GIT

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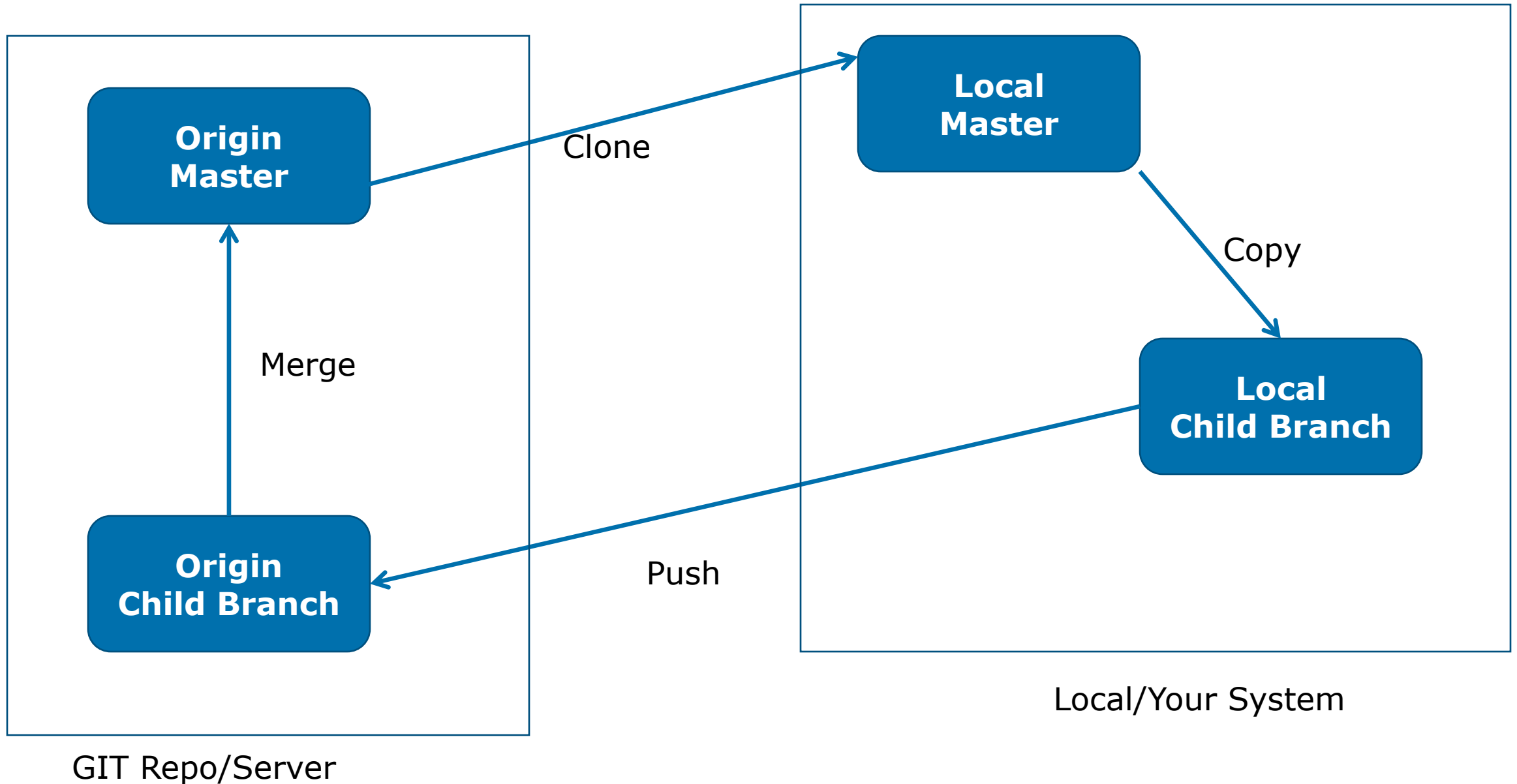Author: Venkata Raghavendra Talluri

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GIT

What is GIT..?

1) Git is a fast, scalable, distributed revision control system with an unusually rich command set.

2) Git is easy to learn and has a tiny footprint with lightning fast performance.

3) It provides both high-level operations and full access to internals.

4) It provides set of commands which will help you to store your data and manage in a controlled way.

5) It outclasses SCM tools like Subversion, CVS, Perforce, and ClearCase with features like cheap local branching, convenient staging areas, and multiple workflows

GIT Flow Diagram

Origin Master

Local Master

Clone

Copy

Merge

Local Child Branch

Origin Child Branch

Push

Local/Your System

GIT Repo/Server

GIT Commands

1) **git-init → Create an empty Git repository or reinitialize an existing one.**
   - This command creates an empty Git repository - basically a .git directory with subdirectories for objects, refs/heads, refs/tags, and template files.
   - An initial HEAD file that references the HEAD of the master branch is also created.

2) **git-clone → Clone a repository into a new directory**
   - Clones a repository into a newly created directory.
   - Creates remote-tracking branches for each branch in the cloned repository (visible using git branch -r)
   - Creates and checks out an initial branch that is forked from the cloned repository's currently active branch.

3) **git-status - Show the working tree status**
   - Displays paths that have differences between the index file and the current HEAD commit
   - Displays Paths that have differences between the working tree and the index file
   - Displays paths in the working tree that are not tracked by Git

4) **git-add - Add file contents to the index**
   - This command updates the index using the current content found in the working tree, to prepare the content staged for the next commit.
   - It typically adds the current content of existing paths as a whole, but with some options it can also be used to add content with only part of the changes made to the working tree files applied, or remove paths that do not exist in the working tree anymore.

GIT Commands

1) **git-commit - Record changes to the repository**
   - Stores the current contents of the index in a new commit along with a log message from the user describing the changes.
   - The content to be added can be specified in several ways.

2) **git-merge - Join two or more development histories together**
   - Incorporates changes from the named commits (since the time their histories diverged from the current branch) into the current branch.
   - This command is used by git pull to incorporate changes from another repository and can be used by hand to merge changes from one branch into another.

3) **git-fetch - Download objects and refs from another repository**
   - Fetch branches and/or tags (collectively, "refs") from one or more other repositories, along with the objects necessary to complete their histories.
   - Remote-tracking branches are updated.

4) **git-pull - Fetch from and integrate with another repository or a local branch**
   - Incorporates changes from a remote repository into the current branch.
   - In its default mode, git pul lis shorthand for git fetch followed by git merge FETCH_HEAD.

5) **git-push - Update remote refs along with associated objects**
   - Updates remote refs using local refs, while sending objects necessary to complete the given refs.

Reference

https://git-scm.com/

https://git-scm.com/docs

https://services.github.com/on-demand/downloads/github-git-cheat-sheet.pdf

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