

# Getting Started with Git & GitHub on Z

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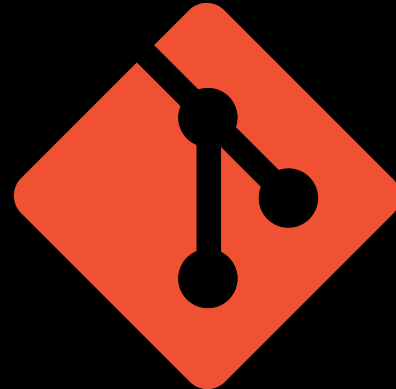


# Overview

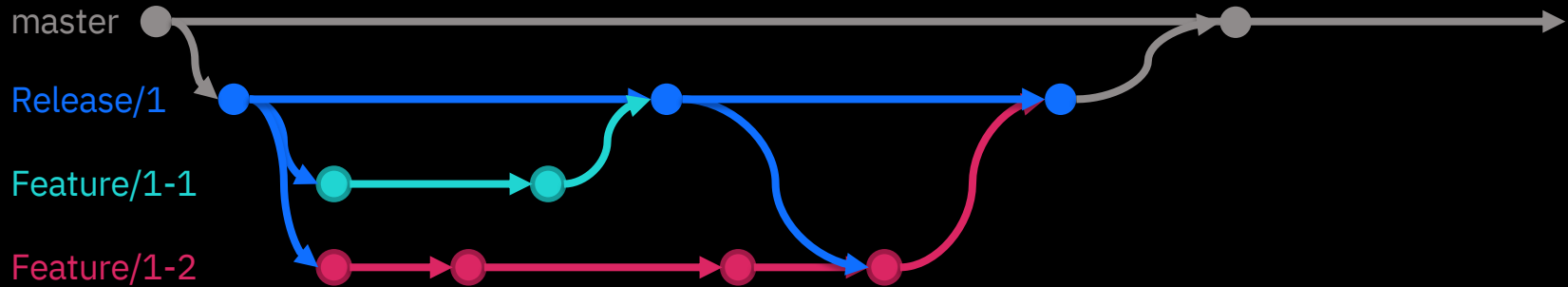
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# What is Git?

- Git is a **free** and **open source** distributed version control system.
  - Runs on all platforms (z/OS, Linux, Windows, Mac)
  - The *de-facto standard* for software development
  - Created in 2005 by Linus Torvalds for the development of the Linux kernel.
  - Language Agnostic
- Goals:
    - Speed
    - Data Integrity
    - Support distributed, non-linear workflows

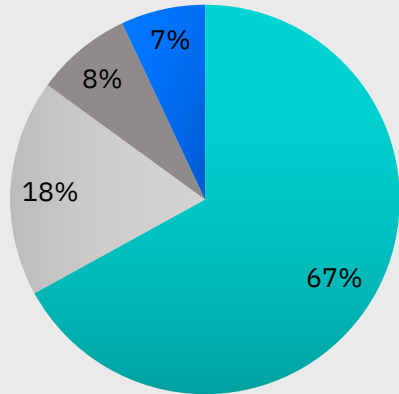


# Branching and Parallel Development



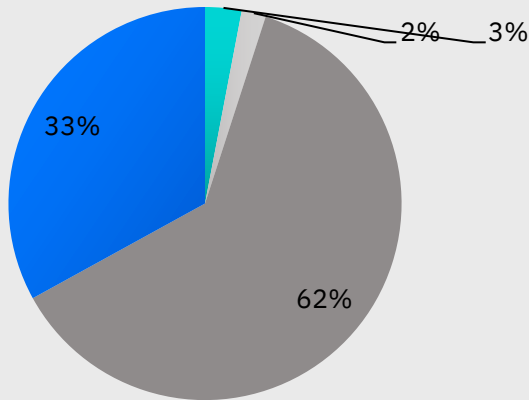
- Git branching allows for developers to work in parallel
- No more waiting for people to release files they have checked out
- No need to worry about your changes affecting another developer

# Git Hosting



## Self-Hosting Providers

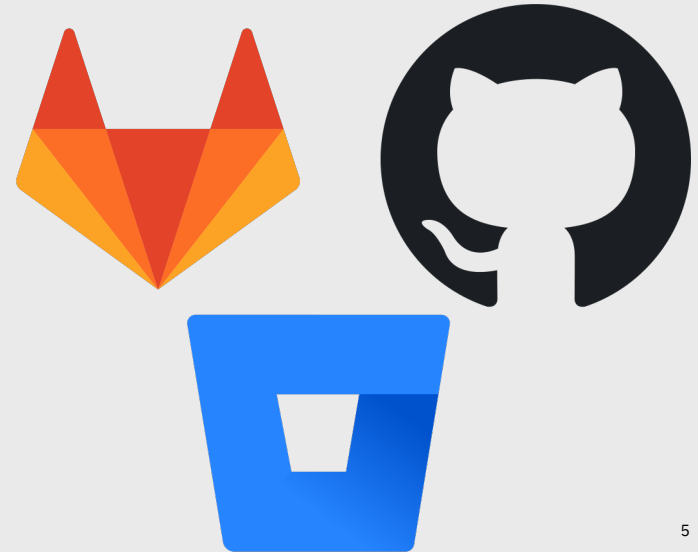
■ GitLab ■ Other ■ GitHub ■ Bitbucket



## Cloud Hosting Providers

■ GitLab ■ VSTS ■ GitHub ■ Bitbucket

- Centralized Git Repository
- Source of truth
- CI/CD tools
- Work Item/Issue Tracking & Project Management



