CLOUDBEES JENKINS PLATFORM

Pipeline with Docker (Day 1)

PREREQUISITES

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PREREQUISITES

- If you do not already have an SSH client, please install Secure Shell Chrome Extension
- Confirm that you can login to the assigned server (IP has been sent by email). Use cb as both the user and the password.
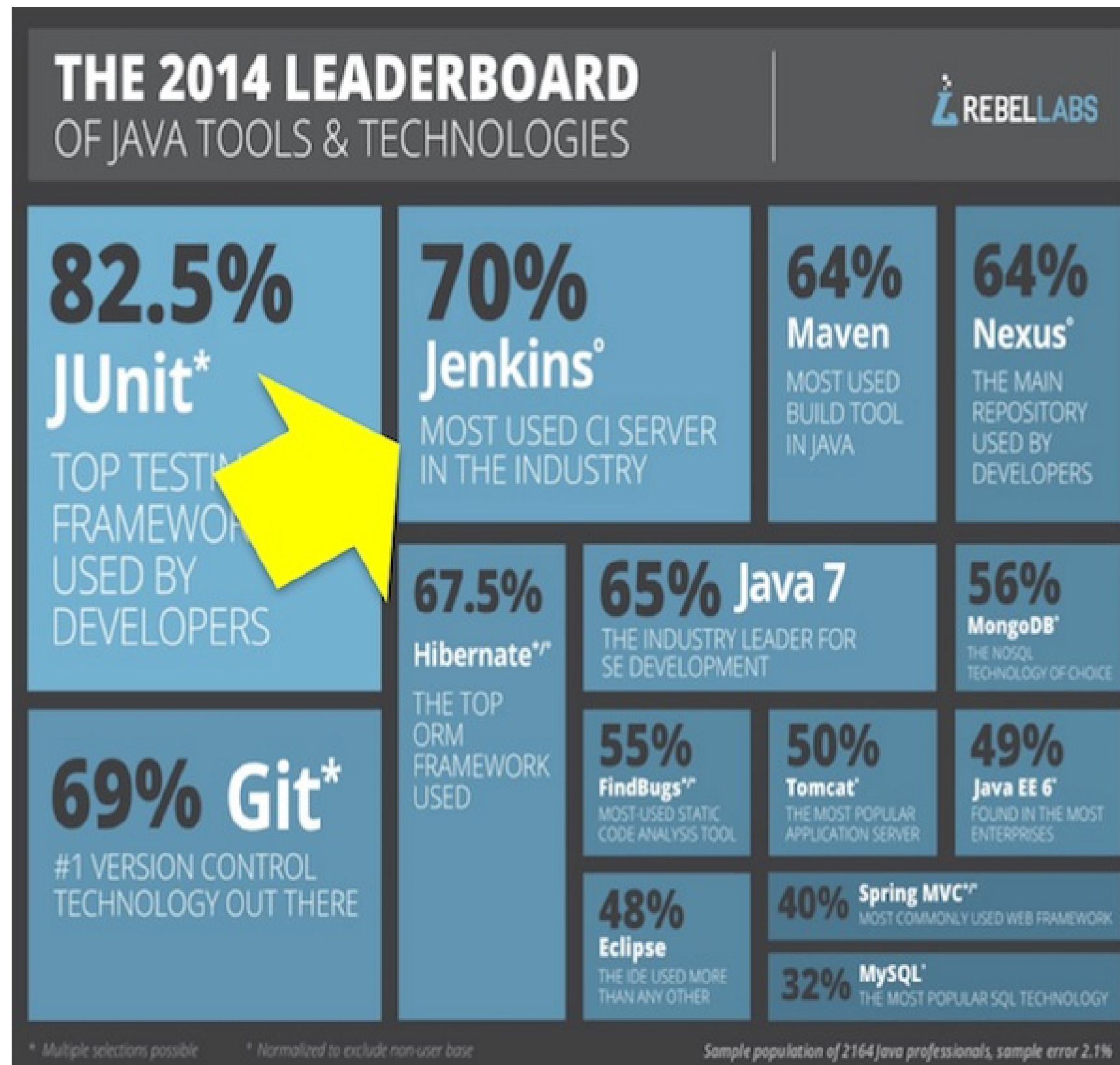
CloudBees Jenkins Platform
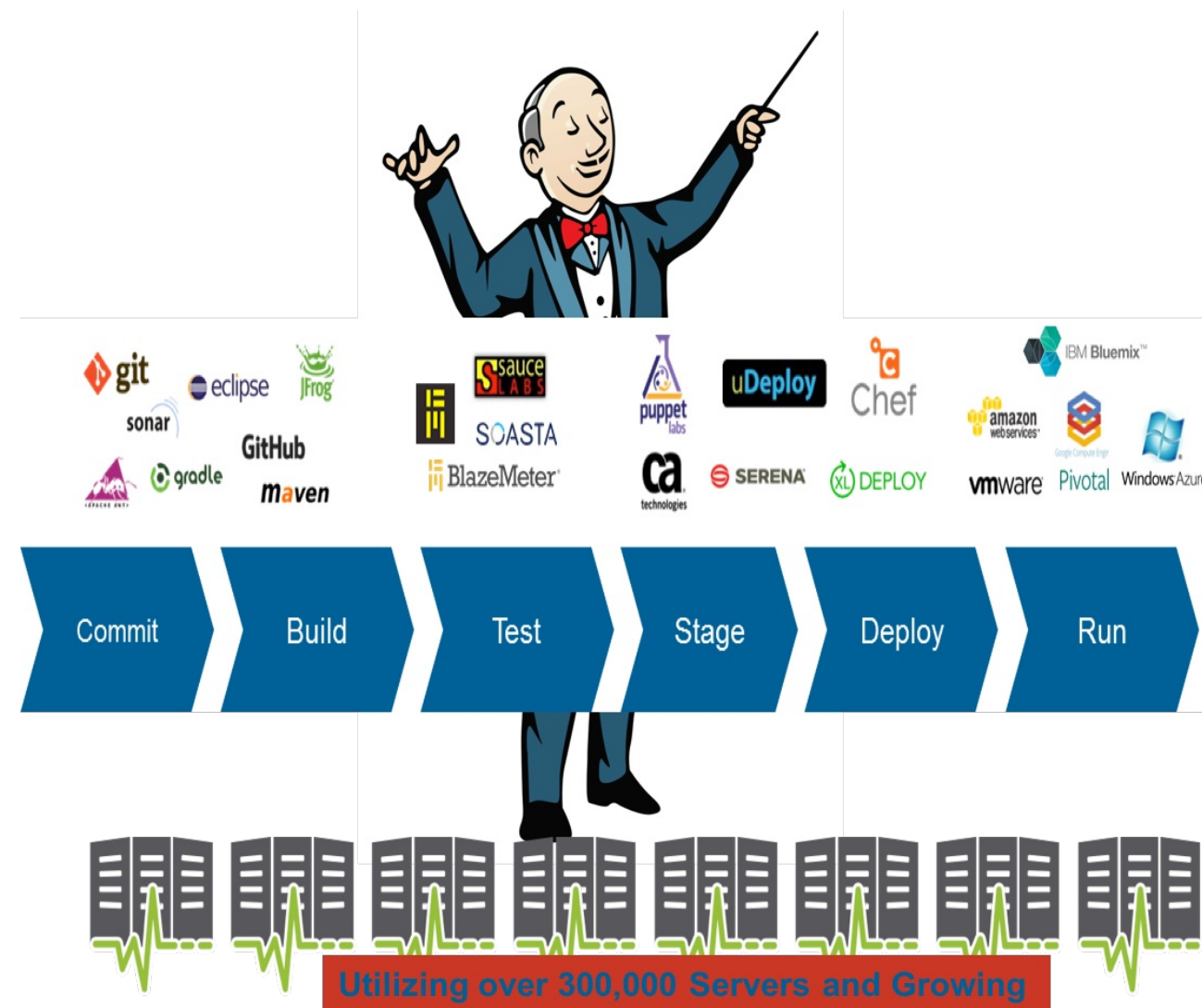
JENKINS OVERVIEW

