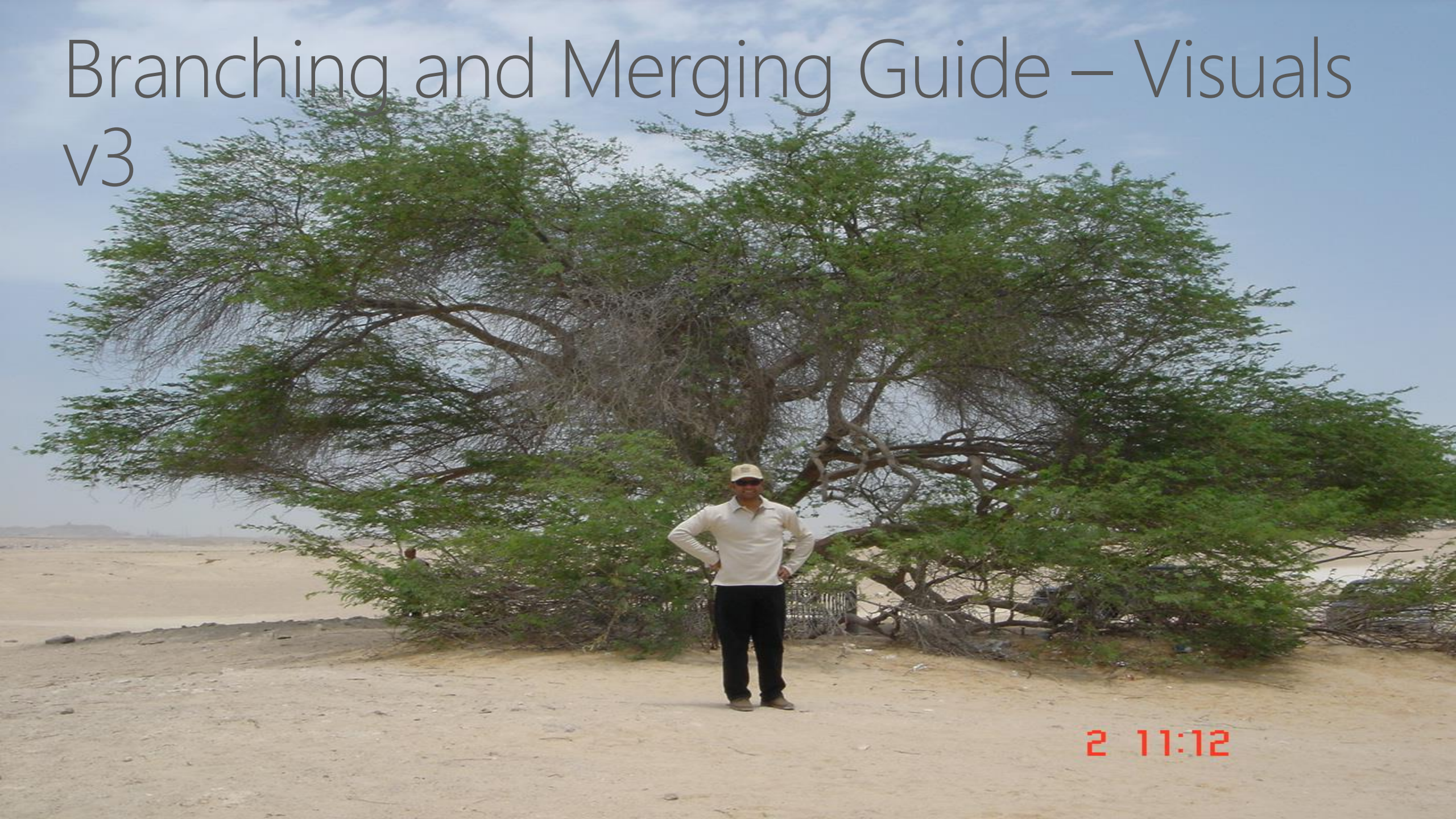
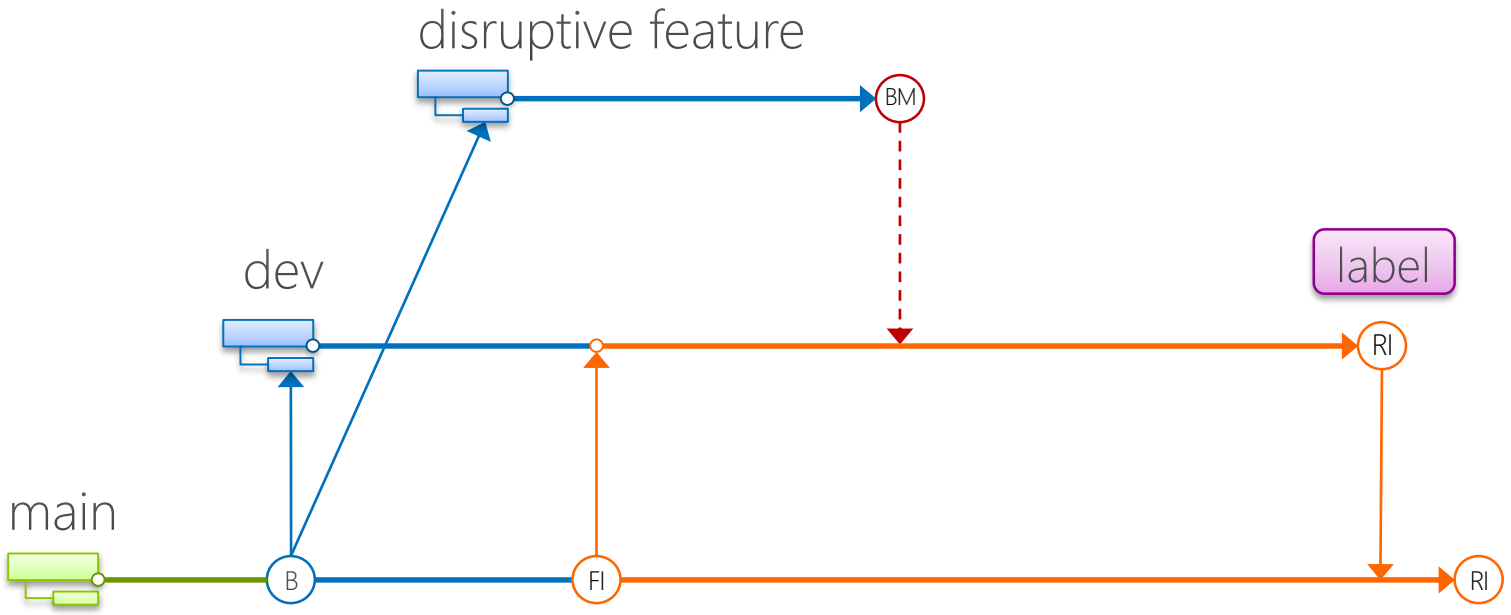
Branching and Merging Guide – Visuals v3





Notes

- We use a ● to indicate a change, which is either B, BM, FI, RI, CO, or CI for Branch, Baseless Merge, Forward Integration, or Reverse Integration for VC operations.
- Workspace operations are indicated by grey ● and lines, using CO, CI and GL for Checkout, Checkin and Get Latest workspace operations.
- We use colours only to highlight concepts where the classic blue (RGB 0 113 188) diagram does not work.
- **Baseless Merges** are shown with dotted merge lines.
- Align ●'s vertically and horizontally.
- Bubbles are .25"x.25"
- Action line and outline width is 1pt
- Branch line is 2pt
- Font in bubbles is Segoe UI Light 10 auto scale to shape
- 🔒 indicates read-only
- ✖ indicates deleted branch

RGB 0 113 188

Visual Studio
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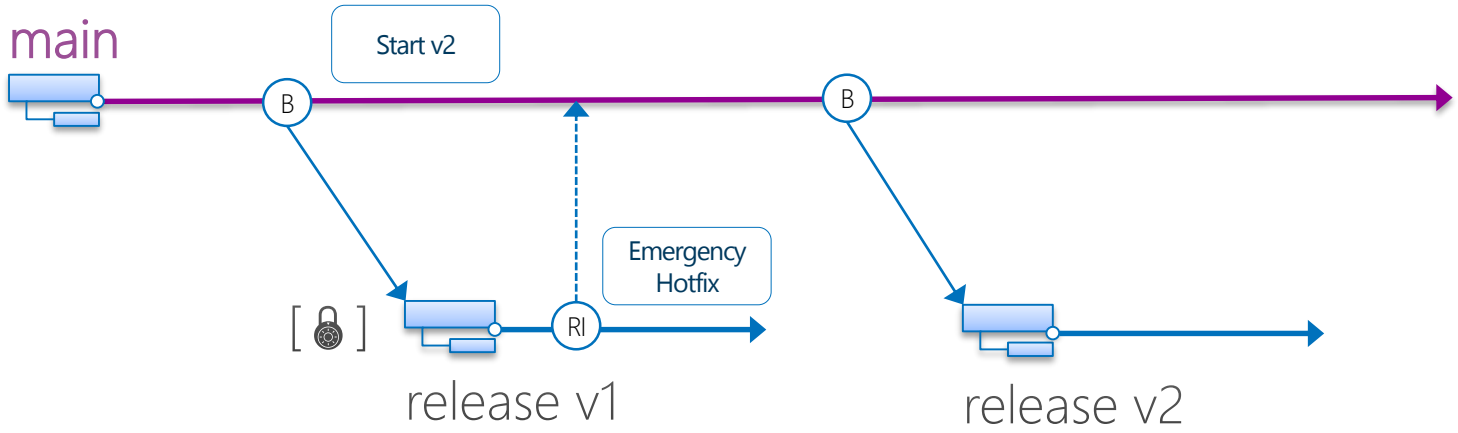
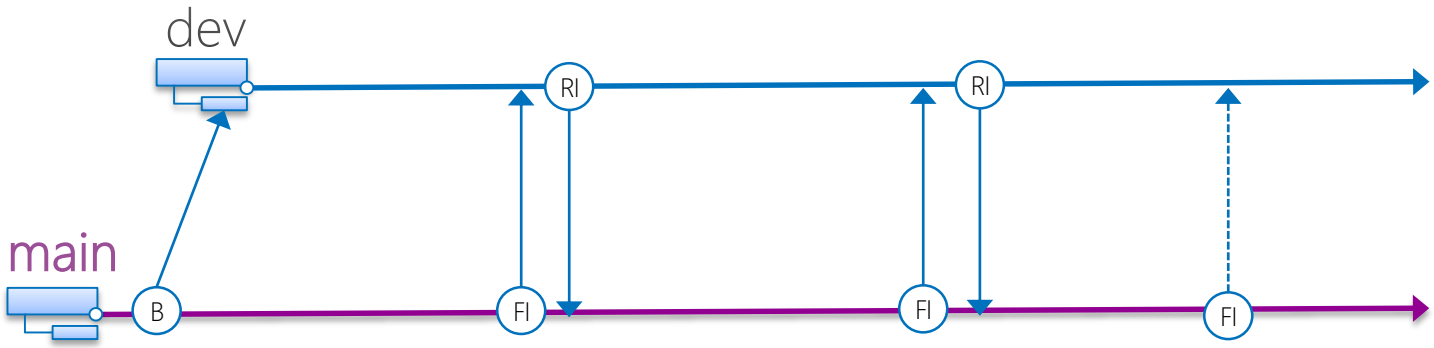
Main Only

