Embedded Systems

CS 397

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Software Installation

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Software Installation

ST-Link Utility (STSW-LINK004) and ST-Link USB Drivers (STSW-LINK009)

- This utility is for programming STM32 microcontrollers, and the file (**en.stsw-link004_v4.6.0.zip**) can be downloaded from

  https://www.st.com/en/development-tools/stsw-link004.html

- Unzip and run "**\STM32 ST-LINK Utility v4.6.0\setup.exe**" to install the ST-Link utility at the default location:

  C:\Program Files (x86)\STMicroelectronics\STM32 ST-LINK Utility

- This utility will also install two USB device drivers, namely

  STMicroelectronics (WinUSB) STLinkWinUSB (06/08/2017 2.01)

  STMicroelectronics (usbser) Ports (06/08/2017 2.01)

- The above USB drivers can also be obtained from

  https://www.st.com/en/development-tools/stsw-link009.html

- Download and unzip **en.stsw-link009_v2.0.2.zip**, and

- Run "**stlink_winusb_install.bat**", which will install the latest USB drivers

Software Installation

1. The Development Software – STM32CubeIDE

- **STM32CubeIDE** is an all-in-one multi-OS development tool, which is part of the STM32Cube software ecosystem.

- **STM32CubeIDE** is an advanced C/C++ development platform with peripheral configuration, code generation, code compilation, and debug features for STM32 microcontrollers. It is based on the ECLIPSE CDT framework and GCC toolchain for the development, and GDB for the debugging.   Eclipse CDT: (C/C++ Development Tooling)

- https://www.st.com/en/development-tools/stm32cubeide.html
  Windows: en.st-stm32cubeide_1.9.0_12015_20220302_0855_x86_64.exe.zip

Get Software

	Part Number	General Description	Supplier	Download	All versions
+	STM32CubeIDE-DEB	STM32CubeIDE Debian Linux Installer	ST	Get latest	Select version
+	STM32CubeIDE-Lnx	STM32CubeIDE Generic Linux Installer	ST	Get latest	Select version
+	STM32CubeIDE-Mac	STM32CubeIDE macOS Installer	ST	Get latest	Select version
+	STM32CubeIDE-RPM	STM32CubeIDE RPM Linux Installer	ST	Get latest	Select version
+	STM32CubeIDE-Win	STM32CubeIDE Windows Installer	ST	Get latest	Select version

Software Installation

- Create folders **C:\STM32CubeIDE\Repository** and **C:\STM32_CS397**

- Unzip and run "**st-stm32cubeide_1.9.0_12015_20220302_0855_x86_64.exe**"
  to install it with default settings

  work folder

- Run **STM32CubeIDE,** select workspace: **C:\STM32_CS397,** and click "Launch"

IDE
STM32Cub...
1.8.0

IDE Override...   ✕

The .cproject file extension is currently associated to another program
(TrueSTUDIO.exe).
Would you like to associate the .cproject files to the STM32CubeIDE instance in use?

☐ Remember my decision

click

| Yes | No |

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life.augmented
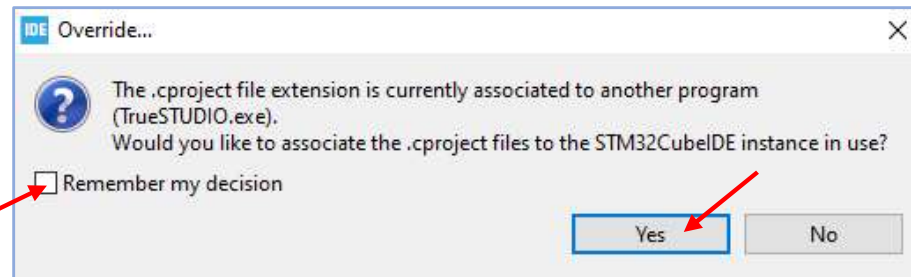
Release note will be displayed in the first run

Release note

STM32CubeIDE release v1.9.0

Introduction

This release note is updated periodically to keep abreast of STM32CubeIDE evolution, problems, and limitations. Check the STMicroelectronics website at www.st.com/stm32softwaretools for the latest version. For the latest release summary, refer to

