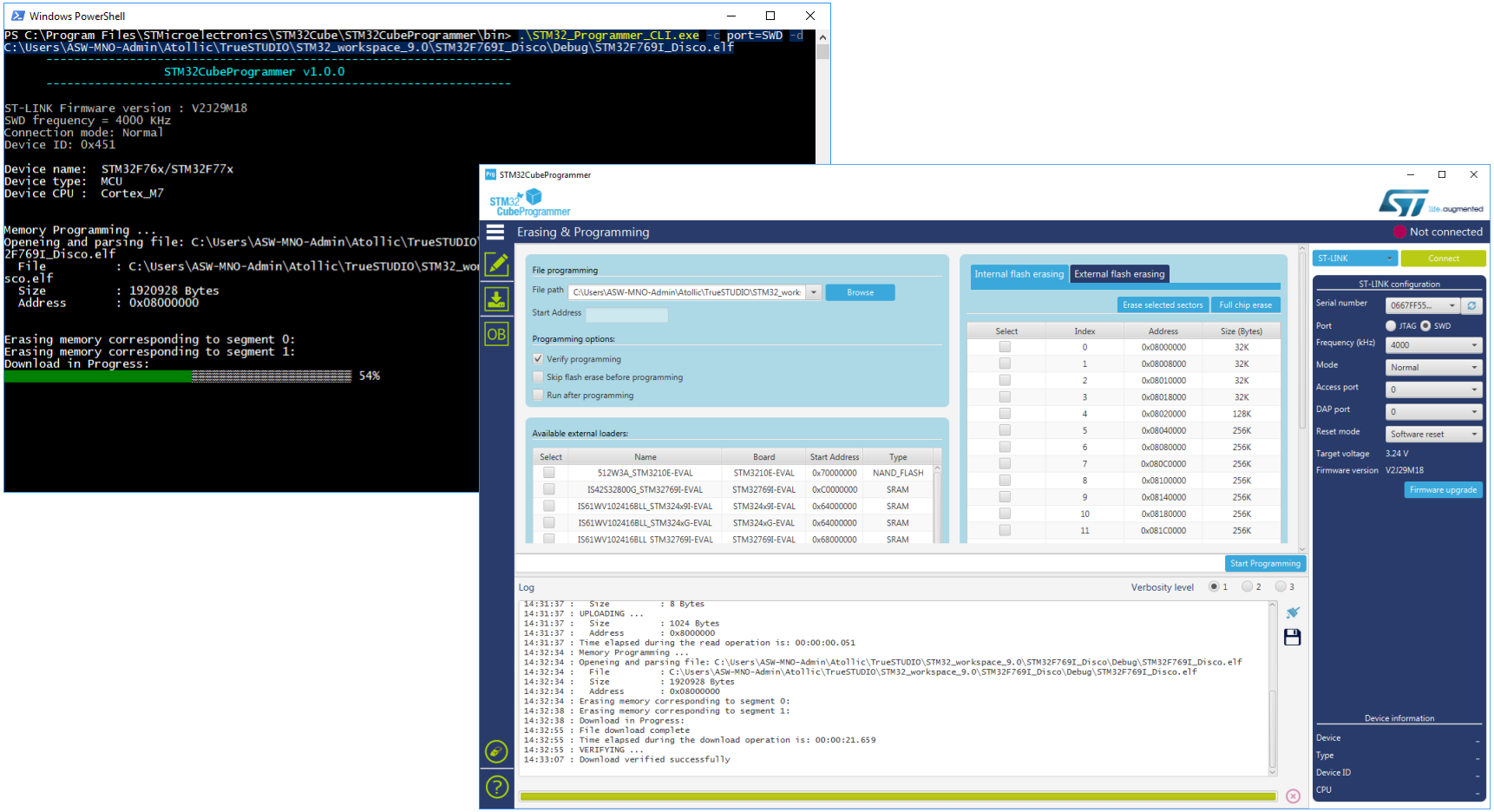
# STM32CubeProgrammer + Atollic TrueSTUDIO for STM32

## Integrating STM32CubeProgrammer

# STM32CubeProgrammer CLI / GUI



What - why - how

What is STM32CubeProgrammer?
Why integrate it?
How can the tool be integrated?

# **What** is STM32CubeProgrammer?

STM32CubeProgrammer (STM32CUBEPROG) is an all-in-one multi-OS software tool for programming STM32 microcontrollers.