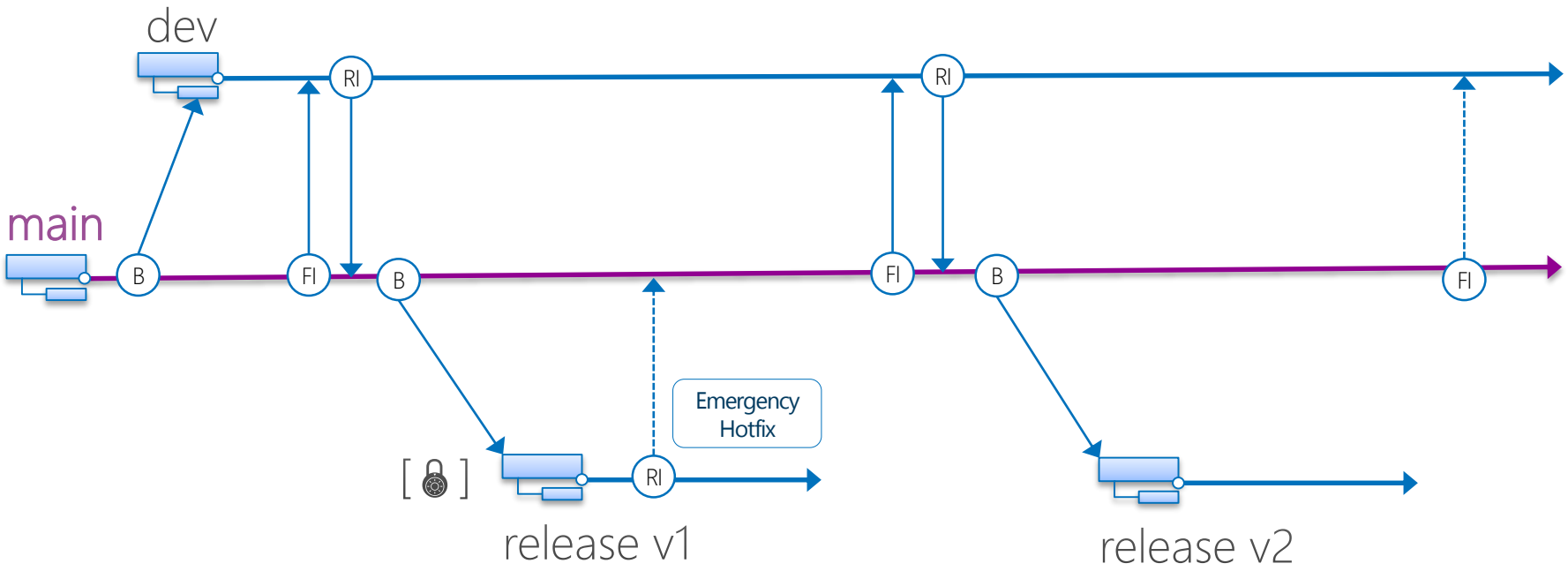
Release Isolation



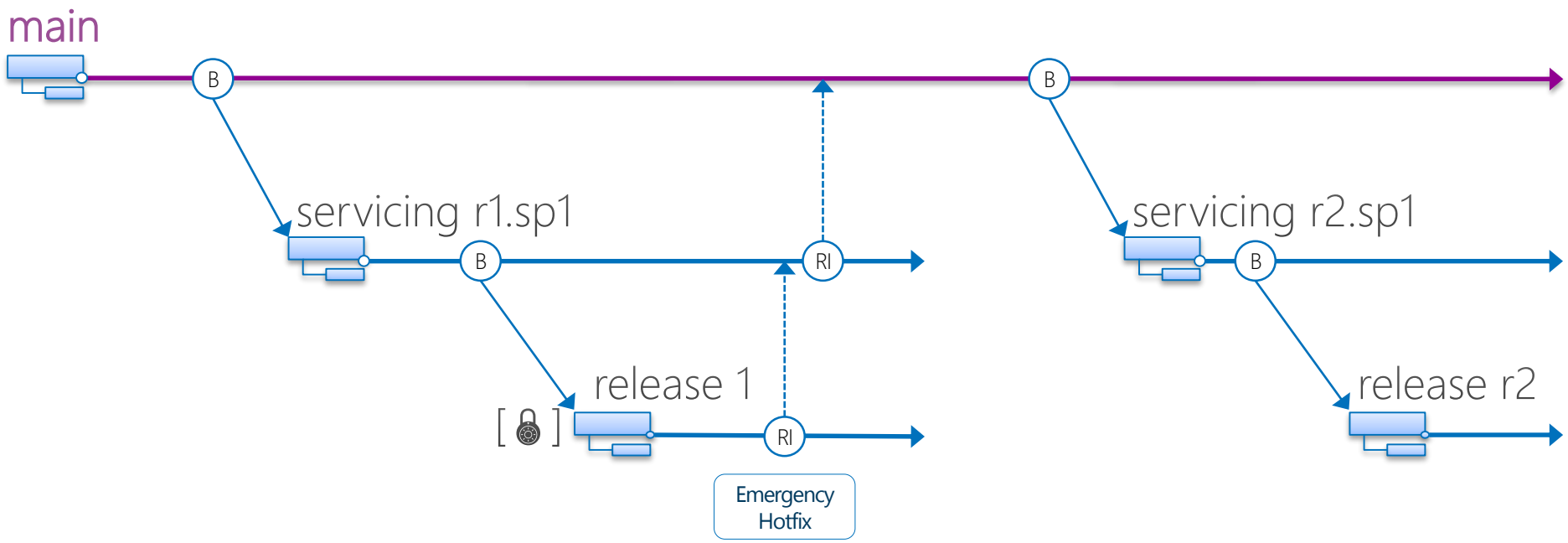
Development Isolation



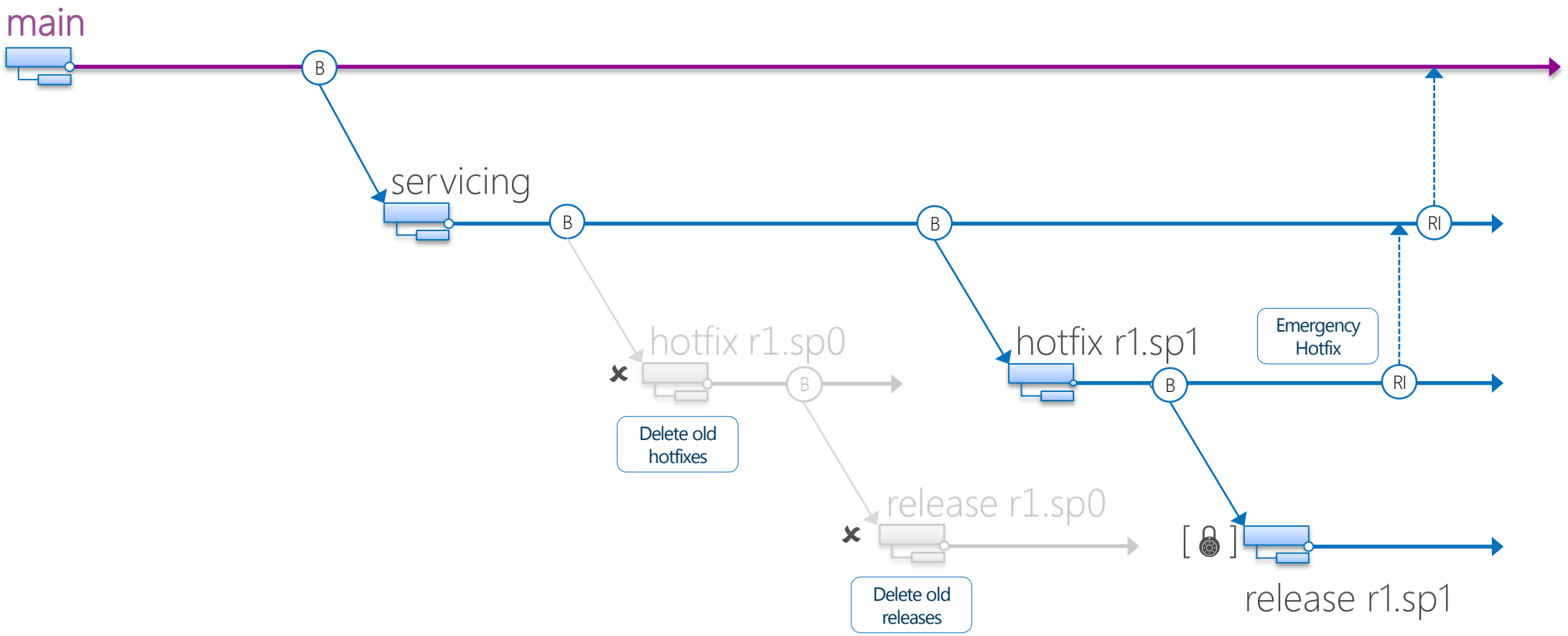
Development and Release Isolation



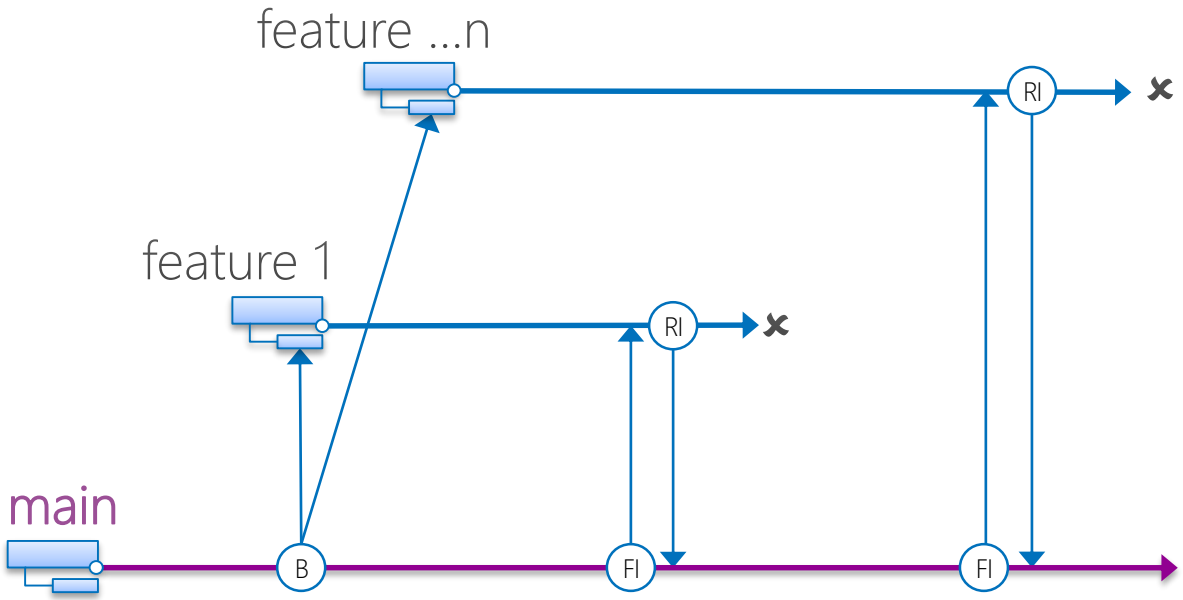
Servicing and Release Isolation

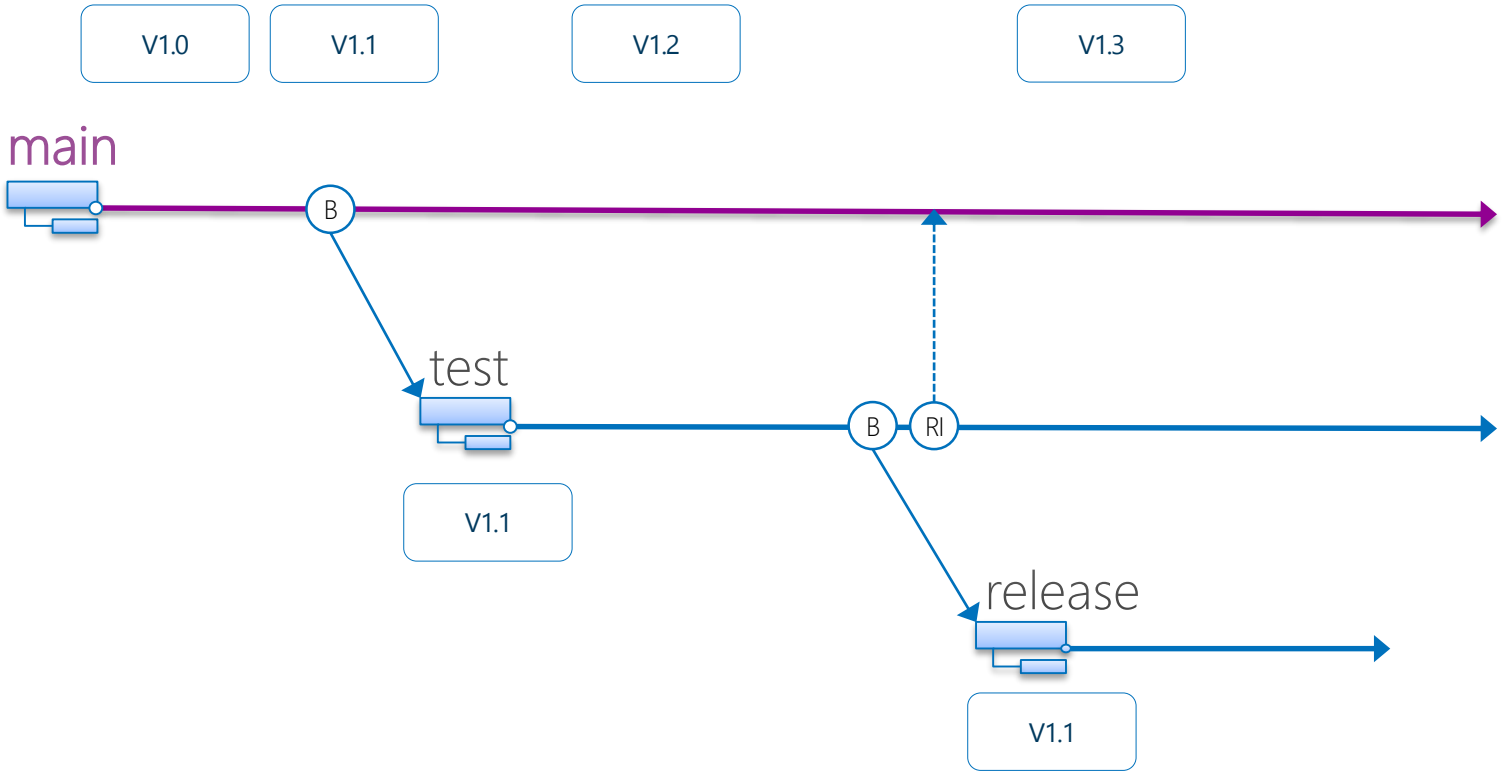


Servicing, Hotfix and Release Isolation

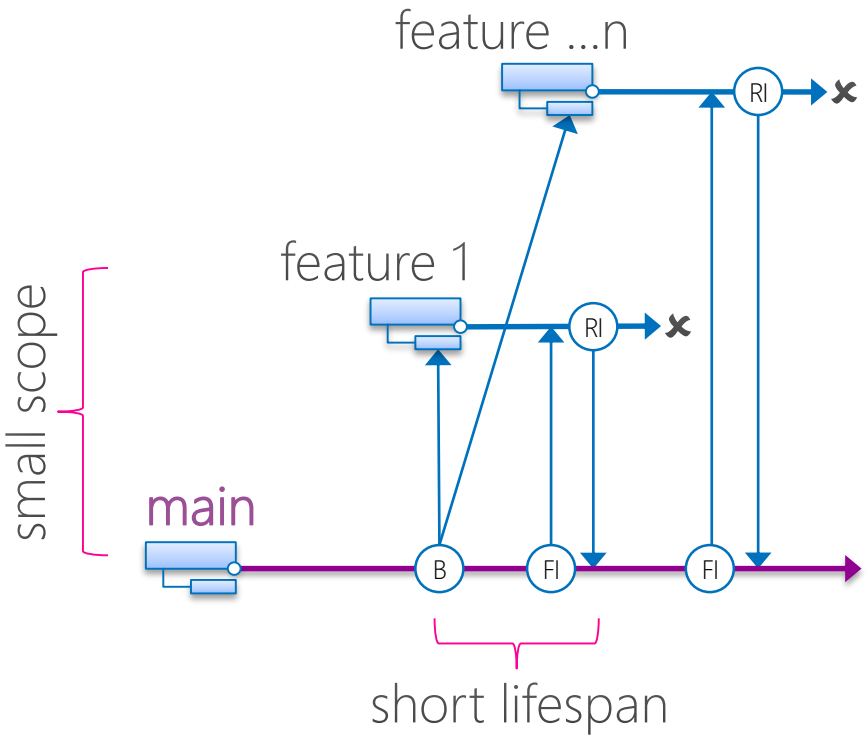


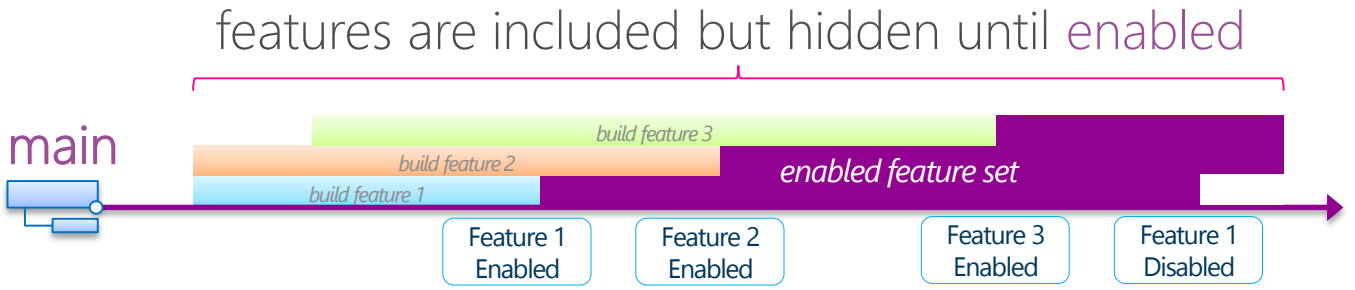
Feature Isolation

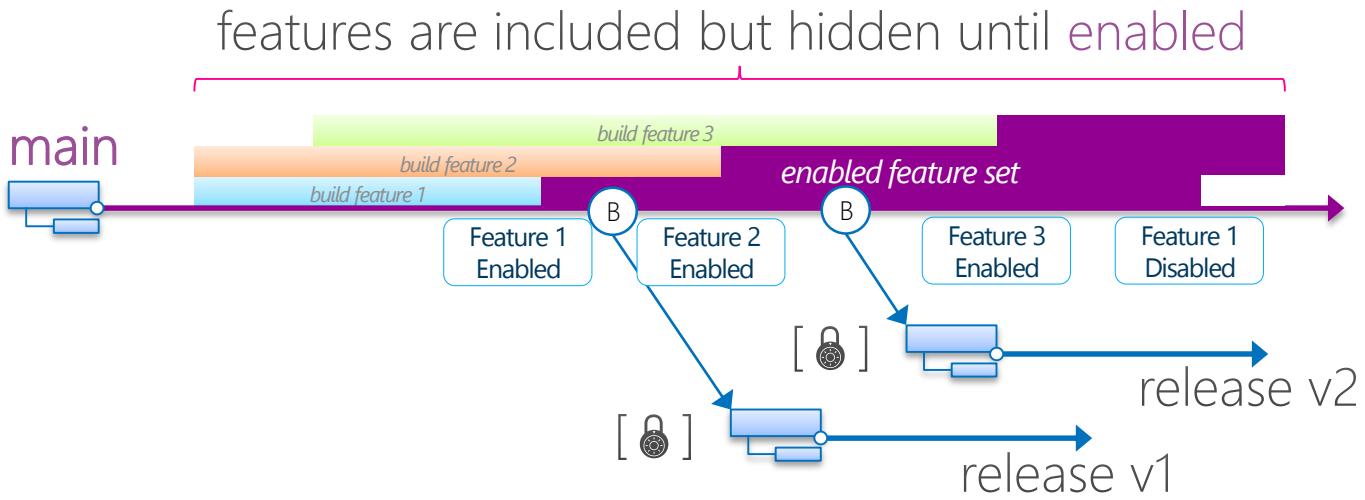



V1.0
V1.1
V1.2
V1.3
main
B
test
B
RI
V1.1
release
V1.1

Continuous delivery







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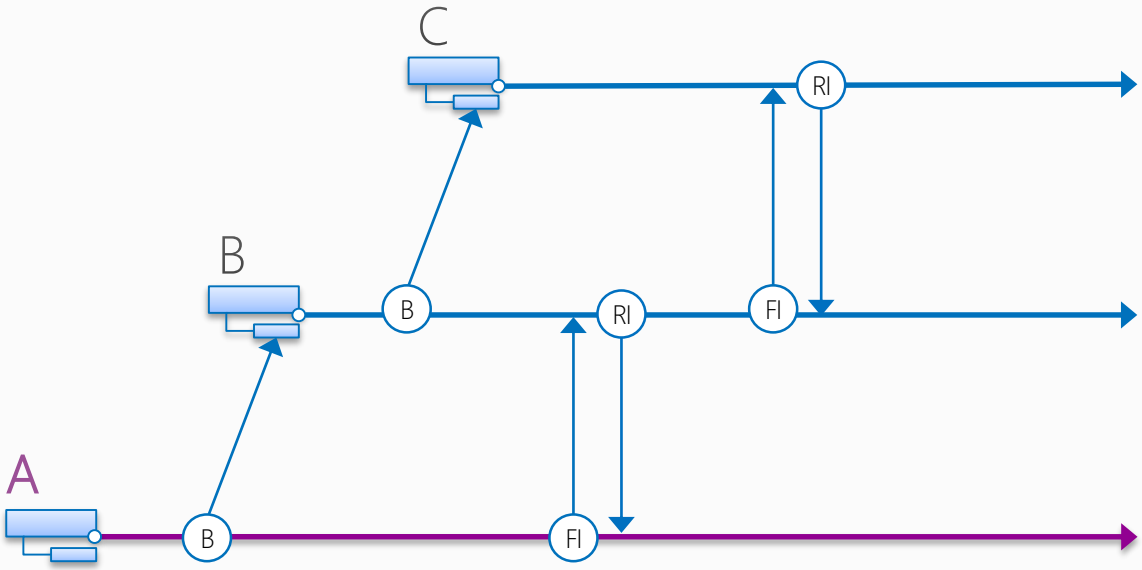
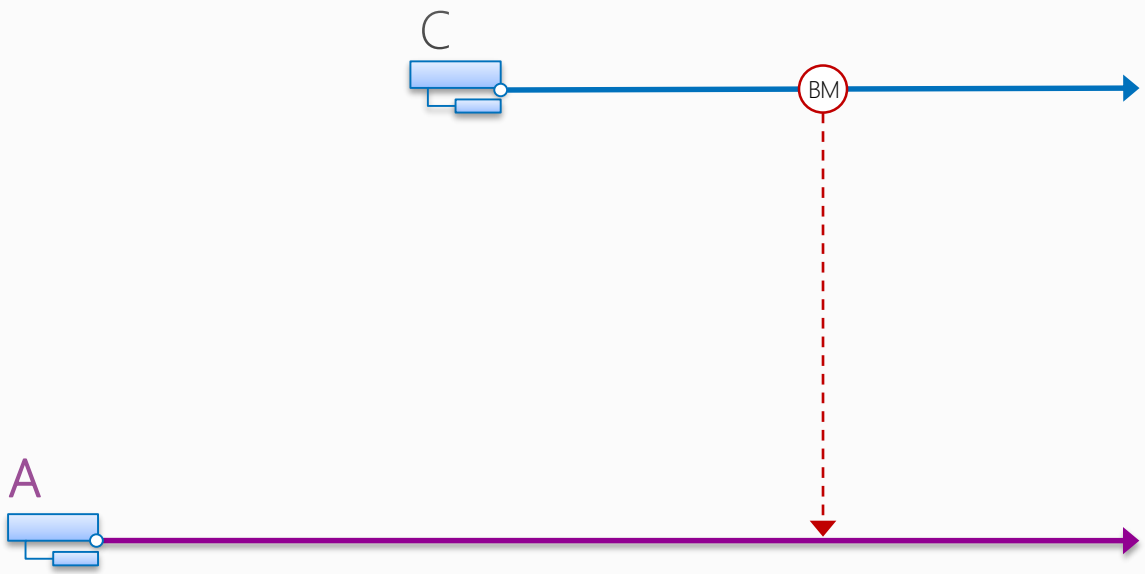
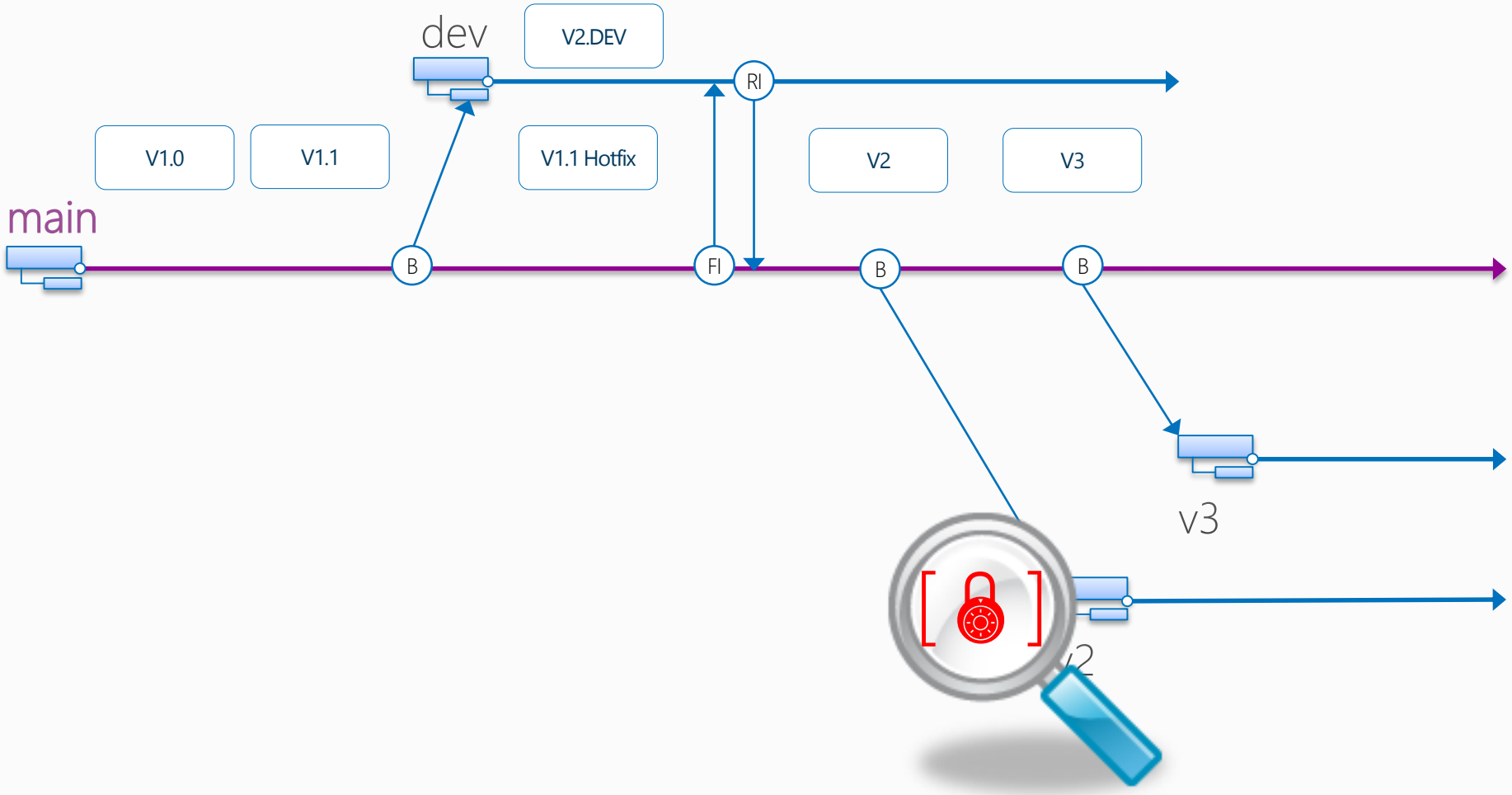
Release Isolation





Visual Studio
ALM Rangers

Release Isolation



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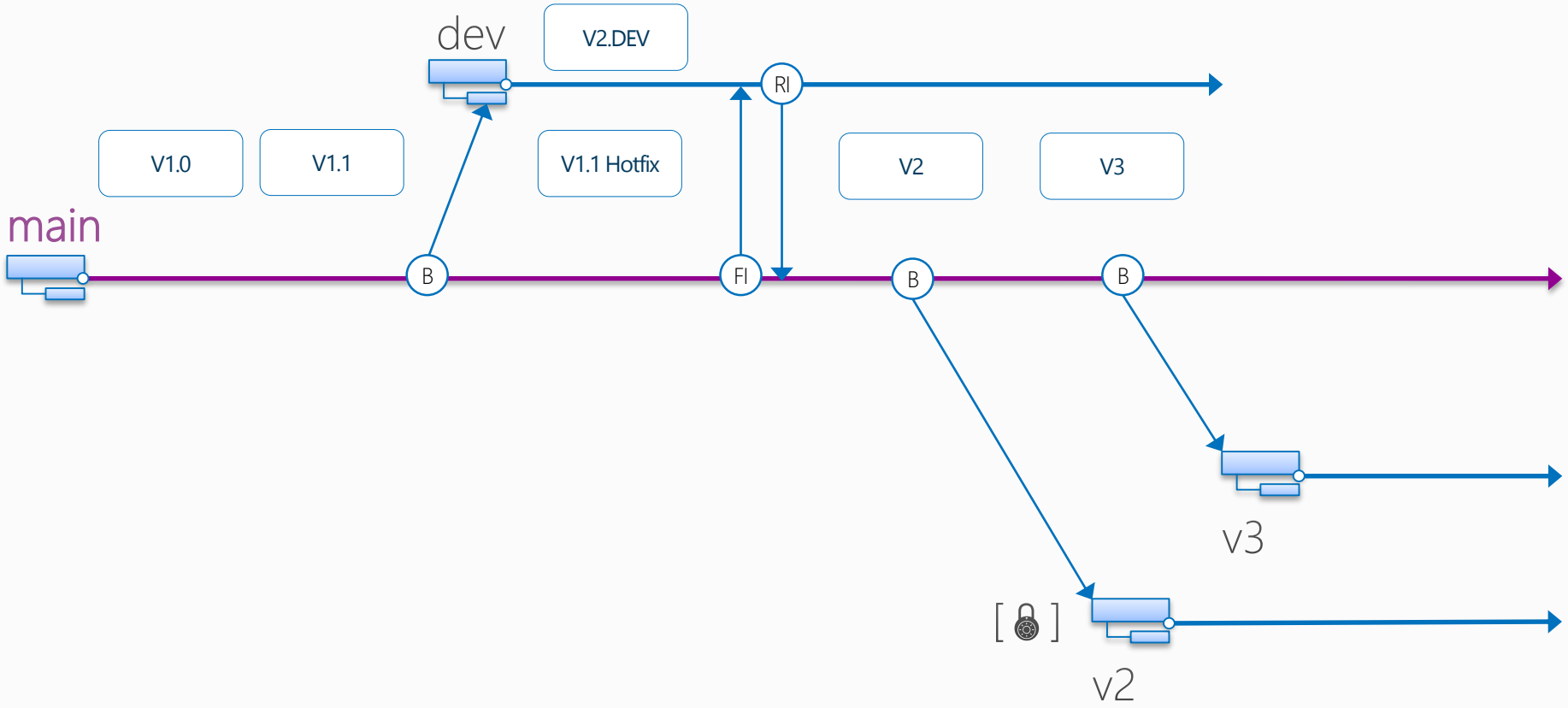
Release Isolation



