# Big Bang or Gradual Migration

## Migrate2SVN & CM-Bridge: Big Bang or Gradual Migration

### Scope

The intention of this document is to highlight two basic approaches taken by Clearvision customers when migrating from ClearCase to one of the Open Source alternatives (SVN/Git/Mercurial). It is not designed as a step by step instruction guide.

### Influencing factors

Before we start the different approaches, let us remember the reasons why your organisation use a Software Configuration Management (SCM) tool (ClearCase);

- maintain an Audit Trail and traceability
- guard against accidents
- keep track of incrementally different versions of electronic information
- provide features like tag creation (used by testing and quality assurance teams for review)

Some organisations underestimate the importance and value associated with versioned history by migrating just the very latest baseline and ignoring all previous history. This approach is generally taken on the basis the original ClearCase environment will be locked for edits but available for historic access. This principle has many draw backs, not least;

- the cost of keeping original hardware/software maintained for an indeterminable period of time
- retain ClearCase knowledgeable people for the lifetime of the environment
- old system and new system do not share data easily

The vast majority of organisations acknowledge the need to migrate a substantial amount of data in order to retire the ClearCase environment. Some organisations are required by law or for compliance reasons to retain a historic trail.

As an absolute minimum, a number of historic important baselines should be migrated, the challenge is, which ones and can you be 100% certain you have migrated complete baselines. If the process for taking every baseline (and more history) is;

1. easier than having to work out what needs to be moved
2. less prone to human error
3. can save valuable time
4. cost less than the amount of time needed to be 100% accurate;

Why would you not take all the history?

### Approach

There a two fundamental approaches to migrating;

1. Big Bang Migration- Move everything (data, people, systems) overnight or a long weekend
2. Gradual Migration - Move everything (data, people) over a period of weeks or months

Assuming both approaches go smoothly, the latter approach reduces the impact to business continuity and is less risky. The first approach relies heavily on very accurate project planning and an eye for identifying all influencing factors. For this reason the risks associated with a Big Bang migration are far higher. The operational costs associated with both approaches are generally comparable however if the Big Bang approach goes wrong the cost of down time can far outweigh the migration costs.

Elements which influence the approach;

1. The amount of data held in the repositories
2. The number of users which need to move to a new tool
3. The geographical location of data and users
4. Dependencies between tools
5. Equipment

### Common Options

Both the Big Bang and Gradual migration paths share a number of common options. Having ascertained that retaining history is important, the

question is where to put it? The default assumption is the history must be part of the same repository the developers will work from. There are two options;

1. Store the moved historic data in the SAME repository as the latest working baseline - see diagram 1-Same
2. Store the moved historic data SEPARATE from latest working baseline - see diagram 2-Separate

diagram 1-Same

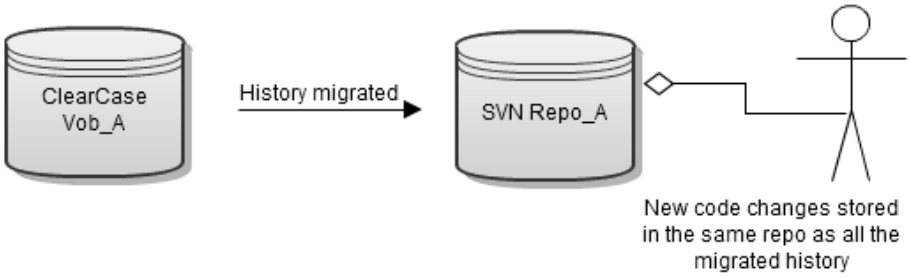
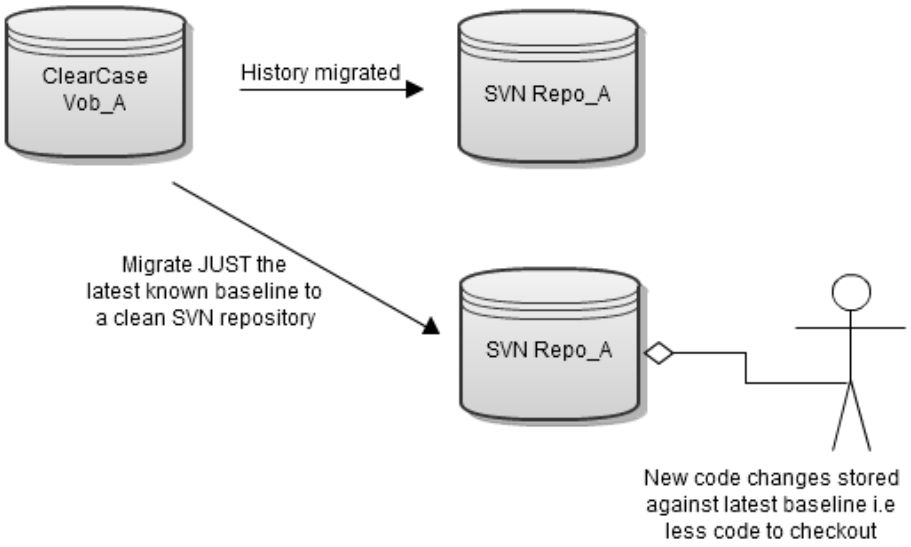



