

# Migrating ClearCase to Subversion

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# Agenda

- Organizational Factors
- Technical Overview

# Organizational Factors

- Change Drivers
- Reality Checks
- Justification
- Process
- Costs
- Key Practices

# Factors Driving Change

- Financial Pressures
  - Saving money
  - Alternative to upgrade
  - ROI can be difficult
- Mergers and Acquisitions
  - One organizational standard
- Working with Third Parties
  - Open Source Tools
- Change of Methodology
  - New tool features or integrations required

# Reality Checks

- Your SCM information is your company
- Change is hard!
- Can you change just to save money?
- What if the change doesn't "go well"?

# Justification Pitfalls

- Recovering from mistakes of the past
- Addressing symptoms not causes
- Focusing on easily quantifiable factors
- Ignoring the hard to quantify intangibles
- The decision matrix
- “Must have” product features

# Justification Reasons

- Usually Good
  - Productivity
  - Integration with Other Systems
  - Content and Activity audits
  - Stability
- Usually Questionable
  - Features
  - Usability
  - Stability

# Process Implications

- Does Process define the tools?
- Do the tools define the Process?
- Does a vendor define the Process?
- Is the process backed by standards?

# Costs

- Product licensing – standard + add-on
- Infrastructure
- Retraining – administrator, user
- Retooling – builds, delivery, backup
- Consultants
- Legacy licenses and support
- Transition down time
- Post-transition productivity

## Key Practices

- Change because you have to
- People resources – dedicated and empowered
- Formal training for advocates and early adopters
- Use Product experts – they know how the new product really operates

# Technology Overview

- The Approach
- Artifact Considerations
- Branches
- Labels
- Perils
- Key Considerations

# The Approach

- Tip/ Head
- Milestone Snapshot
- Retained History
- Incremental – changes since a baseline conversion

# Validation

- Isn't this apples and oranges?
- Trial runs
  - Selected conversions – how do you select?
  - Test Cases – do they cover all situations?
  - Full conversion – time intensive
- Current tip equivalence
- Equivalence is less likely as artifacts age

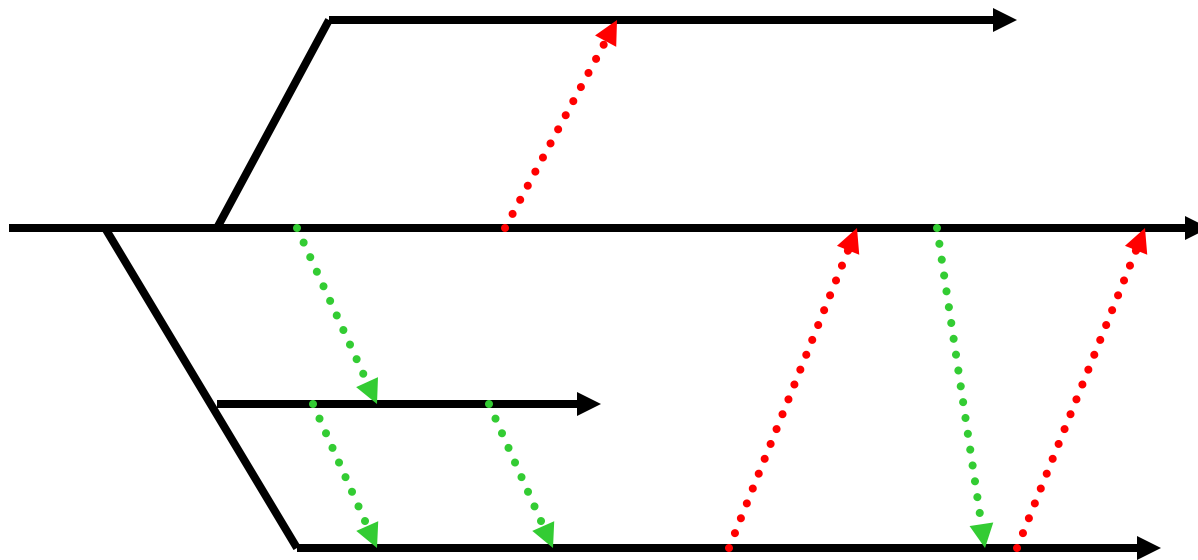
# Artifact Considerations

- Version numbers
- Evil Siblings
- Deleted artifacts
- Symbolic links
- Name spaces
- Time of action
- Attributes