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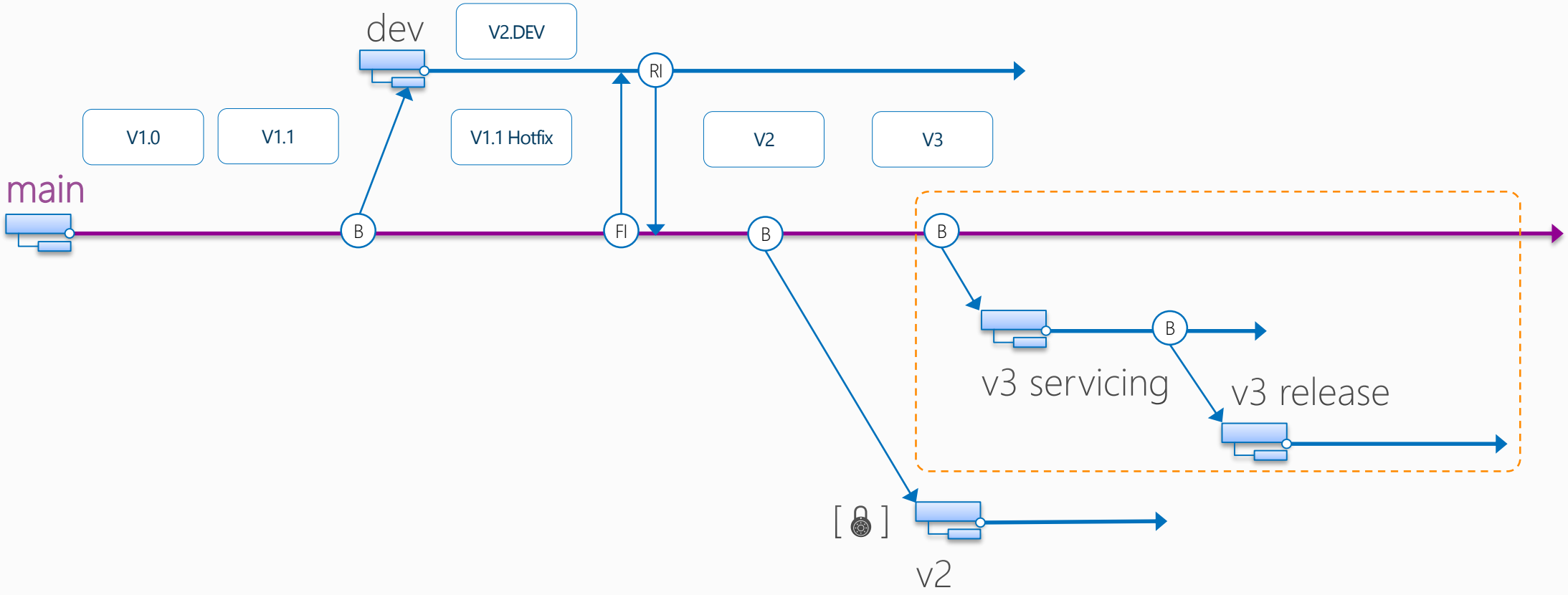
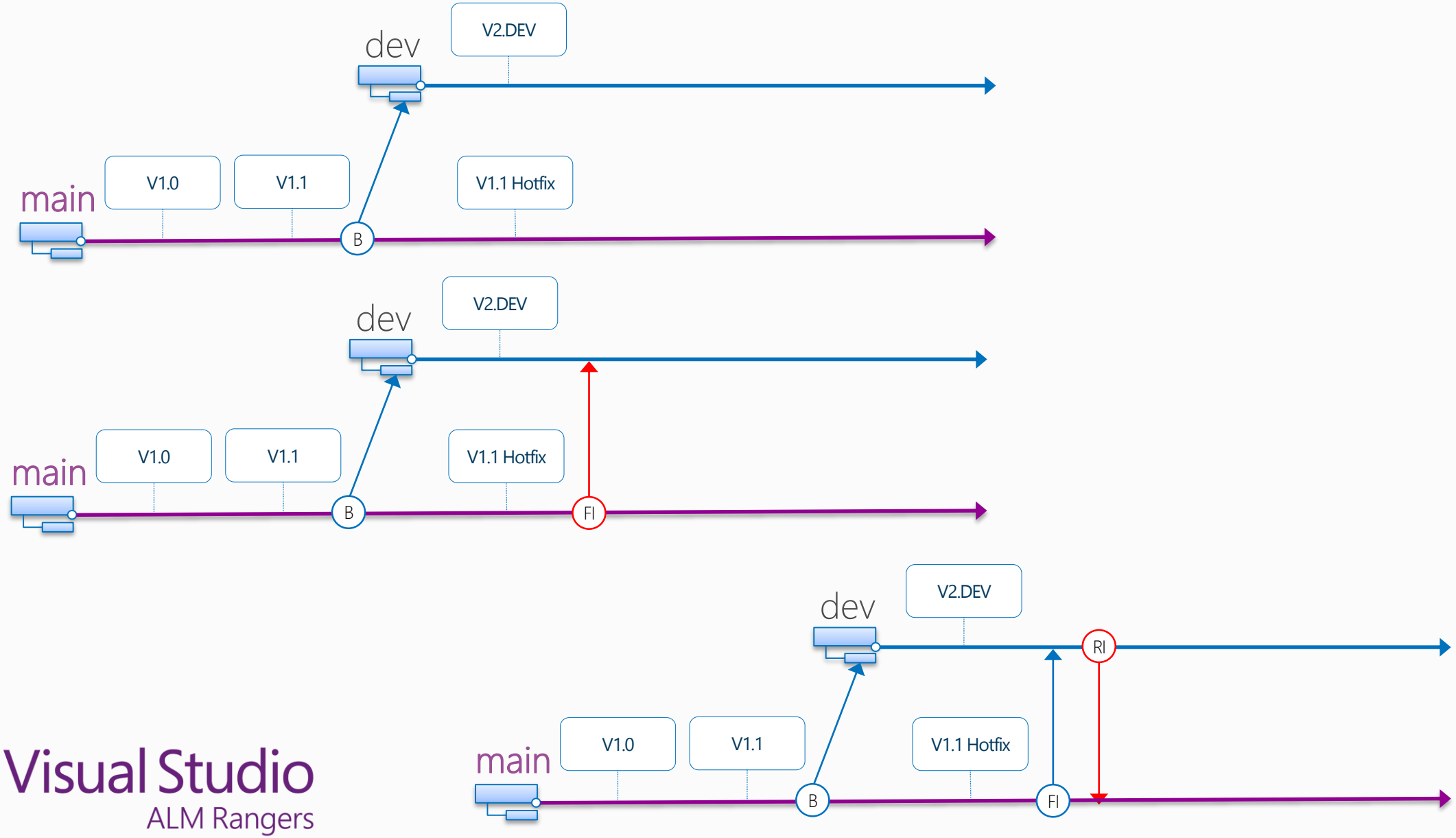
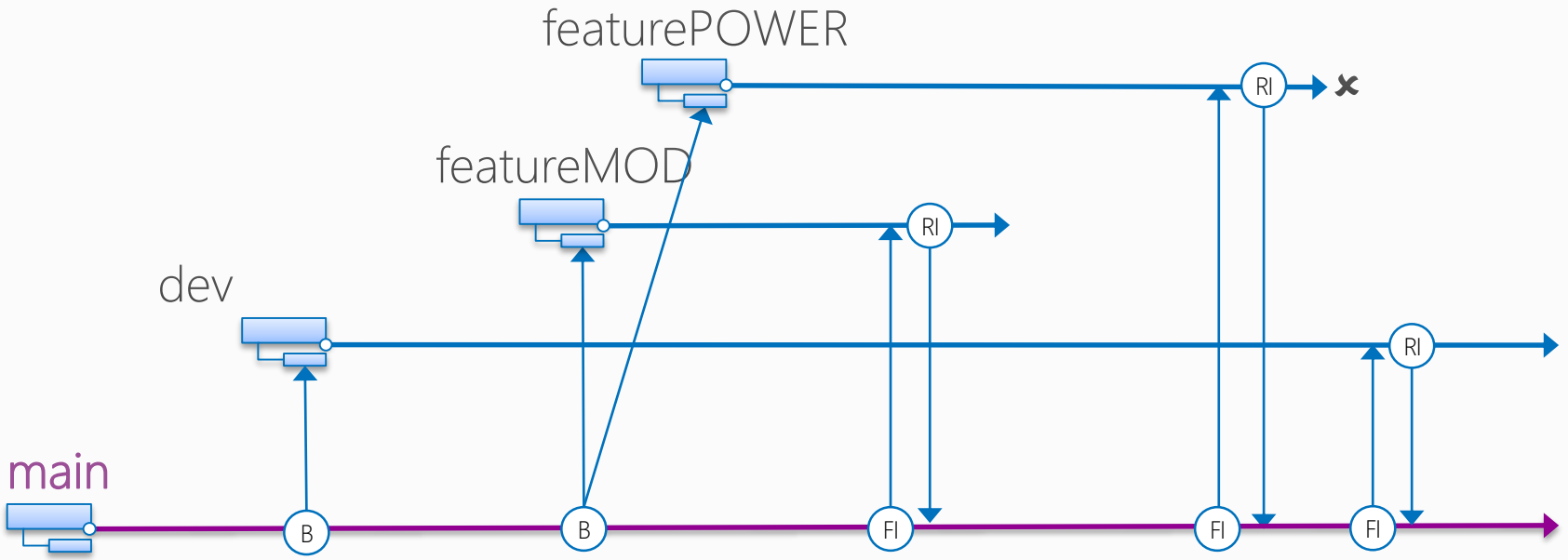
Release Isolation

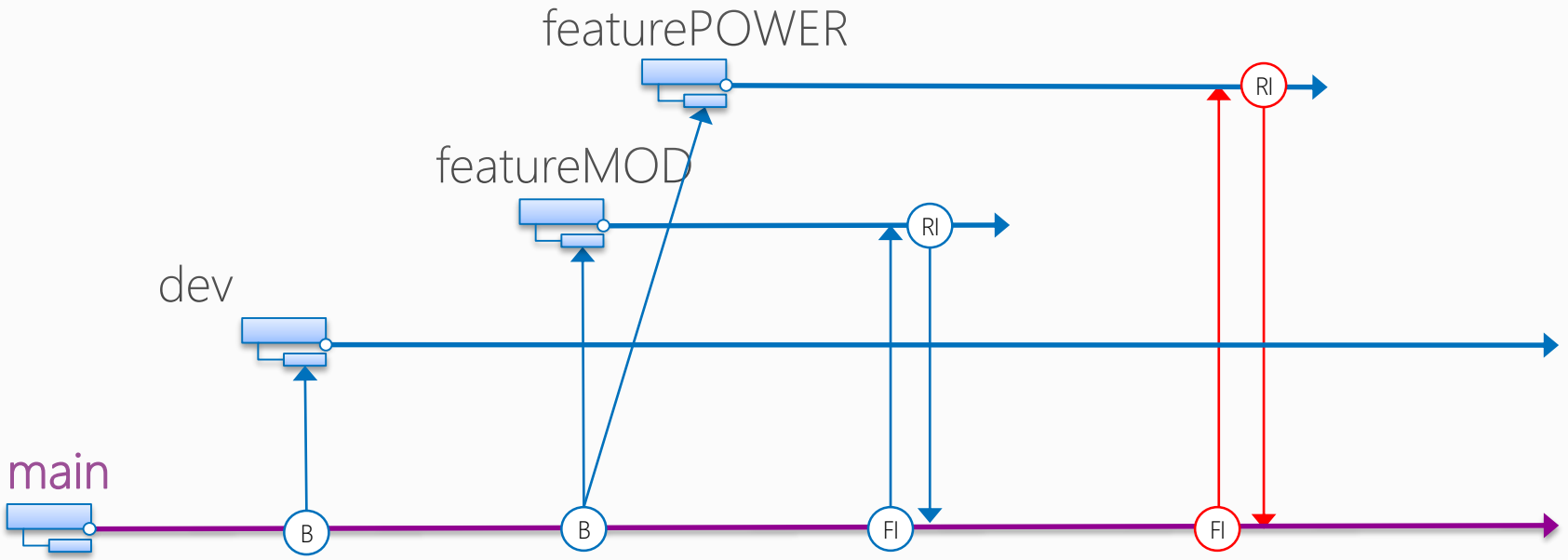


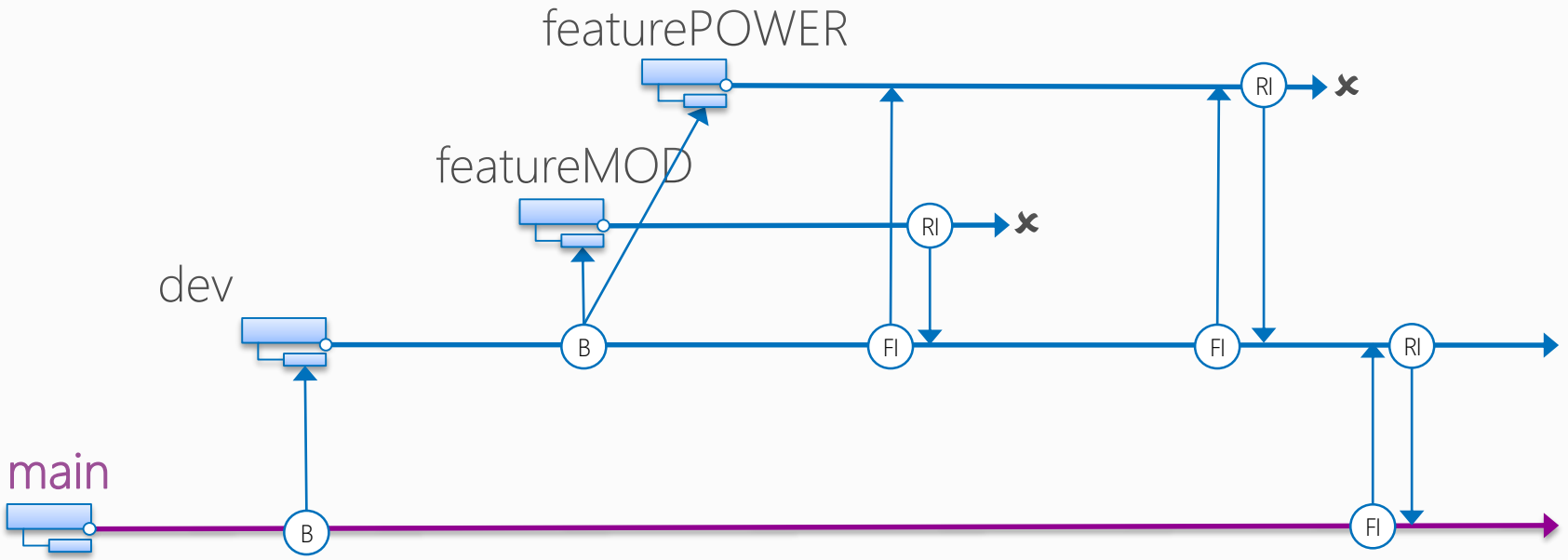
Visual Studio
ALM Rangers



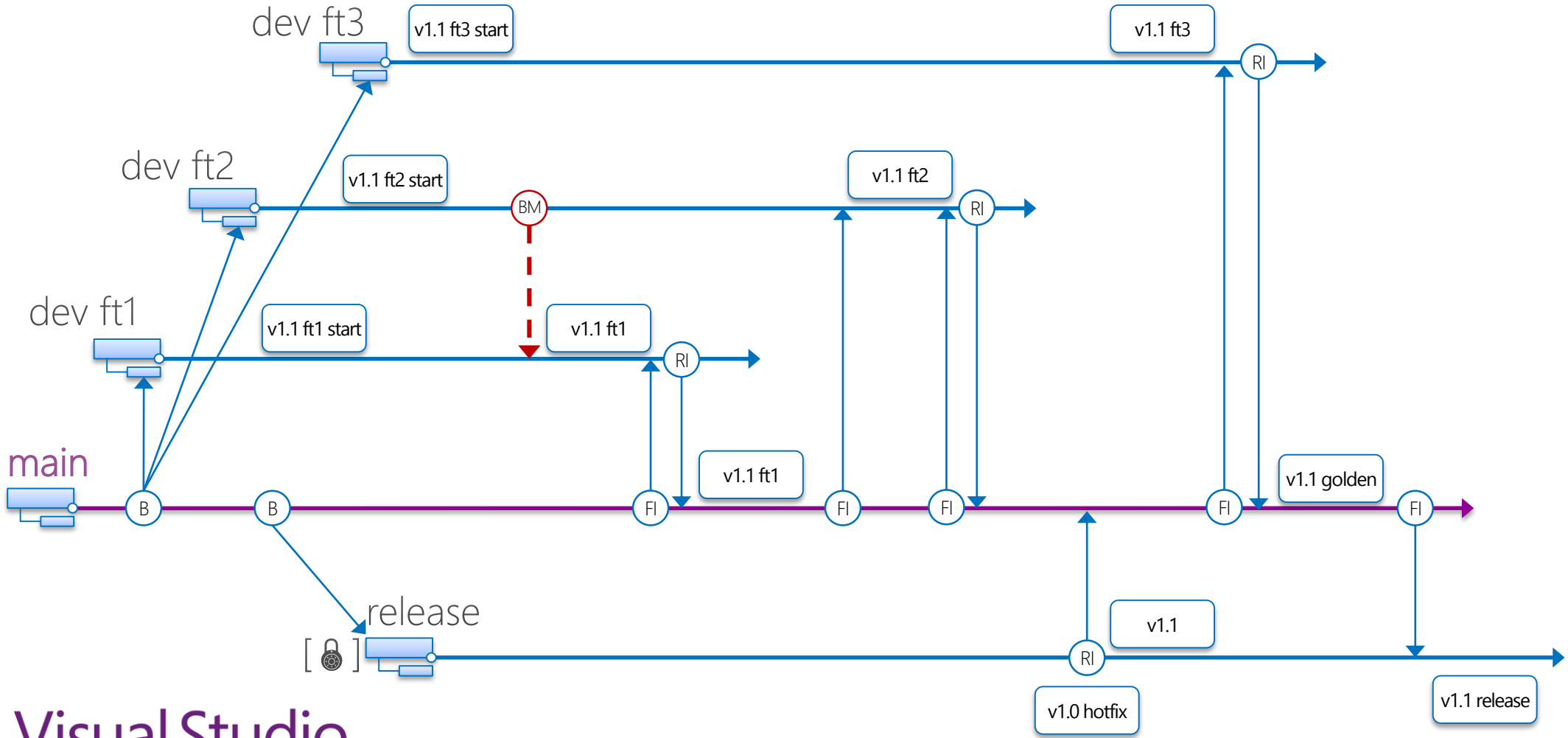
Visual Studio
ALM Rangers


featurePOWER
featureMOD
dev
main
RI
RI
RI
B
B
FI
FI
FI


featurePOWER
featureMOD
dev
main
RI
RI
B
B
FI
FI


featurePOWER
featureMOD
dev
main
B
RI
FI
RI
FI
RI
B
FI

Baseless Merge



Visual Studio
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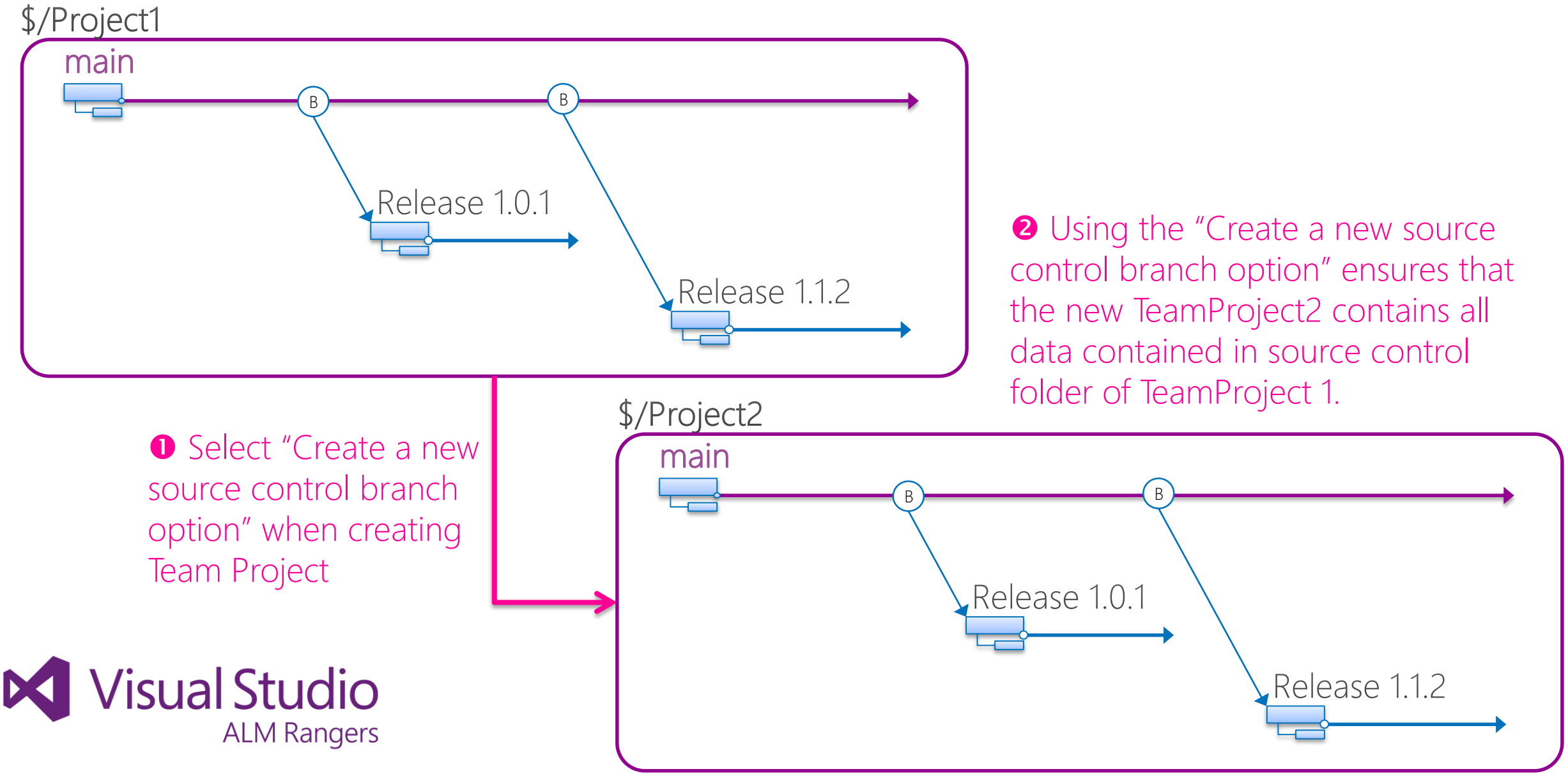
Create a new source control branch option - problematic



