Exploring ST tools for microcontrollers

T.O.M.A.S Team

STM32 L4

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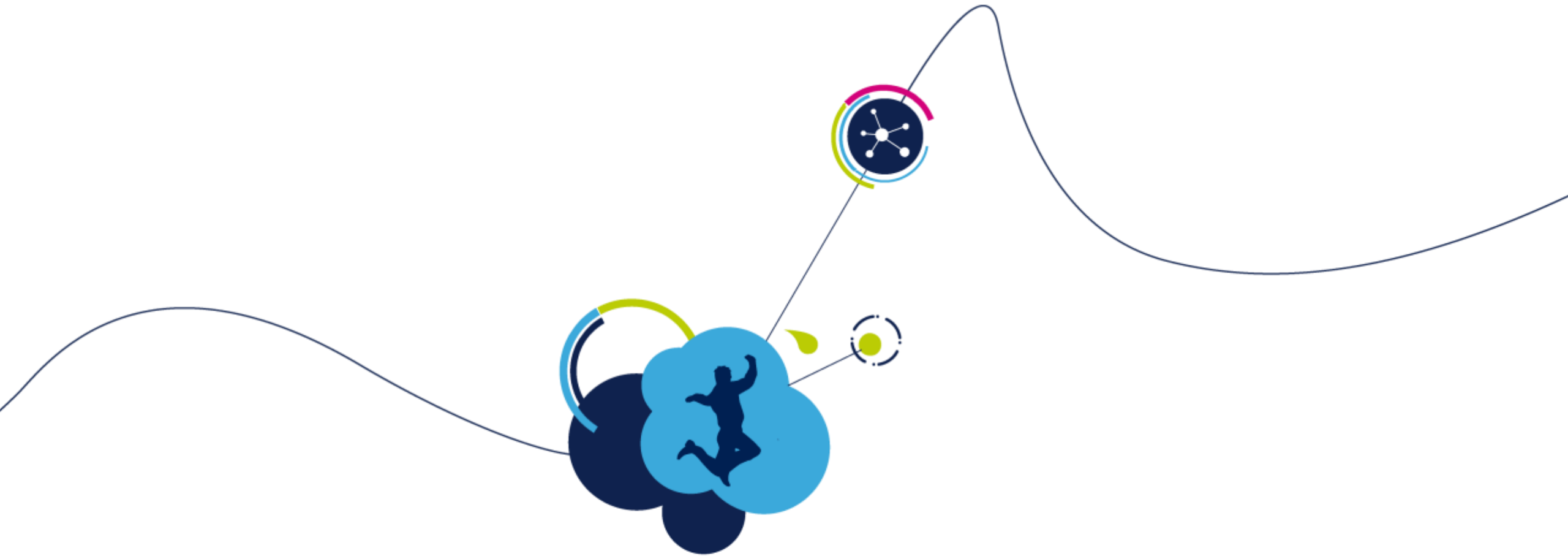
Installation of the tools and drivers

Checklist

❑Download and install SW4STM32

❑Download and install CubeMX

❑Download and install STM32L0-Cube and STM32L4-Cube Libraries

❑Download and install STM32 STLink Utility

❑Download and install ST-Link V2.1 drivers

❑Download and install STMStudio

❑Download and install terminal application (i.e. Termite or HTerm)

Installation of SW4STM32
System Workbench For STM32

Install SW4STM32 toolchain 1/2

installation from MS Windows

- In order to download SW4STM32 toolchain you need to register on www.openstm32.org website

- After registration and logging, please either go to the web itself and:

  - Select „System Workbench for STM32" from left side menu (it is called SW4STM32 as well).

  - Select „Downloading the System Workbench for STM32" link from Table of Contents.

  - Download and run
    install_sw4stm32_win_64bits-latest.exe for 64-bit or
    install_sw4stm32_win_32bits-latest.exe for 32-bit MS Windows.

In our session we will use "installation from MS Windows" option only.

Install SW4STM32 toolchain 2/2

installation from MS Windows

- Launch *System Workbench for STM32* installer.