**Pre-requisite – download STM32CubeProgrammer here:**
http://www.st.com/en/development-tools/stm32cubeprog.html

This provides an environment for reading, writing and verifying device memory through both the debug interface (JTAG and SWD) and the bootloader interface (UART and USB).

STM32CubeProgrammer is delivered in GUI (graphical user interface) and CLI (command-line interface) versions.

This app-note will describe **how to invoke the CLI version from inside Atollic TrueSTUDIO** (or any other Eclipse based tool).

# **Why/when** integrate STM32CubeProgrammer?

Do you rellay need to integrate STM32CubeProgrammer into Atollic TrueSTUDIO? Most likely the answer is ”No”.

BUT STM32CubeProgrammer offers more functionality compared to the Atollic TrueSTUDIO ST-Link GDB-server which manage the programming of STM32.

Integrating  STM32CubeProgrammer into TrueSTUDIO can boost your efficiency compared to using ST-Link GDB-server. Here are some use cases:

- STM32CubeProgrammer supports flashing of STM32 devices not yet supported by ST-Link GDB-server
- STM32CubeProgrammer flash operation sometimes faster than ST-Link GDB-server
- Option bytes must be set/cleared pre/post flash operation
- Flash download must be handled using UART/USB (bootloader)
- STM32CubeProgrammer can program external memories in STM32 eval/disco boards

# **How-to** integrate STM32CubeProgrammer?

Atollic TrueSTUDIO (Eclipse) supports setting up *external tools configurations*

*External tool configuraitons* can be chained into a *Launch Group*

In this document STM32Cubeprogrammer will be setup as an *external tool*. This tool will be chained into a *Launch Group* together with your ST-Link debug configuration so that each time the *Launch Group* is run the following happens:

1. STM32Cubeprogrammer is launched to carry out programming related operations. Then disconnects from the ST-Link and exits.
2. A debug session is launched using the ST-Link GDB-server. The debug configuration skips the programming operation (load).

The external tools configuration allows the user to setup multiple configurations using different STM32CubeProgrammer commands.

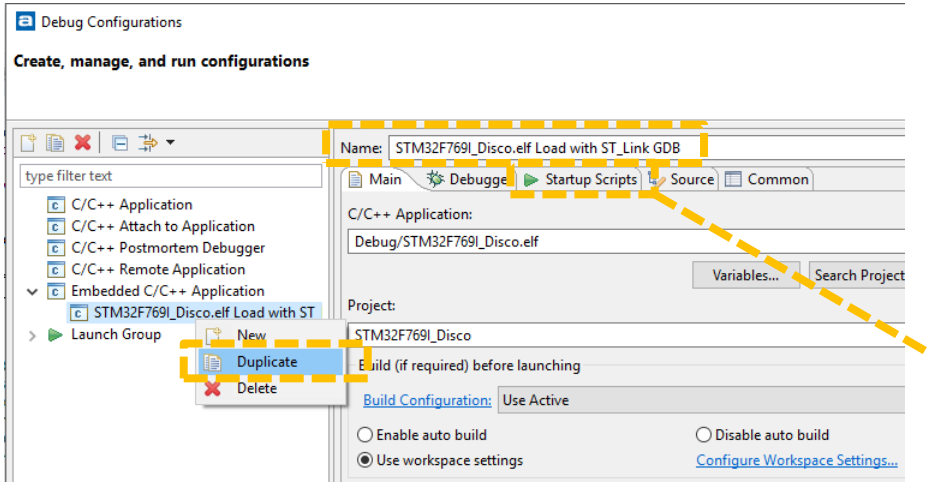
# How-to

This chapter describes how-to setup the integration in Atollic TrueSTUDIO (Eclipse)

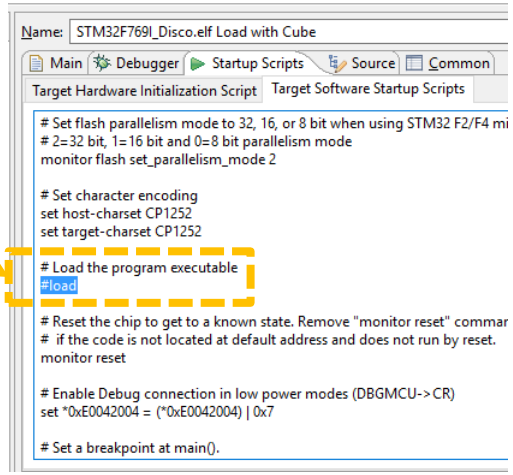
# First duplicate the debug configuration (optional)

