

# Part 5: Using Builds

This tutorial continues on from the previous tutorials [Part 1: Create your First Project](#), [Part 2: Create your First Configuration](#), [Part 3: Create your First Repository](#) and [Part 4: Create your First Action](#) and it is recommended that these are completed before reading this tutorial.

In our previous tutorials we setup our build environment and we are now ready to successfully run our first build.

## Running our Configuration

From the homepage, click on the configuration name to navigate to the **Configuration Activity page**, as shown below. If you attempted to run a build before we created our action workflow then you should see that our Fail Streak is 1 and 1 failed build has run.

So lets run our build by clicking the **Quick Build Button (Fast Forward)** in the top right hand corner of the screen. When a build begins executing it is added to the build queue while it searches for a compatible agent that can run all actions in the build's first stage. By default, Continua installs a local agent on the server, however additional agent licences can be purchased to enable distributed builds. Once a suitable agent has been found, the build will be removed from the queue and become a **Running Build**, as shown below.

The screenshot shows the 'Configuration Activity' page for 'My First Configuration'. The top navigation bar includes 'My First Project', settings, help, and a user profile for 'Dave McConnell'. The breadcrumb trail is 'Home > My First Project > CI > My First Configuration'. The main header shows 'Configuration : My First Configuration' with edit and play buttons. On the left, there is a 'Fail Streak: 1' indicator and sections for 'Success Ratio', 'Build Times', and 'Queue Times'. The main content area has tabs for 'ACTIVITY', 'HISTORY', 'METRICS', 'CHANGES', and 'AGENTS'. Under 'ACTIVITY', there are three sections: 'Running Builds (1)', 'Queued Builds', and 'Recently Completed Builds (1)'. The 'Running Builds' table shows a single build with ID '1.0.0.1' in the 'Stage Initialising' state, started by 'Dave McConnell' on the 'master' branch, 19 seconds ago, with a duration of 19 seconds and 1 change. A 'Stop' button is visible next to it. The 'Queued Builds' section is empty, stating 'No queued Builds were found.'. The 'Recently Completed Builds' section shows a build with ID '1.0.0.0' in a 'Build Error' state, started by 'Dave McConnell' on the 'master' branch, finished 3 days ago, with 1 change, 0 files, and no tags.

Build #	State	Stages	Started By	Branches	Started	Duration	Changes	Artifacts	Tags	
1.0.0.1	Stage Initialising		Dave McConnell	master	19 seconds ago	19 seconds	1 Changes			
No queued Builds were found.										
1.0.0.0	[Pin] Build Error		Dave McConnell	master	3 days ago		1 Changes	0 Files	None	

## Completed Builds

Once a build has completed, it will be displayed as either a green or red build, signifying whether the build finished successfully or failed. Regardless of the result, the Configuration Activity Page will provide an overview of the last 10 builds that were run. More details can be found by clicking on the build number, which will take you to the **Build Detail page**. So lets click on the last successful build and have a closer look at what happened.

My First Project

Home > My First Project > CI > My First Configuration

Configuration : My First Configuration

Fail Streak: 0

Success Ratio:

Build Times:

Queue Times:

ACTIVITY HISTORY METRICS CHANGES AGENTS

**Running Builds**

Build #	State	Stages	Started By	Branches	Started	Duration	Changes
No running Builds were found.							

**Queued Builds**

Build #	State	Stages	Started By	Branches	Started	Elapsed	Changes
No queued Builds were found.							

**Recently Completed Builds (4)**

Build #	State	Stages	Started by	Branches	Finished	Duration	Changes	Artifacts	Tags
1.0.0.3	[Pin] Build Completed		Dave McConnell	master	1 hour, 56 minutes ago	21 seconds	1 Changes	2 Files	None
1.0.0.2	[Pin] Build Completed		Dave McConnell	master	2 hours, 0 minutes ago	17 seconds	1 Changes	2 Files	None
1.0.0.1	[Pin] Build Failed		Dave McConnell	master	2 hours, 2 minutes ago	35 seconds	1 Changes	2 Files	None
1.0.0.0	[Pin] Build Error		Dave McConnell	master	3 days ago		1 Changes	0 Files	None

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## Build Activity

The Build Activity page provides an overview for a specific build. Along the top of the page you should notice several tabs that provide additional information regarding the current build. More information regarding these pages can be found in the [Viewing Build Results Section](#). Feel free to poke around the builds section and check what information is available to you.