- You will receive pop-up error message displayed in case proper JavaRE version is not installed on your system. Click "Ok" to get redirected to the Oracle JAVA website.

  - **Warning** : The architecture version for System Workbench for STM32 **MUST** follow your Java architecture version. SW4STM32 64-bits will only work with JavaRE 7 (and newer) 64-bits etc.

- The first page describes the product features. Get familiar, click "Next" to continue.

- Read and accept the license agreement to continue installation. Click "Next" to continue.

- Choose installation path (default: C:\Ac6\SystemWorkbench). Click "Next" to continue.
  NOTE: Avoid paths with white spaces included like "C:\Program Files\...".

- Follow the installation and, after "Finish" message is displayed, click "Quit" to exit installer.

Update SW4STM32 to current version
configuration of automatic updates

In order to configure automatic finding new updates, please follow the procedure within SW4STM32:

1. Window -> Preferences

2. Install/Update –> Automatic Updates

3. Check "Automatically find new updates and notify me"

4. Configure Update schedule, download options and action to be done once updates are found accordingly
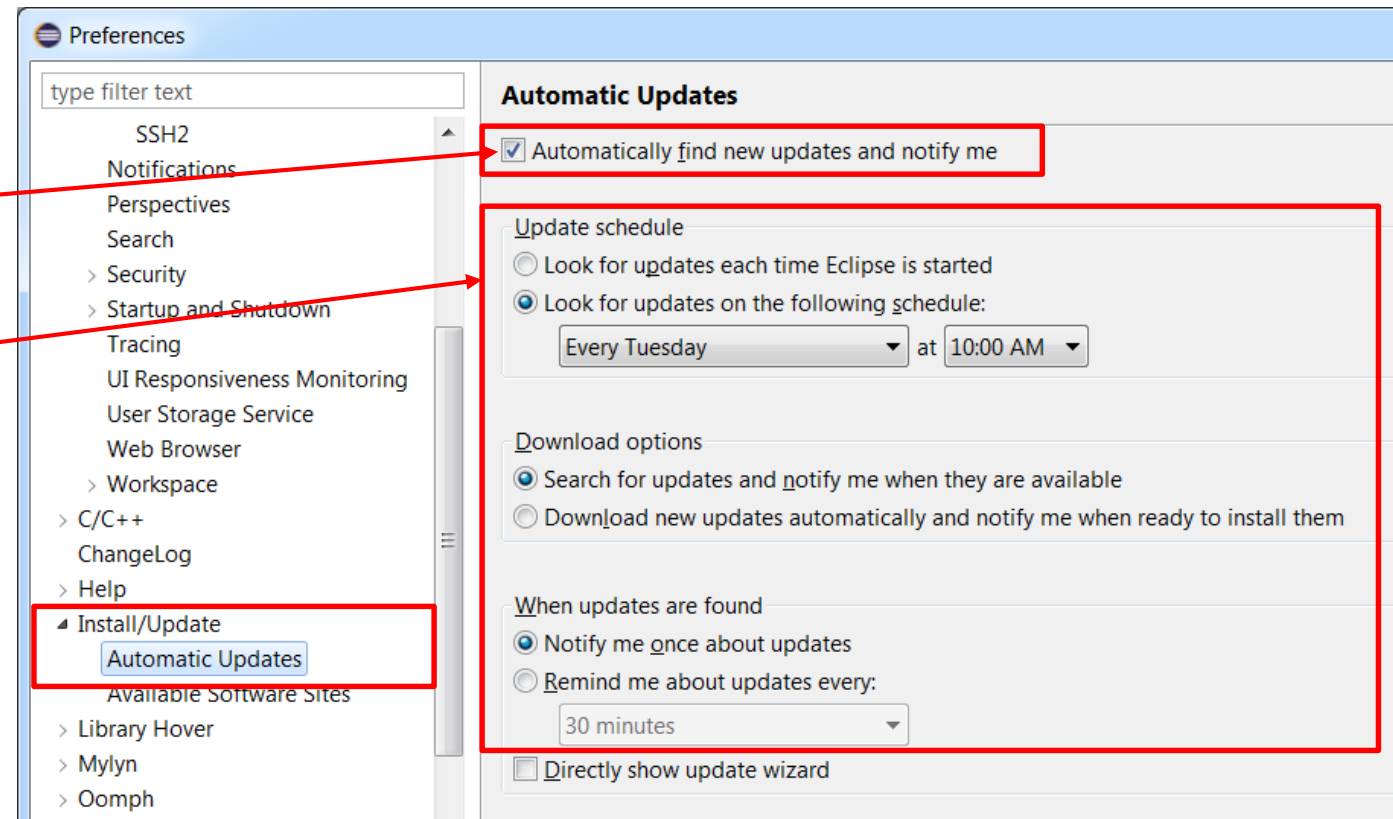
STM32CubeMX installation