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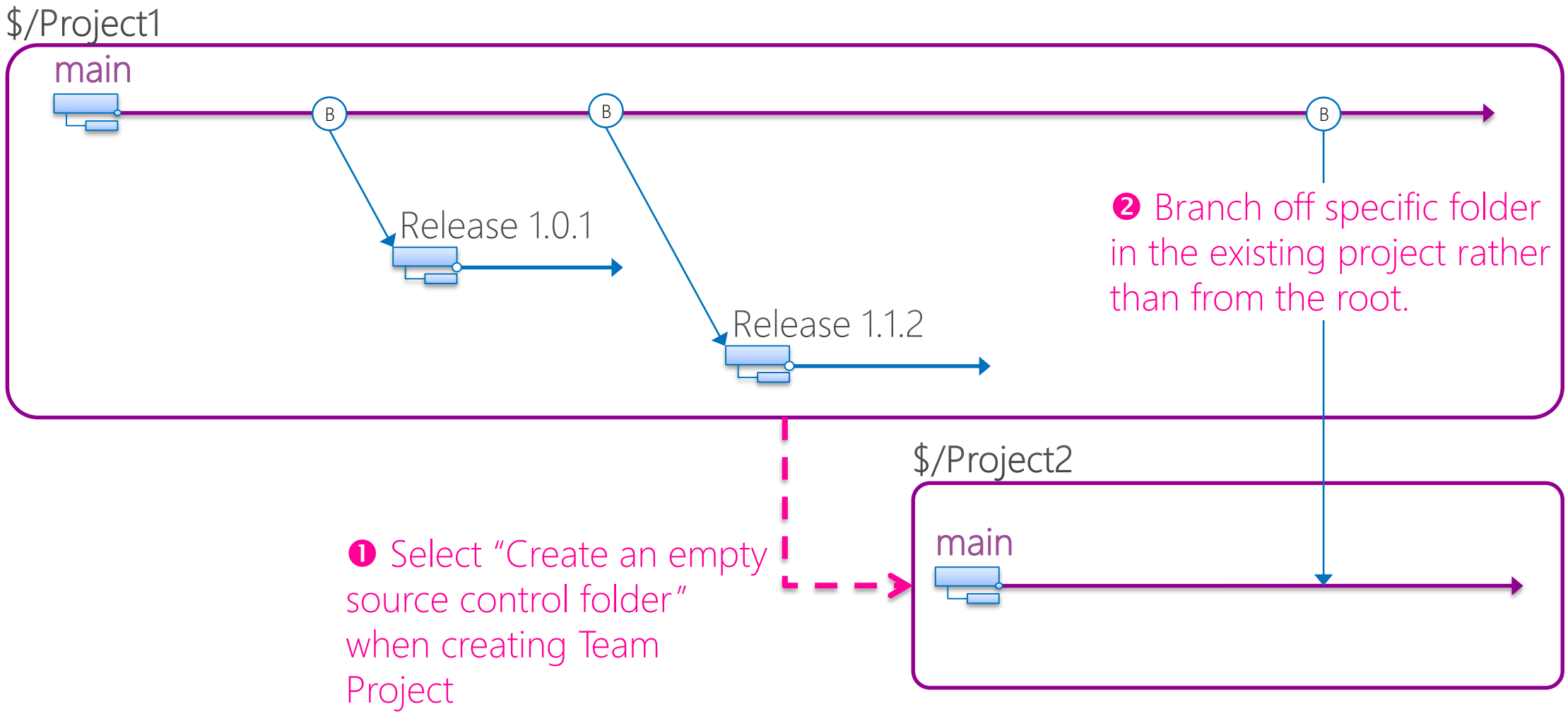
Create a new source control branch option – alternative - problematic



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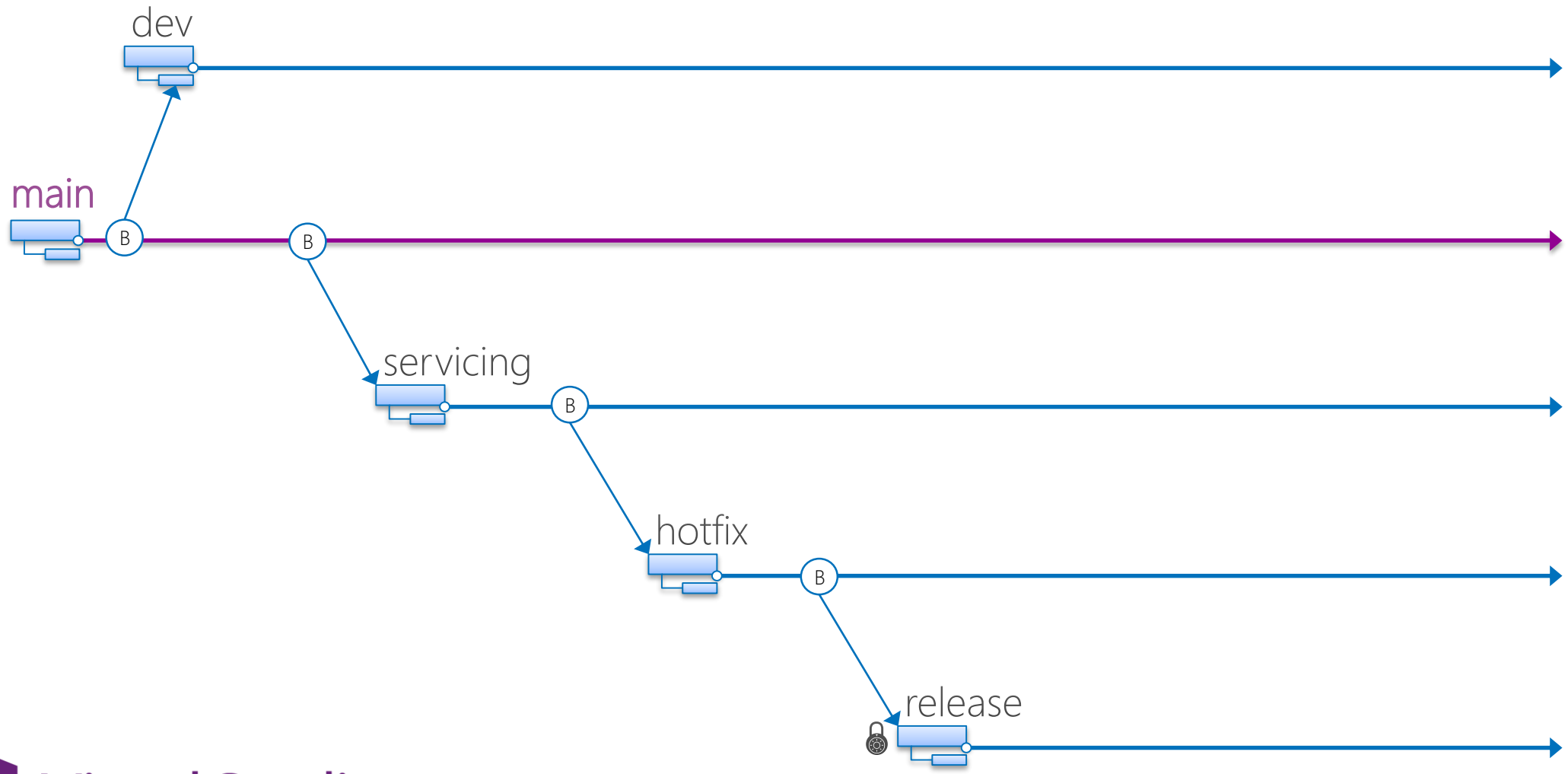
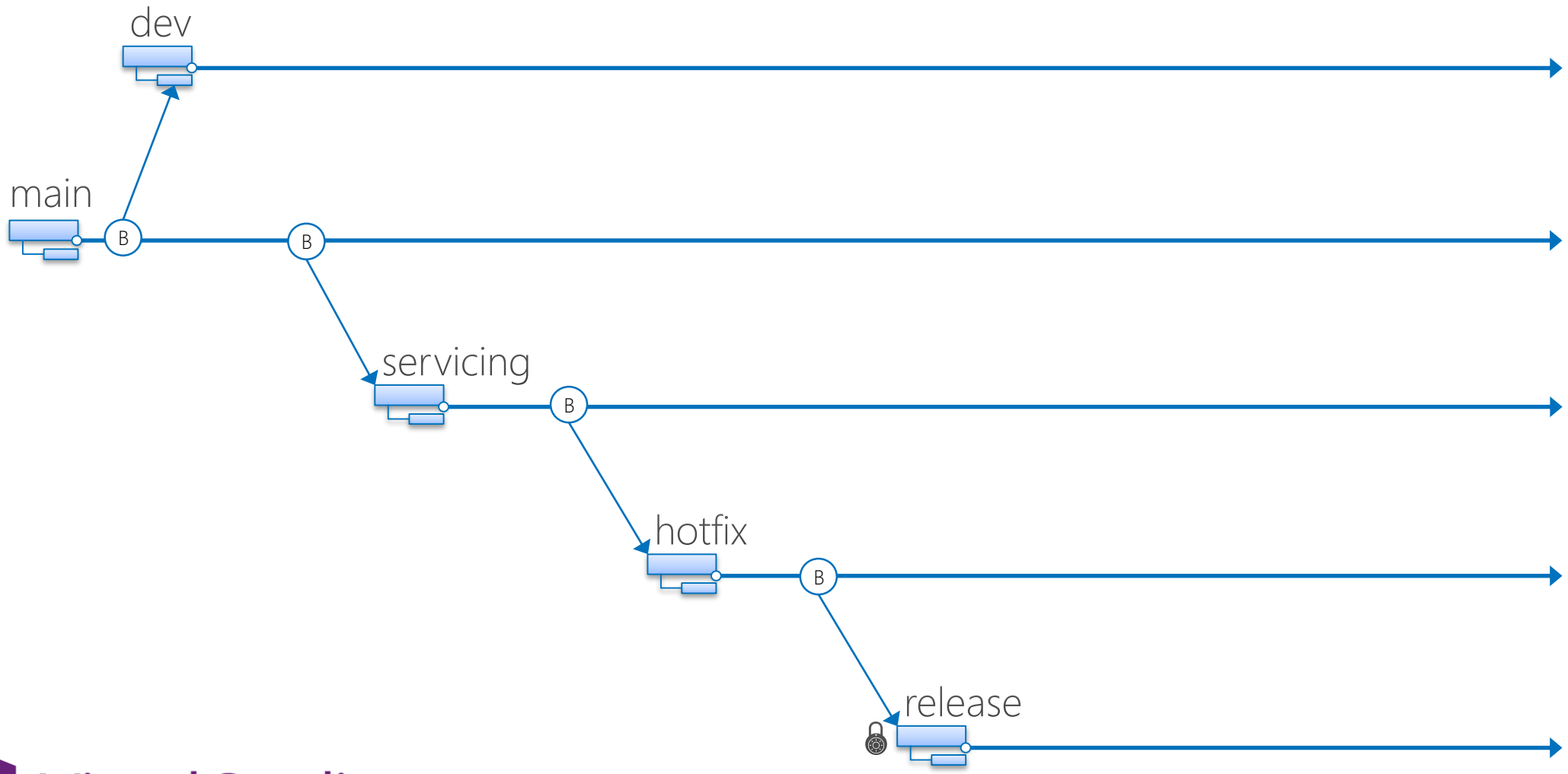
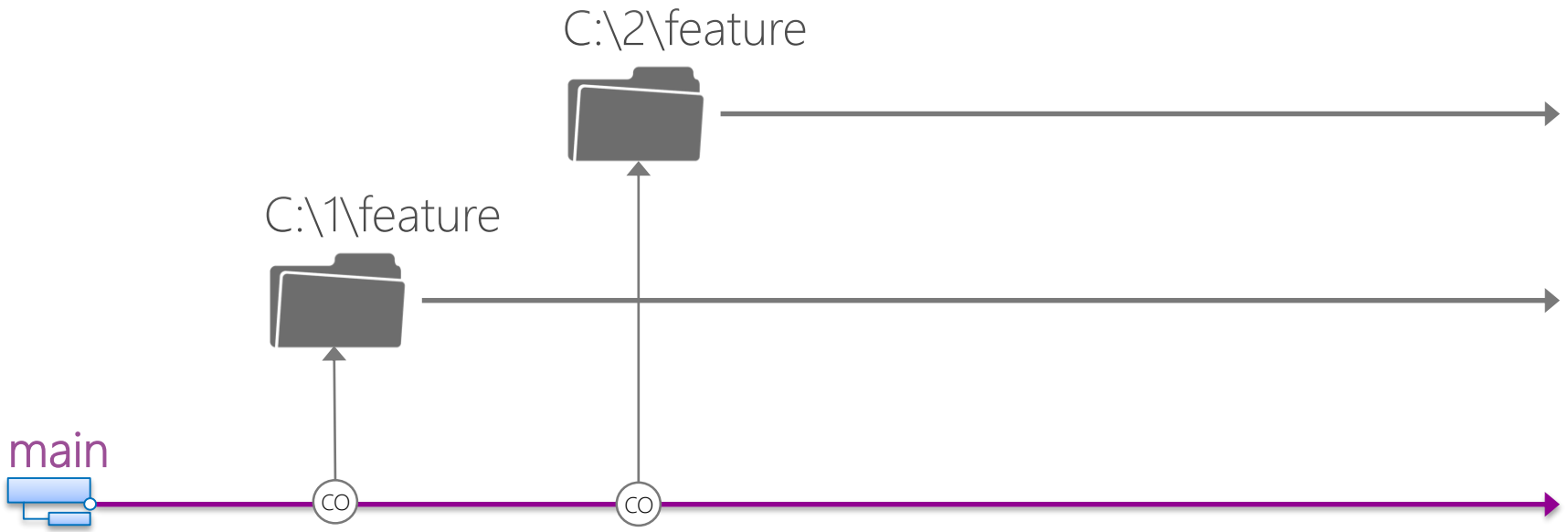


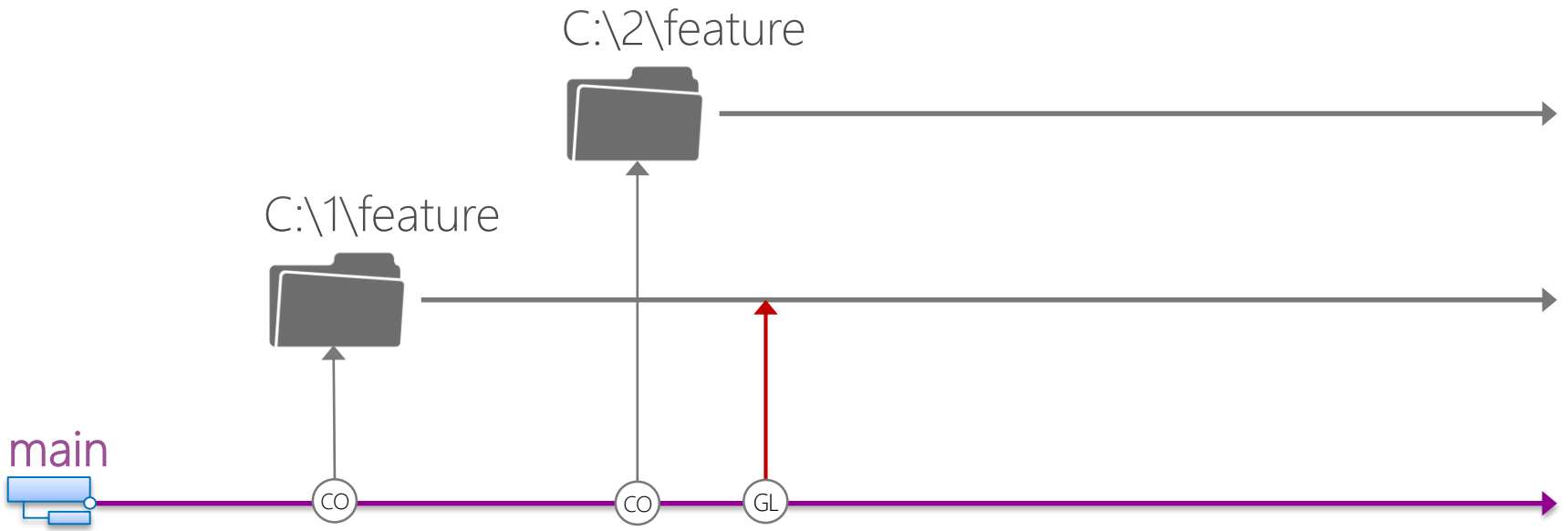
Visual Studio
ALM Rangers


dev
main
B
B
servicing
B
hotfix
B
release

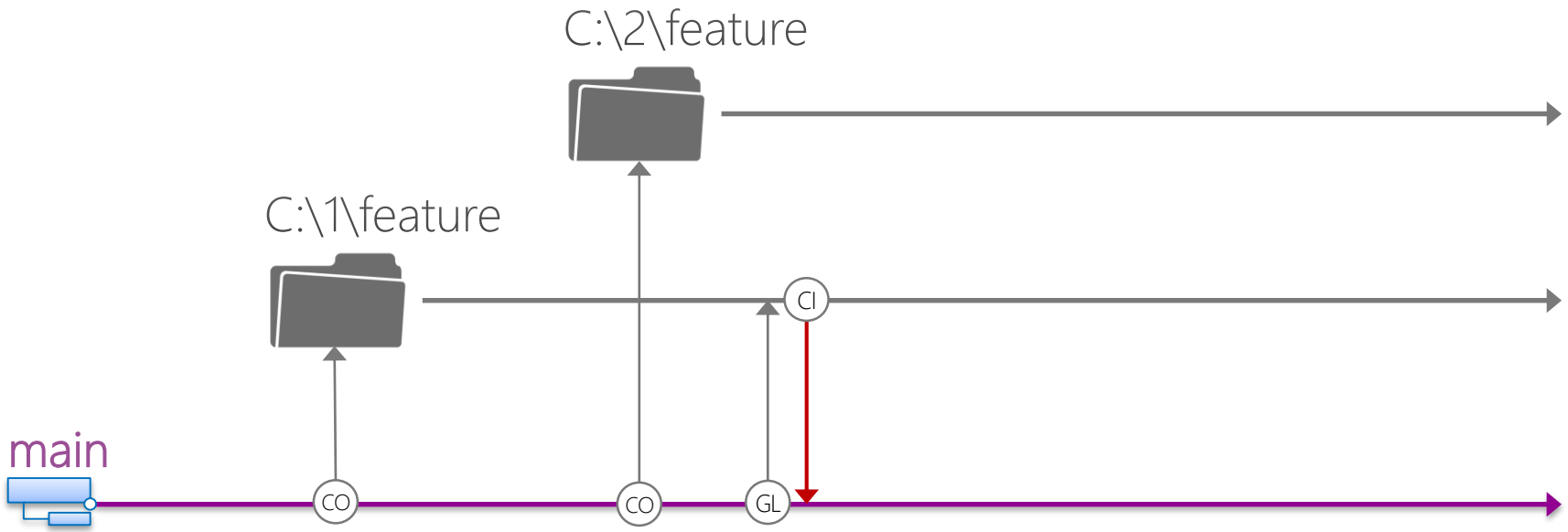
Feature Parent with two children - Checkout