My First Project

Home > My First Project > CI > My First Configuration > 1.0.0.3

My First Project : My First Configuration - Build : 1.0.0.3

Stages

**Build - 1.0.0.3**

Build

Duration: 21s 531ms

Status: Stage Completed

Agent: lancer

DETAILS LOG UNIT TESTS (0) ARTIFACTS (2) CHANGES (1) REPORTS ISSUES (0) TIMELINE COMMENTS (0)

**Build Completed**

**Build Details**

Started By:	davem@office.vsoft.local
Started	2 hours, 43 minutes ago
Duration	21 seconds
Finished	2 hours, 42 minutes ago
Version	1.0.0.3

**Unit Tests**

0	0	0	0	0	0
Passed	Failed	Errors	Fixed	New Failures	Shelved

Tags [\[Add/Edit Tags\]](#)

No Tags were found.

Pinning [\[Pin\]](#)

No Pins were found.

Code Changes [\[View All\]](#)

Gleb Chermennov Fluent\_Nhibernate  
23f67a3209ba3cd43a59961f0ff0056aeb0d6627

Merge pull request #211 from tgmayfield/SubclassInterfaces

Comments [\[View All\]](#) [\[Add Comment\]](#)

No Comments were found.

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## Accessing your Build Source

Remember how in [Part 4: Create your First Action](#) we set the output path of the MSBuild action to `$(Workspace)/output`? By setting this as our output directory, Continua passed our compiled project back to the Continua Server. When an agent passes source back to the server, it is stored in the server's ContinuaShare, which you specified during the Continua install. Your source can be accessed through the ContinuaShare, however this is not the easiest way to access your project. Instead, lets create another stage in our build process and send our source to a more accessible location.

So lets navigate back to the Workflow editor in the Configuration Wizard and add another stage by clicking the **Add Stage** button. This stage will be responsible for the sole task of moving our completed project, so lets call our stage **Move Project**.

**Add Stage**

Options | Promote Options | Workspace Rules | Repository Rules | Artifacts | Shared Resource Locks | Agent Requirements

Name  Required Field

Enabled  
Disabling the stage means that the stage will be skipped.

**Skip Conditions**  
Conditions which control skipping the stage.

Left Value   Right Value  +

Expression Logic  Specify the logical operator that should be applied to the skip conditions above. ?

Once the new stage has been created, it will be added to the Stage Editor after our existing Build Stage, as shown below. These stages can be dragged around to change their execution order and clicking on the stage will select it, which will show all the actions that will be executed in that stage. With our **Move Project** stage selected, our MSBuild action will not be shown in the Action Workflow Editor as that action is executed in the **Build** stage.



## Create Directory Action

So with our **Move Project** stage selected, we will need to add two actions, a [Create Directory Action](#) and a [Copy Action](#). Basically we are copying the files over to a more accessible location, but by running the Create directory action first, we are guaranteeing that our directory exists. For this example I want to copy all my project files to C:\ContinuaTutorial on my Continua Server. So find the [Create Directory action](#) under the File Operations action category and set the **Path** to `\\$Server.Hostname$c$$ContinuaTutorial`, as shown below. When specifying file locations, always remember that this stage could run on ANY Agent. If I pointed my Create Directory action to C:\ContinuaTutorial then this folder would be created on the Agent machine rather than the Continua Server. If this stage was run on the local agent then the folder would be created on the Continua server correctly, however this would be incorrect if a distributed agent was running this stage.

So lets break this path down.

