


PLC Source Control - Working with GIT and TcXaeShell

Tutorial that outlines the steps that make up a typical TcXaeShell development cycle with GIR source control

 Difficulty **Hard**

 Duration **1 hour(s)**

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Comments

Introduction

These steps outline typical actions that make up a development cycle for changing code on a machine, saving changes locally and saving to the cloud repository using Git as the Source control tool.

Prerequisites tutorials

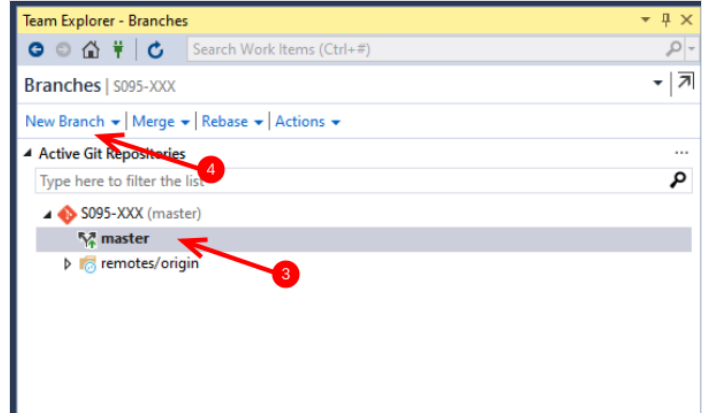
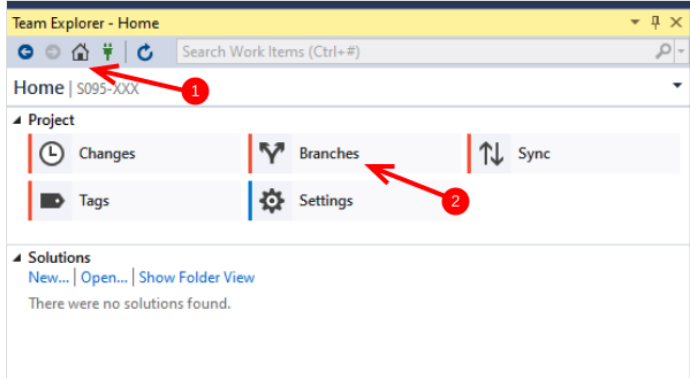
 [PLC Source Control - Selecting GIT as the source control Plug-in](#)

 [PLC Source Control - Adding a Repository](#)

Step 1 - Creating A Branch

Create a branch locally to hold the code changes.

1. Select **Home**
2. Select **Branches**
3. Mouse click on **master**, the word master will become **bold** and, the name of the repository will be shown with (master) brackets. This shows that the root of the branch will be on the **master** branch.
4. Select **New Branch** go to Step 2 Naming a Branch



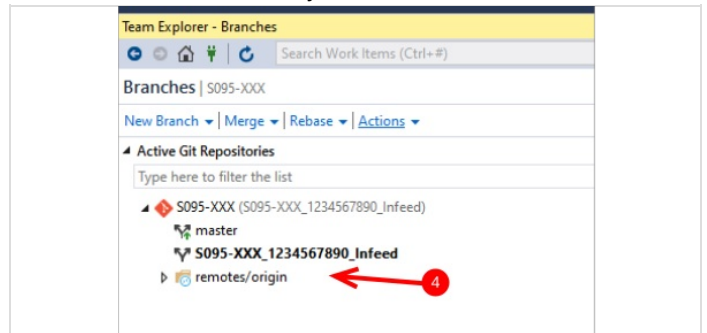
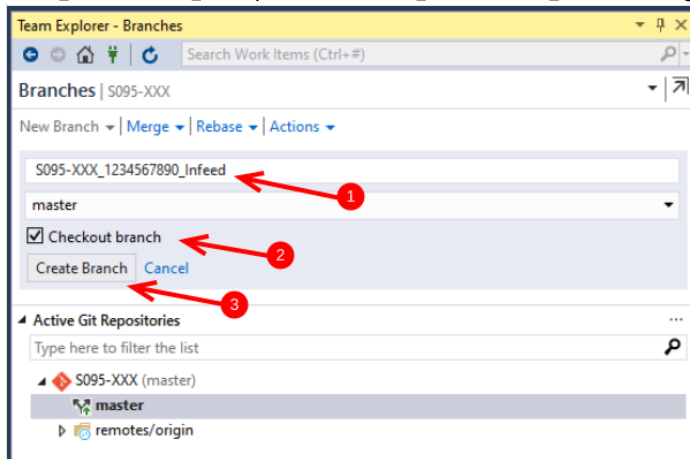
Step 2 - Naming a Branch

