

Install Intel Development Tools

This is a short step-by-step guide on how to install Intel Development Tools on WinOS and LinuxOS.

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Quartus Prime Software - Windows

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- 2 [Download Quartus Software](#)
 - 2.1 [Quartus Prime Pro Edition 22.4 \(all parts\): Quartus Prime Pro 22.4 for Windows - Individual Files](#) Intel Quartus Prime (includes Nios II EDS) / Intel Quartus Prime Pro Edition Part 2
 - 2.2 [Quartus Prime Lite Edition 22.1.2 \(Free\): Quartus Prime Lite 22.1.2 for Windows - Individual Files](#) Intel Quartus Prime (includes Nios II EDS)
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- 4 [Run installer executable <product>-<version>-windows.exe \(e.g. QuartusLiteSetup-22.1std.2.922-windows.exe\)](#)
 - a. Follow the instructions of the installation wizard
- 3. Download device support you need
 - a. Available device support for Quartus Prime Pro Edition 22.4: [Quartus Prime Pro 22.4 for Windows - Device Support](#) Individual Files Devices
 - Agliex (license required)
 - Arria 10 (license required)
 - Cyclone 10 GX (free, no license file required)
 - eASIC™ N5X (license required)
 - Stratix 10 (license required)
 - b. Available device support for Quartus Prime Lite Edition 22.1.2 (free) : [Quartus Prime Lite 22.1.2 for Windows - Device Support](#) Individual Files Devices
 - Arria II
 - Cyclone IV
 - Cyclone 10 LP
 - Cyclone V
 - MAX II, MAX V
 - MAX 10 FPGA
- 4. Launch Device Installer from Windows Start Menu to install device support
 - a. Follow the instructions of the device installer wizard
- 5. Install Arrow USB Blaster driver for Trenz boards: [Arrow USB Programmer](#)

Nios II EDS - Windows

Nios II EDS is included in Quartus Prime software, but there are additional requirements for using it:

- Installing Windows Subsystem for Linux (WSL) (required from version Quartus Prime Lite Edition 19.1 and Quartus Prime Pro Edition 19.2)
- Installing Eclipse IDE into Nios II EDS (required from version Nios II EDS v19.1)

Install Windows Subsystem for Linux (WSL)



- Recommended operating system version:
 - Windows* 10 build version 18362.1256 or higher
 - Windows* 11 build version 22000.1219 or higher
- Install only WSL1. WSL2 is not supported by Nios II EDS.

1. Open PowerShell as Administrator
 - a. Enable the Windows Subsystem for Linux:

```
dism.exe /online /enable-feature /featurename:Microsoft-  
Windows-Subsystem-Linux /all /norestart
```

- b. Enable virtual machine feature:

```
dism.exe /online /enable-feature /featurename:  
VirtualMachinePlatform /all /norestart
```

2. Restart your PC to complete the installation.
3. Install Linux distribution Ubuntu18.04 LTS for WSL
 - a. Open PowerShell as Administrator and run:

```
wsl --install --distribution Ubuntu-18.04
```

- b. Launch Ubuntu18.04 from Windows Start Menu and follow instructions
 - i. Install additional packages:

```
sudo apt update  
sudo apt upgrade  
sudo apt install wsl  
sudo apt install dos2unix  
sudo apt install make  
sudo apt install build-essential
```

For more information see: [Installing Windows Subsystem for Linux \(WSL\) on Windows](#)

Install Eclipse IDE into Nios II EDS - Windows

Starting with Nios II EDS v19.1 the Eclipse IDE must be installed manually as it is not included in Quartus Prime software.

1. Download CDT 8.8.1 which is Eclipse C/C++ IDE for Mars.2: [eclipse-cpp-mars-2-win32-x86_64.zip](#)
2. Extract the downloaded file and rename the <download_path>/eclipse folder to <download_path>/eclipse_nios2
3. Copy and paste <quartus_installation_path>/nios2eds/bin/eclipse_nios2_plugins.zip to <download_path>
4. Extract <download_path>/eclipse_nios2_plugins.zip the Extraction overrides files in <download_path>/eclipse_nios2
5. To verify the correct extraction you should see <download_path>/eclipse_nios2/plugin_customization.ini file
6. Copy and paste <download_path>/eclipse_nios2 to <quartus_installation_path>/nios2eds/bin/eclipse_nios2
7. Now you can launch "Nios II Software Build Tools for Eclipse"

For more information see: [Nios II Developer Handbook#3.1. Installing Eclipse IDE into Nios II EDS](#)

RiscFree IDE for Intel FPGAs- Windows

1. Download RiscFree IDE Software
 - RiscFree IDE for Intel® FPGAs 22.4: [Ashling RiscFree IDE 22.4 for Windows - Download](#) Additional Software Stand-Alone Software Ashling RiscFree IDE for Intel® FPGAs

- RiscFree IDE for Intel® FPGAs 22.1.2: [RiscFree IDE 22.1 for Windows - Download](#)
Additional Software Stand-Alone Software RiscFree IDE for Intel® FPGAs 22.1std. 2.922
2. Run installer executable *RiscFreeSetup-<version>-windows.exe* (e.g. RiscFreeSetup-22.1std.2.922-windows.exe)
 - a. Follow the instructions of the installation wizard