Standalone version

- CubeMX tool

  - http://www.st.com/stm32cube
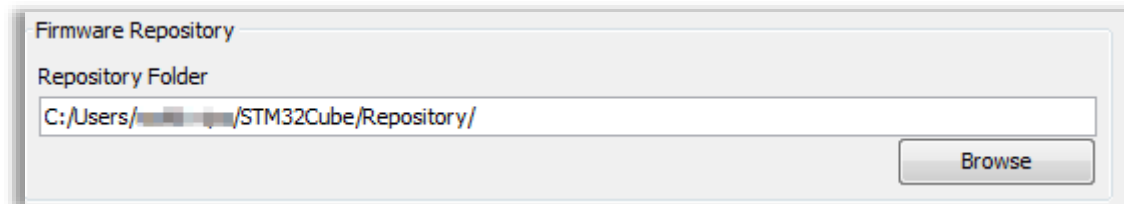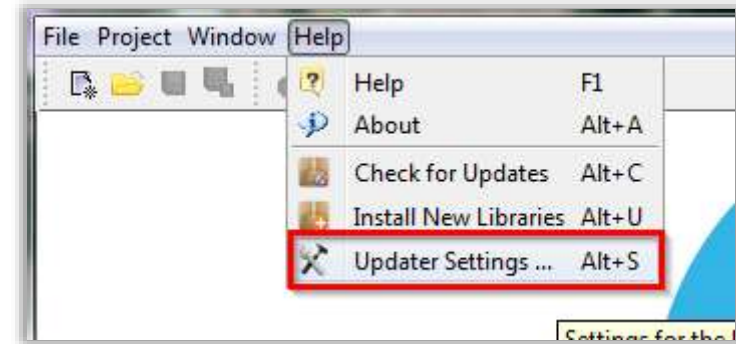
- The CubeMX tool needs Java

  - Please check whether you have latest Java installed on your PC, for sure 32-bit and 64-bit version

- You can either download L0 and L4 Cube packages directly from CubeMX or download them offline using the below links and install as local ("**From loc…**" button)

  - STM32CubeL0

  - STM32CubeL4

CubeMX configuration

- In case you download packages from web, you need to define place where they will be stored (repository)

- MENU>Help>Updater Settings…

- You will see current repository folder location
  - Default is C:/User/Acc_name/STM32Cube/Repository/
  - **NOTE: In case your repository path contains diacritics, CubeMX may fail to recognize them correctly. If this happens, change your repository path to contain raw Latin only (ex: C:/Repository)**

- You can either download STM32 packages manually and put them into this folder or CubeMX can do it for you if configured correctly

- The comparison of the CubeMX repository settings and folder structure

Firmware Repository

Repository Folder

C:/Users/⬛⬛⬛/STM32Cube/Repository/

Browse
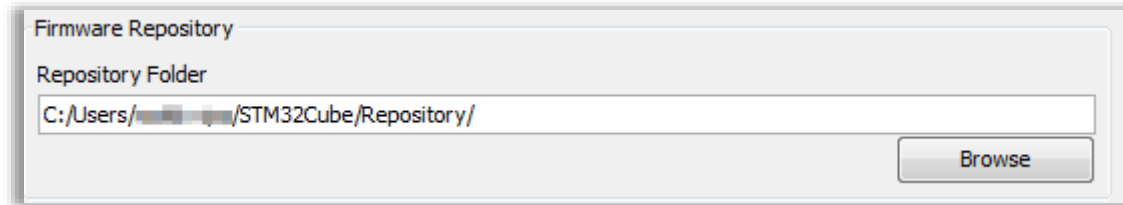
- In case you want CubeMX to download these files automatically
  - MENU>Help>Install New Libraries
  - Select required libraries
  - Force download with button "Install Now"