diagram 2-Separate




Generally the preferred approach is option 2 for two reasons;

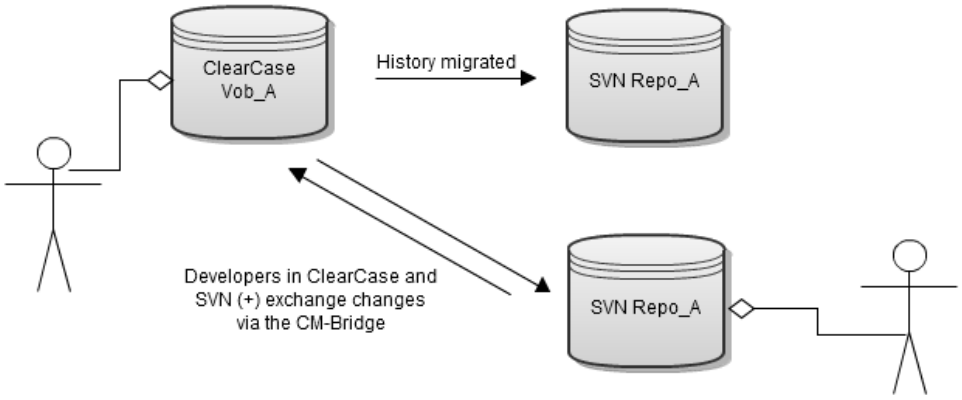
1. The SVN repository is not cluttered with history and for certain operations performs quicker
2. The history is still easily available

The slight down side of option 2 is that code stored in two separate repositories cannot be easily merged, thankfully the need to do so should be very rare.

## Gradual Migration

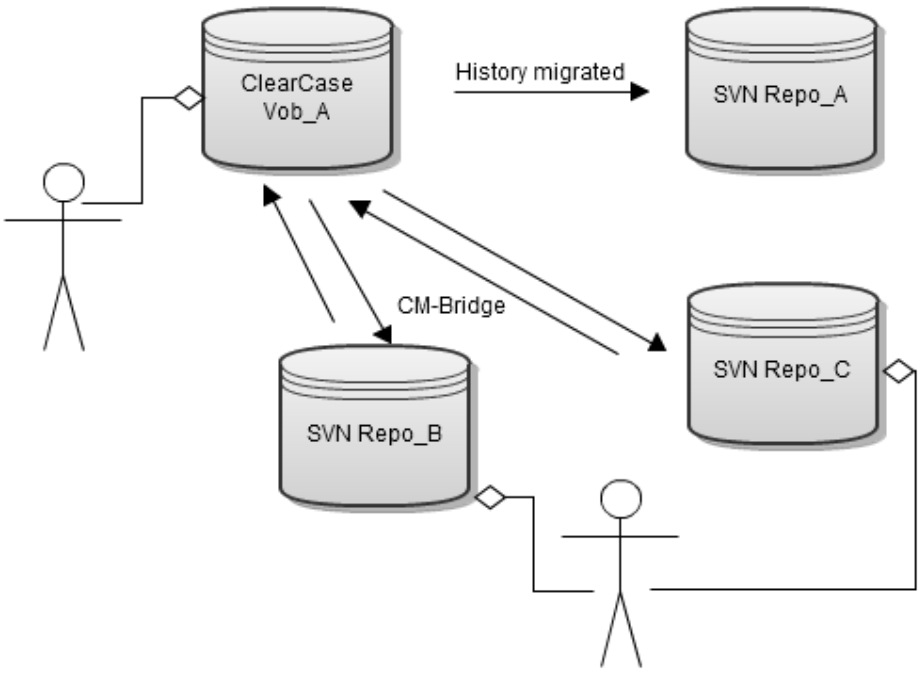
This option is all about gradually moving the users from ClearCase to SVN/Git/Mercurial