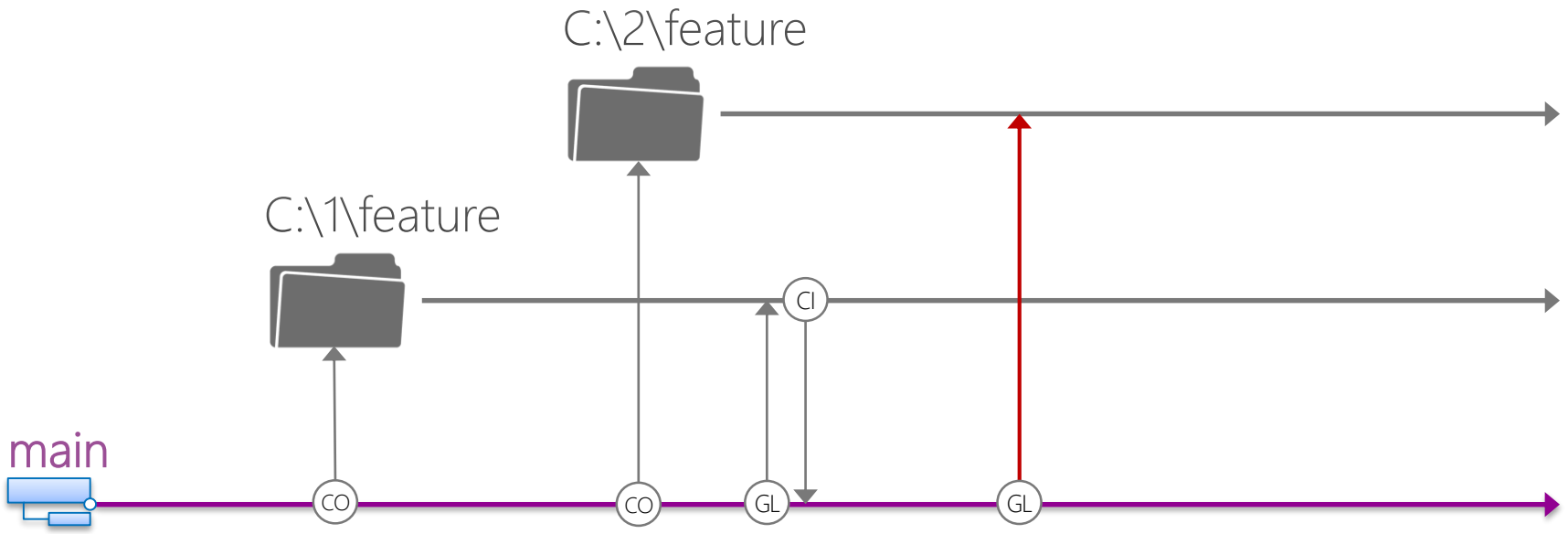
Feature Parent with two children – Get Latest Child 1



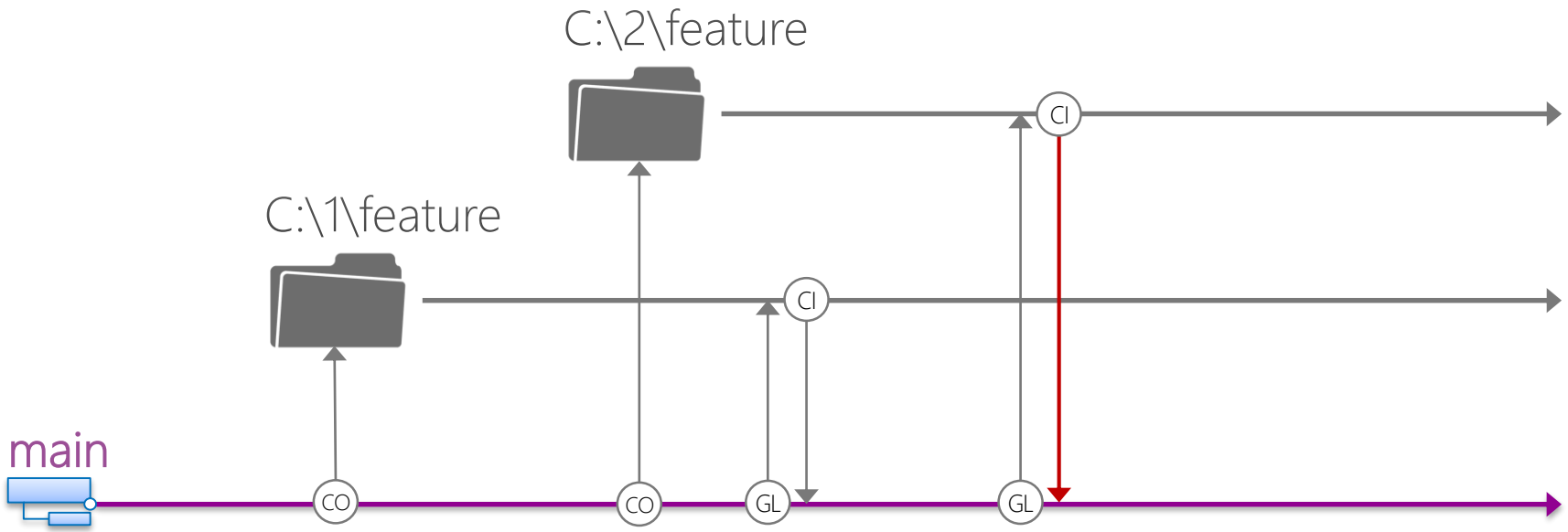
Feature Parent with two children – Checkin from Child 1



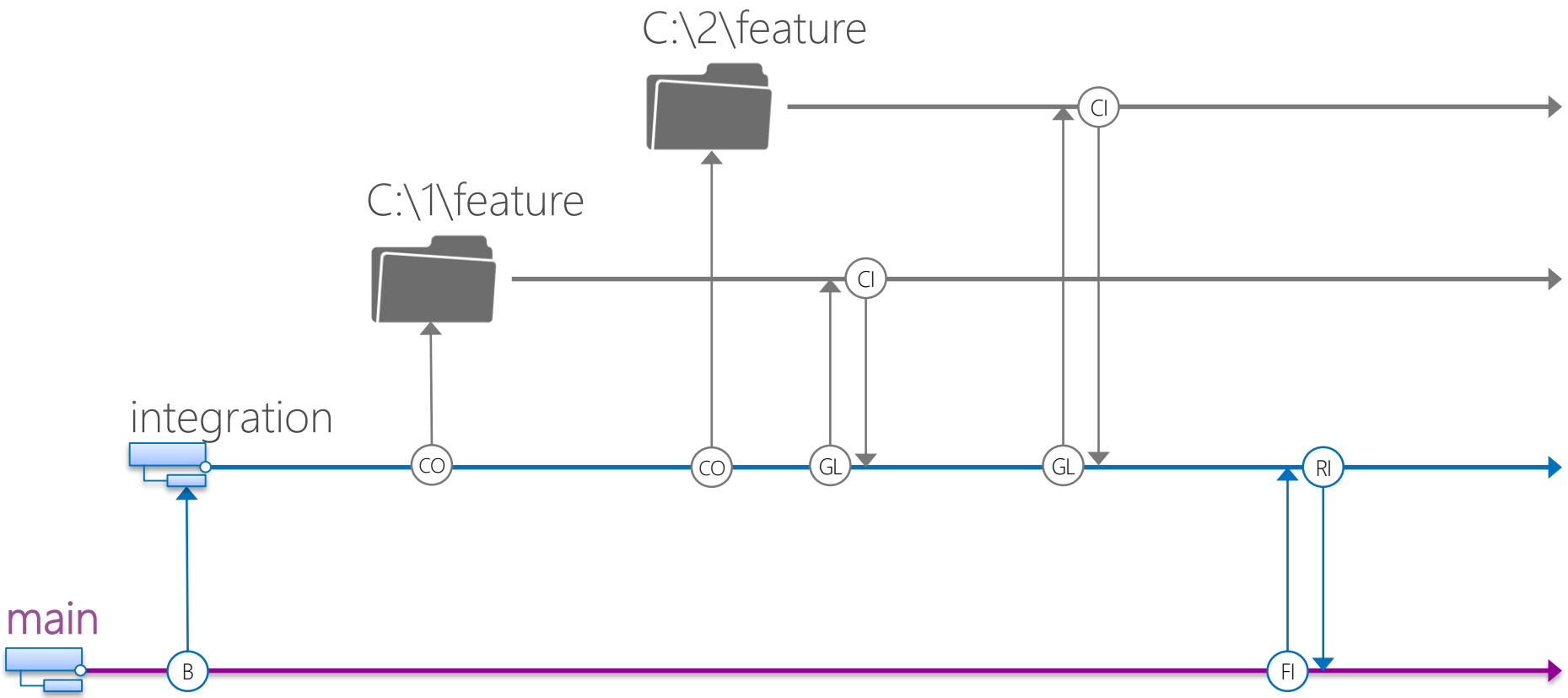
Feature Parent with two children - Get Latest Child 2



Feature Parent with two children - Checkin from Child 2



Feature Parent with two children and integration branch



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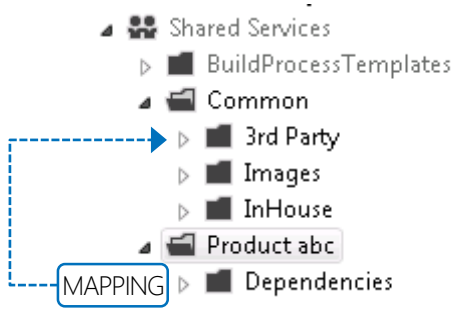

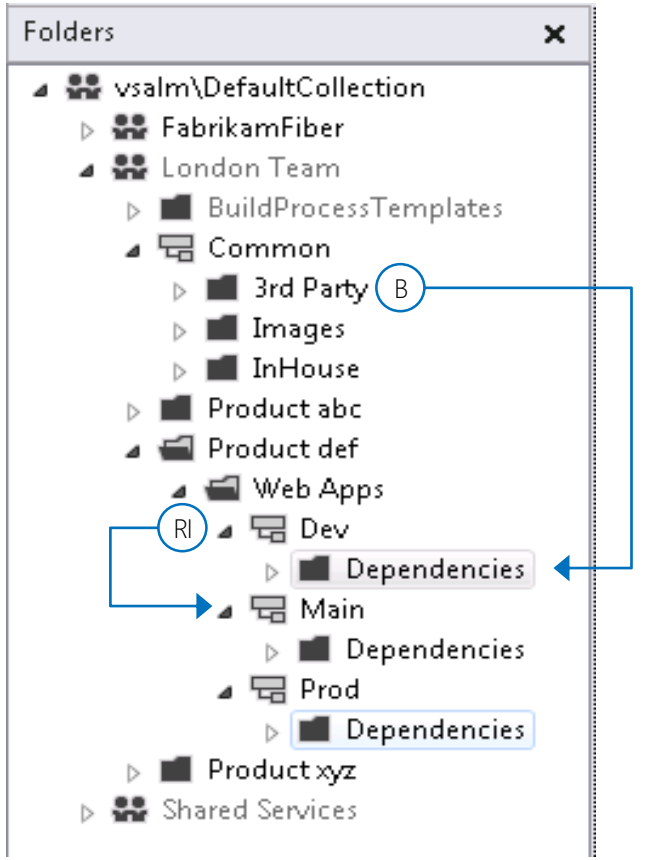

Visual Studio
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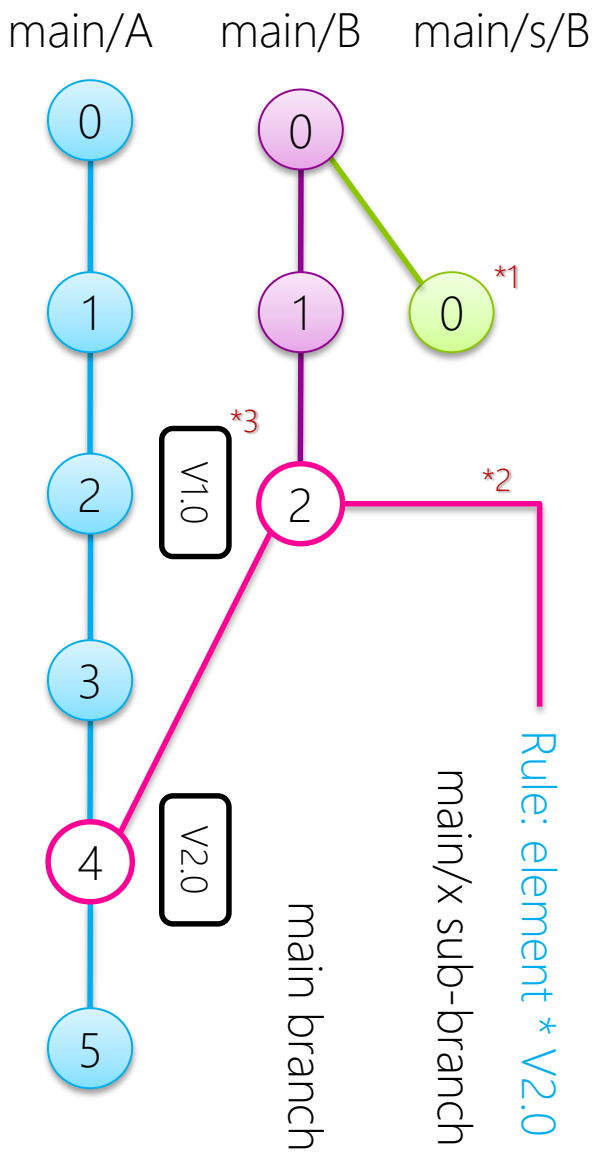

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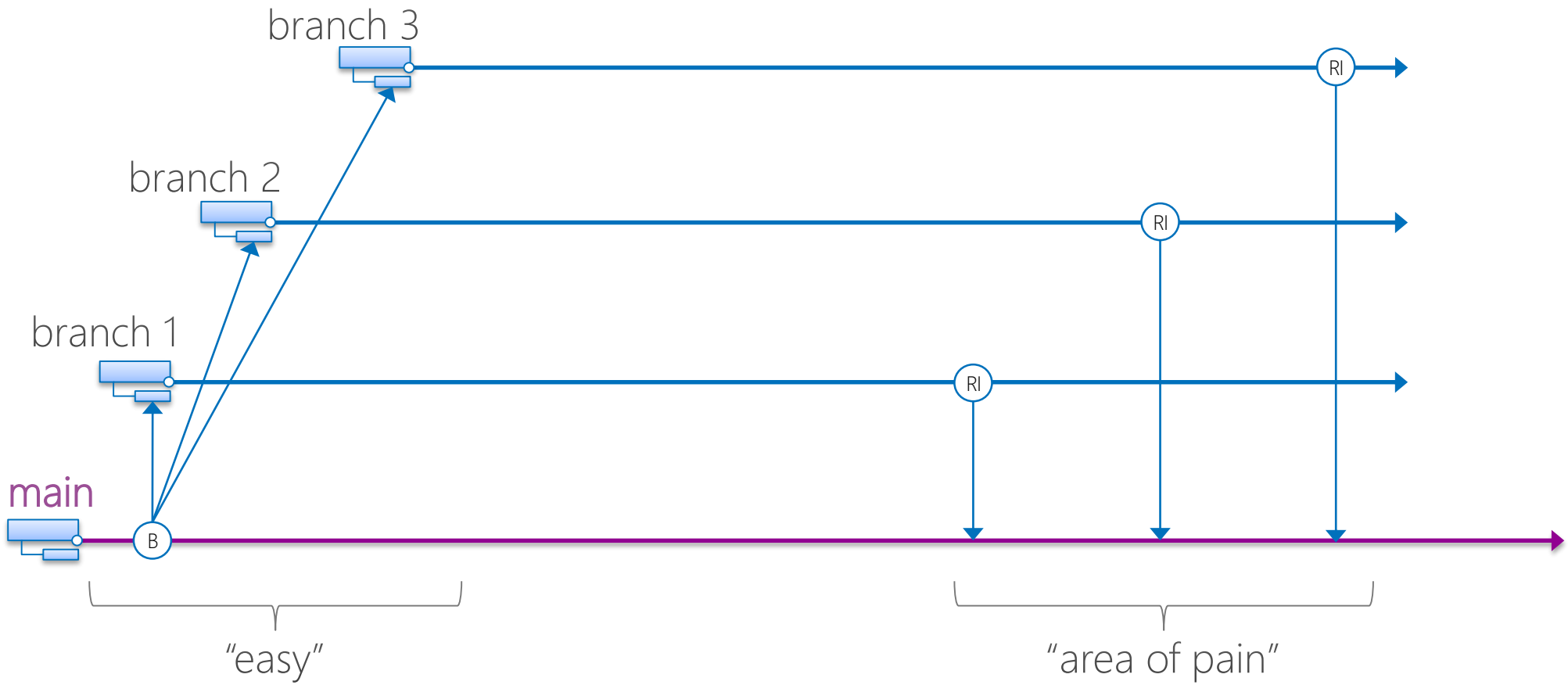
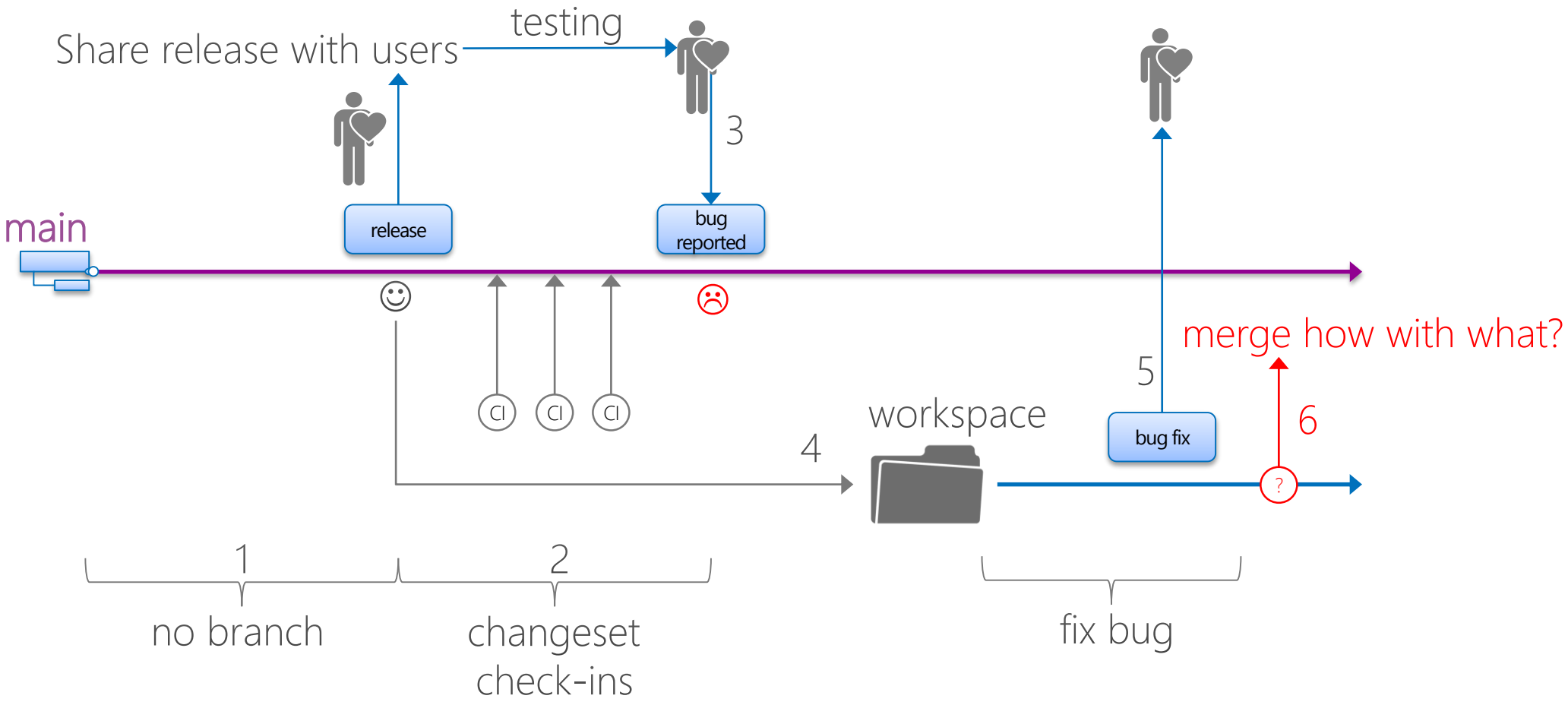
Branching is "easy"





