

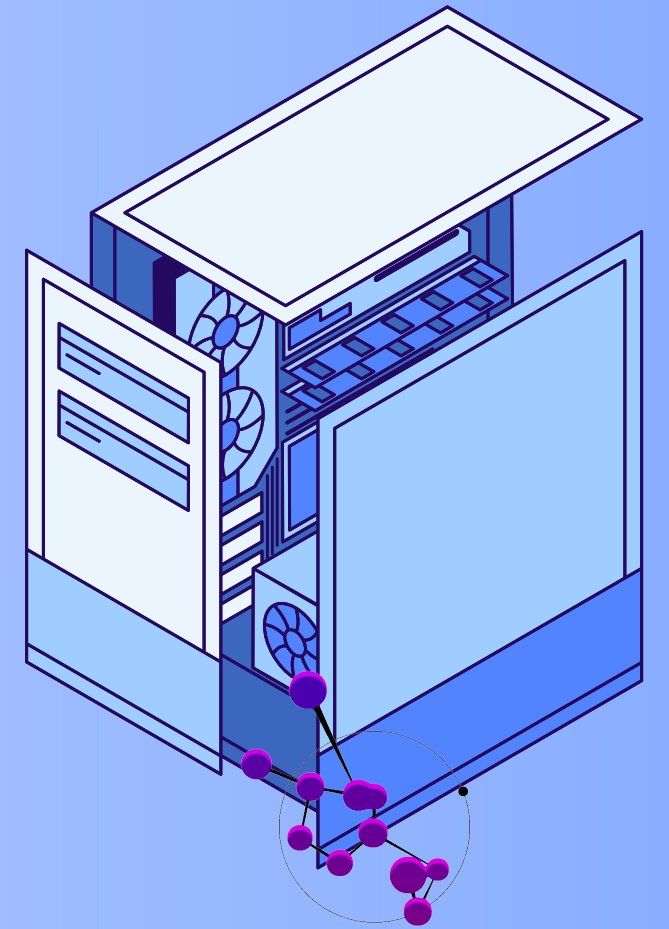
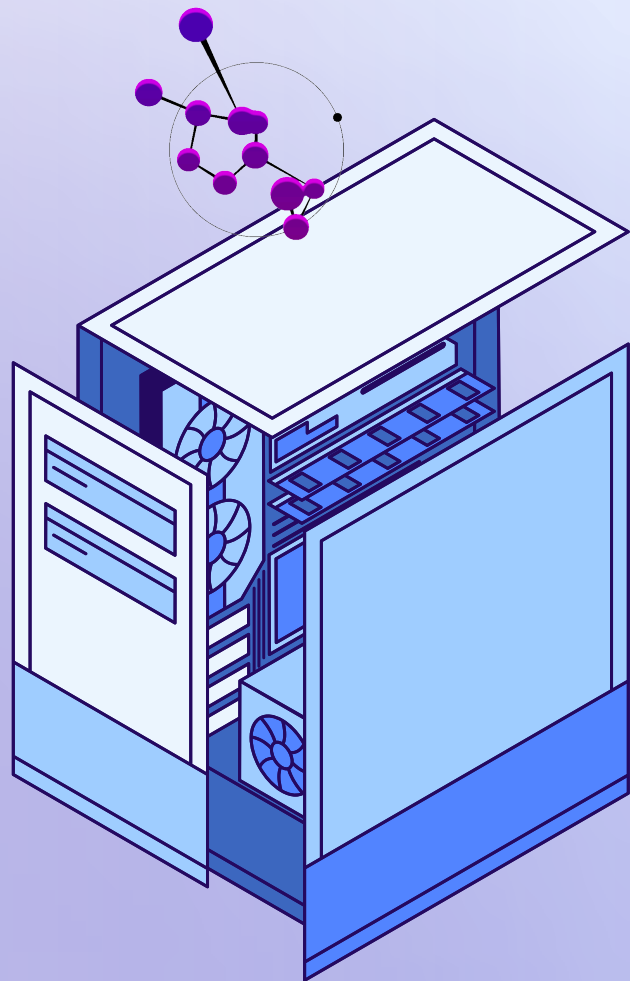
# SUBVERSION

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# DEFINITION

**Apache Subversion (SVN) is a centralized version control system that facilitates efficient management of project files and directories over time. It enables developers to track changes, revert to previous versions, and collaborate seamlessly.**



# INTRODUCTION TO SUBVERSION

- A centralized version control system developed by the Apache Software Foundation.
- Used to maintain current and historical versions

## KEY FEATURES INCLUDE:

- **Centralized Version Control:** All files are stored in a central repository, making it easy to manage.
- **Atomic Commits:** Ensures that either all changes are committed or none, preventing partial updates.
- **Efficient Handling of Binary Files:** Stores binary files effectively without unnecessary duplication.
- **Branching and Merging:** Supports parallel development by allowing teams to work on different branches.
- **Access Control:** Permissions can be set at directory levels to restrict access.

