



Pacific  
Community  
Communauté  
du Pacifique

# 1 Introduction to Git and GitHub

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SPC Git/GitHub Workshop  
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# Overview

**Examples**    *SPC software/analyses/information*  
*fisheries software, open data, personal notes*

**Benefits**    *track changes, backups, collaboration, dissemination*

**Git concepts**    *repositories, commits, tags, branches, gitignore*

**GitHub features**    *releases, assets, forks, pull requests, issues,*  
*browse, access control, authentication*

## Level of Expertise

1. Have downloaded things from GitHub *for example, `install_github("somePackage")`*
2. Have a GitHub account and Git is installed on my computer
3. Have created my own repo *personal or within an organization*
4. Have forked a repo and submitted a pull request *contributing to a project*
5. Have helped a colleague with Git/GitHub and starred a repo
6. Have tagged a commit and created a GitHub release
7. Happy with my Git tools and configuration *edit, commit, browse, etc.*
8. Have worked across branches and solved a merge conflict
9. Could give a one-day workshop on using Git and Github 😊

# Installing Git



git windows



All



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<https://git-scm.com> > downloads  6

## Downloads - Git SCM

Downloads. macOS · **Windows** · Linux/Unix · Older releases are available and the **Git** source repository is on GitHub.

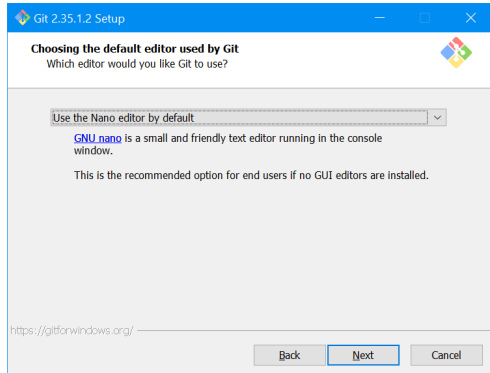
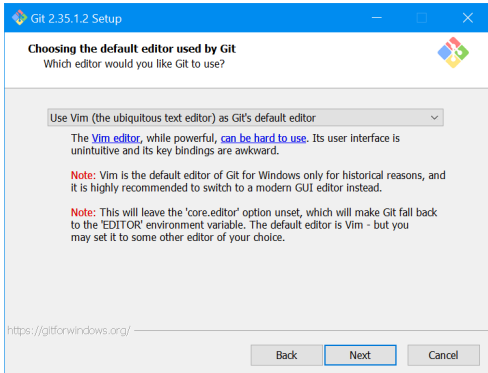
[macOS](#) · [Download for Linux and Unix](#) · [GUI Clients](#) · [Logos](#)

<https://git-scm.com> > download > win  6

## Downloading Package - Git SCM

Download for **Windows**. Click here to download the latest (2.35.1) 32-bit version of **Git** for **Windows**. This is the most recent maintained build.

# Default Editor



## GitHub Examples



Search or jump to...



[Pull requests](#) [Issues](#) [Marketplace](#) [Explore](#)



## Pacific Community (SPC)

Pacific Community (SPC) Official GitHub Organization

[New Caledonia](#) <http://www.spc.int/> [hostmaster@spc.int](mailto:hostmaster@spc.int)

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### Repositories

Find a repository...

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Language

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New

#### ofp-sam-yft-review Public

Yellowfin tuna assessment review

☆ 0 🍴 0 🔄 0 📄 0 Updated 3 hours ago

#### OFP-Ikamoana Private

Jupyter Notebook ☆ 1 🍴 1 🔄 0 📄 0 Updated 8 hours ago

#### OFP-FEMA-BioDaSys Private

Local front-end for the Biological Database System (Tissue Bank)

C# ☆ 0 🍴 0 🔄 6 📄 0 Updated 11 hours ago

#### tuf\_common Private

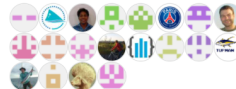
Common Tuf code shared between Tuf instances like Tufman2

C# ☆ 0 🍴 0 🔄 0 📄 0 Updated 15 hours ago

#### tufman2 Private

C# ☆ 0 🍴 1 🔄 11 (1 issue needs help) 📄 0 Updated 16 hours ago

### People



[View all](#)

### Top languages

R C# JavaScript HTML

TypeScript

# Repositories

<b>SPC software</b>	TUFMAN2, MD2, MULTIFAN-CL, SEAPODYM, FLR4MFCL
<b>SPC analyses</b>	Swordfish 2025 CPUE analysis, Oceanic whitetip shark 2025 assessment
<b>SPC information</b>	Yellowfin review, Condor tutorial, Git/GitHub workshop, TAF demo
<b>Fisheries software</b>	TMB, sdmTMB, SAM, Gadget, CASAL, Stock Synthesis, TAF
<b>Open data</b>	US West Coast fisheries, Global fisheries, Covid data
<b>Personal notes</b>	Covid analysis, Computer settings



## Benefits of Using Git and GitHub

## Benefits

**Track changes** Who changed what, when, and why

**Backups** Online

Restore previous state

**Collaboration** Local, regional, international

Software development, analyses, other projects

**Dissemination** Software

Open science, data hub

Products

# Git Concepts

# Git and GitHub

## Git

A program *that you can install*

Version control software *tracking changes*

Load and save project snapshots *clone, commit*

Free software *created by Linus Torvalds in 2005*

## GitHub

A website *open 'github.com' in a browser*

Service for Git projects *pull requests, issues*

Browse online *view changes, download*

Basic functionality is free *created 2008, owned by Microsoft since 2018*

*Popular in fisheries science since around 2015, taking over from previous (similar) technologies*

# Git Concepts

**Repository** Project folder with tracked changes    *a sequence of commits*

**Commit** Saved snapshot    *example: bc4b374*

**Tag** Nickname for a significant commit    *example: 2.0.0*

**Branch** Parallel sequence of commits    *can be merged later with the main branch*

**Gitignore** List of local files that should be ignored    *not uploaded to remote repo*

## GitHub Features

# GitHub Features

**Release** GitHub page pointing to a tag    *guaranteed to work, human-readable history*

**Assets** Downloadable files for a given release    *installer.exe, everything.zip, poster.pdf*

**Fork** Personal copy of a collaborative project repo    *edit things, add features*

**Pull request** Request project owner to consider your additions    *from your fork to main repo*

**Issue** Discussion related to project    *question, bug, idea*

## GitHub Features (cont)

**Browse** Organization/user    *repos (pinned/starred/search), people, teams*

Repo    *activity, releases, contributors, files, issues, pull requests, review comment*

Commits    *history, log entries, changed files, changed lines*

**Access control** public, private    *read/write/admin, teams*

**Authentication** login, clone, push    *password, windows credentials, ssh keys*



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