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MEET JENKINS…

- #1 Continuous Integration and Delivery server
- Created by Kohsuke Kawaguchi
- An independent and active community (jenkins-ci.org)
- 10 years old
- 500+ releases to date
- 100,000 active installations
- 300,000 Jenkins servers
- 1,200+ plugins

Source: 2014 Java Tools and Technologies Landscape – Rebel Labs

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JENKINS IS THE CD ORCHESTRATOR

Commit | Build | Test | Stage | Deploy | Run

Utilizing over 300,000 Servers and Growing
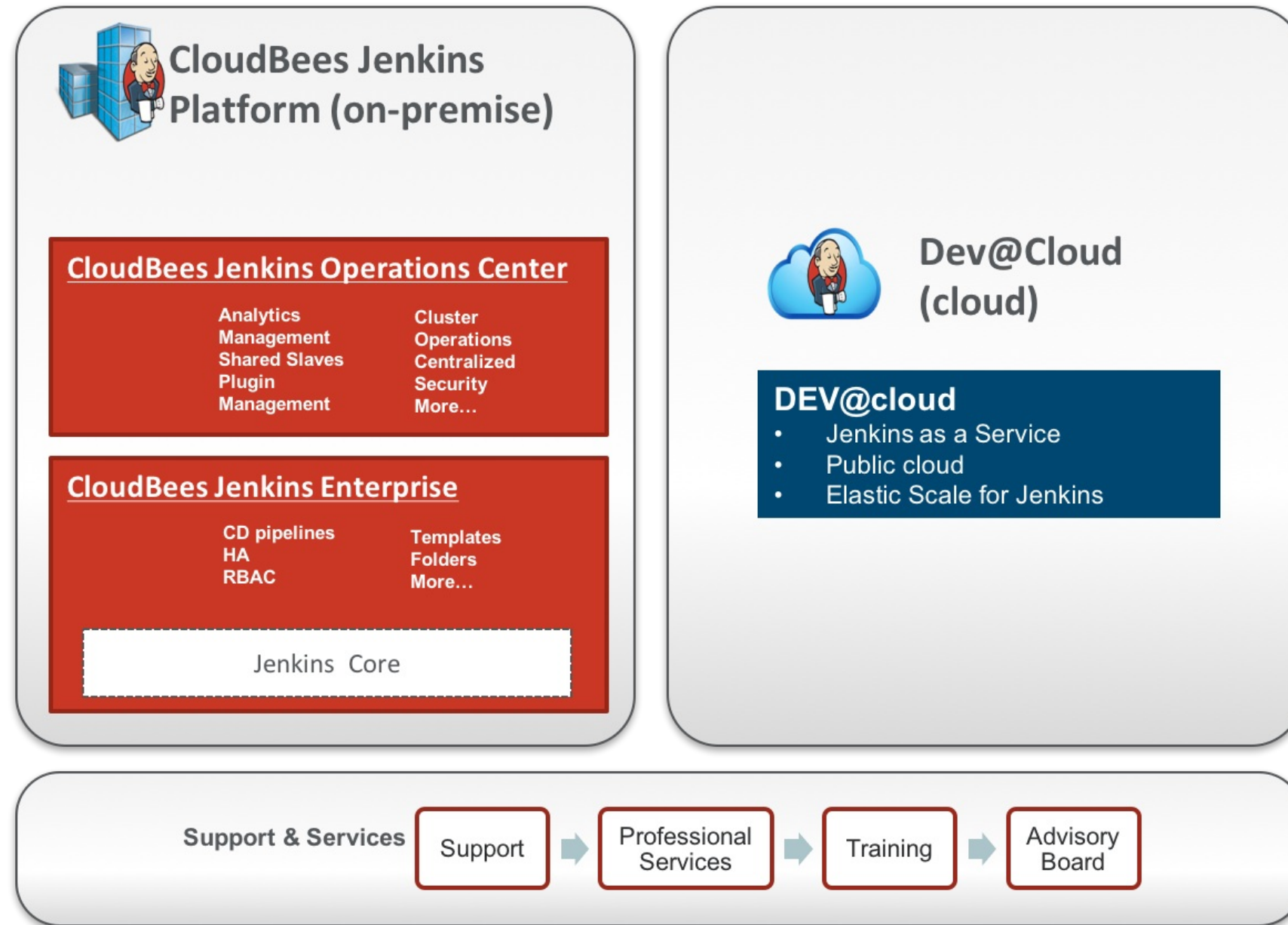
CLOUDBEES INTRODUCTION

