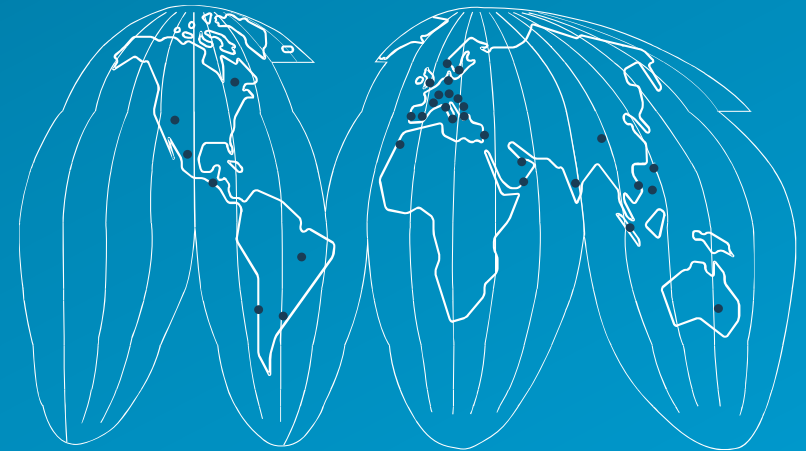


## About Capgemini

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Together with its clients, Capgemini creates and delivers business and technology solutions that fit their needs and drive the results they want. A deeply multicultural organization, Capgemini has developed its own way of working, the Collaborative Business Experience™, and draws on Rightshore®, its worldwide delivery model.

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