# INSTALLATION

## LINUX: wsl command:

`sudo apt update`

`sudo apt-get install subversion`

`sudo apt-get install libapache2-mod-svn`

```
PROBLEMS  OUTPUT  DEBUG CONSOLE  TERMINAL  PORTS
wsl + - [ ] [ ] ...

nandini_uniix@DESKTOP-DKD8FLD:/mnt/c/Users/hp/Desktop/6thsem/compiler/morning/my_project$ sudo apt update
[sudo] password for nandini_uniix:
Hit:1 http://archive.ubuntu.com/ubuntu jammy InRelease
Get:2 http://security.ubuntu.com/ubuntu jammy-security InRelease [129 kB]
Hit:3 http://archive.canonical.com/ubuntu jammy InRelease
Get:4 http://archive.ubuntu.com/ubuntu jammy-updates InRelease [128 kB]
Get:5 http://security.ubuntu.com/ubuntu noble-security InRelease [126 kB]
Get:6 http://security.ubuntu.com/ubuntu jammy-security/main amd64 Packages [2079 kB]
Get:7 http://archive.ubuntu.com/ubuntu jammy-backports InRelease [127 kB]
Hit:8 http://archive.ubuntu.com/ubuntu noble InRelease
Get:9 http://security.ubuntu.com/ubuntu jammy-security/main Translation-en [325 kB]
Get:10 http://security.ubuntu.com/ubuntu jammy-security/main amd64 Components [43.0 kB]
Get:11 http://security.ubuntu.com/ubuntu jammy-security/restricted amd64 Packages [2839 kB]
Get:12 http://archive.ubuntu.com/ubuntu noble-updates InRelease [126 kB]
Get:13 http://security.ubuntu.com/ubuntu jammy-security/restricted Translation-en [497 kB]
Get:14 http://security.ubuntu.com/ubuntu jammy-security/restricted amd64 Components [208 B]
Get:15 http://security.ubuntu.com/ubuntu jammy-security/universe amd64 Packages [961 kB]
Get:16 http://security.ubuntu.com/ubuntu jammy-security/universe Translation-en [205 kB]
Get:17 http://security.ubuntu.com/ubuntu jammy-security/universe amd64 Components [125 kB]
Get:18 http://security.ubuntu.com/ubuntu jammy-security/multiverse amd64 Components [208 B]
Get:19 http://security.ubuntu.com/ubuntu noble-security/main amd64 Packages [618 kB]
Get:20 http://security.ubuntu.com/ubuntu noble-security/main Translation-en [118 kB]
Get:21 http://security.ubuntu.com/ubuntu noble-security/main amd64 Components [8988 B]
Get:22 http://security.ubuntu.com/ubuntu noble-security/universe amd64 Packages [803 kB]
Get:23 http://security.ubuntu.com/ubuntu noble-security/universe Translation-en [171 kB]
Get:24 http://security.ubuntu.com/ubuntu noble-security/universe amd64 Components [52.0 kB]
```

```
PROBLEMS  OUTPUT  DEBUG CONSOLE  TERMINAL  PORTS
wsl + - [ ] [ ] ...

nandini_uniix@DESKTOP-DKD8FLD:/mnt/c/Users/hp/Desktop/6thsem/compiler/morning/my_project$ sudo apt-get install subversion
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following package was automatically installed and is no longer required:
  libllvm17t64
Use 'sudo apt autoremove' to remove it.
The following additional packages will be installed:
  libapr1t64 libaprutil1t64 libserf-1-1 libsvn1 libutf8proc3
Suggested packages:
  db5.3-util libapache2-mod-svn subversion-tools
The following NEW packages will be installed:
  libapr1t64 libaprutil1t64 libserf-1-1 libsvn1 libutf8proc3 subversion
0 upgraded, 6 newly installed, 0 to remove and 23 not upgraded.
Need to get 2571 kB of archives.
```



```
nandini_uniix@DESKTOP-DKD8FLD:/mnt/c/Users/hp/Desktop/6thsem/compiler/morning/my_project$ sudo apt-get install libapache2-mod-svn
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following package was automatically installed and is no longer required:
  libllvm17t64
Use 'sudo apt autoremove' to remove it.
The following additional packages will be installed:
  apache2-bin libaprutil1-dbd-sqlite3 libaprutil1-ldap liblua5.4-0
Suggested packages:
  apache2-doc apache2-suexec-pristine | apache2-suexec-custom www-browser db5.3-util
The following NEW packages will be installed:
  apache2-bin libapache2-mod-svn libaprutil1-dbd-sqlite3 libaprutil1-ldap liblua5.4-0
0 upgraded, 5 newly installed, 0 to remove and 23 not upgraded.
Need to get 1608 kB of archives.
After this operation, 6192 kB of additional disk space will be used.
Do you want to continue? [Y/n] y
Get:1 http://archive.ubuntu.com/ubuntu noble/main amd64 libaprutil1-dbd-sqlite3 amd64 1.6.3-1.1ubuntu7 [11.2 kB]
Get:2 http://archive.ubuntu.com/ubuntu noble/main amd64 libaprutil1-ldap amd64 1.6.3-1.1ubuntu7 [9116 B]
Get:3 http://archive.ubuntu.com/ubuntu noble/main amd64 liblua5.4-0 amd64 5.4.6-3build2 [166 kB]
Get:4 http://archive.ubuntu.com/ubuntu noble-updates/main amd64 apache2-bin amd64 2.4.58-1ubuntu8.5 [1329 kB]
```