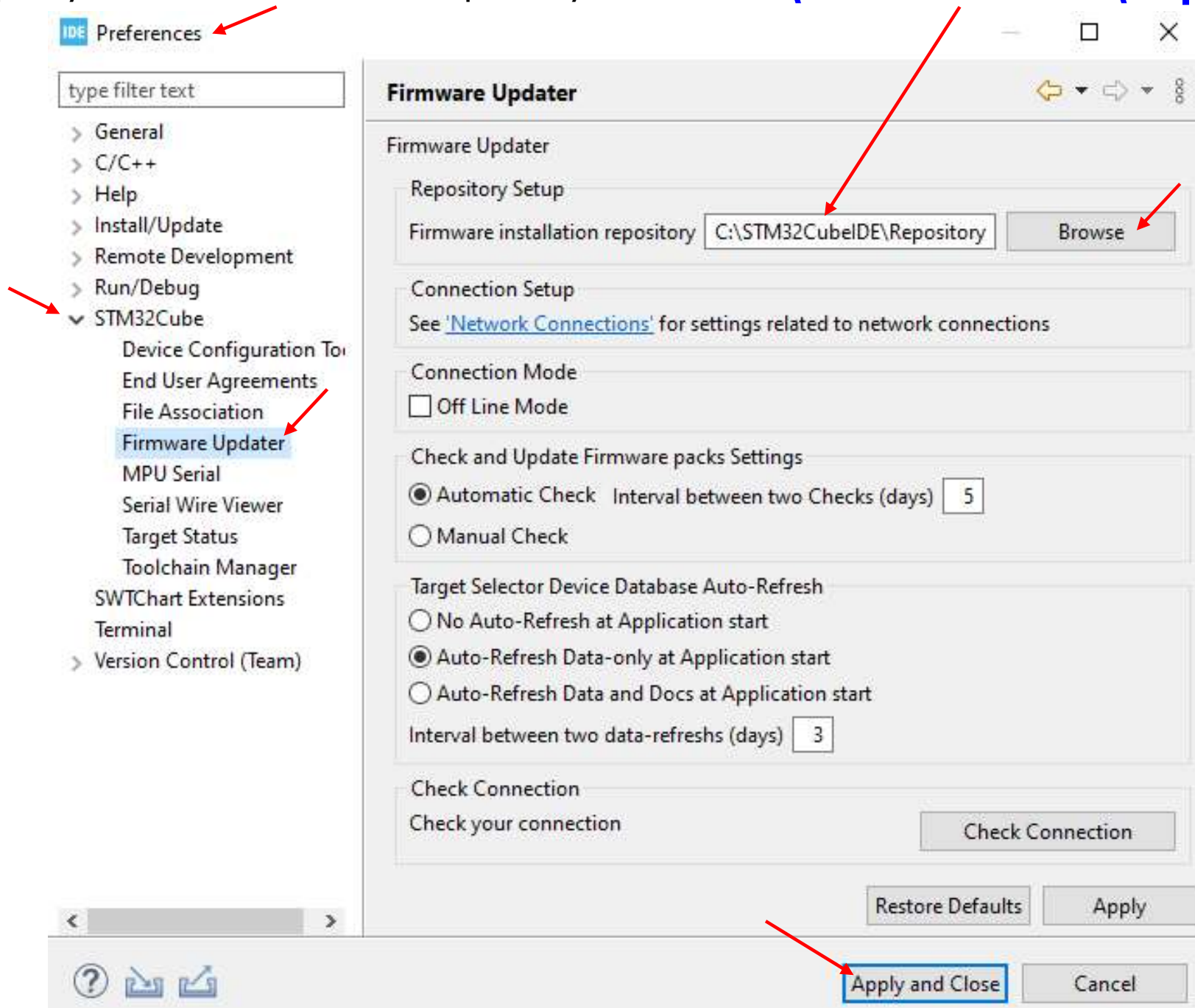- Select: Window -> Preferences (for firmware