For more Information see: <https://www.intel.com/content/www/us/en/docs/programmable/730783/22-4/installation-and-setup.html>

Linux Ubuntu 22.04 LTS

Quartus Prime Software - Linux

1. Open Terminal
2. Install required libraries:

```
sudo dpkg --add-architecture i386
sudo add-apt-repository ppa:linuxuprising/libpng12
sudo apt update
sudo apt install libc6:i386 libncurses6:i386 libxtst6:i386 libxft2:i386 libstdc++6:i386 \
                                libc6-dev-i386 lib32z1 libncurses5
libbz2-1.0:i386 libpng12-0 libqt5xml5 \
                                liblzma-dev libcanberra-gtk-module
```

3. Download Quartus Software
 - Quartus Prime Pro Edition 22.4 (all parts): [Quartus Prime Pro 22.4 for Linux - Download](#)
Individual Files Quartus Prime (includes Nios II EDS) / Quartus Prime Pro Edition Part 2
 - Quartus Prime Lite Edition 22.1.2 (Free): [Quartus Prime Lite 22.1.2 for Linux - Download](#) Individual Files Intel Quartus Prime (includes Nios II EDS)
4. Run command:

```
sudo chmod +x <download_path>/<product>-<version>-linux.run
```

5. Run installer executable (e.g. QuartusLiteSetup-22.1std.2.922-linux.run) and follow the instructions of the installation wizard:

```
<download_path>/<product>-<version>-linux.run
```

6. Download device support you need
 - a. Available device support for Quartus Prime Pro Edition 22.4: [Quartus Prime Pro 22.4 for Linux - Device Support](#) Individual Files Devices
 - Agliex (license required)
 - Arria 10 (license required)
 - Cyclone 10 GX (free, no license file required)
 - eASIC™ N5X (license required)
 - Stratix 10 (license required)
 - b. Available device support for Quartus Prime Lite Edition 22.1.2 (free) : [Quartus Prime Lite 22.1.2 for Linux - Device Support](#) Individual Files Devices
 - Arria II
 - Cyclone IV
 - Cyclone 10 LP
 - Cyclone V
 - MAX II, MAX V
 - MAX 10 FPGA

7. Launch Quartus Prime with

```
#Quartus Prime Pro Edition 22.4
path/to/intelFPGA_pro/22.4/quartus/bin/quartus
#Quartus Prime Lite Edition 22.1.2
path/to/intelFPGA_lite/22.1std/quartus/bin/quartus
```

8. Click 'Tools Install Devices' to install device support
 - a. Follow the instructions of the device installer wizard
9. Install Arrow USB Blaster driver for Trenz boards: [Arrow USB Programmer](#)

Nios II EDS - Linux

Install Eclipse IDE into Nios II EDS - Linux

Starting with Nios II EDS v19.1 the Eclipse IDE must be installed manually as it is not included in Quartus Prime software.

1. Download CDT 8.8.1 which is Eclipse C/C++ IDE for Mars.2: [eclipse-cpp-mars-2-linux-gtk-x86_64.tar.gz](#)
2. move downloaded file to `<installation_directory>/nios2eds/bin`
3. Extract the downloaded file:

```
sudo tar xfv <installation_directory>/nios2eds/bin/eclipse-cpp-mars-2-linux-gtk-x86_64.tar.gz
```

4. Rename the extracted file:

```
sudo mv <installation_directory>/nios2eds/bin/eclipse
<installation_directory>/nios2eds/bin/eclipse_nios2
```

5. Extract the existing file "eclipse_nios2_plugins.tar.gz" the Extraction overrides files in `<download_path>/eclipse_nios2`:

```
sudo tar xfv <installation_directory>/nios2eds/bin
/eclipse_nios2_plugins.tar.gz
```

6. To verify the correct extraction you should see the `<installation_directory>/nios2eds/bin/eclipse_nios2/plugin_customization.ini` file
7. Now you can launch "Nios II Software Build Tools for Eclipse"

For more information see: [Nios II Developer Handbook#3.1. Installing Eclipse IDE into Nios II EDS](#)

RiscFree IDE for Intel FPGAs - Linux

1. Download RiscFree IDE Software
 - RiscFree IDE for Intel® FPGAs 22.4: [Ashling RiscFree IDE 22.4 for Linux - Download Additional Software](#) Stand-Alone Software Ashling RiscFree IDE for Intel® FPGAs
 - RiscFree IDE for Intel® FPGAs 22.1.2: [RiscFree IDE 22.1 for Linux - Download Additional Software](#) Stand-Alone Software RiscFree IDE for Intel® FPGAs 22.1std.2.922
2. Run installer `RiscFreeSetup-<version>-linux.run` (e.g. `RiscFreeSetup-22.1std.2.922-linux.run`)
 - a. Follow the instructions of the installation wizard

For more Information see: <https://www.intel.com/content/www/us/en/docs/programmable/730783/22-4/installation-and-setup.html>

References

- [Intel FPGA Software Installation and Licensing](#)
- [Nios II Developer Handbook](#)
- [Rocketboards.org#SoCEDS and ARM Development Studio](#)