Visual Studio
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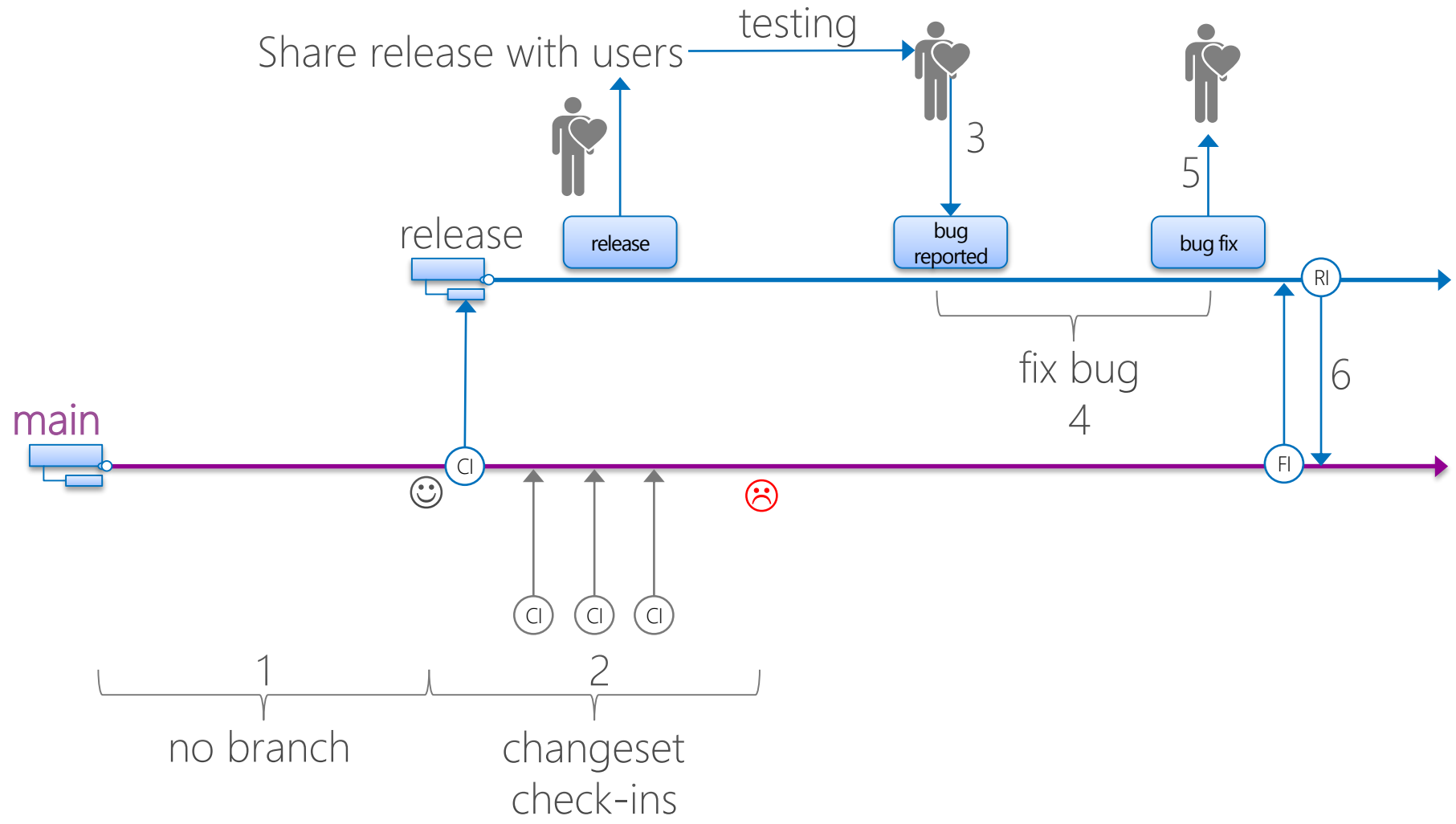

Visual Studio
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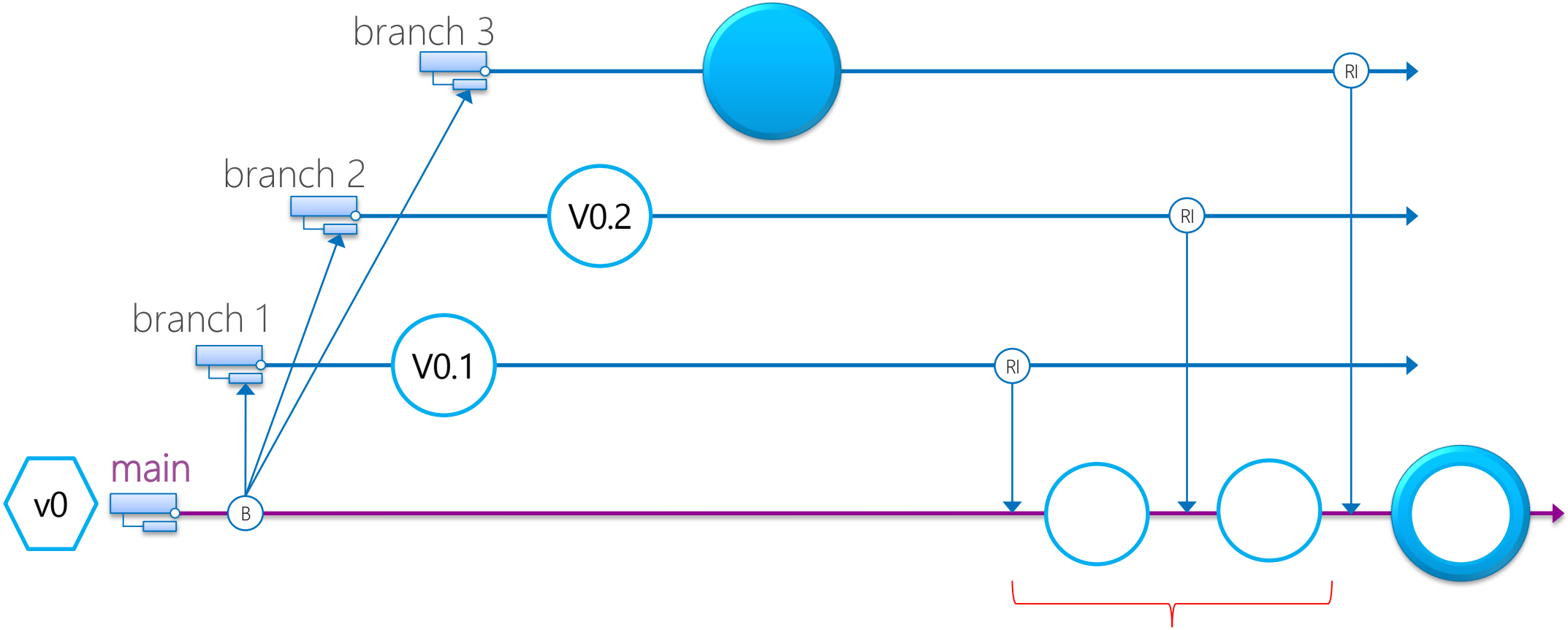
Branching is "easy"



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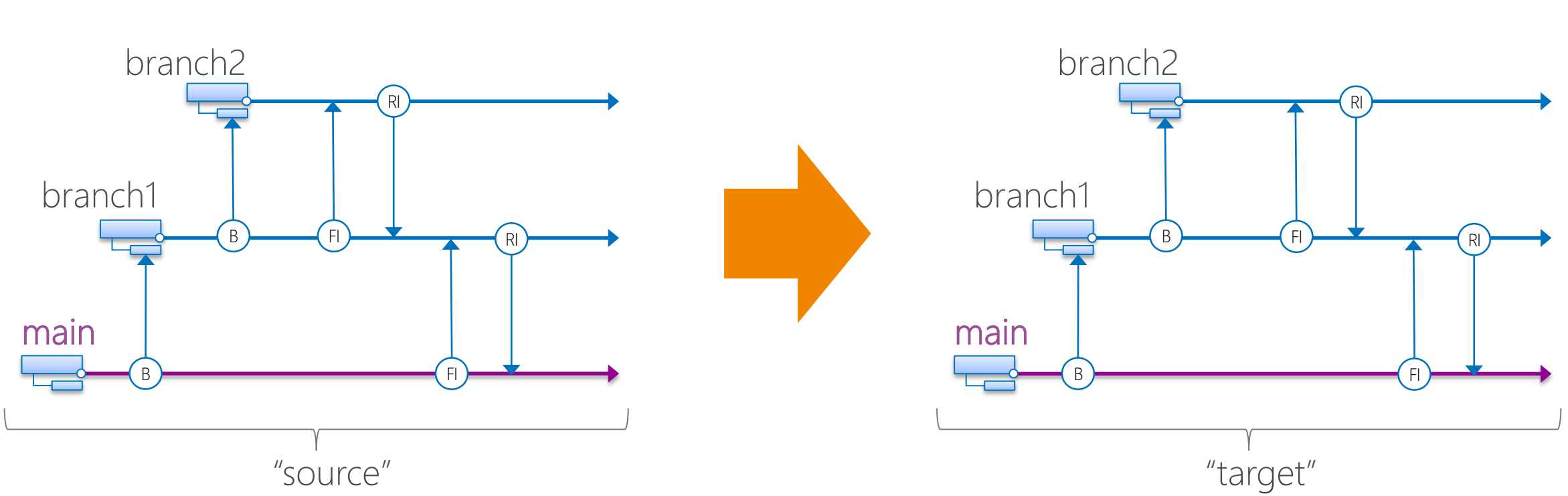
TFS Integration Tools - Standard



Paths (in session config)

Active	$/space

Local Path: c:\temp\space

Name

- branch1
- branch2
- BuildProcessTemplates
- main

Physical (file) view

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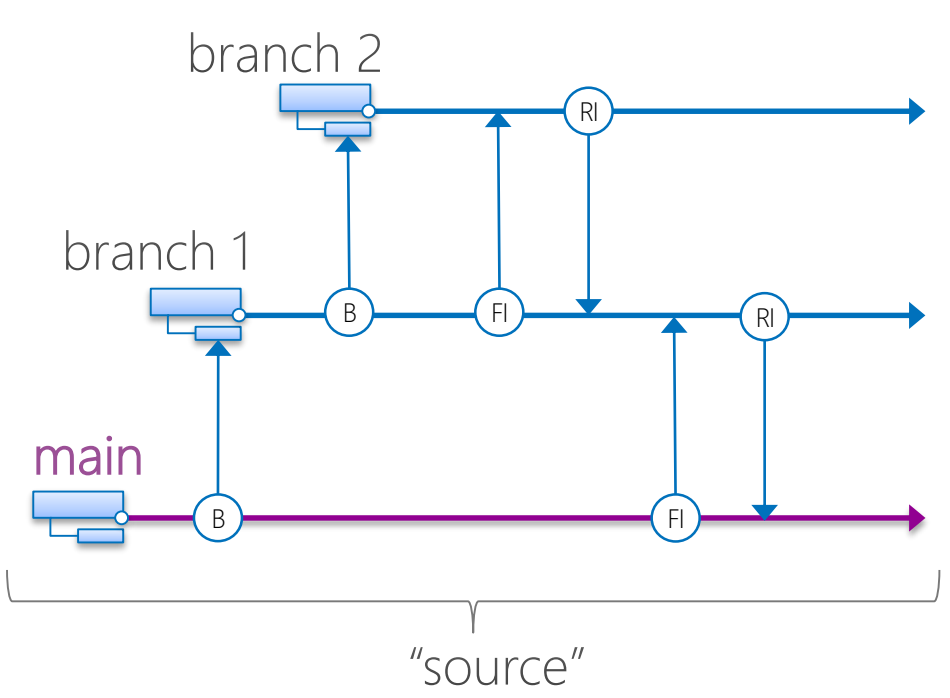
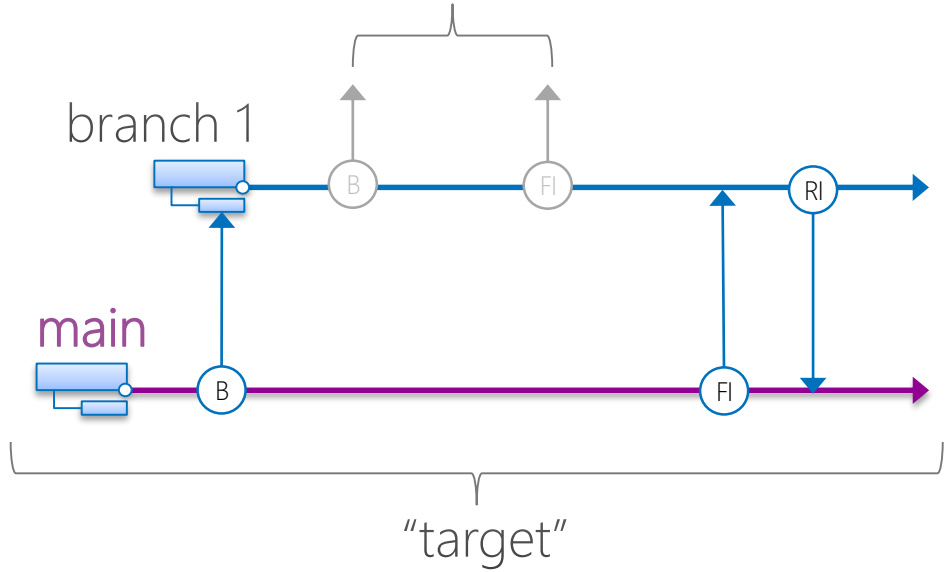
TFS Integration Tools – Merge Scope



skip branch and forward integration actions as they are out of scope

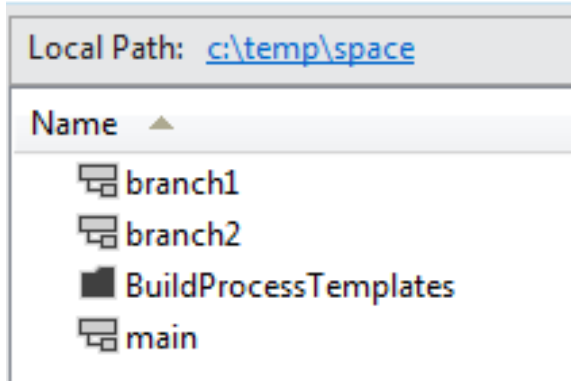


logical tree view

Paths (in session config)

Active	$/space/branch1

mergescope = $/space/branch1



Physical (file) view

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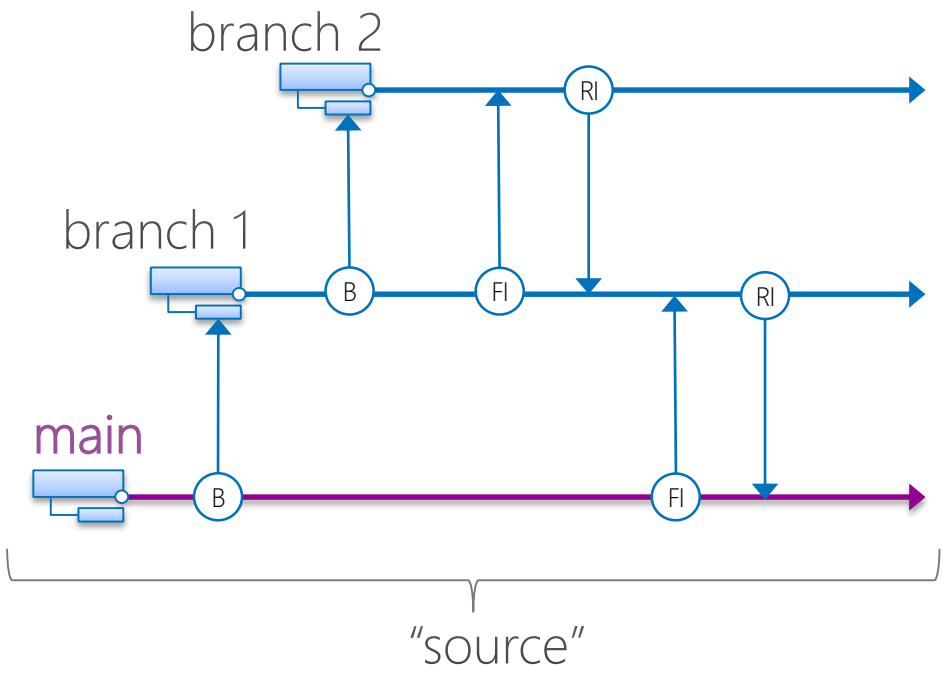
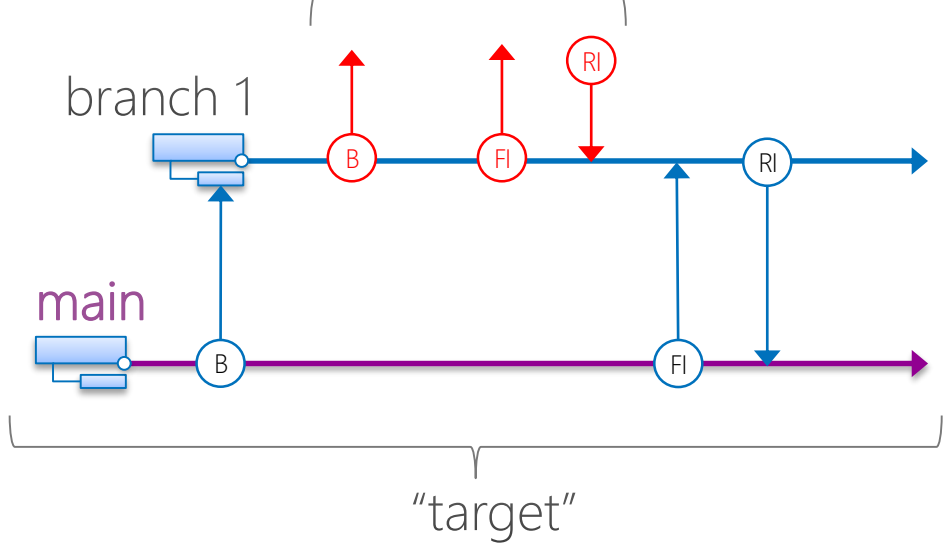
TFS Integration Tools – Cloak

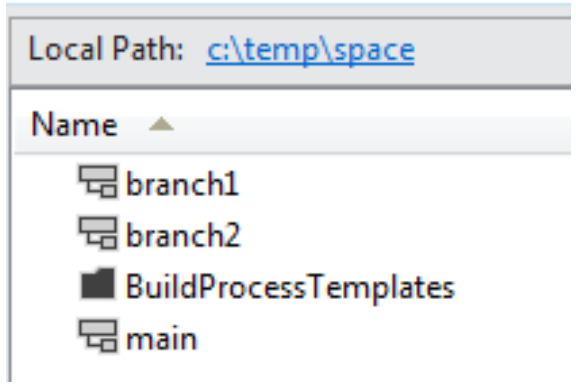




logical tree view

Paths (in session config)

Active	$/space
Cloaked	$/space/branch2



Physical (file) view

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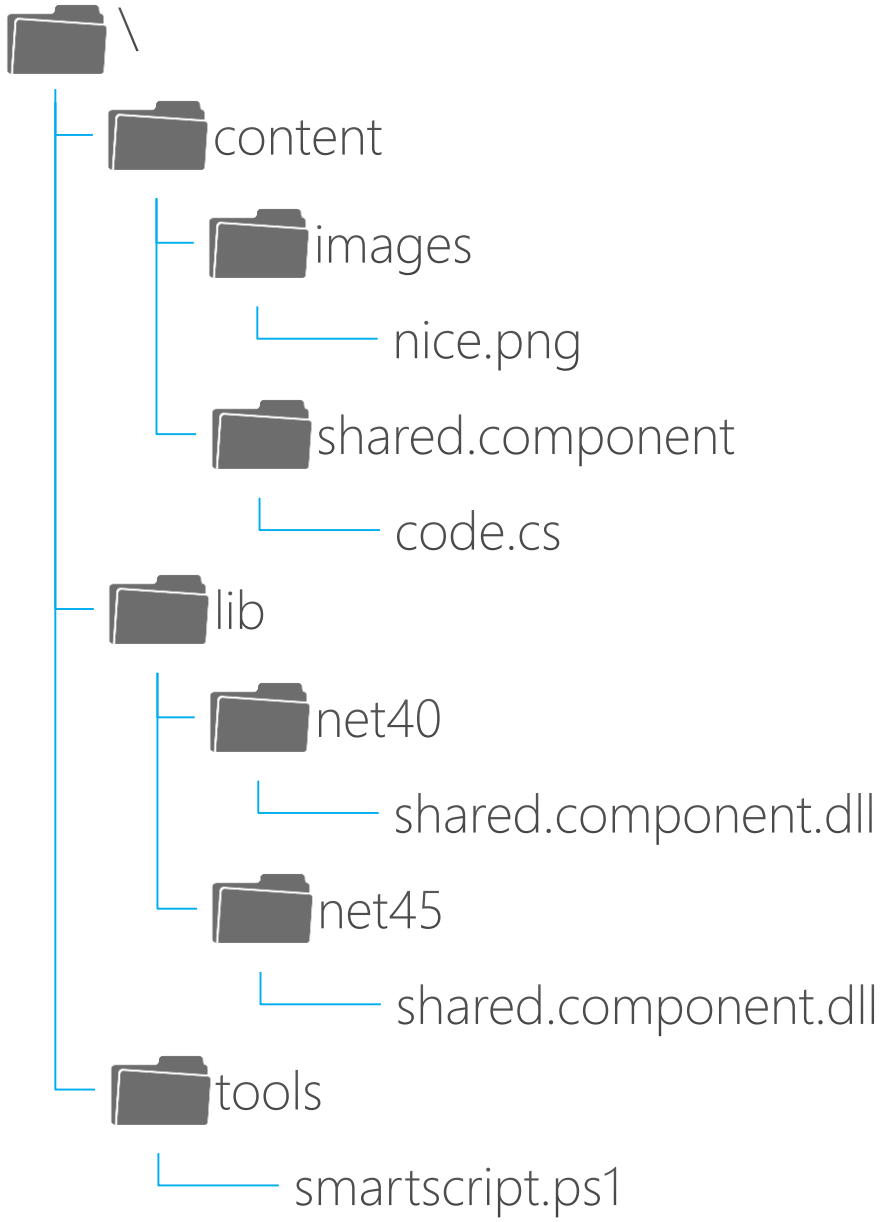
Branching & Merging
Silver bullet

2 11:12

To branch or not
to branch … that is
our adventure!