File Project Window Help

Help   F1
About   Alt+A
Check for Updates Alt+C
Install New Libraries Alt+U
Updater Settings ...   Alt+S

CubeMX can download for you repository packages automatically
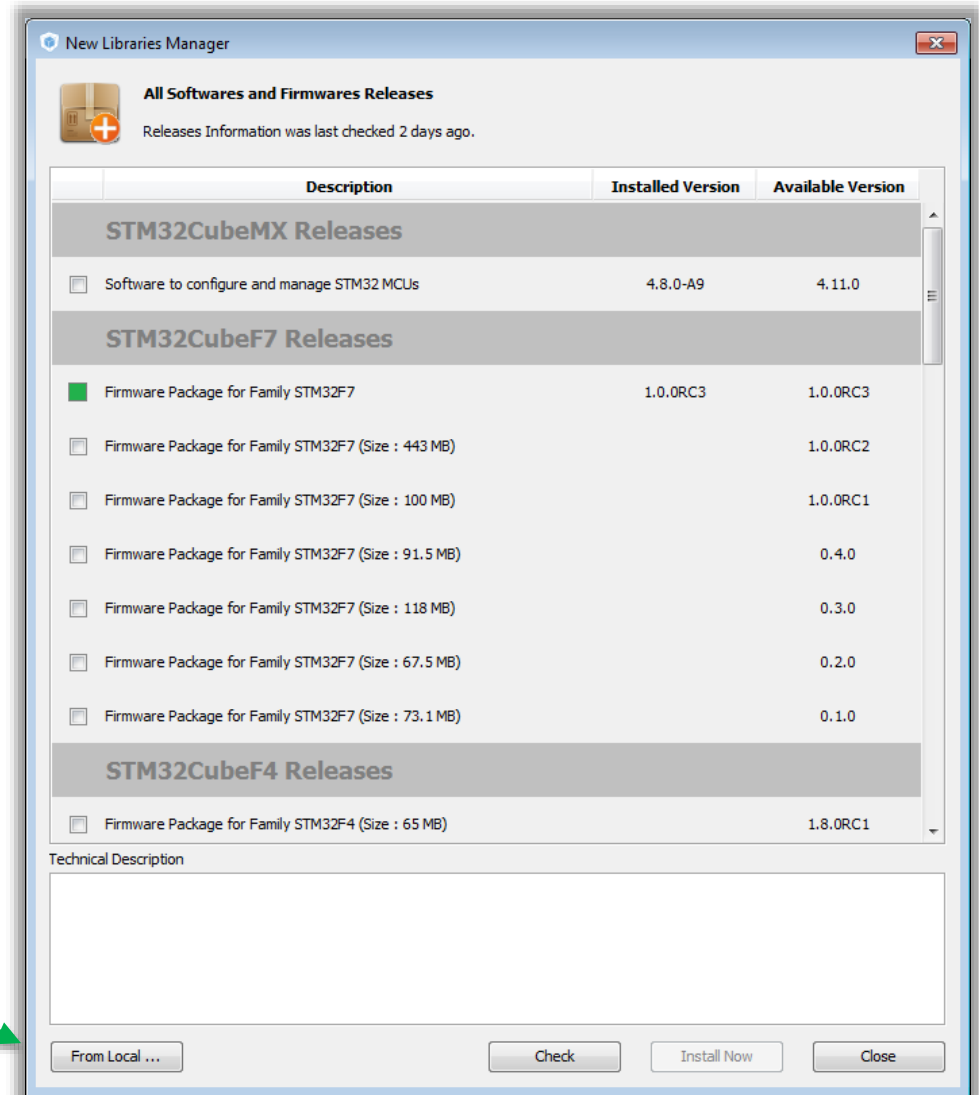
CubeMX configuration