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CLOUDBEES AND THE JENKINS COMMUNITY

- Kohsuke Kawaguchi
  - Community leader and CloudBees' CTO
- Code and Releases
  - CloudBees partners with the community on development
  - CloudBees engineers contribute a majority of Jenkins OSS code
  - CloudBees partners with the community on releases
  - CloudBees contributes fixes back to the community
- Produce Jenkins Quarterly Newsletter
- Conduct Jenkins User Conferences

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CLOUDBEES PRODUCTS

CloudBees Jenkins Platform (on-premise)

CloudBees Jenkins Operations Center

Analytics
Management
Shared Slaves
Plugin
Management

Cluster
Operations
Centralized
Security
More…

CloudBees Jenkins Enterprise

CD pipelines
HA
RBAC

Templates
Folders
More…

Jenkins Core

Dev@Cloud (cloud)

DEV@cloud
- Jenkins as a Service
- Public cloud
- Elastic Scale for Jenkins

Support & Services → Support ⇒ Professional Services ⇒ Training ⇒ Advisory Board

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CLOUDBEES JENKINS PLATFORM: ENTERPRISE EDITION

For enterprise DevOps or infrastructure teams that want to:

- Have the best in class Jenkins technical support
- Operate Jenkins at scale to support a large number of developers, teams, or projects
- Monitor usage and share resources across the Jenkins infrastructure
- Optimize performance and efficiency of the CD platform

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CLOUDBEES SUBSCRIPTION MODEL

- CloudBees sells subscriptions that entitle you to receive support for:
  - CloudBees Jenkins Platform
  - OSS Jenkins including 1,200+ Open Source Plugins
- Customers are charged an annual subscription fee per installation
  - Multi-year subscriptions are available
- A typical service subscription includes:
  - Software updates, bug fixes, and upgrades
  - Technical support
  - stable versions, stable APIs, and more

CLOUDBEES RESOURCES

- Customer Engagement
  - Support
  - Knowledge Base
  - Diagnostics
- Professional Services
  - Architecture Assessment & CD Guidance
  - Bootstrap Implementation Services
  - Migration Assistance
- Partners
  - Training
  - Integration
  - Custom Development

PIPELINE INTRODUCTION (DAY 1)

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IN THIS UNIT: YOU WILL LEARN

- The need for pipeline
- Pipeline use cases
- Key pipeline DSL
- Pipeline structure and syntax
- Execution control

IN THIS UNIT: YOU WILL BE ABLE TO

- Recognize pipeline purpose and use cases

THE NEED FOR PIPELINE?

- Reduction of a number of jobs
- Easier maintenance
- Deployment decentralization
- Easier specification through code