installation)
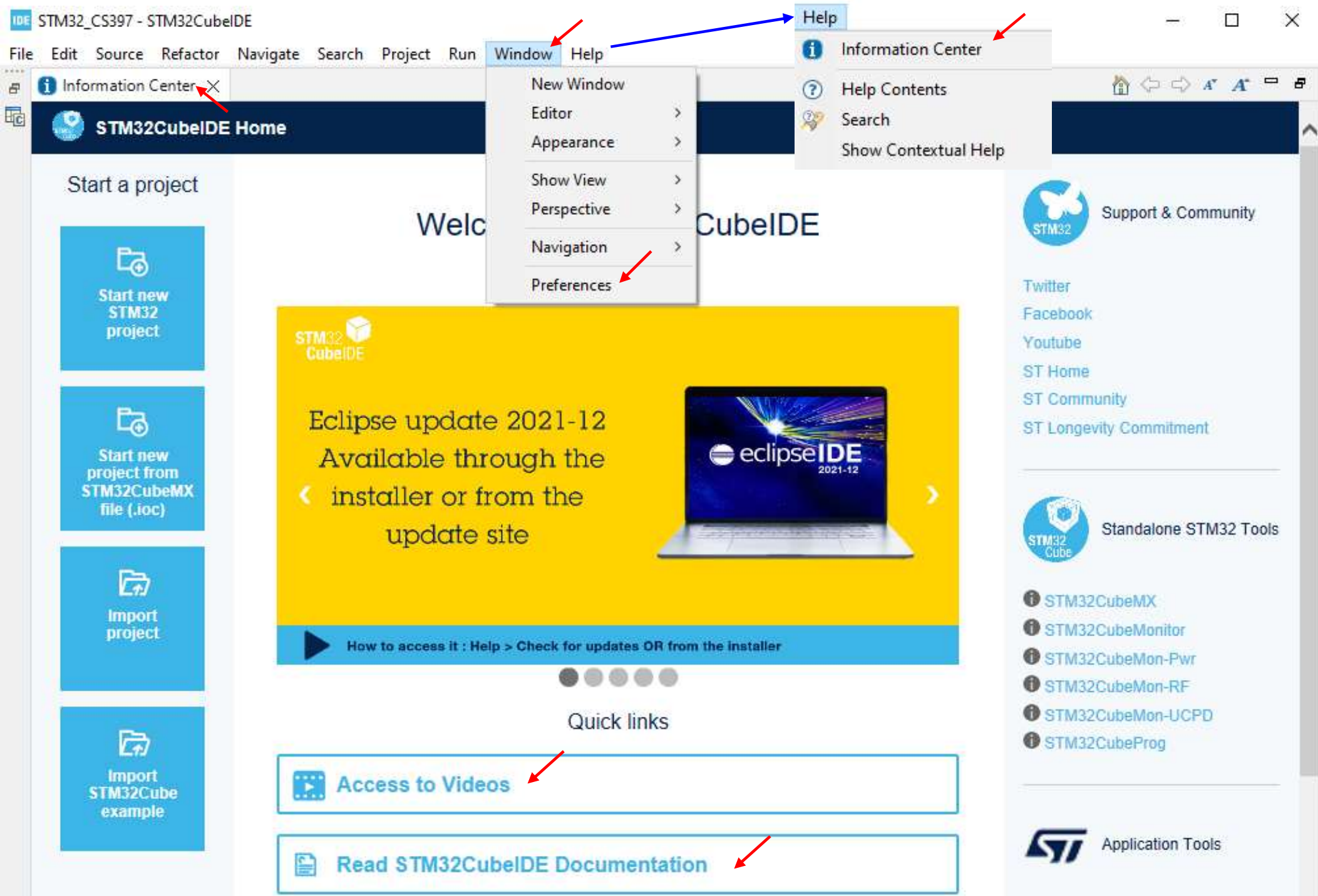
Software Installation