# What is a Branch?

- Specification requirements
- Activity histories
  - Codeline
  - Merge
  - Conflict resolution
- Representation
  - Sparse
  - Fully populated
  - Workspace content

# The History Challenge



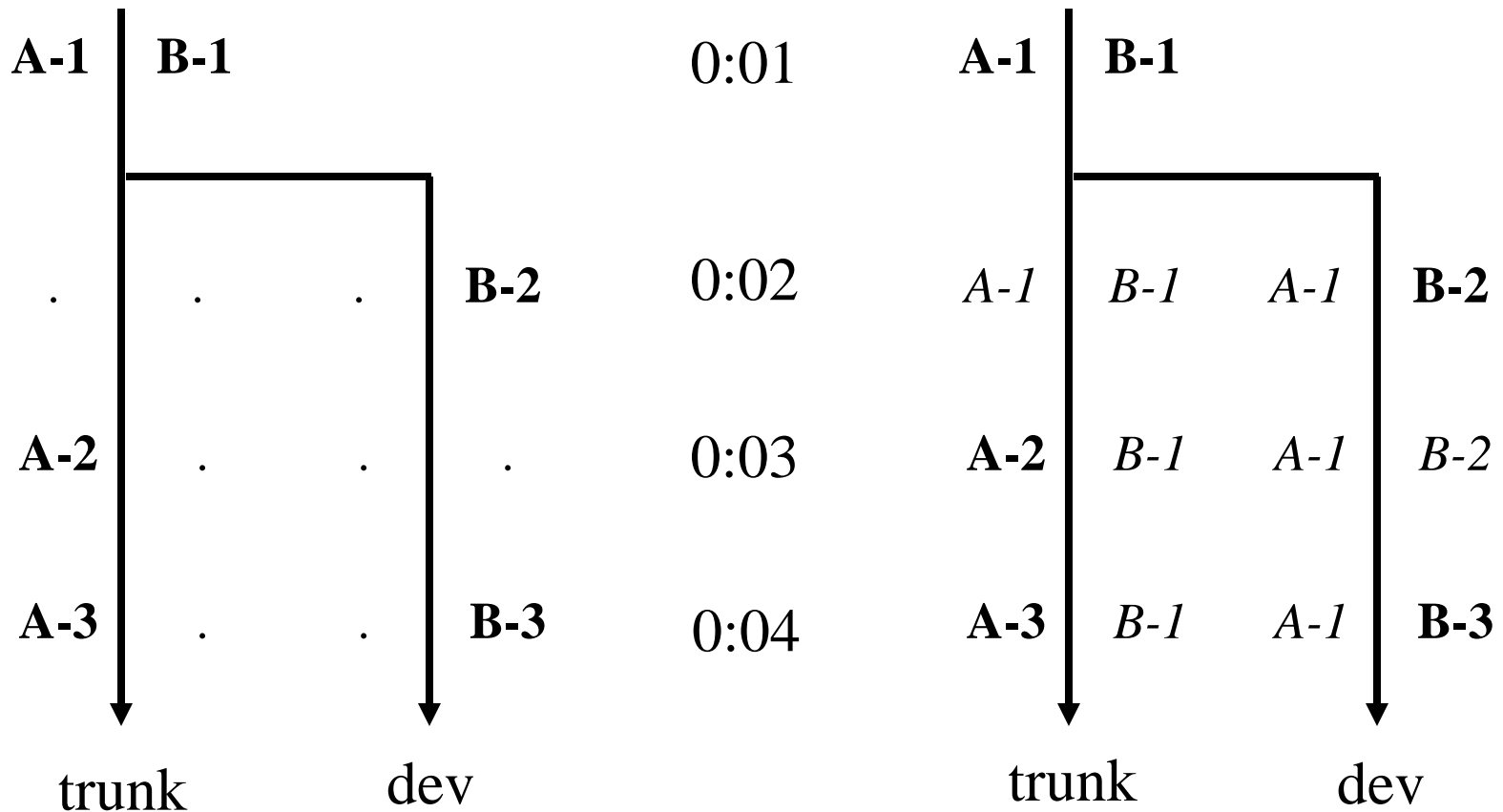
# Activity History

- Changes along a code line
- Directory level changes
- Merges
  - Directed
  - Results matter
  - Techniques don't matter

