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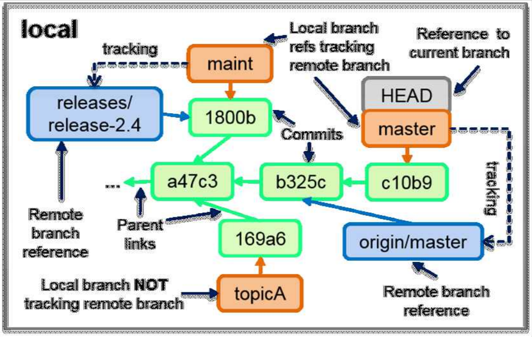

Intermediate Git

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Overview

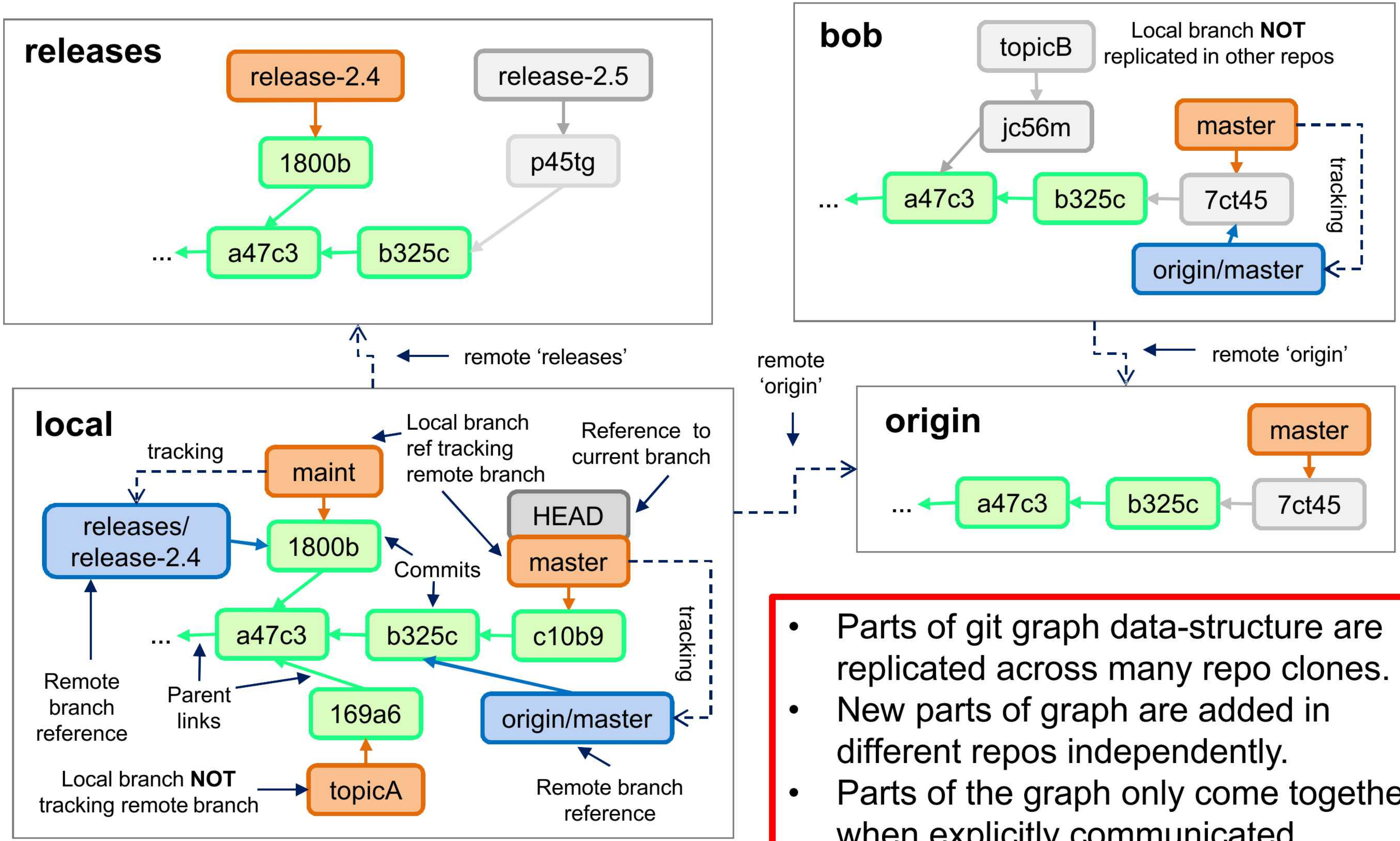
- Learn git as a data-structure and set of core algorithms to query and manipulate that data-structure.
- The git data-structure **IS** the best conceptual model for git.
- This data-structure can be seen in local git repo using:
  - git log --oneline --graph <ref>
  - gitk &
- Adopting/adapting workflows is easier once you have a basic understanding of the git data-structure and algorithms.
- Write personal cheat-sheet and memorize just the basic git commands for your adopted workflows (and Google the rest).
- Each project should document commands for adopted workflows (e.g. PETSc and Trilinos).

Material Presented

- IDEAS Project What-is and How-To Documents (https://ideas-productivity.org/resources/howtos/)
  - "What is Version Control?" (just mention)
  - "How to Do Version Control with Git in Your CSE Project" (skim)
- Git Tutorial and Reference Collection:
  - Critical Beginner Git Usage Tips (skim)
  - Visual Git Reference (in depth)
  - Visualizing Git Concepts with D3 (git revert, fetch, pull, push, tag)
  - The Git Object Model (skim)

Goal: Present some basics and gain some comfort & familiarity with these sites so that you can go back and complete the learning of the basic git data-structures and core algorithms.

The Distributed Git Data-Structure



Legend: xxxxx objects are not in 'local' repo

- Parts of git graph data-structure are replicated across many repo clones.
- New parts of graph are added in different repos independently.
- Parts of the graph only come together when explicitly communicated.
- All parts of the distributed replicated graph may never come together!

Summary

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