# Workflow Example

## 1. Set up an SVN repository

### Create a Local Repository

```
mkdir ~/svn_repo
```

## 2. Initialize Repo

```
svnadmin create ~/svn_repo/my_project
```

```
nandini_uniix@DESKTOP-DKD8FLD:/mnt/c/Users/hp/Desktop/6thsem/compiler/morning/my_project$ mkdir ~/svn_repo  
nandini_uniix@DESKTOP-DKD8FLD:/mnt/c/Users/hp/Desktop/6thsem/compiler/morning/my_project$ svnadmin create ~/svn_repo/my_project
```

## Start SVN Server (Optional)

```
svnserve -d -r ~/svn_repo
```

```
nandini_uniix@DESKTOP-DKD8FLD:/mnt/c/Users/hp/Desktop/6thsem/compiler/morning/my_project$ svnserve -d -r ~/svn_repo  
nandini_uniix@DESKTOP-DKD8FLD:/mnt/c/Users/hp/Desktop/6thsem/compiler/morning/my_project$
```

### 3. Commit changes

```
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS
(No info could be read for "-p": geteuid()=1000 but you should be root.)
nandini_uniix@DESKTOP-DKD8FLD:/mnt/c/Users/hp/Desktop/subversion$ svnserve -d -r /var/svn/repos
svnserve: E000098: Can't bind server socket: Address already in use
nandini_uniix@DESKTOP-DKD8FLD:/mnt/c/Users/hp/Desktop/subversion$ svn checkout svn://localhost/myrepo --username alice
svn: E170013: Unable to connect to a repository at URL 'svn://localhost/myrepo'
svn: E200002: Error while parsing config file: /var/svn/repos/myrepo/conf/svnserve.conf:
svn: E200002: line 18: Option expected
nandini_uniix@DESKTOP-DKD8FLD:/mnt/c/Users/hp/Desktop/subversion$ pkill svnserve
pkill: killing pid 1269 failed: Operation not permitted
nandini_uniix@DESKTOP-DKD8FLD:/mnt/c/Users/hp/Desktop/subversion$ sudo pkill svnserve
nandini_uniix@DESKTOP-DKD8FLD:/mnt/c/Users/hp/Desktop/subversion$ svnserve -d -r /var/svn/repos
nandini_uniix@DESKTOP-DKD8FLD:/mnt/c/Users/hp/Desktop/subversion$ svn checkout svn://localhost/myrepo --username alice
svn: E170013: Unable to connect to a repository at URL 'svn://localhost/myrepo'
svn: E200002: Error while parsing config file: /var/svn/repos/myrepo/conf/svnserve.conf:
svn: E200002: line 18: Option expected
nandini_uniix@DESKTOP-DKD8FLD:/mnt/c/Users/hp/Desktop/subversion$
```

## 4. Clone a Remote Repository:

hg clone https://www.mercurial-scm.org/repo/hello

```
nandini_uniix@DESKTOP-DKD8FLD:/mnt/c/Users/hp/Desktop/6thsem/compiler/morning/my_project$ hg clone https://www.mercurial-scm.org/repo/hello

real URL is https://repo.mercurial-scm.org/hello
destination directory: hello
requesting all changes
adding changesets
adding manifests
adding file changes
added 2 changesets with 2 changes to 2 files
new changesets 0a04b987be5a:82e55d328c8c
updating to branch default
2 files updated, 0 files merged, 0 files removed, 0 files unresolved
nandini_uniix@DESKTOP-DKD8FLD:/mnt/c/Users/hp/Desktop/6thsem/compiler/morning/my_project$
nandini_uniix@DESKTOP-DKD8FLD:/mnt/c/Users/hp/Desktop/6thsem/compiler/morning/my_project$
```

## 5. Push changes to Remote

hg push

```
nandini_uniix@DESKTOP-DKD8FLD:/mnt/c/Users/hp/Desktop/6thsem/compiler/morning/my_project$ hg push
config error: default repository not configured!
(see 'hg help config.paths')
nandini_uniix@DESKTOP-DKD8FLD:/mnt/c/Users/hp/Desktop/6thsem/compiler/morning/my_project$
```



# ADVANTAGES

- **Ease of Use:** Simpler and more consistent commands compared to Git.
- **Performance:** Handles large repositories efficiently.
- **Flexibility:** Supports both centralized and distributed workflows.
- **Extensibility:** Plugins allow customization for specific needs.

# DISADVANTAGES

- **Less Popular:** Git has a larger community and ecosystem.
- **Fewer Hosting Options:** Platforms like GitHub and GitLab are more Git-focused.