# Getting Started with Git on Z

# Rocket Software's Port of Git

## Install Steps

- Requirements: bash-4.3, unzip-6.0 and perl-5.24.0
- Download: <https://www.rocketsoftware.com/zos-open-source/tools>
- Unzip & Untar
- Set environment variables

## Git in ISPF

- IBM DBB GitHub: <https://github.com/IBM/dbb/tree/master/IDE/GitISPFClient>

## Git Concepts

- Branching
- Commits
- Pulls & Merging
- Webinar link: [https://event.on24.com/wcc/r/2242678/F110C7B6A1BAC1267F1D9CD5859EB8EF?cm\\_mc\\_uid=01811329907015855750529&cm\\_mc\\_sid\\_50200000=18999681589808805684](https://event.on24.com/wcc/r/2242678/F110C7B6A1BAC1267F1D9CD5859EB8EF?cm_mc_uid=01811329907015855750529&cm_mc_sid_50200000=18999681589808805684)

## Using Git in IDz

- EGit plug-in
- .gitattributes file used for ASCII EBCDIC conversion
- Code Pattern: <https://developer.ibm.com/tutorials/egit-installation-for-ibm-explorer-for-zos/>



# Migrating to Git

## From Datasets

- DBB Migration script
- Mapping File
- Mapping Rule
- Instructions:  
[https://www.ibm.com/support/knowledgecenter/en/SS6T76\\_1.0.9/migration.html](https://www.ibm.com/support/knowledgecenter/en/SS6T76_1.0.9/migration.html)

## From SCLM

- SCLM migration tool
- Link:  
<https://github.com/IBM/dbb/tree/master/Migration>
- A good starting point

## From Endeavor, ChangeMan, etc.

- Partnership with RRMac for migration services.





# Dependency Base Build

## DBB

- Provides capability to automate builds for traditional z/OS applications like COBOL & PL/I
- Integrates well with open source tools like Git and Jenkins
- Java APIs allow you to run MVS, TSO and ISPF commands
- Works as a dependency control agent that makes sure all file (source and dependencies) in the mainframe build process are current

## Groovy Scripting

- Super Set of Java

## Web App

- Stores and manages the dependency information and build reports
- Can help you create intelligent build scripts.

## DBB Community Repository

- Link: <https://github.com/IBM/dbb>



# Getting Started with Git on Z

## zAppBuild

- A generic build solution for building z/OS applications using Groovy build scripts and IBM DBB APIs.
- Comes with sample Mortgage App

## How it works

- Clone to USS
  - build.properties
  - datasets.properties
- Build

## Supported Languages

- Assembler.groovy
- BMS.groovy
- Cobol.groovy
- LinkEdit.groovy (for building link cards)
- PLI.groovy
- DBDgen.groovy
- PSBgen.groovy
- MFS.groovy
- ZunitConfig.groovy

## GitHub Repo:

- Link:  
<https://github.com/IBM/dbb-zappbuild>

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development 2 branches 1 tag

Go to file Add file Code

dennis-behm Merge pull request #32 from dennis-behm/development e4fa83 17 days ago 71 commits

build-conf	adding dbb.file.tagging property	18 days ago
languages	Adding zUnit Support, these changes are paired with dbb v1.0.0 (#26)	last month
samples	adding missing pgm	18 days ago
utilities	pushing the scannerMapping to ScannerUtilities for backwards comp...	25 days ago
gitattributes	Adding zAppBuild Sample (#8)	15 months ago
project	Adding zAppBuild Sample (#8)	15 months ago
BUILD.md	pushing the scannerMapping to ScannerUtilities for backwards comp...	25 days ago
CONTRIBUTIONS.md	Introduction of the development branch	6 months ago
DCO1.1.txt	Reorganization for new repository	6 months ago
INSTALL.md	Adding zAppBuild Sample (#8)	15 months ago
LICENSE	Reorganization for new repository	6 months ago
README.md	Adding zUnit Support, these changes are paired with dbb v1.0.0 (#26)	last month
build.groovy	Adding zUnit Support, these changes are paired with dbb v1.0.0 (#26)	last month

README.md

### zAppBuild

About

zAppBuild is a generic build solution for building z/OS applications using Apache Groovy build scripts and IBM Dependency Based Build (DBB) APIs.

Readme

Apache-2.0 License

Releases 1

zAppBuild v2.0.0 (Latest) on Feb 27

Packages

No packages published

Contributors 7

Languages

Groovy 100.0%

# Getting Started with GitHub on Z



# Getting Started with GitHub on Z

- Create a GitHub account
- Fork zAppBuild or create your own repo
- Config git with your GitHub account (git config command or SSHKey)
- Clone to USS
- Configure zAppBuild Framework
- Test Build

## Pull Requests

- Merging branches
- Formal process
- Code Review
- Automated Checks

## Use Custom App

- Try replacing the sample Mortgage app with one of your own.
- Customize zAppBuild Framework for your app
- Build your app.

## Integrate with CI/CD Orchestrator

- Configure necessary plugins and connections
- Set up z/OS Agent
- Set up Git Clone stage
- Set up DBB Build Stage
- Run Pipeline



# What Next?

## Start using Git

- Set up Git on z/OS
- Create a GitHub account
- Make a Repo
- Work with your Repo

## Test out DBB

- Try a user build
- Test out the zAppBuild Framework
- Put your own app into the zAppBuild framework.
- zTrial Link:  
<https://www.ibm.com/account/eg/ae/signup?formid=ua-15955>

## Talk with your distributed counterparts

- Enterprise Wide Standardization

## Engage IBM

- Z Value Stream Assessment

# Thank you



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