NuGet Package Structure



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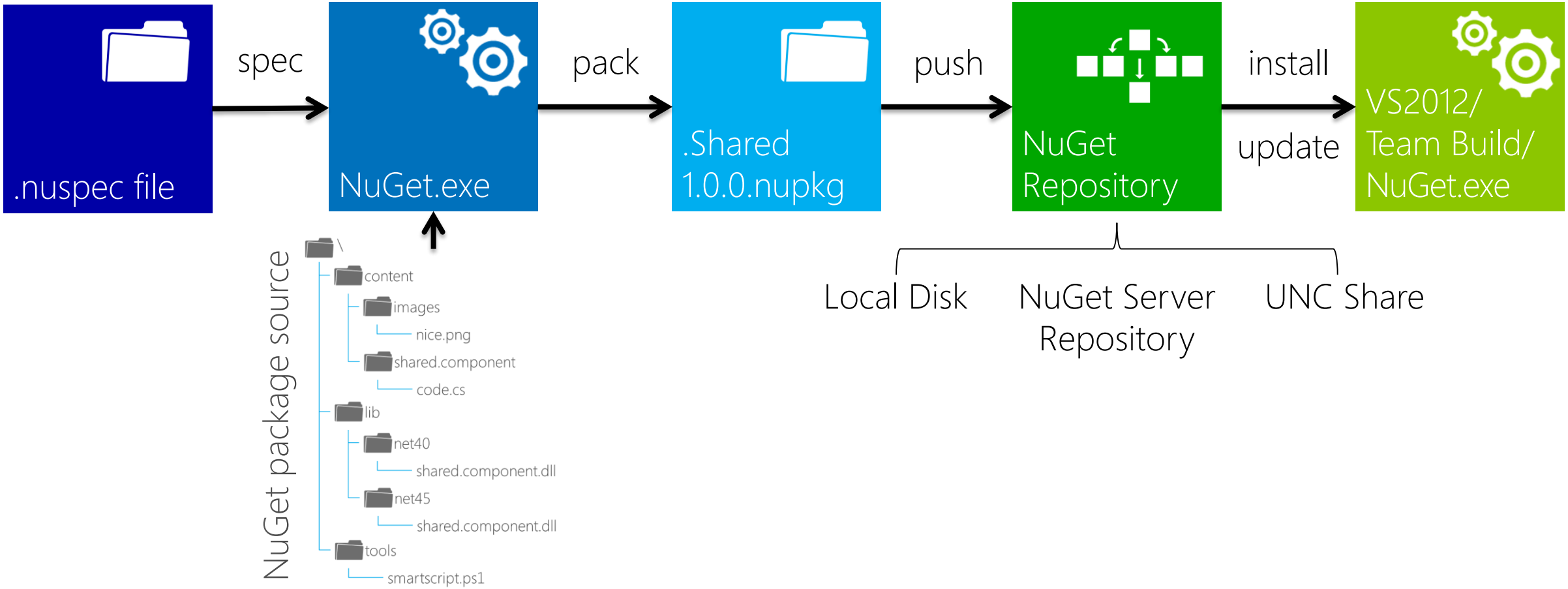
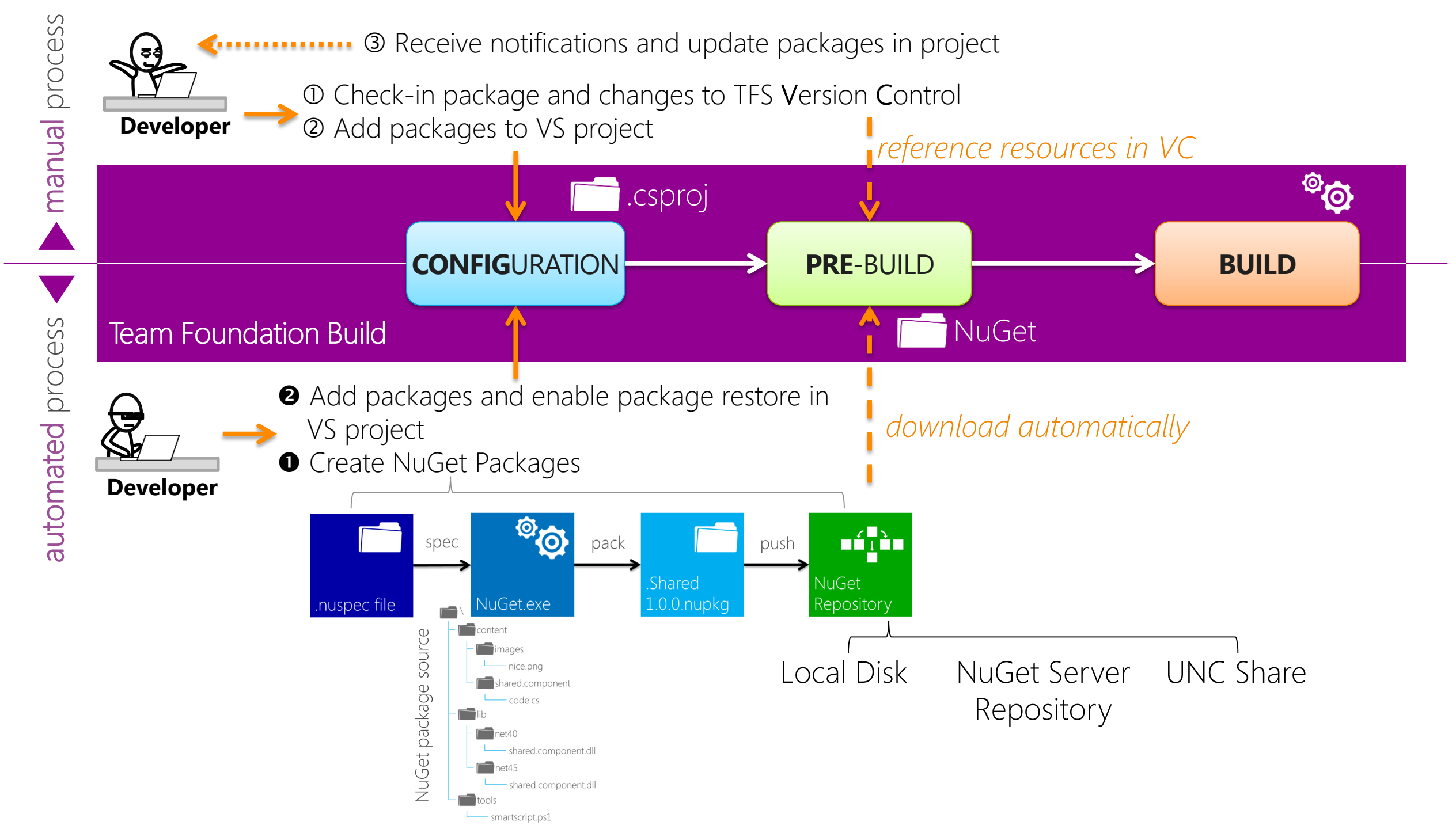
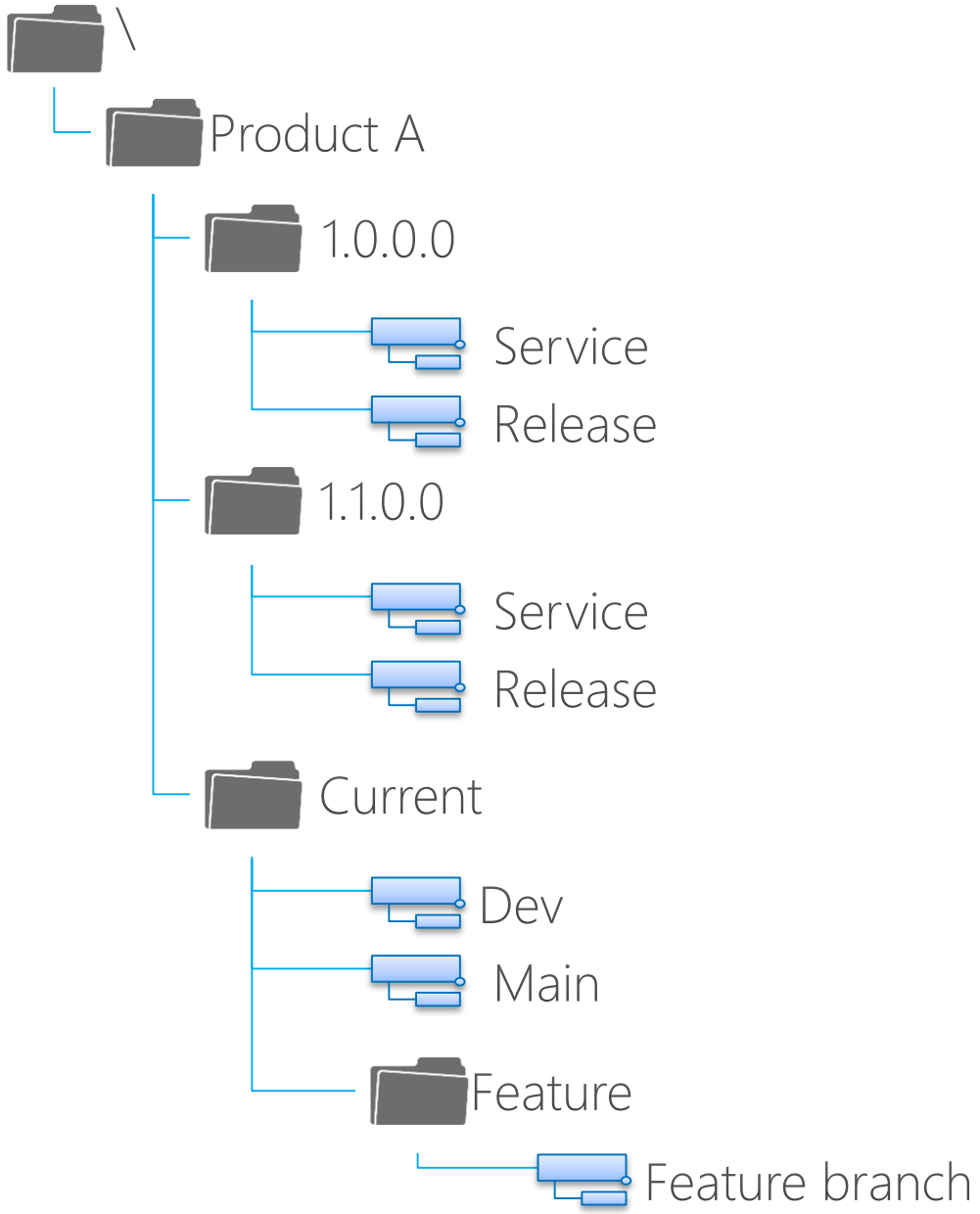
NuGet Build Process



Visual Studio
ALM Rangers

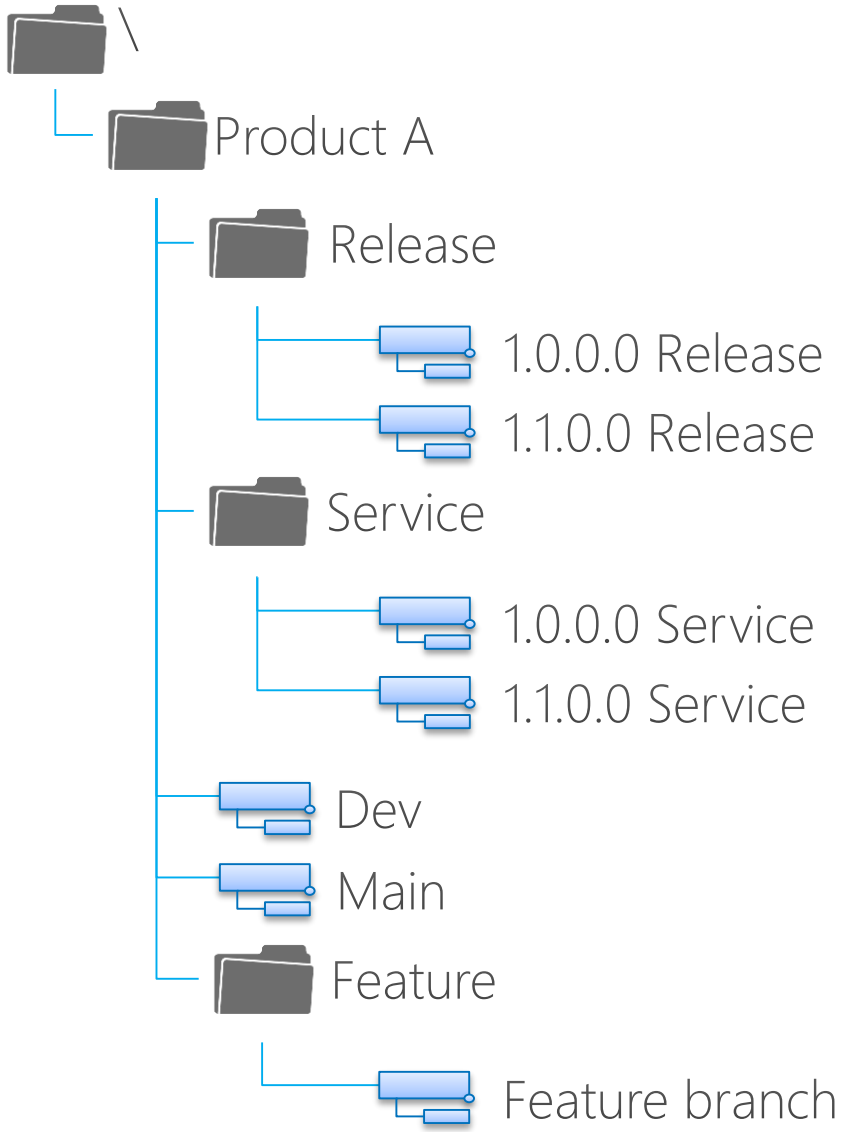

manual process
automated process
③ Receive notifications and update packages in project
Developer
① Check-in package and changes to TFS Version Control
② Add packages to VS project
reference resources in VC
.csproj
CONFIGURATION
PRE-BUILD
BUILD
Team Foundation Build
NuGet
download automatically
❷ Add packages and enable package restore in VS project
❶ Create NuGet Packages
Developer
.nuspec file
spec
NuGet.exe
pack
.Shared 1.0.0.nupkg
push
NuGet Repository
NuGet package source
content
images
nice.png
shared.component
code.cs
lib
net40
shared.component.dll
net45
shared.component.dll
tools
smartscript.ps1
Local Disk
NuGet Server Repository
UNC Share