- Specify Firmware Installation Repository

C:\STM32CubeIDE\Repository

Software Installation

- Manage Embedded Software Packages

Updates after installation

Software Installation

IDE Embedded Software Packages Manager

STM32Cube MCU Packages and embedded software packs releases

Releases Information was last refreshed less than one hour ago.

| | STM32Cube MCU Packages | STMicroelectronics | RoweBots | SEGGER | emotas | portGmbH | wolfSSL |

	Description	Installed Version	Available Version
▼	**STM32F7**		
■	STM32Cube MCU Package for STM32F7 Series	1.16.2	1.16.2
☐	STM32Cube MCU Package for STM32F7 Series (Size : 1517.0 MB)		1.16.1
☐			

Details

Install MCU Package

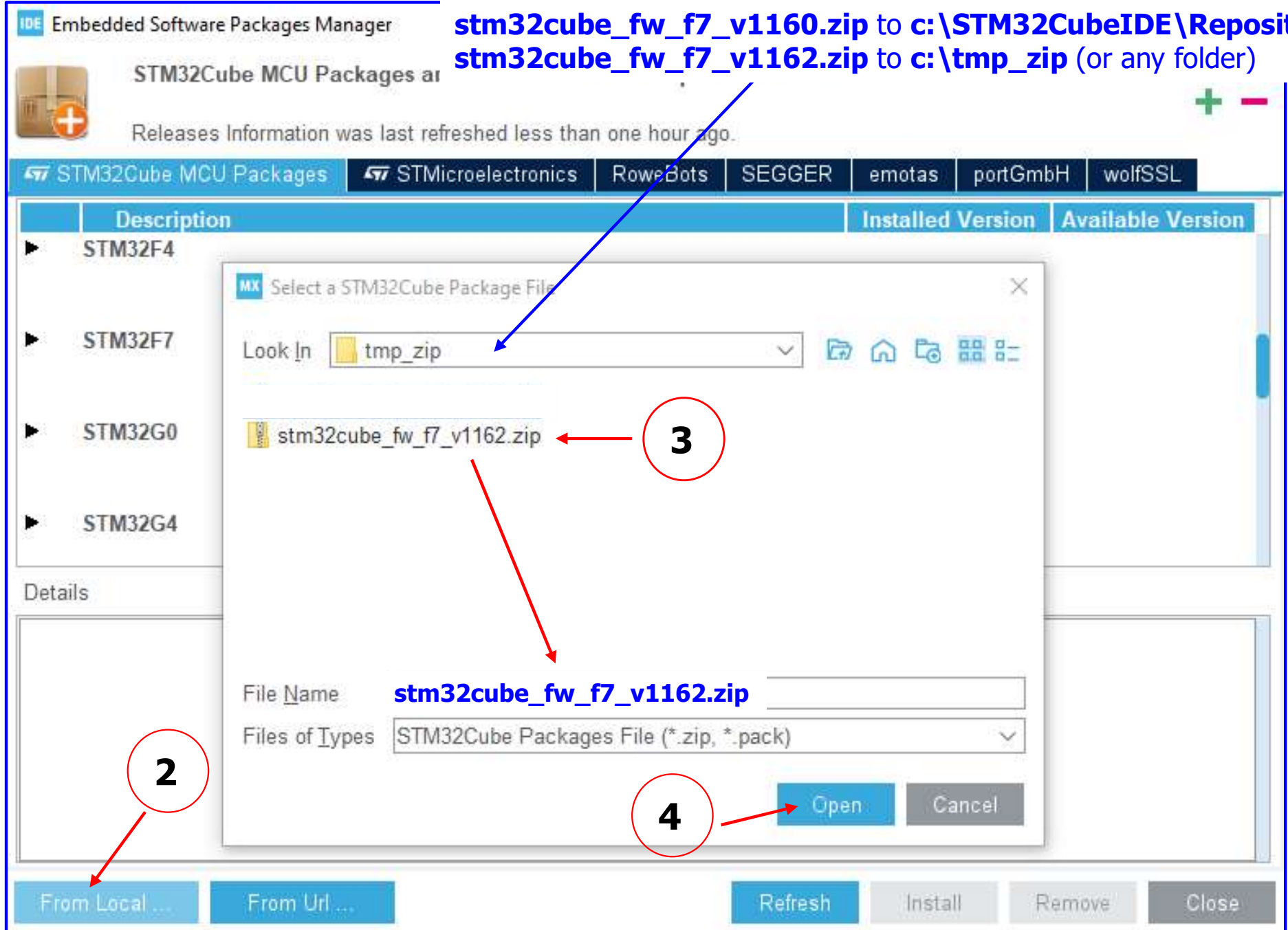| From Local ... | From Url ... | | Refresh | Install | Remove | Close |

- Install STM32CubeIDE MCU Package Locally **(1)**
  First, copy the MCU packages to folders: **(do not unzip the files)**

stm32cube_fw_f7_v1160.zip to **c:\STM32CubeIDE\Repository**
stm32cube_fw_f7_v1162.zip to **c:\tmp_zip** (or any folder)

IDE Embedded Software Packages Manager

STM32Cube MCU Packages ar

Releases Information was last refreshed less than one hour ago.