The unique requirement for a 'gradual' migration is the need to exchange changes between ClearCase and Subversion/Git/Mercurial as developers will be working in both tools at the same time. This is resolved by using the CM-Bridge




## Splitting Data Repositories

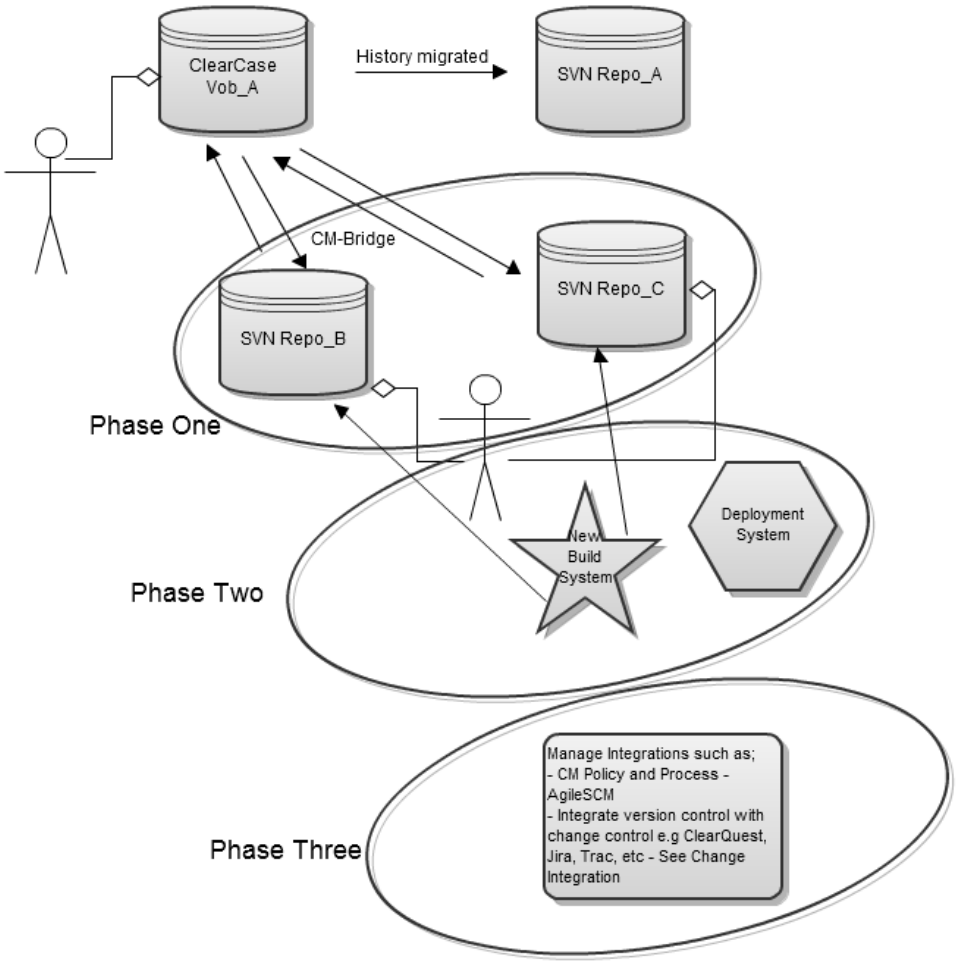
Moving to a new system offers a unique opportunity to re-factor code. Very rarely do companies get a chance to restructure the code to either separate repositories or just move data to a different path. The flexibility of the CM-Bridge enables organisations to re-factor without impacting productivity and builds.




The ClearCase environment might remain the master site for building the product. Over time, the re-factored SVN side can establish a new build environment. When the product builds the same in ClearCase as it does in the re-factored SVN repositories, and all the users have moved across, the links to ClearCase can be dissolved.

## Gradual Migration - Phased Approach

The general principle is to move users and data across to the new environment without impacting builds and deployments. The gradual approach is represented as a number of phases, each phase can be very effective at moving from ClearCase to SVN/Git/Mercurial, retaining history and optionally reconfigure the development environment without negatively effecting productivity. Although these 'phases' are shown as separate activities, there is often overlap and dependencies between each phase which requires managing and planning.




Clearvision's experience of migrating customers means they are in a perfect position to assist with all phases.

For more information and a customised proposal please contact sales@clearvision-cm.com