WHAT IS CD FLOW?
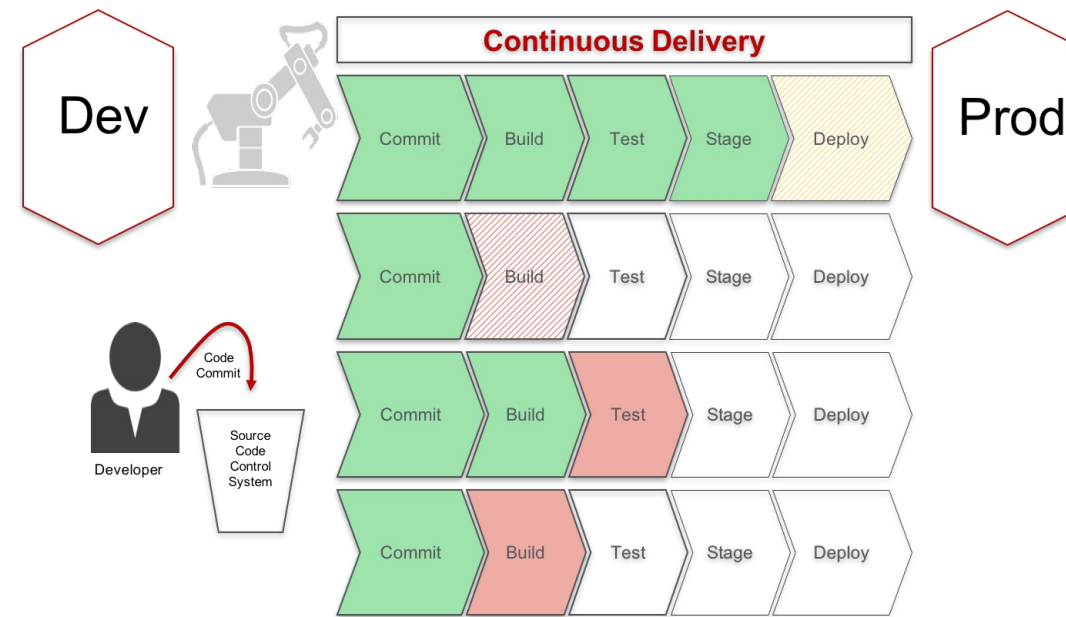
CD is about setting a "flow", from SCM commit to deployed application

Jenkins can chain jobs this way, but …

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JENKINS CD FLOW

A Real-world CD Flow Is Way More Complex !

- Requires (Complex) Conditional Logic
- Requires Resources Allocation And Cleanup
- Involves Human Interaction For Manual Approval
- Should Be Resumable At Some Point On Failure

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JENKINS CD FLOW

- Many Related Plugins
  - Conditional build steps
  - Parameterized trigger
  - Promotions
  - …
- Major Issue: Flow Configuration Is Scattered In Various Jobs

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CD FLOW VISUALIZATION

Build Pipeline Plugin To Render "Linear" Pipeline
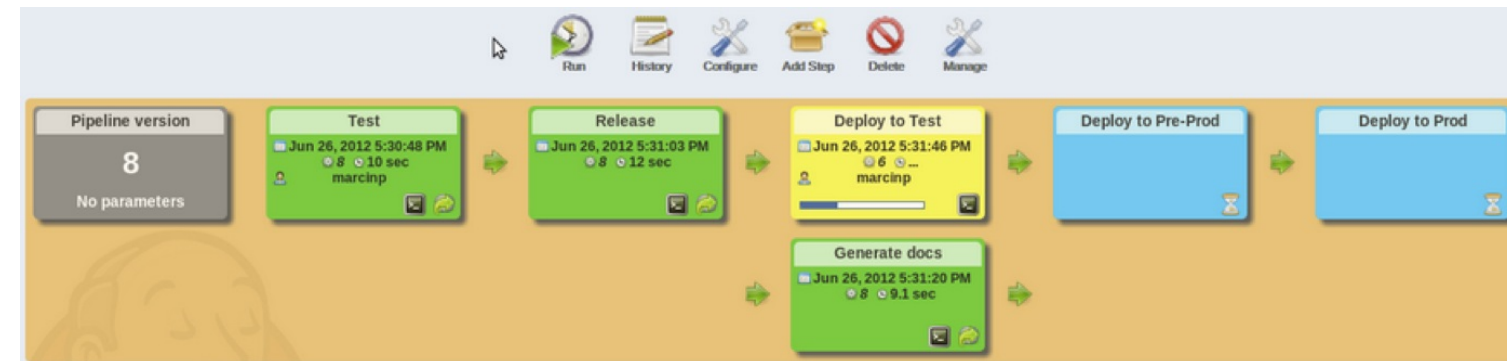
Build-graph-view To Render Complex Ones