1. The branch name is made up of three parts
 - a) **Machine Reference** S095_ followed by an underscore character _
 - b) **Service Job Number** 1234567890_ followed by an underscore _
 - c) **Text** that identifies the change eg. Outfeed_Fix, Timer_Mod

2. Checkout branch, - if selected, the branch will become active when the branch is created.

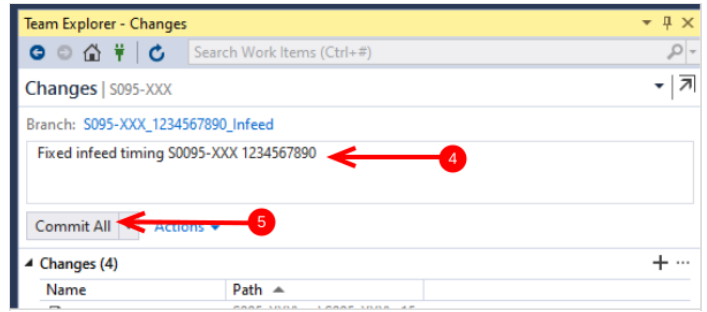
3. Press **Create Branch**
4. Show the new created branch

Note ;There may be more than one branch for the changes under the same service job. This method of naming aids traceability. For example S095_123454321_ClampMod and S095_123454321_InfeedTiming are two branches under the same job number.



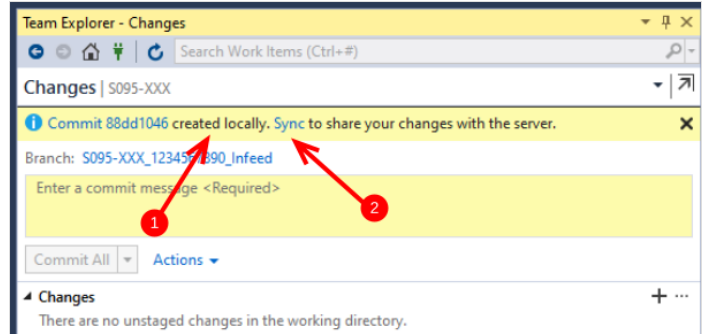
Step 3 - Make changes to the PLC Code

1. Make some changes to the PLC code,
2. Select the Team Explorer Tab or View Team Explorer from the View menu.
3. Select **Home** then **Changes** this shows the commit message (Required)
4. Enter a message and add the **Machine** and **Job Number** at the end . eg. Fixed infeed timing S0095-XXX 1234567890
5. Mouse click on **Commit** , this Commits (saves).the changes locally.
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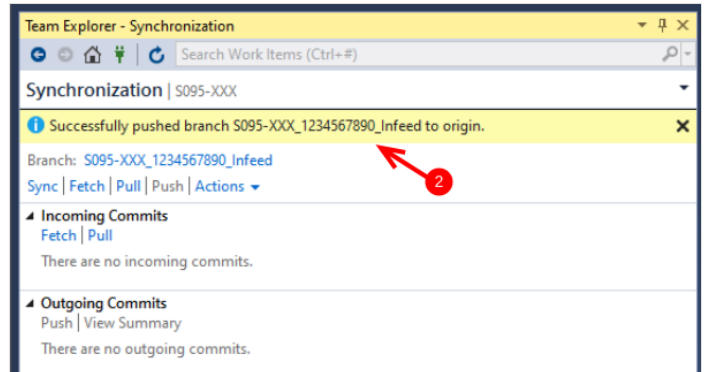
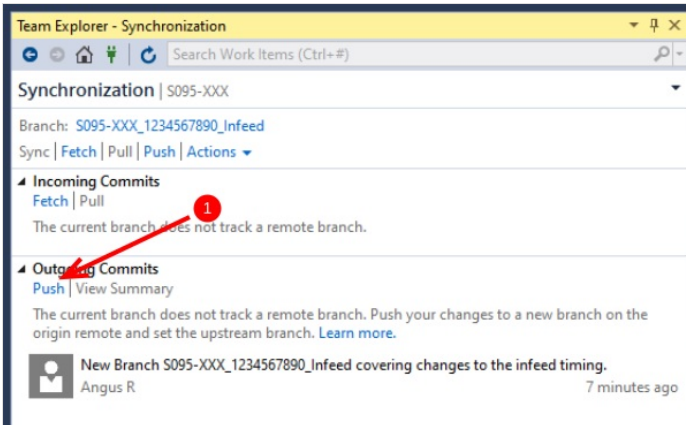
Step 4 - Using Sync

1. The pop-up message shows, the changes have been saved as a local change (from Step 3).
2. Press **Sync** to save the changes to the cloud repository. This ensures that the local Branch is now being tracked as a branch that is attached to the Remote Repository.



