Embedded Systems Tools

Prepared By: AMIT Learning

Getting Started …

Please make sure not to exert so much effort studying this material as its main goal not to deliver information, but to evaluate your comprehensive ability through the assessment exam held after that.

It also helps us determining your ability to self study some topics that gives alot of aid determining the course execution nature that suits you the best.

Osama Shaaban- Embedded Systems Training Manager

Agenda

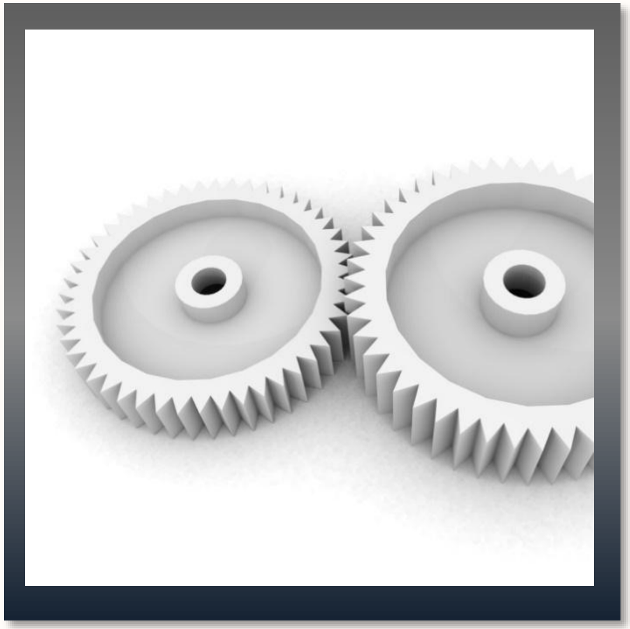
1 Software Configuration Management

2

3

4

5



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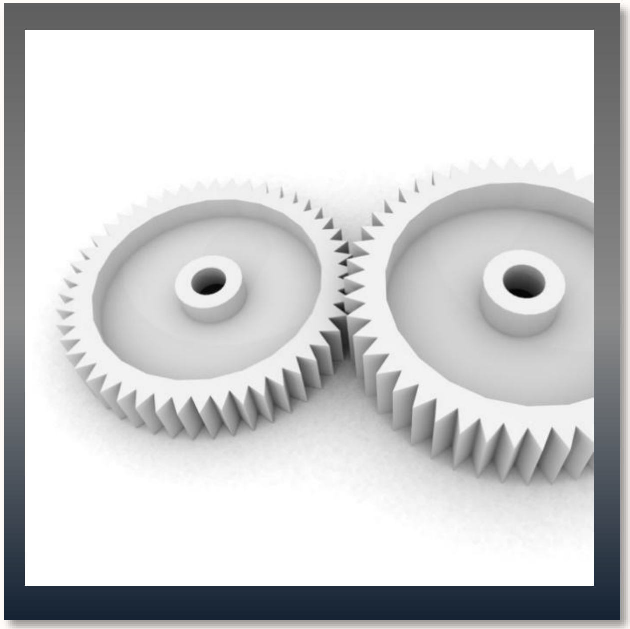
Agenda

- ✓ 1 Software Configuration Management
- 2
- 3
- 4
- 5



Software Configuration Management

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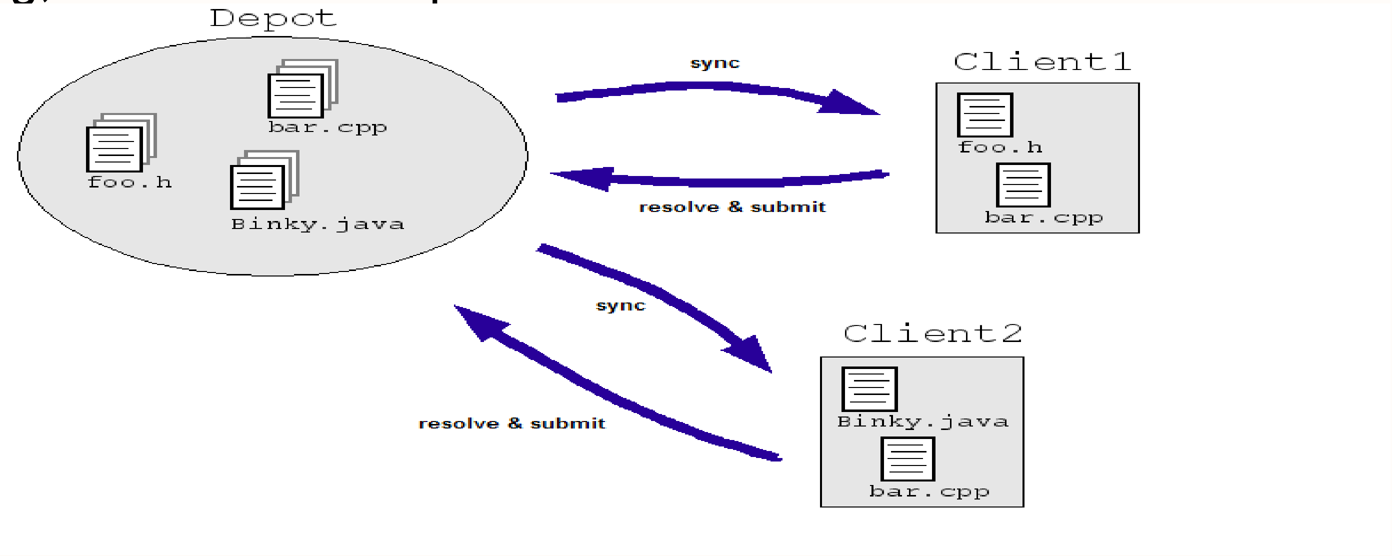
Introduction