- You can see that we are getting the Server's hostname from a [Continua Dynamic Object](#) by calling `$Server.Hostname$`.
- We need to specify the C:/ local drive, however the dollar (\$) sign is a reserved character in any fields that accept [Query Expressions](#). In Continua **you can escape reserved characters by doubling them up. ie. \$\$**. So instead of calling c\$ for the local drive, we need to call c\$\$.
- The actual directory that we want to create, **ContinuaTutorial**, is then specified. At runtime this path would then be read as `\\<server_name>c$ContinuaTutorial`

When saving this Create Directory action, make sure it is **enabled** and **Fail if directory exists is NOT checked**, as we want the project to copy over the existing project every time we run a build.

### Create Directory Action

Create Directory	Comments
Required Field	
Name	<input type="text" value="Create Directory [\\\$Server.Hostname\$c\$\$ContinuaTutorial]"/>
	<input checked="" type="checkbox"/> Enabled
Path	<input type="text" value="\\\$Server.Hostname\$c\$\$ContinuaTutorial"/>
	The directory to create and its full path. Any directories in the path that do not exist will be created.
	<input type="checkbox"/> Fail if directory exists
	<input type="checkbox"/> Ignore warnings
<input checked="" type="button" value="Validate"/> <input type="button" value="Save"/> <input type="button" value="Cancel"/> <input type="button" value="Help"/>	

## Copy Action

Once we have added a Create Directory action, we need to create a copy action. Basically we want to copy our project files from the Agent workspace to our ContinuaTutorial folder. So lets add a [Copy Action](#) which is also under the File Operations action category. Set the source directory to `$Workspace$Output` and similarly to the Create Directory action, lets set the **Destination Directory** to `\\$Server.Hostname$c$$ContinuaTutorial`. Before we save the action we should also make sure it is **enabled**, that **File Names / Patterns** is set to `**.*` (This tells the action copy everything) and that **Over write existing files IS checked**.

### Copy Action

Copy | Comments

Required Field

**Name**

Enabled

**Source Directory**

The directory to be copied.

**File Names / Patterns**

The files to be copied. The files/patterns are relative to the Source Directory entered above. Specify one pattern/file per line. Prefix the file name or pattern with - to exclude files

**Destination Directory**

Where the files will be copied.

- Overwrite existing files
- Overwrite read-only files
- Fail if no files are copied
- Log the result of each file
- Recreate relative paths in destination folder
- Ignore warnings

Validate

Once both the Create Directory action and the Copy Action have been created, your action workflow should look something like the screenshot below. So lets hit **Save & Complete Wizard** and then run our build again.



Save All Stages | Add Stage | Delete Stage | Edit Stage Options | Edit Stage Gate | Create Variable | ↑ | ↓ | ← | → | Edit Action | Delete Action | Cut Action | Copy Action | Paste Action

Search...