+ **−**

| STM32Cube MCU Packages | STMicroelectronics | RoweBots | SEGGER | emotas | portGmbH | wolfSSL |

Description	Installed Version	Available Version
► STM32F4		
► STM32F7		
► STM32G0		
► STM32G4		

Details

MX Select a STM32Cube Package File   ×

Look In   tmp_zip

📁 stm32cube_fw_f7_v1162.zip   ← **(3)**

File Name   **stm32cube_fw_f7_v1162.zip**

Files of Types   STM32Cube Packages File (*.zip, *.pack)

(4) → Open   Cancel

From Local ...   From Url ...   Refresh   Install   Remove   Close

(2)

Software Installation

2. Use J-Link on-board instead of ST-Link on-board with the ST hardware via USB

- The steps for converting the ST-Link on-board to a J-Link on-board are:

    - Make sure that the ST-Link USB drivers (STSW-LINK009) are installed.

        Download: https://www.st.com/en/development-tools/stsw-link009.html

        Unzip **en.stsw-link009.zip**, and run "**stlink_winusb_install.bat**"

    - Make sure that the J-Link software package V5.12b or later

        (**JLink_Windows_V766a_x86_64.exe**) is installed (default settings).

        Download: https://www.segger.com/downloads/jlink/

    - Obtain the SEGGER J-Link software package (**STLinkReflash_190812.zip**)

        Download: https://www.segger.com/downloads/jlink#STLink_Reflash

    - Unzip and start the **STLinkReflash.exe** utility

    - Agree to the license terms

    - Connect ST-Link on-board to PC

    - Select an option: "Upgrade to J-Link", "Upgrade J-Link Firmware", or "Restore ST-Link",

    - Wait for operation to complete

Info: https://www.segger.com/products/debug-probes/j-link/models/other-j-links/st-link-on-board/
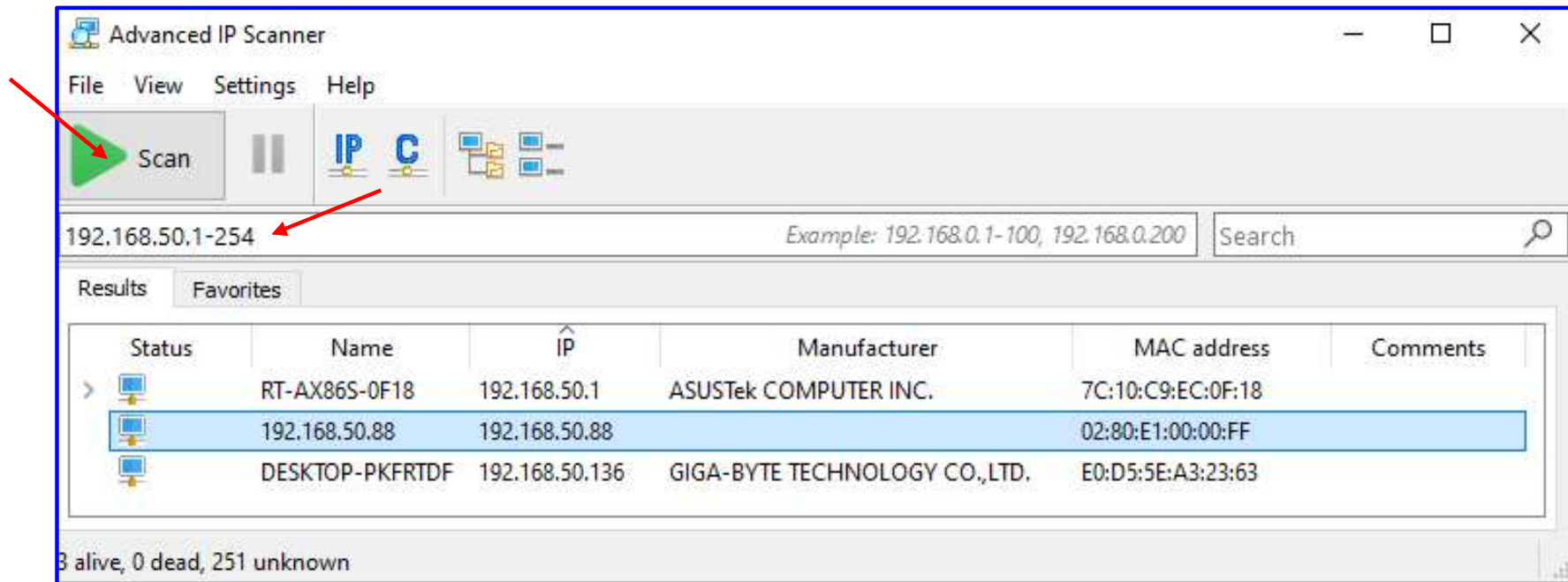
Software Installation