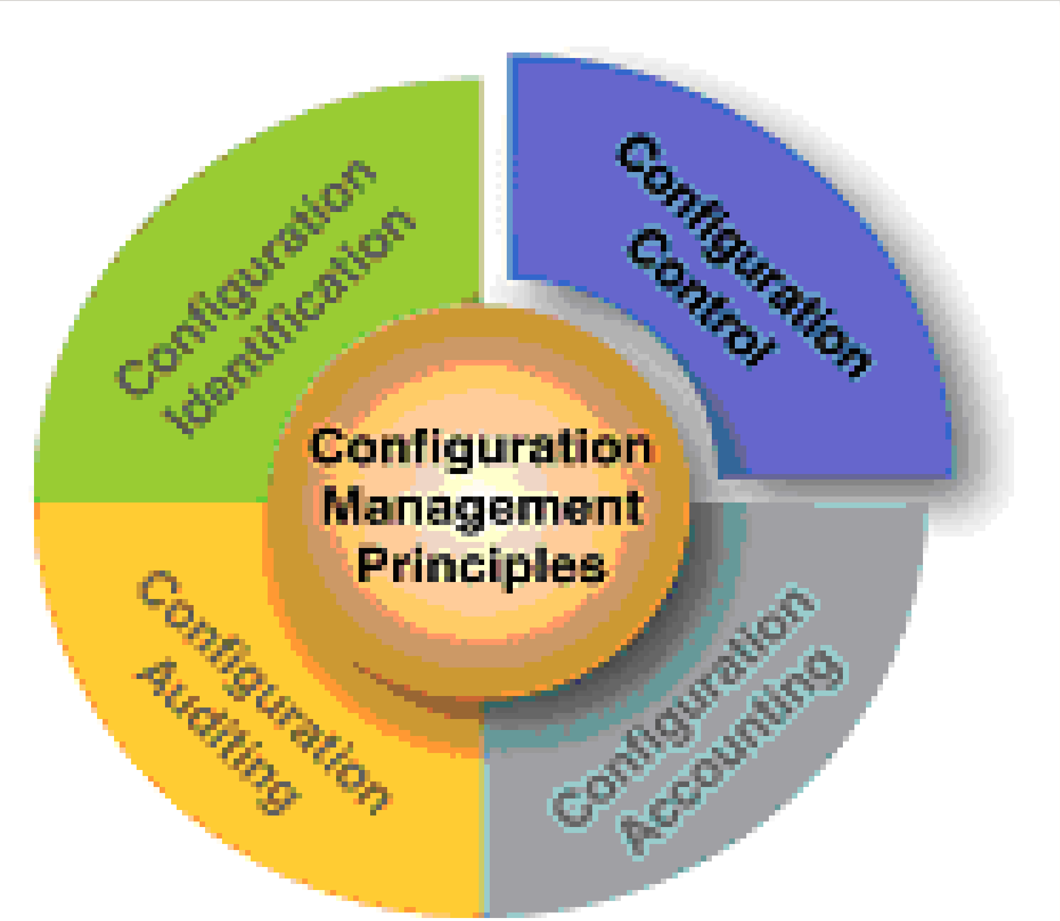
- Software Configuration Management(SCM) is the task of Tracking and Controlling changes in the software
- SCM concerns with answering the question "Somebody did something, how can one reproduce it?"



Introduction Cont..”

- Multiple users/developers
- Repository
  - It is a central database multiple files
  - It is server based
    - Local
    - Web based
- User/access rights
- Artefact
- Any file that I can upload, anyone can change in it or configure it
  - It is change traceable
  - It can be text/binary file

Purposes


Configuration Identification
Configuration Control
Configuration Management Principles
Configuration Auditing
Configuration Accounting

Purposes

- **Build management**

Managing the process and tools used for builds.