- The comparison of the CubeMX repository settings and folder structure

- In case you want to install files manually
    - MENU>Help>Install New Libraries

- Click "From Local…" button
- Browse to select file to be installed
  i.e. from provided USB stick package:

    \HAL\STM32Cube_FW_L4_V1.5.0.zip

CubeMX install

- For code generation CubeMX uses package from the Repository folder

- Currently, CubeMX can generate code for the following toolchains
  - Keil (free for F0/L0 families)
  - IAR
  - Atollic (free Lite version available)
  - System Workbench (SW4STM32 by AC6, free)

- For debugging purposes, it is necessary to have ST-Link drivers installed. Drivers are a part of ST-Link Utility package that can be found here
  - STSW-LINK004 ST-link Utility

- To install drivers you will need **Admin rights** on your PC
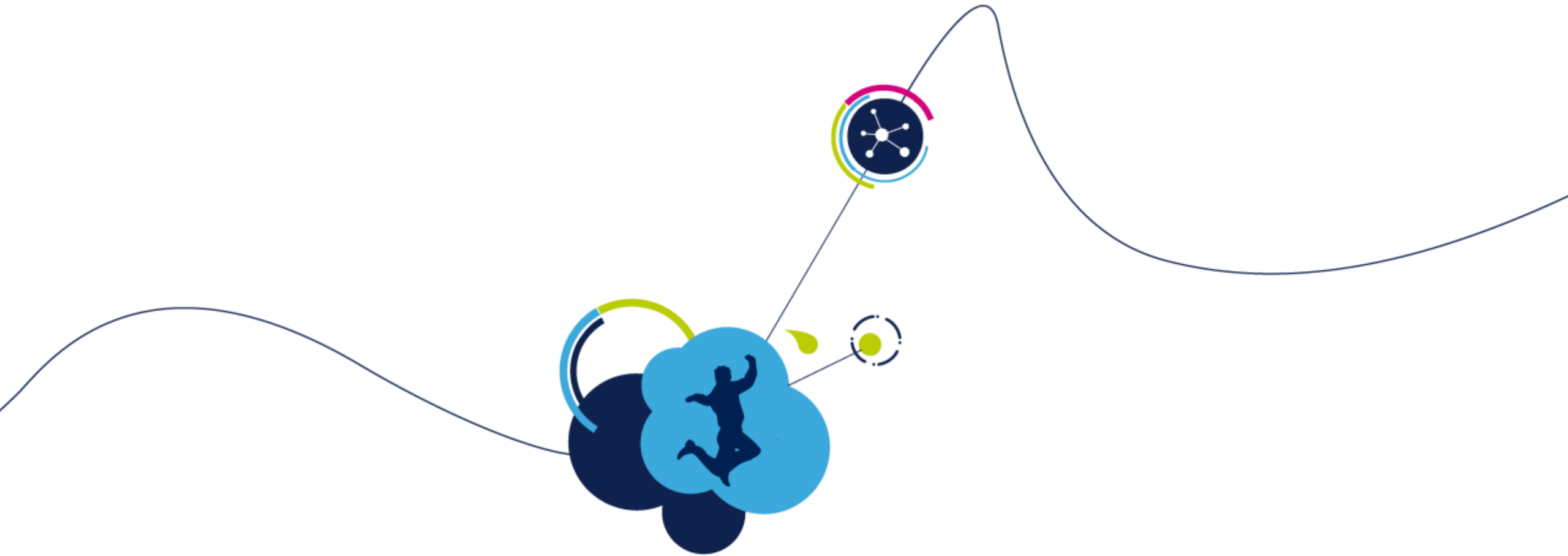
Installation of STM32 ST-Link Utility

Download & Install STM32 ST-Link Utility

- Drivers are available for Windows XP, Vista, 7, 8 & 10.

- To download them use direct link:

  http://www.st.com/content/st_com/en/products/embedded-software/development-tool-software/stsw-link004.html

- Unzip the package and run executable (setup.exe)

- Follow all default installation settings

Installation of ST-Link v2.1 drivers

Download & Install ST-Link/V2-1 drivers

- Drivers are available for Windows XP, Vista, 7, 8 & 10.