Do this for back-up purpose or in case you want to be able to chain up different launch use cases and need one debug configuraiton for each use case:

1. *Run → Debug Configurations…*
2. Right-click on your Embedded debug configuration → *Duplicate*
3. Give the copy a new *name*

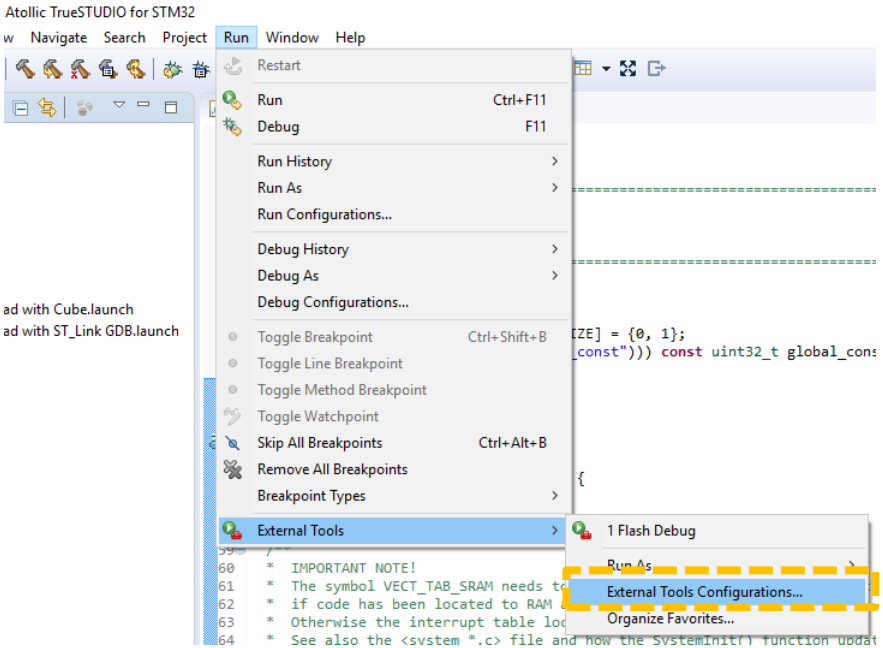


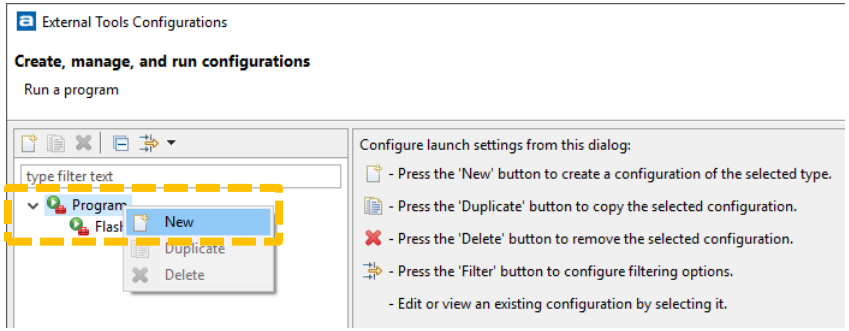

4. Open *Startup Scripts* tab
5. *Remove or comment the load command*