Step 5 - Pushing changes to the Cloud Repo

1. Select **Push**
2. Message appears showing the successful push to the **Origin** which is in the remote cloud Repo



Step 6 - Add More Changes and Commit

1. Add more changes to the code,
2. Select **Home** then **Changes** this shows the commit message (Required)
3. Enter the message and add the **Machine** and **Job Number** to the message
4. Push Commit , this Commits the changes locally

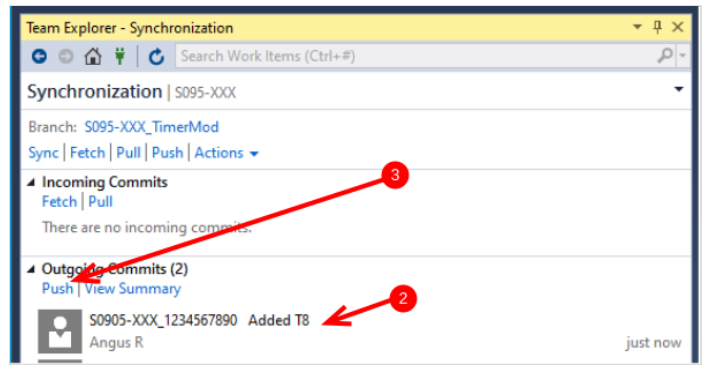
This cycle of changing code and pushing to the cloud can be extensive and can cover many hours work. By pushing to the cloud the work is backed up and code can be restored if needed.

Step 7 - Pushing the changes to the Remote Repository

1. To save the changes to the remote repository select **Sync**
2. Commits ready to be pushed to the Cloud
3. Select **Push** to send the changes

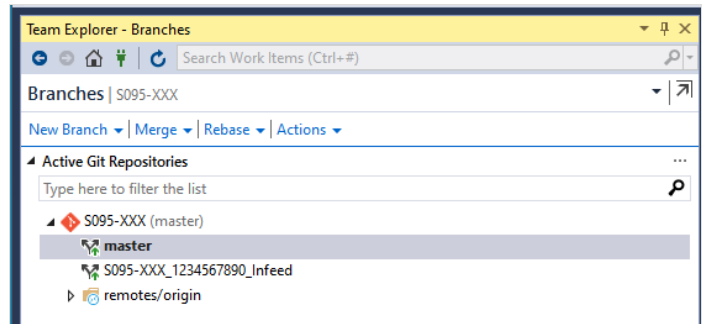
When complete the **remote branch** repository will contain all the changes made and committed to the **local branch**