3. Other Software (1/2)

- **RealTerm –** A serial terminal for engineering and debugging
  - https://sourceforge.net/projects/realterm/files/Realterm/2.0.0.70/
  - **Realterm_2.0.0.70_Signed_Wrapper_setup.exe**
- **Notepad++ –** A free source code editor
  - https://notepad-plus-plus.org/downloads/
  - **npp.8.4.1.Installer.x64.exe**
- **Sumatra PDF –** A free PDF, eBook (ePub, Mobi), XPS, DjVu, CHM, Comic Book (CBZ and CBR) reader for Windows
  - https://www.sumatrapdfreader.org/download-free-pdf-viewer.html
  - **SumatraPDF-3.4.3-64-install.exe**
- **7-Zip –** A file archiver with a high compression ratio
  - https://www.7-zip.org/
  - **7z2107-x64.exe**
- **SystemView –** An application that performs system analysis and verification of embedded systems
  - https://www.segger.com/downloads/systemview/
  - **SystemView_Windows_V332_x64.exe**
- **EchoTool –** Command line echo server and client for Windows
  - https://github.com/PavelBansky/EchoTool/
  - **echotool.exe**
- **htmlgen –** A 'makefsdata' tool to create C code suitable for httpd for given html pages (or other files) in a directory
  - https://github.com/fetisov/lrndis/tree/master/makefsdata
  - **htmlgen.exe** (in lrndis-master.zip)

Software Installation

3. Other Software (2/2)

- **Advanced IP Scanner** – Scan a network to obtain IP addresses
    - https://www.advanced-ip-scanner.com/
    - **Advanced_IP_Scanner_2.5.4594.1.exe**

Software Installation

4. USB-CAN FD adapter/analyzer
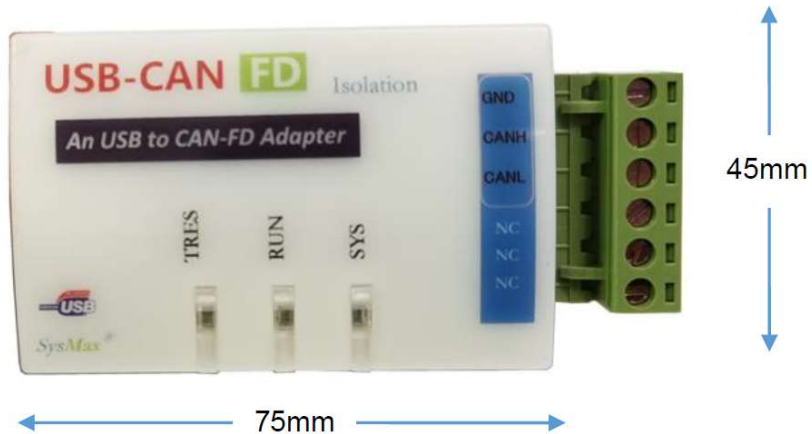
BM-USB-CANFD-X2

- Install **BUSMASTER_Installer_Ver_3.2.2.21.exe** with default settings

5. STM32 Online Training

STM32 Education

https://www.st.com/content/st_com/en/support/learning/stm32-education.html

STM32 Online Training

https://www.st.com/content/st_com/en/support/learning/stm32-education/stm32-online-training.html

STM32 MOOCs (Massive Open Online Courses)

https://www.st.com/content/st_com/en/support/learning/stm32-education/stm32-moocs.html

STM32CubeMX & CubeHAL basics MOOC

https://www.st.com/content/st_com/en/support/learning/stm32-education/stm32-moocs/stm32cubemx-and-cubeHhal-basics.html

STM32H7 Online training

https://www.st.com/content/st_com/en/support/learning/stm32-education/stm32-online-training/stm32h7-online-training.html