- **Process management**

Ensuring adherence to the organization's development process.

- **Environment management**

Managing the software and hardware that host the system.

- **Teamwork**

Facilitate team interactions related to the process.

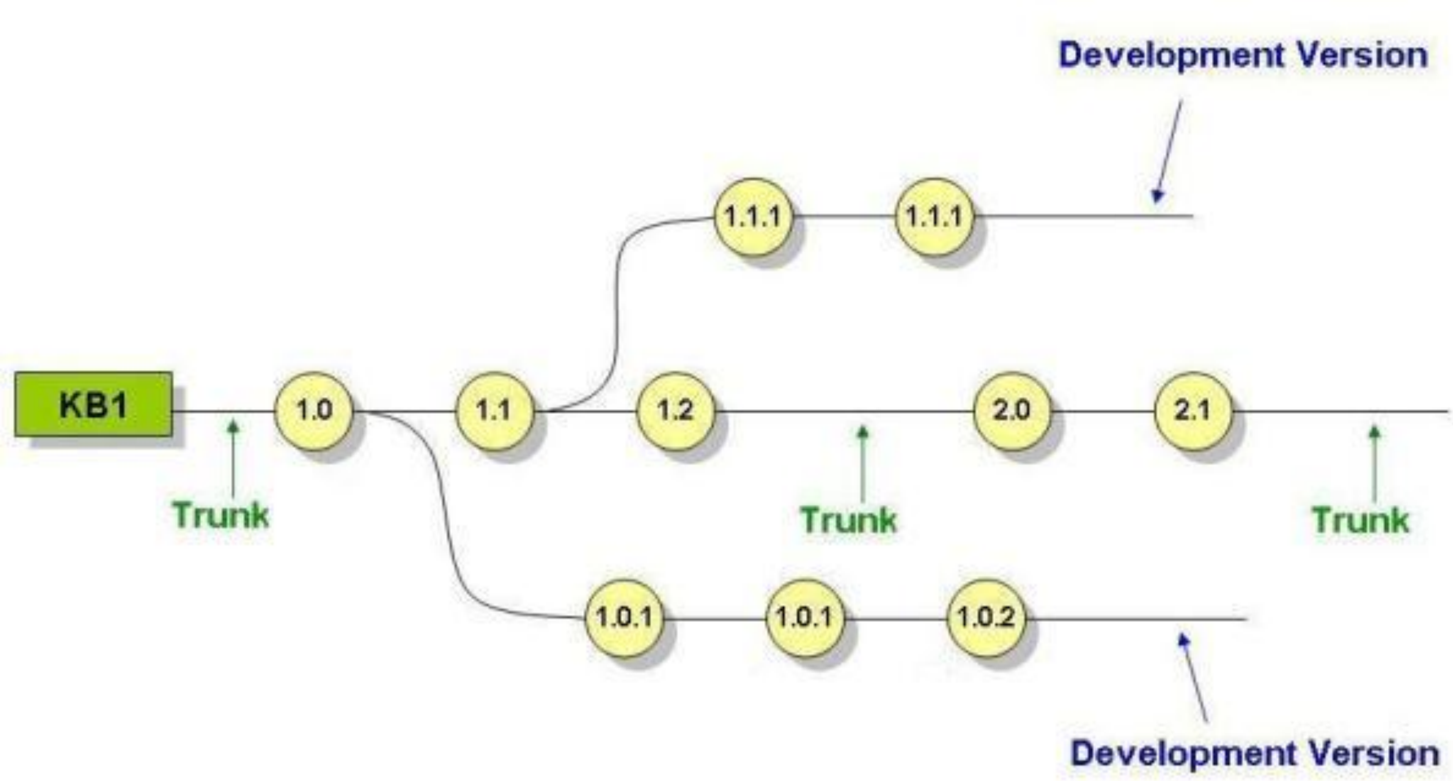
- **Defect tracking**

Making sure every defect has traceability back to the source.

Use Scenario “1”

1. I want to see the code
   - Check out if the artifact is exist or not (it returns a copy in local PC)
2. Modify in the code and upload it
   - Check-in (commit)
3. Another one needs to load the update his local copy
   - Update see which file needs modified and update it
4. What if the 1st has wrong changes
   - **In case of text** : It save the changes only
   - **In case of binary files**: It saves the complete files
   - This makes each have deferent versions
   - Revert back to older version
5. To have the latest version
   - Top of the trunk

Use Scenario “1” Cont..”



