Unit 9

Software Configuration Management (SCM)

4TH

Date [redacted]
Page 2:11 pm

#Intro

- SCM is a branch of s/w engineering to provide a better process in handling, organizing and controlling the changes in requirements, codes, teams and other elements in s/w project development life cycle.
- It primarily deals with version selection, tracking the changes of software projects with high quality of productivity and minimizing error and risk factor.
- Controls the evaluation of complex systems.
- Reports all the changes made in configuration.

Need of SCM:

SCM is needed in project development 'coz:

* It helps tracking and managing the changes in s/w development process.
* Enhance the productivity of s/w with minimal errors.
* Track every member of team with project workflow status
* Provides smooth workflow inside development process.
* Updates team members codes parallely by considering different version control
* Manage different tools and development process in s/w product
* Provides high quality product

Basic Configuration:

A s/w configuration process is a tool used in the s/w development life cycle proces to track, changing and managing configuration items (req^n, codes, resources, docs, budgets, s/w, h/w etc) inside product development.

The project manager, developers, product owners, and testers are involved in SCM processes.

Configuration is composed of different processes as:

(a) Planning and Identification Process
(b) Version Control Processes or Baselines
(c) Change Control Processes
(d) Configuration Release Processes
(e) " Auditing "
(f) Review and Status Reporting Processes

(a) Planning and Identification Process:

- Very first and initial level of SCM, done for proper planning of development of apps. and identify the configuration items as per scope of project.
- Conduct kick-off meetings & welcome changes requests are basic criteria for process.
- Project mgt. plan is the input for this process and approval of plan is the exit criteria.

(b) Version Control Process (Baselines):

- Helps to store different version of development/configuration by changing scope or code or equipments etc.
- Provides several versions of that s/w product.

(c) Change Control Process:

- New change requests created by clients to change some configurations on the s/w product. i.e add/remove

any functions etc.
- As per the approval of request, the app. will be developed.

(d) Configuration Release Process:
- Used to ensure app. will be developed as per the project plan and verify app. as per the scope.
- s/w related docs and notes are inputs to provide for a working version of s/w app.

(e) Configuration Auditing Process:
- Verify the developed s/w products as per the base line.
- Functional requirements audit or physical audit of app. is done.

(f) Review and Status Reposting Process:
- It is a technical review on app. works flows, process, configuration item and change request etc. to generate status repot in every phase of SDLC.
- Here, we go for multiple reviews of app. to develop the app related docs like manuals, release note, Installation guide etc.

Management Functions:

Functions of management help us to stay informed about what we need to do and how you/we can guide our staff accordingly.

The functions of mgt are:

(a) **Planning:**

Imp. function of mgt. as it sets the pace for all subsequent steps in the managerial process or s/w development process.

- Helps to develop road map for the development of the project along with assumed risks and solutions.

(b) **Organizing:**

This is where we put our plan into action by establishing a system of hierarchy (authority) in the context of organizational structure to carry out developmental task.

(c) **Staffing:**

Here, we assign tasks based on each team members knowledge, skills, and abilities.

Also hire new staffs, if needed.

(d) Directing:
- Concerned with supervising our teams progress.
- Here, we have to keep an open channel of communication and get regular updates to stay on top of things.

(e) Controlling:
This is where, we have to measure the progress of each step established in the planning stage against our organizational goals.
- Helps to coordinate with our employees to ensure that they're moving in a right direction in right manner.

Configuration Mgt Responsibilities:
It is carried out through two principles:

(a) Configuration Identification:
Activity involves deciding which part of system should be kept under configuration mgt.

(b) Configuration Control:
Activity used to ensure that changes to a system occurs smoothly.

SCM Roles and Responsibilities:

Configuration Manager:
- Responsible for approving configurations items
- Responsible for development & enforcement of procedures
- " for monitoring entropy.

(b) Change Control Board:
- Approves and prioritises or reject the change requests made by users.

(c) Software Engineers:
- Responsible for identification and versioning of configuration items.
- Create promotions triggered by change requests
- Update items to incorporate request changes and also resolve any arising conflicts.

END