Actions: File Operations

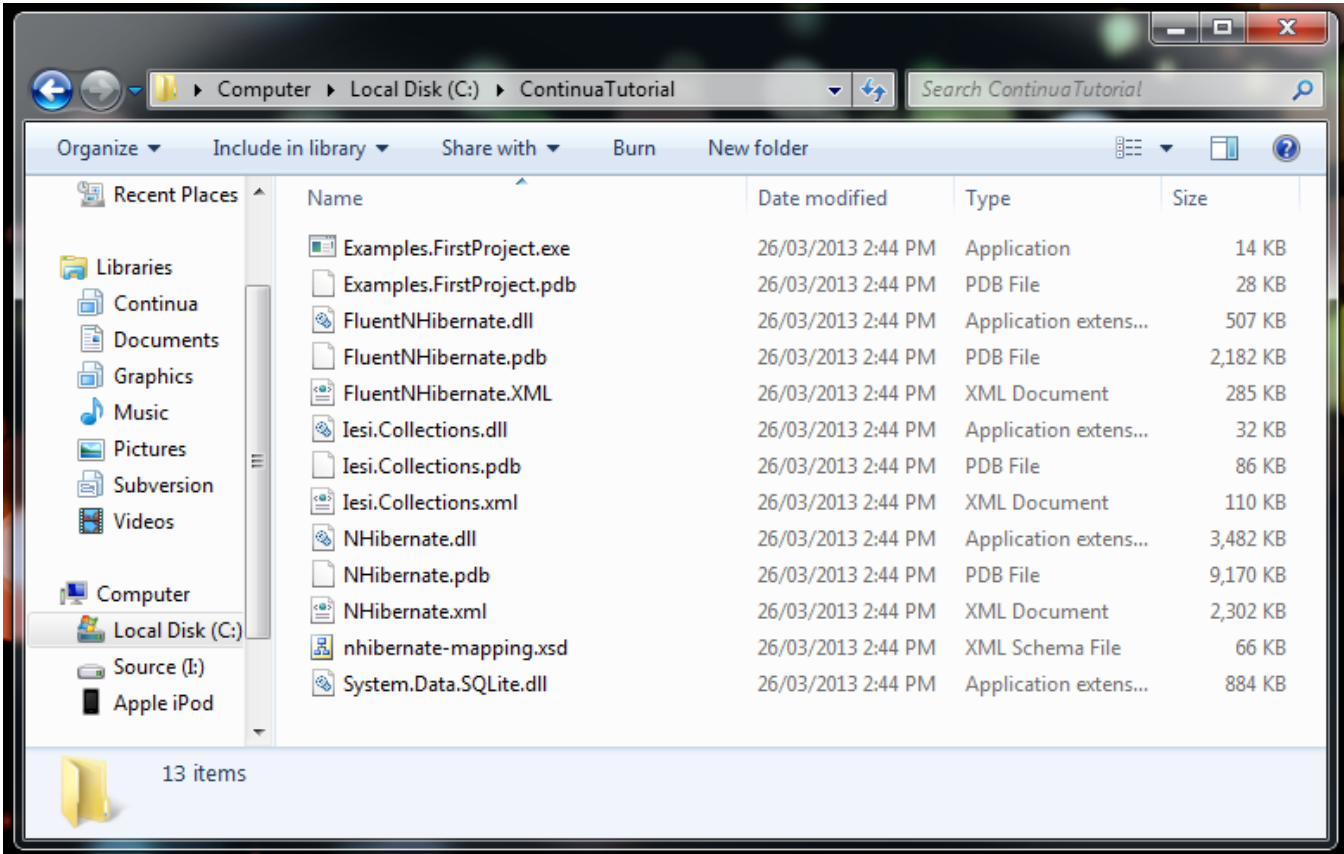
- AssemblyInfo Updater
- Copy
- Create Directory
- Delete
- Delete Directory
- DotNet Add
- DotNet Remove
- Move
- Rename
- Transform Configuration File

Enabled	Action	Name
<input checked="" type="checkbox"/>	Create Directory	Create Directory [\\\$Server.Hostname\$c\$S\ContinuaTutorial]
<input checked="" type="checkbox"/>	Copy	Copy [SWorkspace\$Output]

## Running Our Configuration - Again

If your build finished successfully then open up Windows explorer and navigate to ContinuaTutorial folder we created in the Action Workflow. If your project failed then double check the properties you set on your actions against the examples provided above.

If everything went according to plan then you should see the built Fluent NHibernate project in your Continua Tutorial folder, as shown below!



As the proverbial saying goes, there is more than one way to skin a cat, and this tutorial only demonstrates one method of accessing your built projects. All of your projects can be accessed directly through the Continua Share, moved around with [Workspace Rules](#) or accessed using a different action. The choice is really yours. While it may not make sense to copy your built projects back onto the Continua Server, this tutorial provides a guide for how you can move your project around. For example you may want to copy the project onto your production server once Continua has built your project.

We are now almost at the finish line. Currently running a build manually isn't really that useful as you still need to hit the run button but this is all about to change.

Continue on to the final segment of this tutorial, [Part 6: Automate your Builds](#).

[Part 6: Automate your Builds](#)