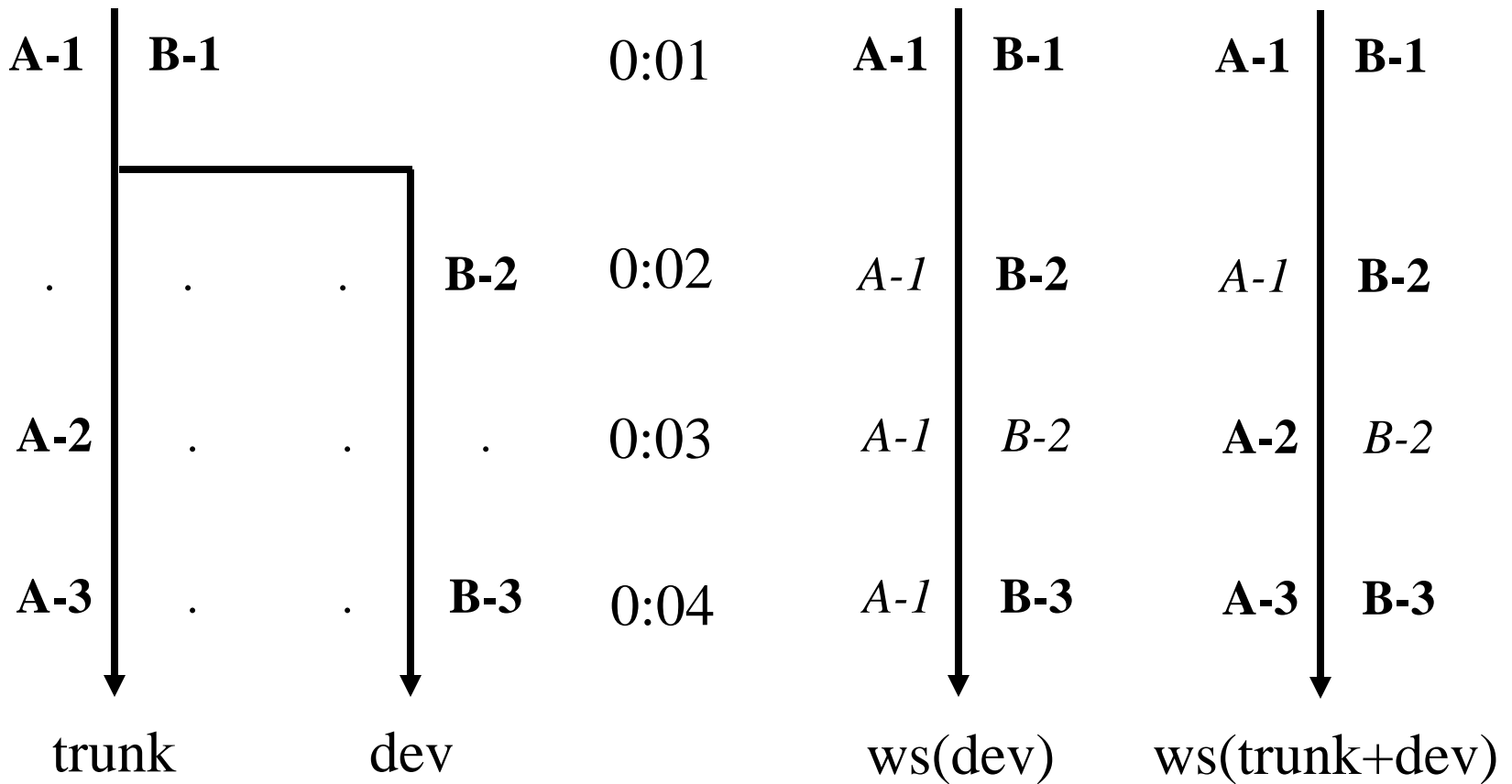
# Branch Representation

- Sparse
  - Only branch unique files
- Fully Populated
  - All files: common and unique
- Where do common files come from?
- Workspace Population

