Software Configuration Management

In Software Engineering, Software Configuration Management(SCM) is a process to systematically manage, organize, and control the changes in the documents, codes, and other entities during the Software Development Life Cycle.

Why do we need Configuration management?

The primary reasons for Implementing Technical Software Configuration Management System are:

- There are multiple people working on software which is continually updating
- It may be a case where multiple version, branches, authors are involved in a software config project, and the team is geographically distributed and works concurrently
- Changes in user requirement, policy, budget, schedule need to be accommodated.
- Software should able to run on various machines and Operating Systems
- Helps to develop coordination among stakeholders
- SCM process is also beneficial to control the costs involved in making changes to a system

Tasks in SCM process

- Configuration Identification
- Baselines
- Change Control
- Configuration Status Accounting
- Configuration Audits and Reviews

Configuration Identification:

Configuration identification is a method of determining the scope of the software system.
Example:

1. Instead of naming a File login.php its should be named login_v1.2.php where v1.2 stands for the version number of the file
2. Instead of using snake_case. Use camelCase while programming this software.

Baseline:

A baseline is a formally accepted version of a software configuration item. It is designated and fixed at a specific time while conducting the SCM process.
In simple words, baseline means ready for release.

Change Control:

Change control is a procedural method which ensures quality and consistency when changes are made in the configuration object.

Configuration Status Accounting:

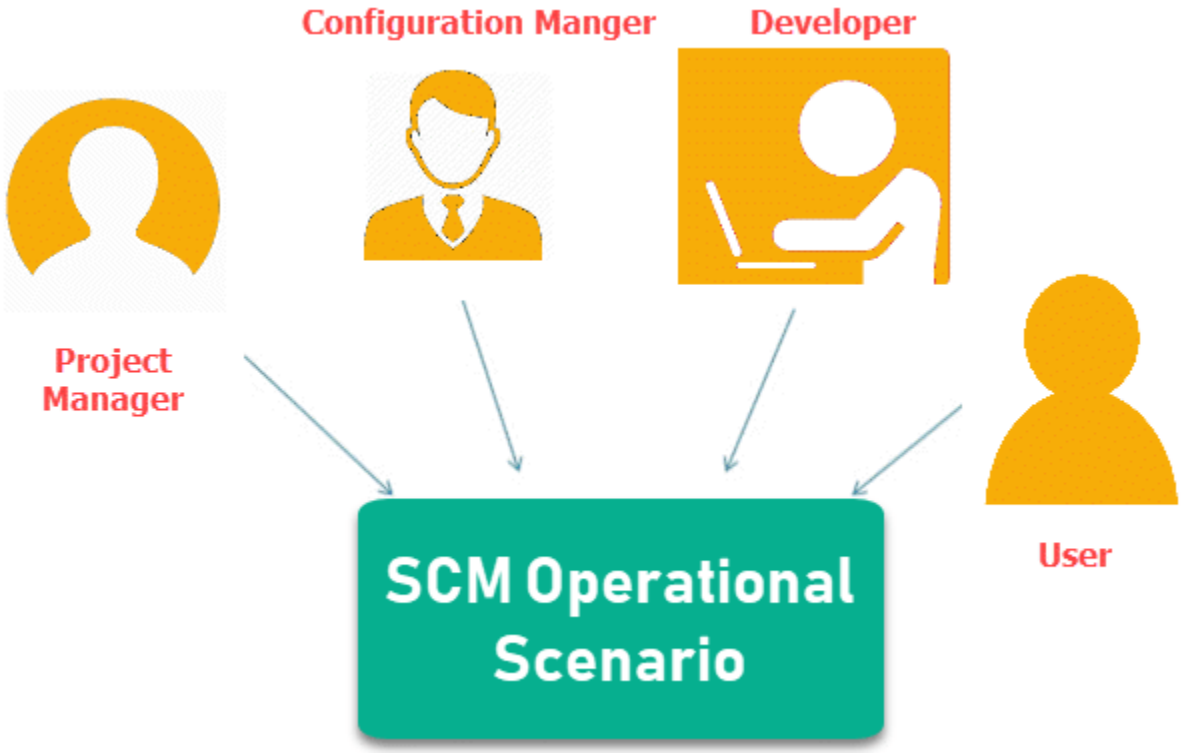
Configuration status accounting tracks each release during the SCM process. This stage involves tracking what each version has and the changes that lead to this version.

Configuration Audits and Reviews:

Software Configuration audits verify that all the software product satisfies the baseline needs. It ensures that what is built is what is delivered.

Participant of SCM process:

Following are the key participants in SCM



The end user should understand the key SCM terms to ensure he has the latest version of the software