# Create an ext. tools config…

*Run → External Tools → External Tools Configurations…*



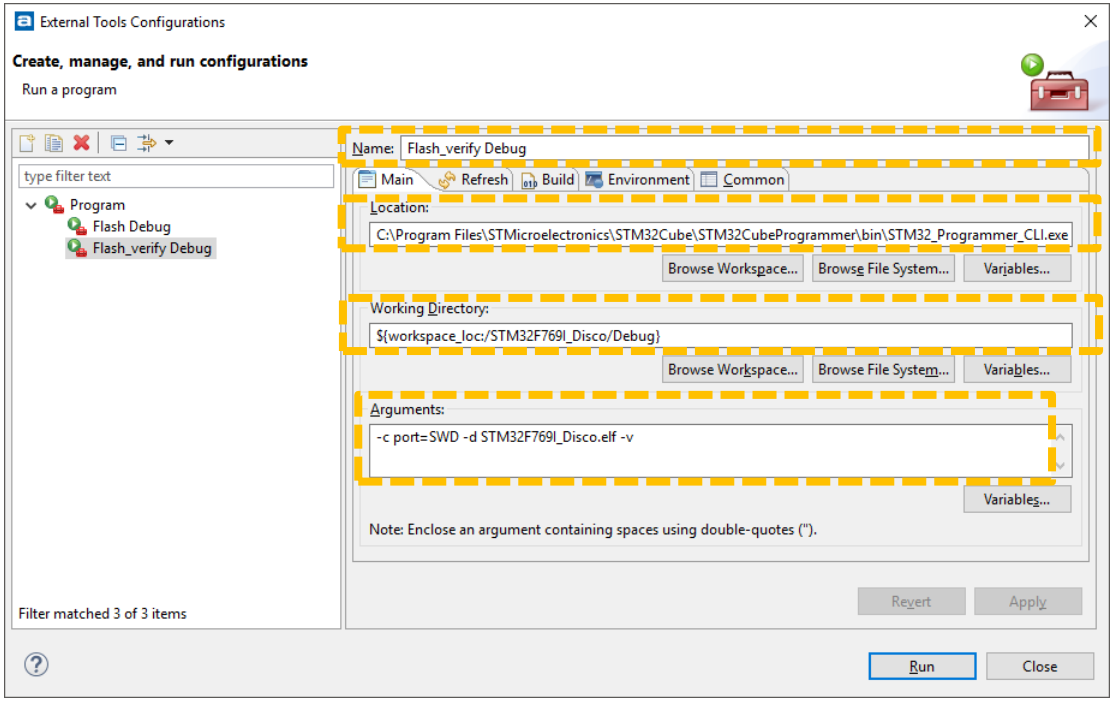
# Ext. tools config for STM32CubeProgrammer

*Name:* Give the configuration a name describes what it does

*Location:* Should point to the STM32CubeProgrammer CLI executable

*Working directory:* Can be set to project output folder for the relevant build configuration

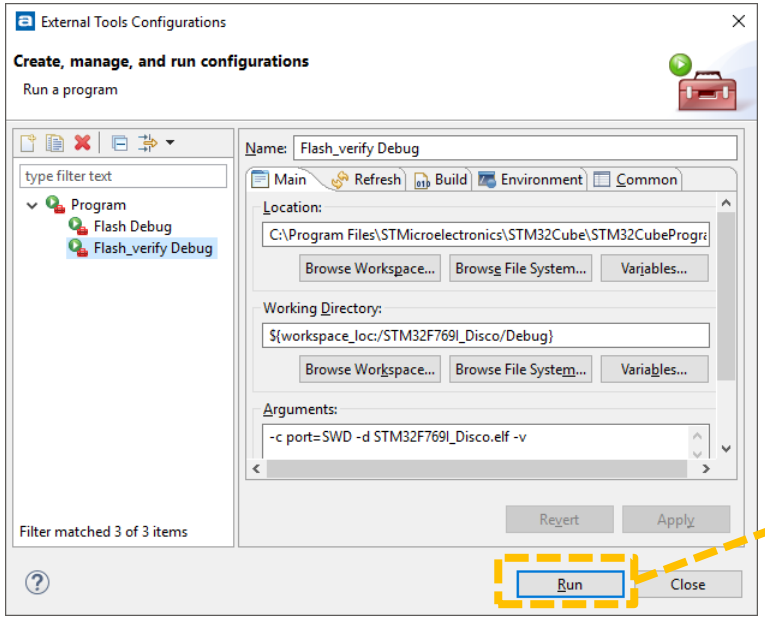
*Arguments:* STM32CubePogrammer will be called with these arguments/options