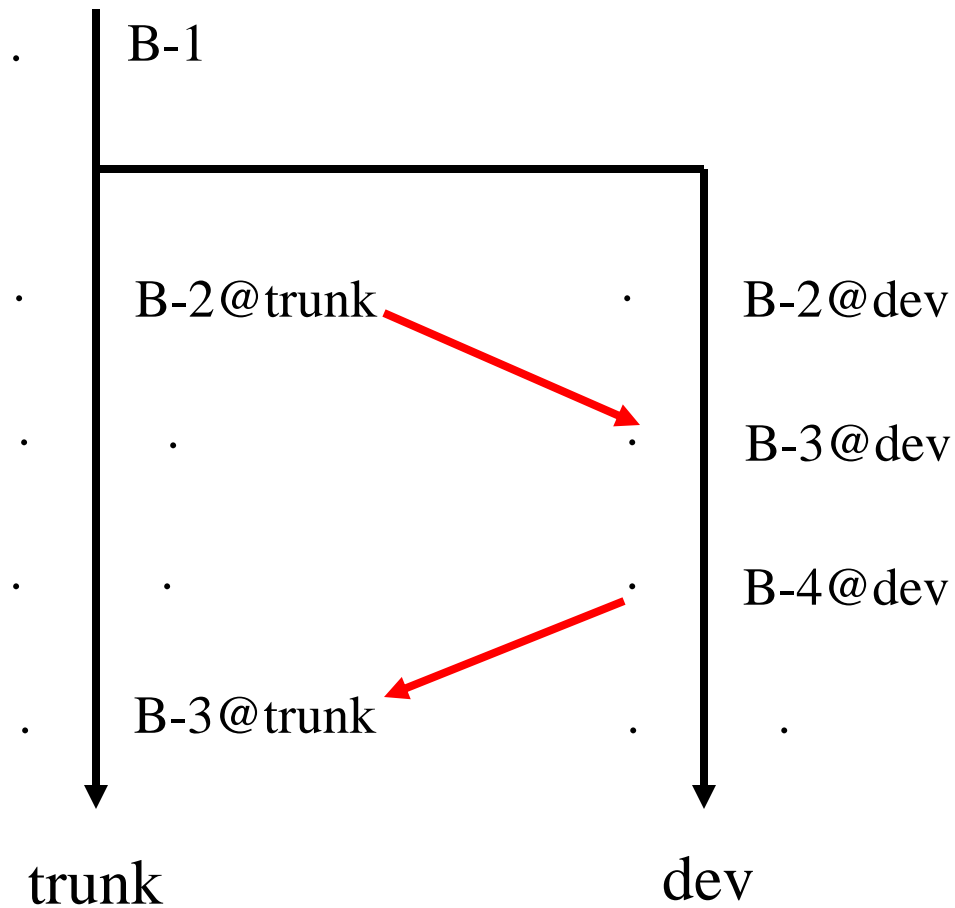
# Sparse vs Full - Changes



# Workspaces



# Merging



# Sparse to Full

- What is the selection criteria?
- During the migration
  - More decisions
  - Longer migration time
- After the fact
  - What is the action time?
  - After-the-fact update coordination
  - Merges into historic versions

# Labels/ Tags

- The “dead wood” – typically >95%
- Artifact reference differences
- Branch implications
- Performance implications
  - Extraction
  - Conversion

# Perils

- The file with 1000 versions
- Time to validate
- Time to migrate
- Structural refactoring
- Mid-conversion failure
- Production environment impact
- Development impact

# Key Considerations

- Any two systems are similar but not identical
- There are going to be trade-offs
- Make consistent choices
- Use a straightforward approach
- Be sure the tips are accurate
- Avoid potential time sinks – validation, artifact conversion
- It's not “what if XXX goes wrong” but rather “how do we recover when XXX goes wrong”

# Conclusions

- Migrate for sound business reasons
- It's about Process and Productivity
  - Migration cost is just the visible “tip of the iceberg”
- Quality Infrastructure
  - Invest! Don't just “make do”
- It *is* just like rocket science
  - Migrate to your experience level