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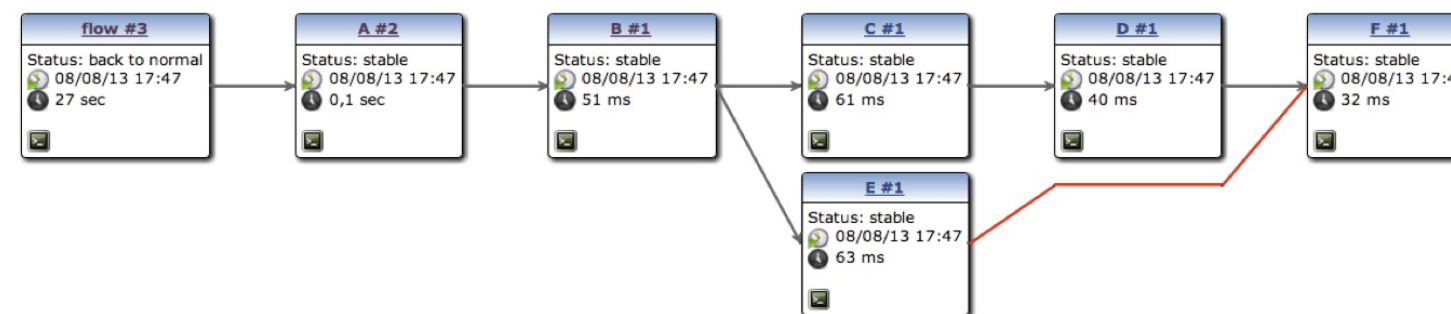
REALITY CHECK

- How do you use Jenkins now?
- Given the functionality, where do you see your team using these tools and plugins in your jobs?
- Do you practice CI or CD?
- Describe your CI/CD flow needs and processes.

BUILD FLOW PLUGIN

- OSS
- Proof of concept
- Define CD flow as code
- Largely adopted
- Technical limitations

build-flow-plugin - installations
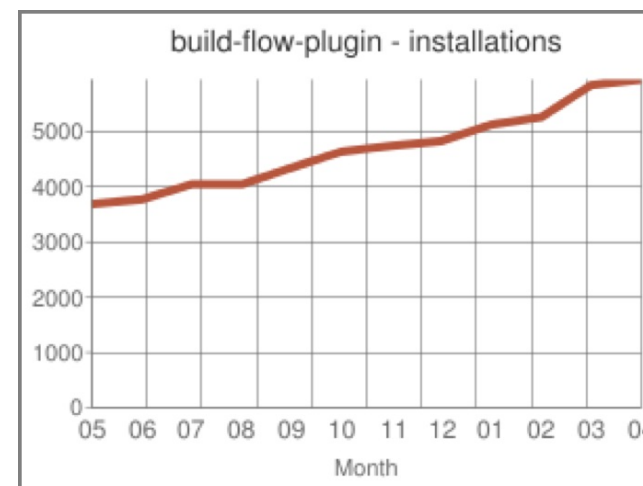
CLOUDBEES PIPELINE PLUGIN

- Inspired By Build-flow
- Groovy DSL To Orchestrate Build Steps
- Extensible DSL Syntax
- Supports Checkpoint
- Advanced Visualization
- SCM Friendly

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MID-BREAK

(10) minutes for learner re-integration.

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CREATING A SIMPLE PIPELINE

Item name | my-first-pipeline

○ **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.

○ **Auxiliary Template**

Auxiliary templates are used to create nested structures embedded within other templates as attribute values. For example, if you are modeling a CD, youd define an auxiliary template called "Track, and then your "CD" would have an attribute called "tracks" that contain a list of "Track"s.

○ Backup

[OK]

More info: Getting Started With Pipeline

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SNIPPET GENERATOR

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PIPELINE INTRODUCTION: REVIEW

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PIPELINE INTRODUCTION: REVIEW

- CD Flow
- Older Solutions
- Build Flow Plugin
- Cloudbees Pipeline Plugin
- Create Pipeline Jobs
- Use The Snippet Generator

PIPELINE INTRODUCTION: EXERCISE

Pipeline Introduction: Exercise

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