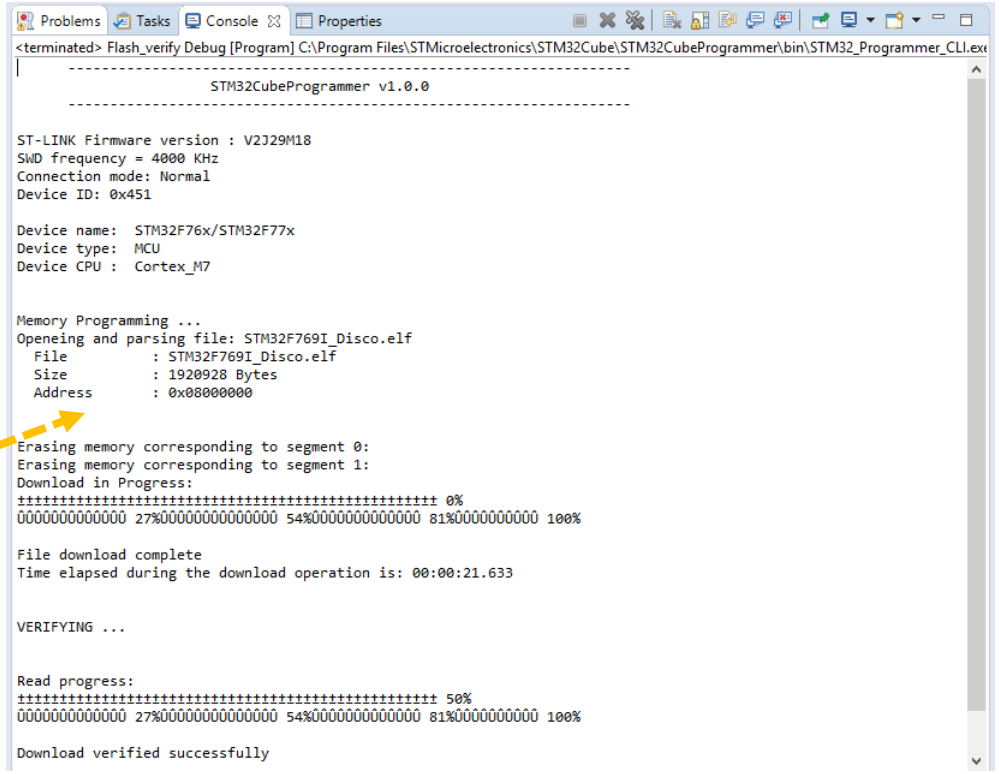



When this step is done you can call STM32CubeProgrammer from within the IDE!

# Test launch of STM32CubeProgrammer

Verify that your ext. tools configuration works as expected by running it!




No error message?

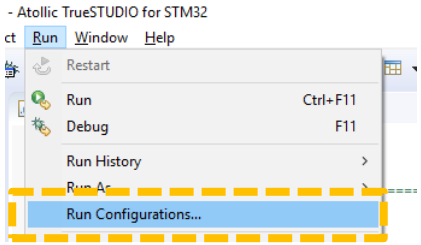
Working ext. tools configuration!

# Create a Launch Group…

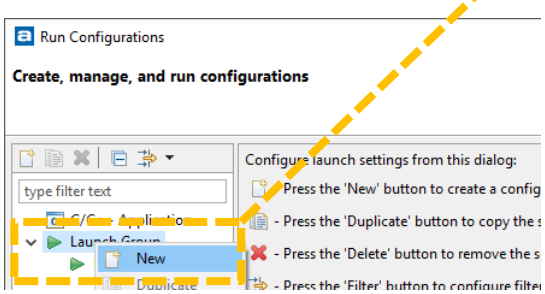
Create a launch group run configuration that will perform;

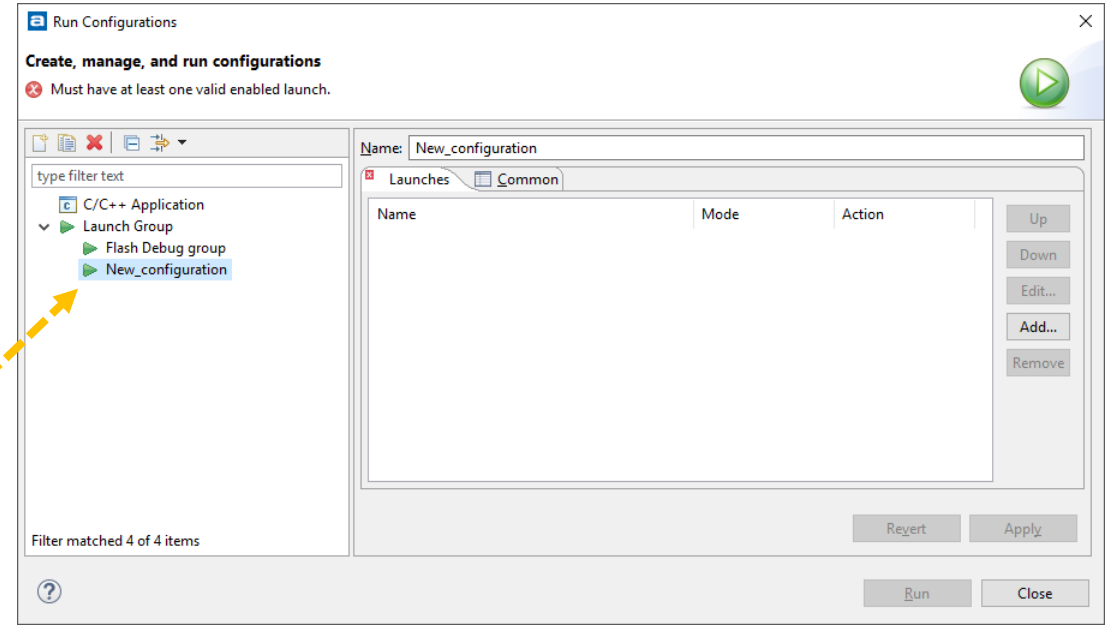
1. flash with *ext*. *tool*,
2. launch *debug configuration*:

Run → *Run Configurations…*




*Right-click Launch Group → New*



# Add flash step into Launch Group

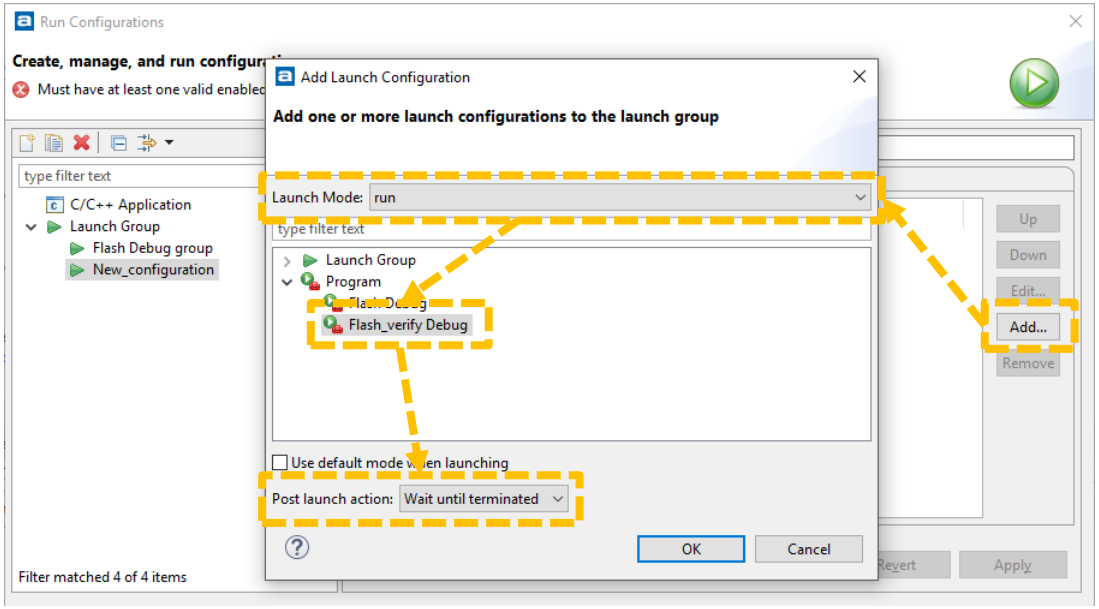
Add STM32CubeProgrammer ext. tool configuration as first step in the launch group:

*Run Configurations → Add…*

*Launch mode:* ***run***

*Program:* The ext.tool configured on page 9-10

*Post launch action:* ***Wait until terminated*** ***← IMPORTANT!***



# Add debug configuration into Launch Group

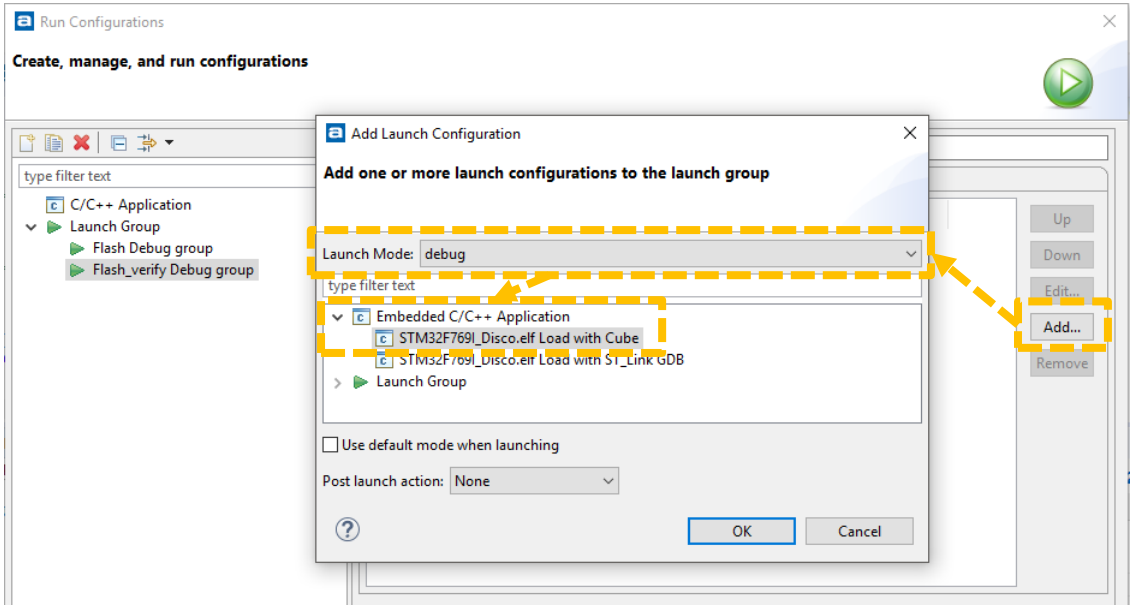
Add a *debug configuration* to the *Launch Group* after STM32CubeProgrammer has finnished flash operation:

*Run Configurations → Add…*

*Launch mode:* ***debug***

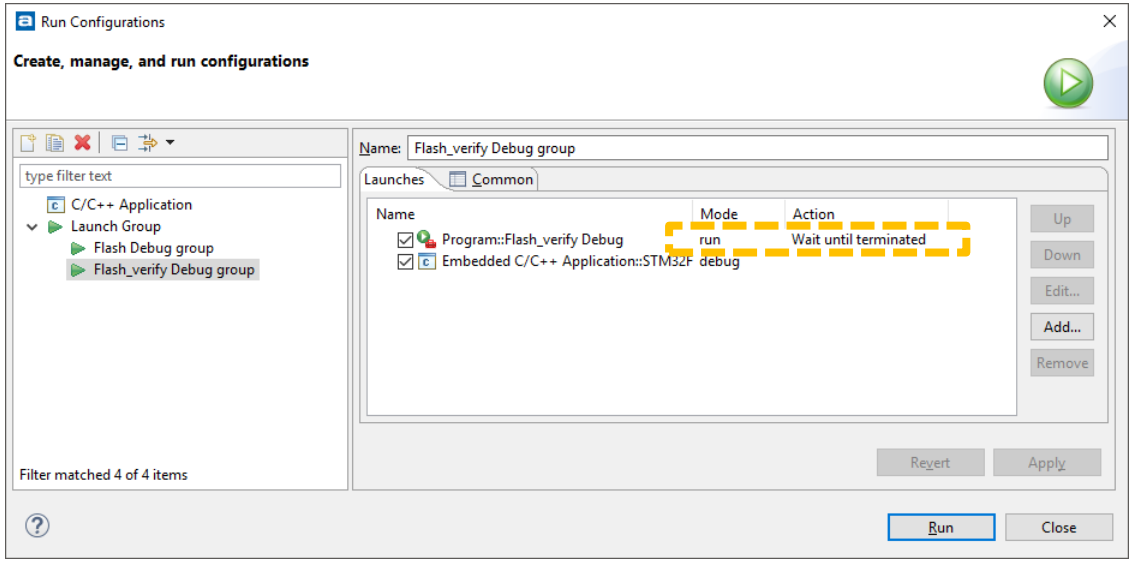
*Embedded C Application:* The debug configuration used in TrueSTUDIO to debug the project

*Post launch action:* ***none***



# **How-to** integrate STM32CubeProgrammer?

The complete *Launch Group* should look like this:




Click *Run* to test that:

1. The Launch Group runs STM32CubeProgrammer to flash the device
2. The Launch Group launches the debug configuration to debug the device

# Done!

We are always interested to hear your feedback!

Drop an e-mail to support@atollic.com, use the
e-mail subject: ”*AN1801_cubeprogrammer_in_truestudio*”