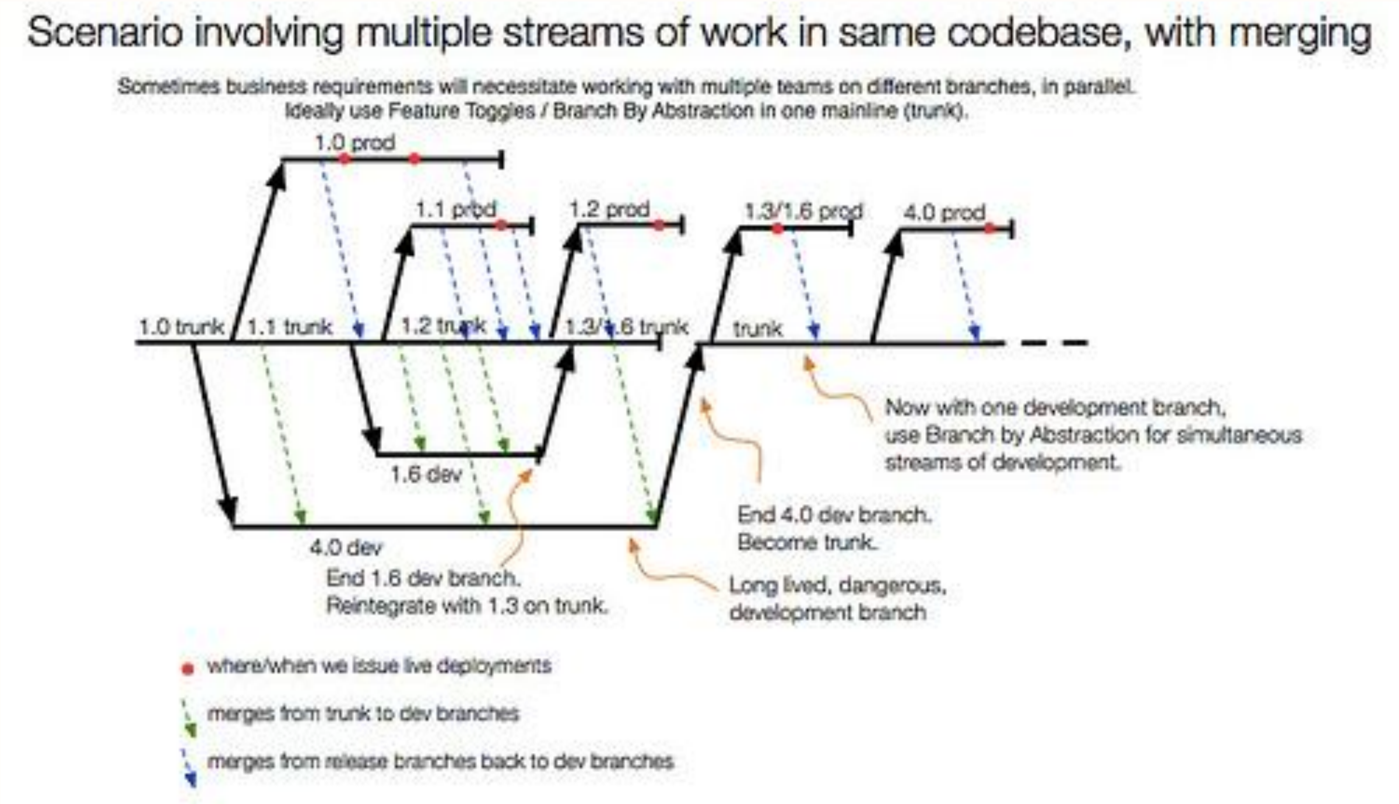
Use Scenario “2”

If 2 Developers want to change in the same file at same time

1. **Developer#1**: Make change and upload it

2. **Developer#2**: Make change and wants to upload it
   - The repository refuse to save the changes (the file on the server is more recent than you have).
   - Make update (this make merge between the 2 files if and only if the 2 changes are separated in lines) if not the tool return conflict no update (change it manual).
   - upload the Changes

Use Scenario “3”



Scenario involving multiple streams of work in same codebase, with merging

Sometimes business requirements will necessitate working with multiple teams on different branches, in parallel.
Ideally use Feature Toggles / Branch By Abstraction in one mainline (trunk).

Now with one development branch, use Branch by Abstraction for simultaneous streams of development.

End 4.0 dev branch. Become trunk.

End 1.6 dev branch. Reintegrate with 1.3 on trunk.

Long lived, dangerous, development branch

● where/when we issue live deployments

merges from trunk to dev branches

merges from release branches back to dev branches

Use Scenario “4”

I want to deliver to customer

- Top of the trunk to have the latest update

- If I want to save the version of the project files at this time use baseline

- Baseline save this version of files as a project version

SCM Servers

- **GIT**
- **CVS**
- **SVN**
- **PVCS**
- **Clear Case**

Used tool (Tortoise SVN)

SVN tutorial

assembla

THANK YOU!

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Beyond Education