TFVC Folder Structure – By Release



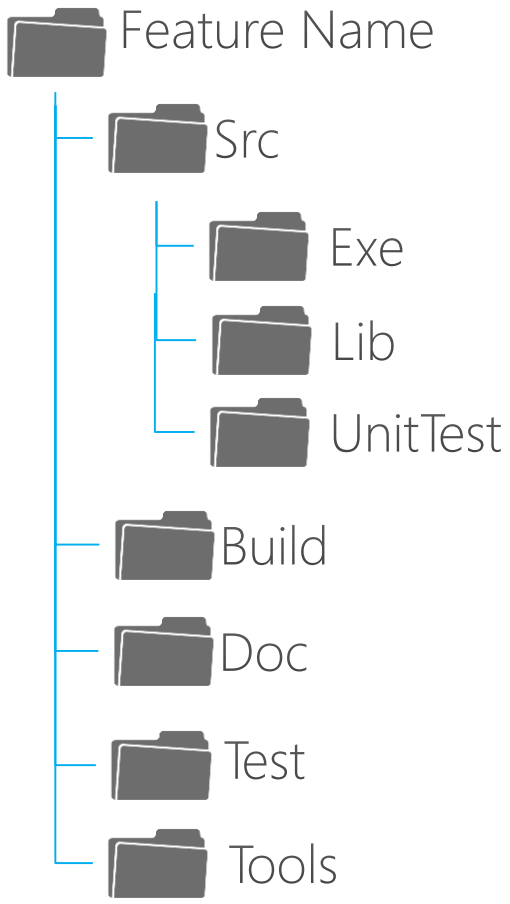
Visual Studio
ALM Rangers

TFVC Folder Structure – By Purpose

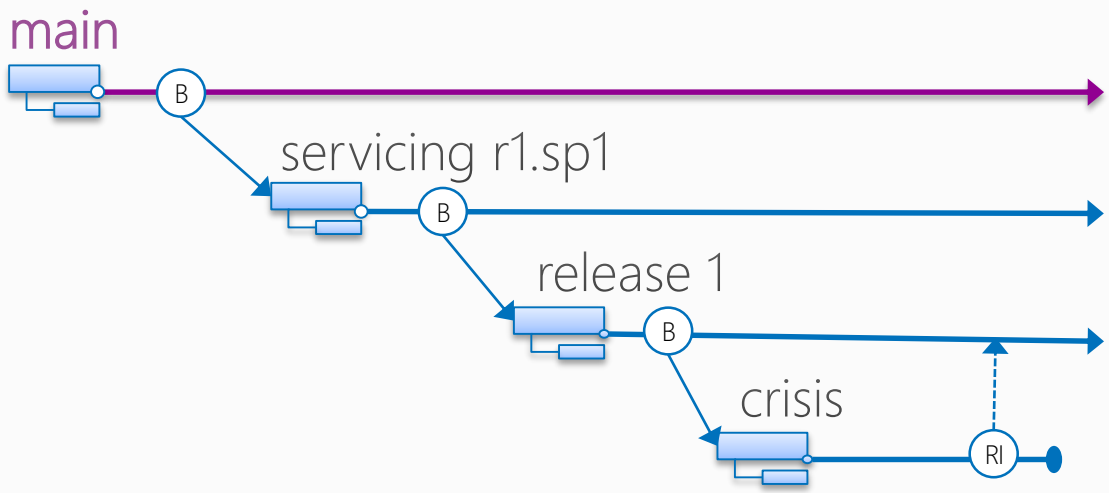


Visual Studio
ALM Rangers

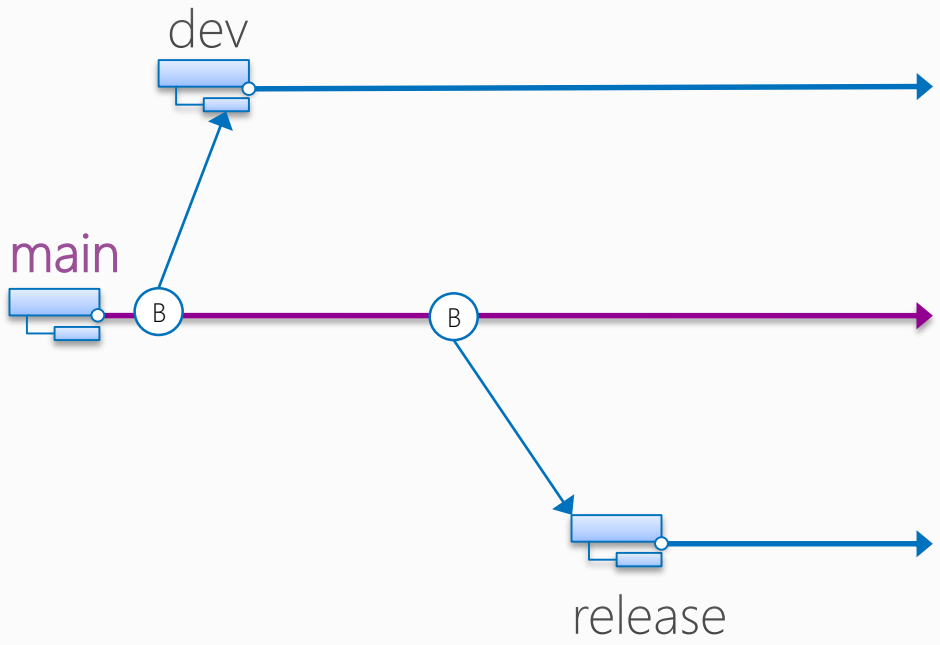
TFVC Folder Structure - Feature



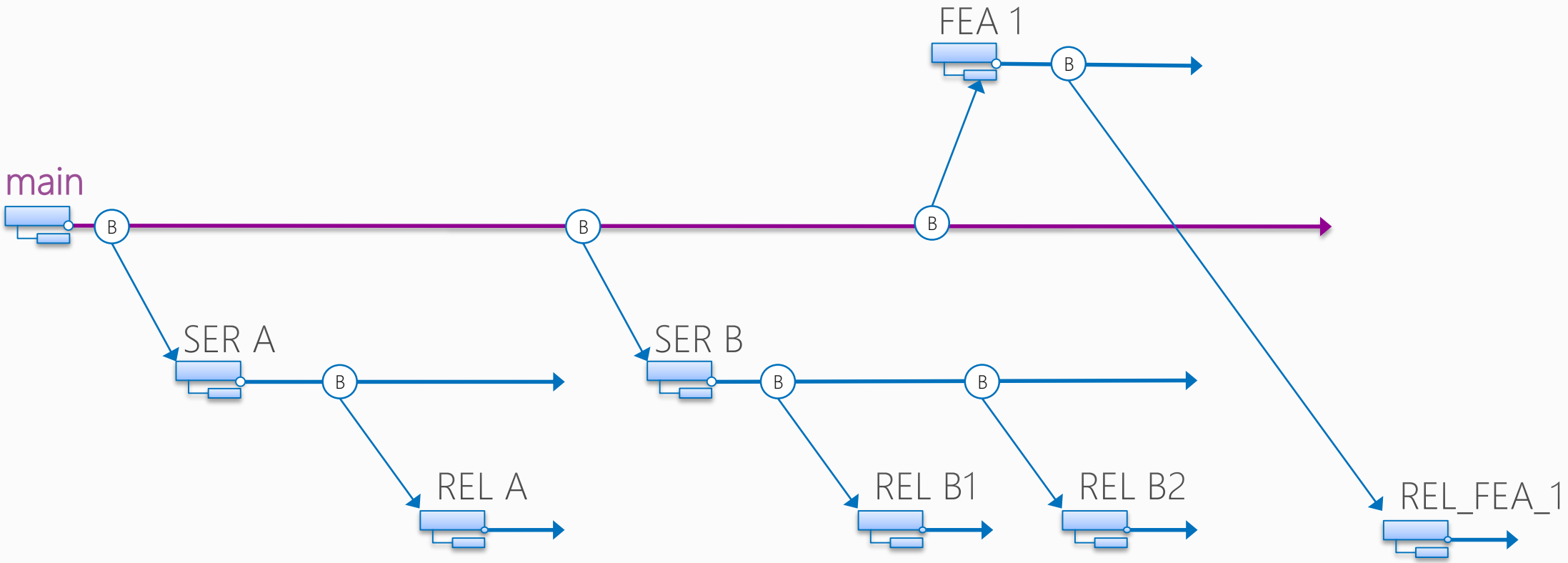
Walkthrough - Blips



Development and Release Isolation Simplified

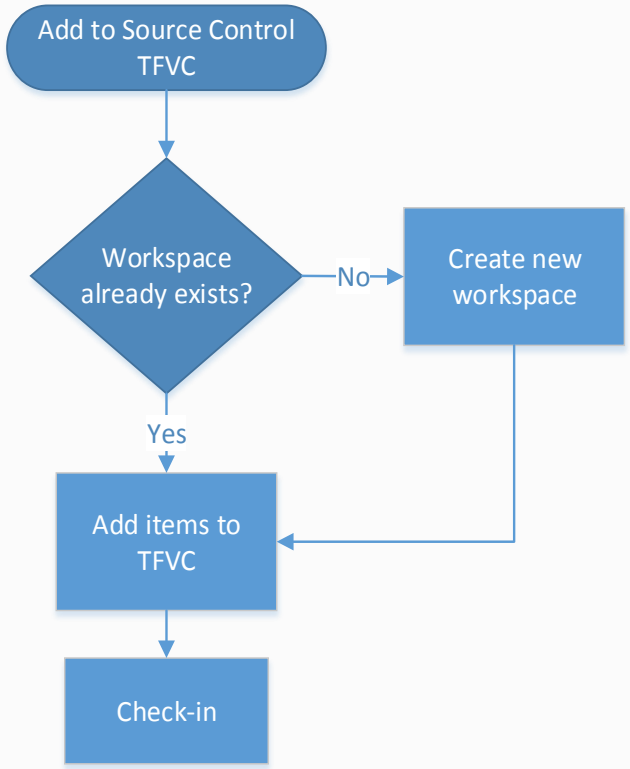


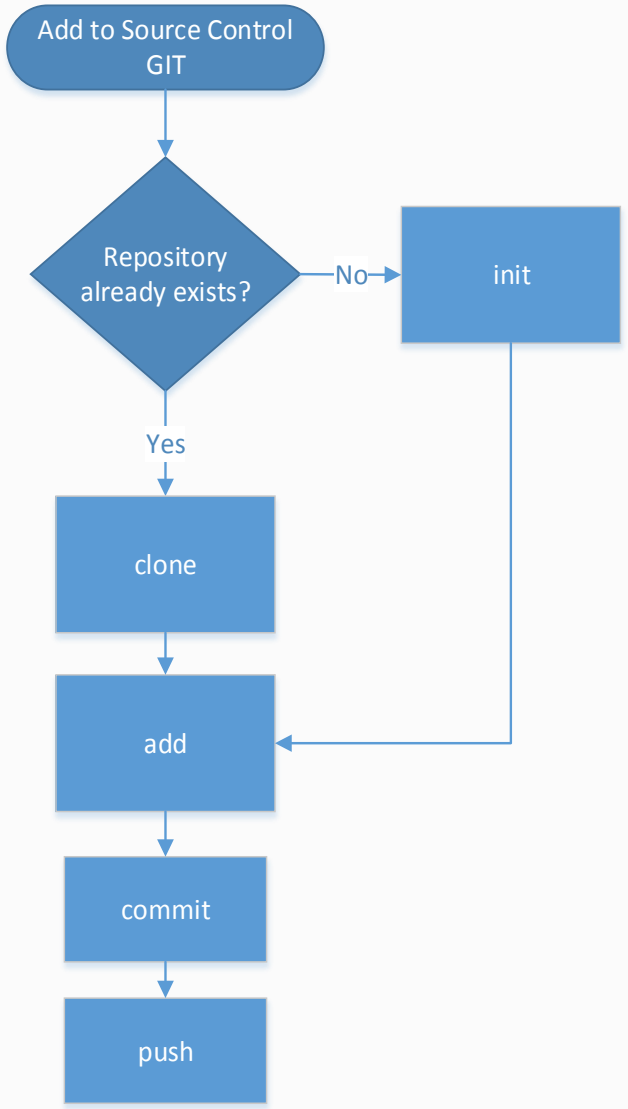
Servicing and Release Isolation Sample



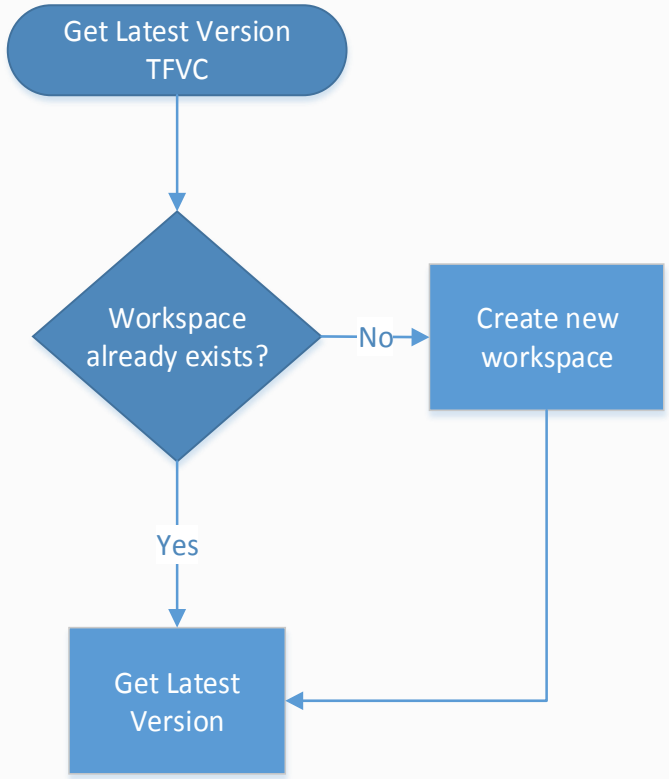
Common User Stories

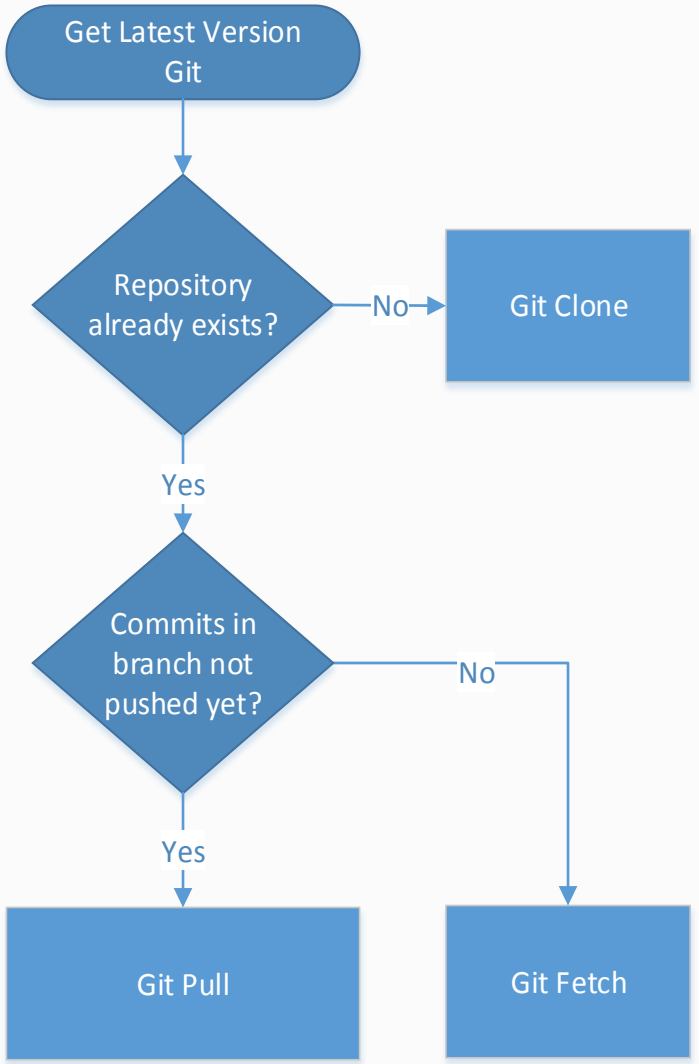
1. Add Items to Source Control



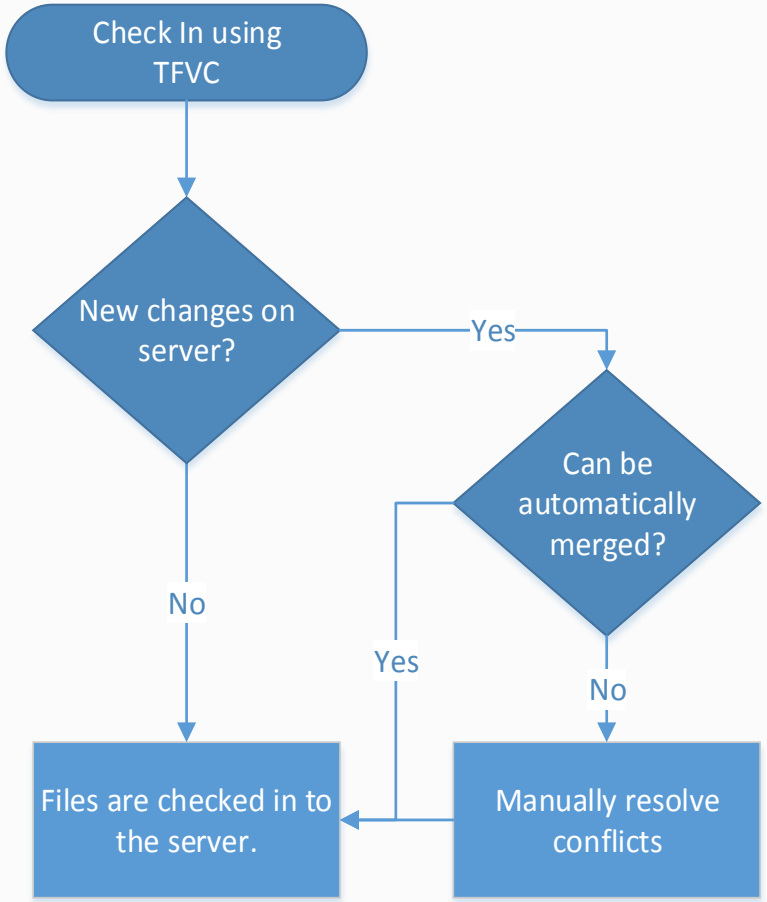


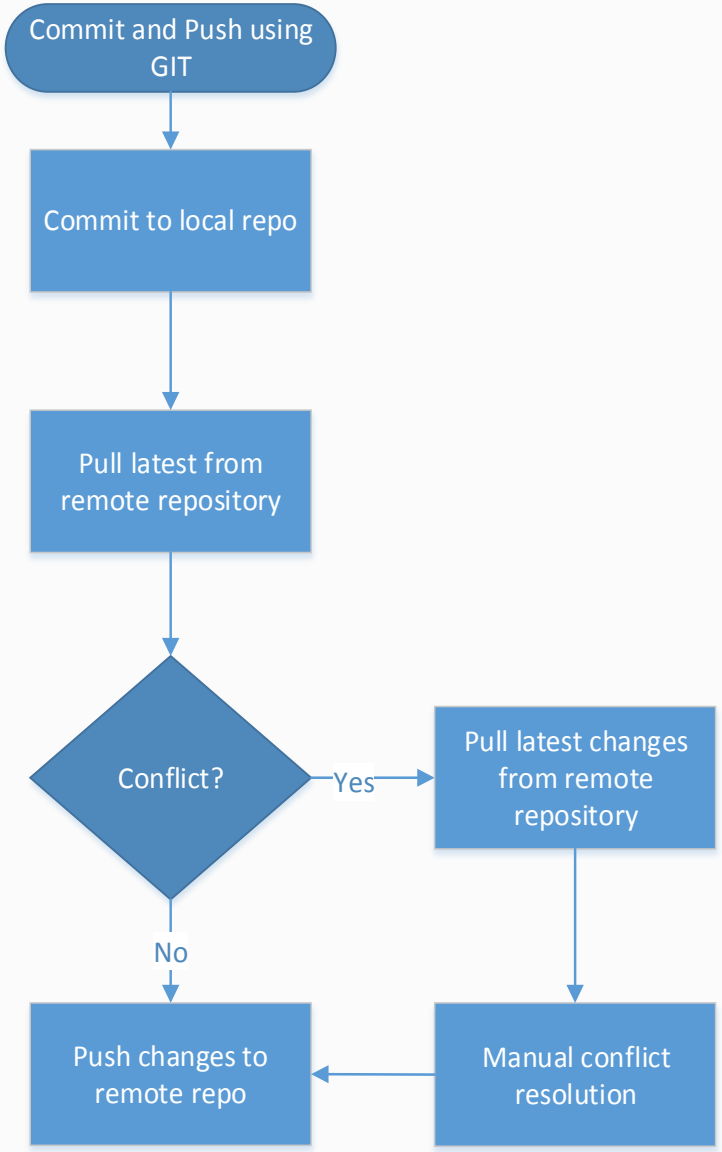
2. Get Items


Get Latest Version TFVC
Workspace already exists?
No
Create new workspace
Yes
Get Latest Version

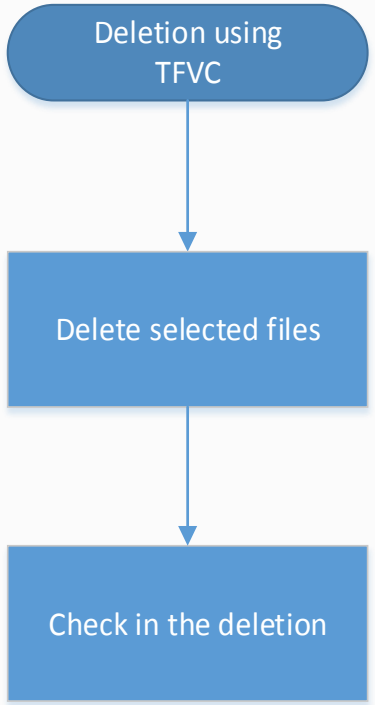

Get Latest Version Git
Repository already exists?
No
Git Clone
Yes
Commits in branch not pushed yet?
No
Yes
Git Pull
Git Fetch

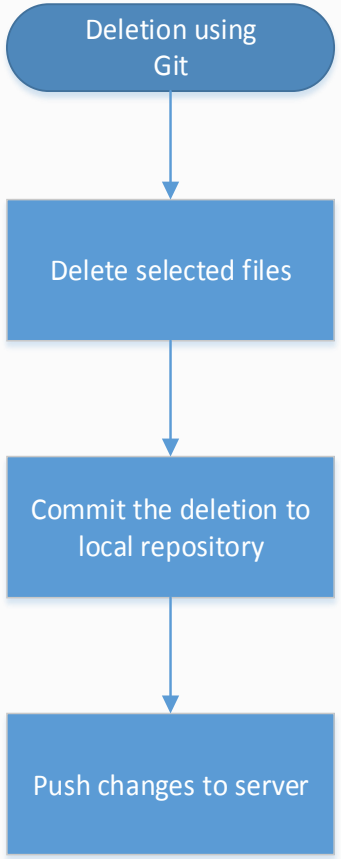
3. Check-in

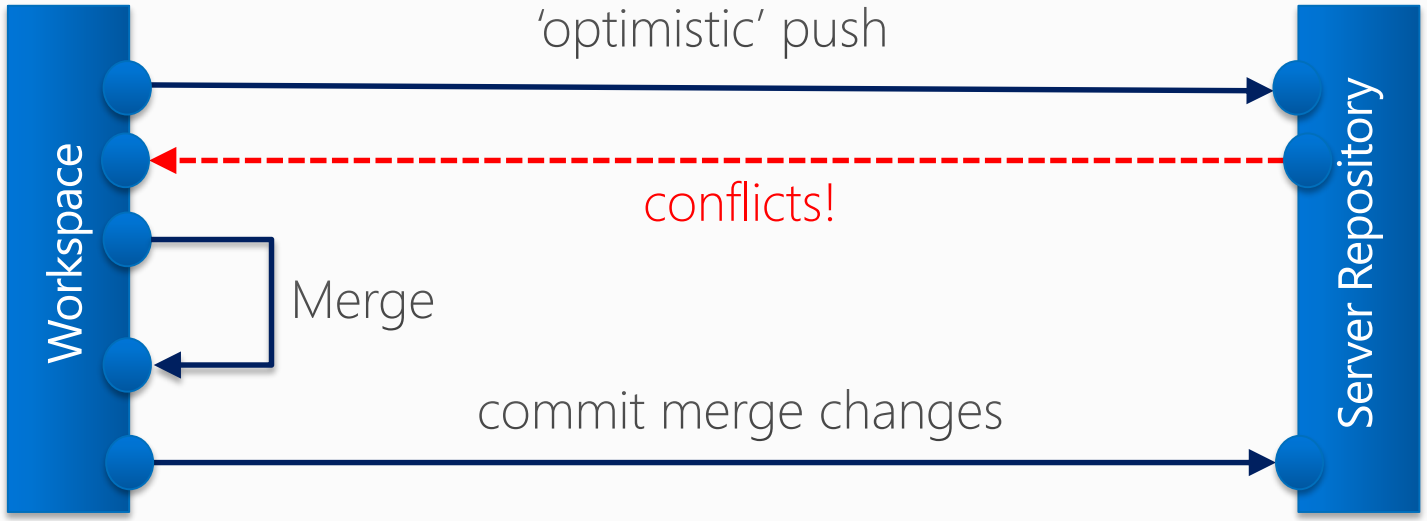

Check In using TFVC
New changes on server?
Yes
No
Can be automatically merged?
Yes
No
Files are checked in to the server.
Manually resolve conflicts

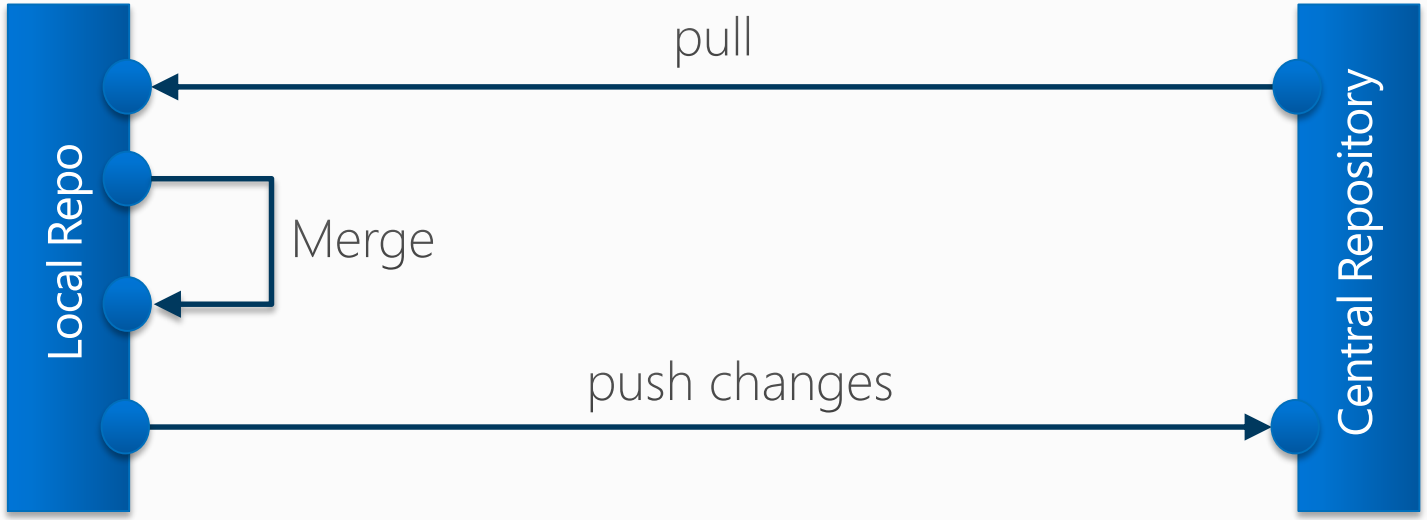

Commit and Push using GIT
Commit to local repo
Pull latest from remote repository
Conflict?
Yes
Pull latest changes from remote repository
No
Push changes to remote repo
Manual conflict resolution

4. Delete


Deletion using TFVC
Delete selected files
Check in the deletion


Deletion using Git
Delete selected files
Commit the deletion to local repository
Push changes to server


'optimistic' push
Workspace
Server Repository
conflicts!
Merge
commit merge changes


pull
Local Repo
Central Repository
Merge
push changes