Steps 4 and 5 can repeat many times during a development cycle



Step 8 - Setting up for Merging the Branched code

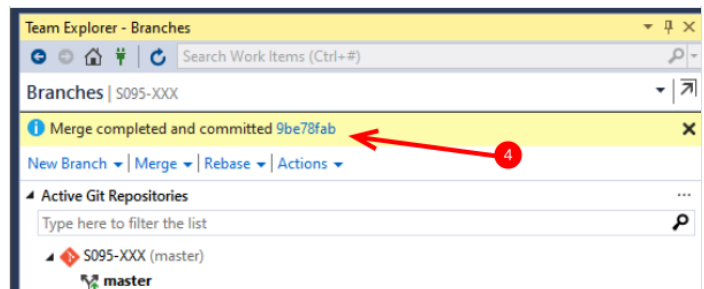
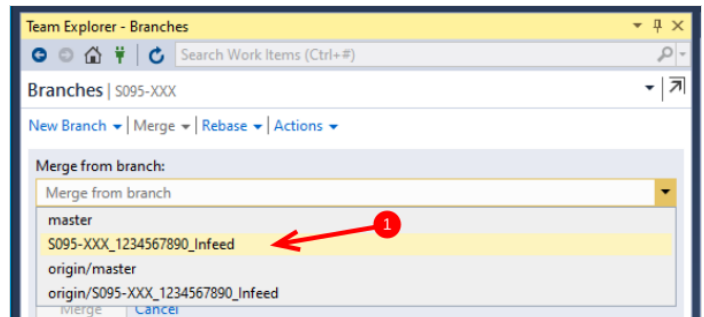
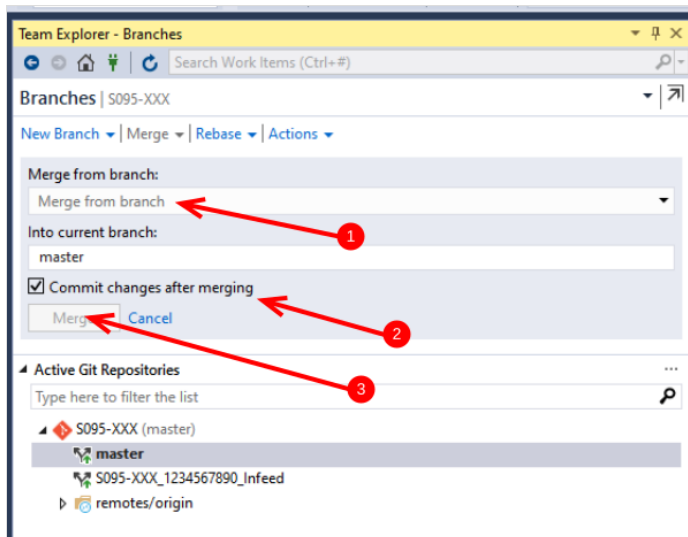
1. Make sure all changes have been committed and pushed steps 4 and 5
2. Select **Home** then select **Branches**
3. Mouse click on **master** when it is selected it will be in bold text. If this does not work and there is an error message, the most likely cause is there are committed changes waiting to be pushed to the cloud Repo. go back to steps 4 and 5 and push the remaining changes.
4. Press **Merge** to open the merge window.



Step 9 - Merge

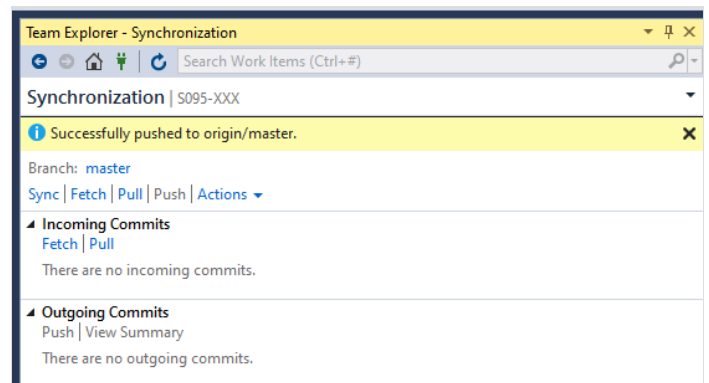
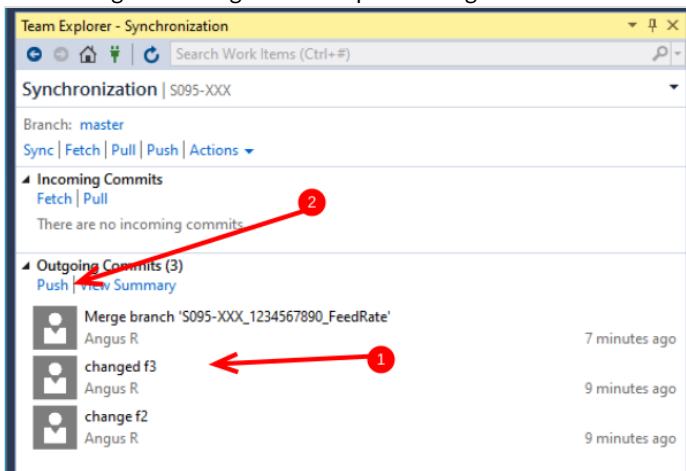
1. From the dropdown Menu select the branch to be merged
2. Keep the option : Commit changes after merging checked
3. Press **Merge**
4. Message to say merge is complete:..

i ...The merge is complete on the local repository, Press Sync to update the remote Repo



Step 10 - Sync

1. Sync lists the commits that are waiting to be pushed to the Remote Repo Origin
2. Press **Push**
3. Message indicating successful push to origin master



Step 11 - Up to date

The local branch has been updated and merged with the local master. The remote branch and master-repository now match. (same change level)