- To download them use direct link:
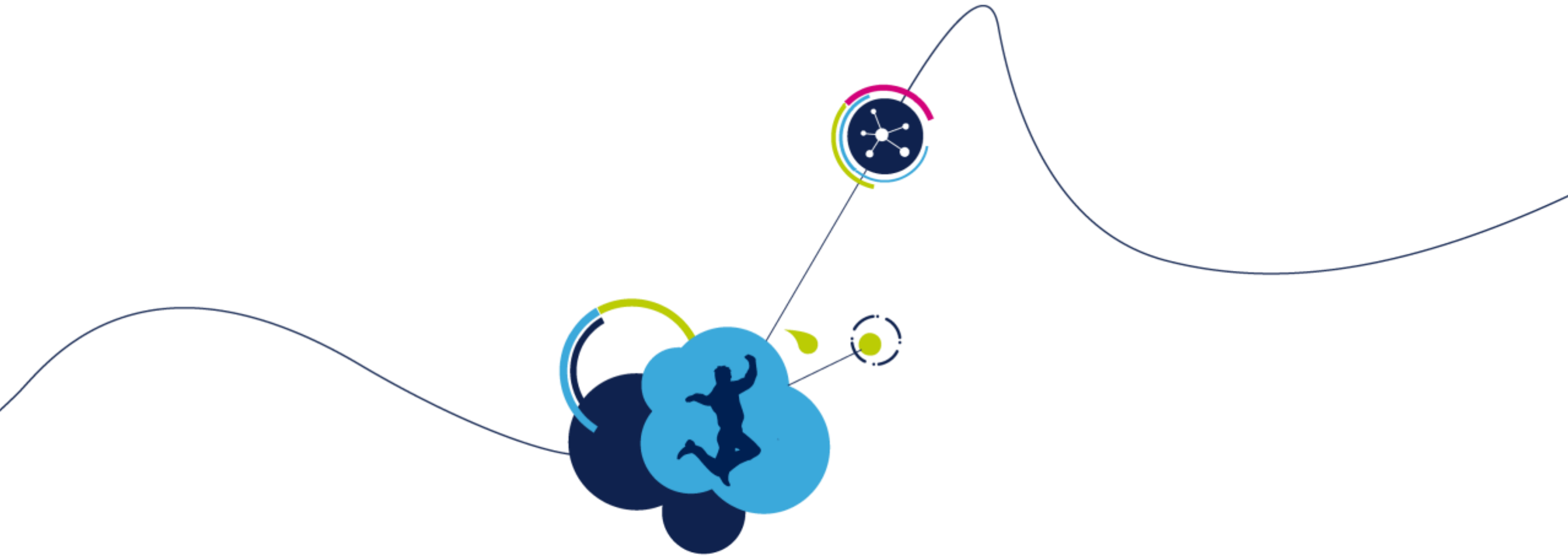   - http://www.st.com/content/st_com/en/products/embedded-software/development-tool-software/stsw-link009.html

- Unzip the package and run executable for x86 or AMD micro, depending on the platform you use

- Follow all default installation settings

Installation of STMStudio application

Installing STMStudio

- Ensure that the Java Run Time Environment (JRE) is installed and running on your machine. JRE version 1.7 or more recent is required (JRE 7).

- If installed JRE version is older than 1.7 or you miss it, please download the latest one from:

  http://www.oracle.com/technetwork/java/javase/downloads/index.html.

- Note that STM-STUDIO requires 32-bit JRE installed (even on 64-bit versions of Windows).

- STMStudio can be found on www.st.com by putting **stmstudio** keyword into the search field

- Once the JRE is installed or updated, run **STMStudio_setup.exe**.

✓ Download and install SW4STM32

✓ Download and install CubeMX

✓ Download and install STM32L0-Cube and STM32L4-Cube libraries

✓ Download and install STM32 STLink Utility

✓ Download and install ST-Link V2.1 drivers

✓ Download and install STMStudio application

✓ Download and install any terminal application (i.e. Termite or Hterm)

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Now we are ready for the session!

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