Remote Debugging with the GNU GDB Debugger using Eclipse

MA35D1|MA35D0|MA35H0|NUC970|NUC980

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Introduction

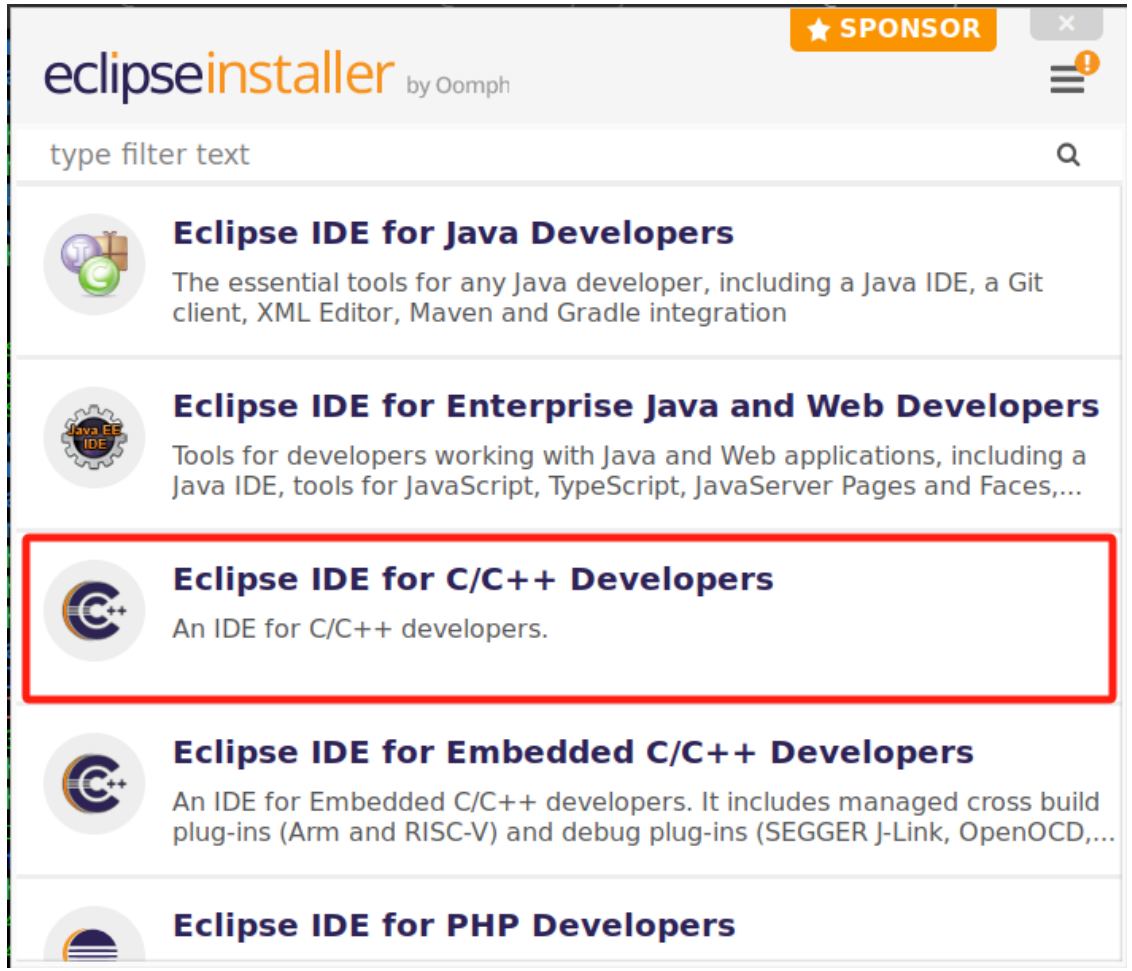
- The Eclipse Public License is designed to be a business-friendly free software license, and features weaker copyleft provisions than licenses such as the GNU General Public License (GPL).

Installing Eclipse

- Download ***Eclipse Installer 2023-12 R*** from the site
  https://www.eclipse.org/downloads/download.php?file=/oomph/epp/2023-12/R/eclipse-inst-jre-linux64.tar.gz
- Extract the package ***eclipse-inst-jre-linux64.tar.gz***
  $ tar -xf eclipse-inst-jre-linux64.tar.gz 2> /dev/null
- Execute the installer ***eclipse-installer***
  $ cd eclipse-installer
  $ ./eclipse-inst

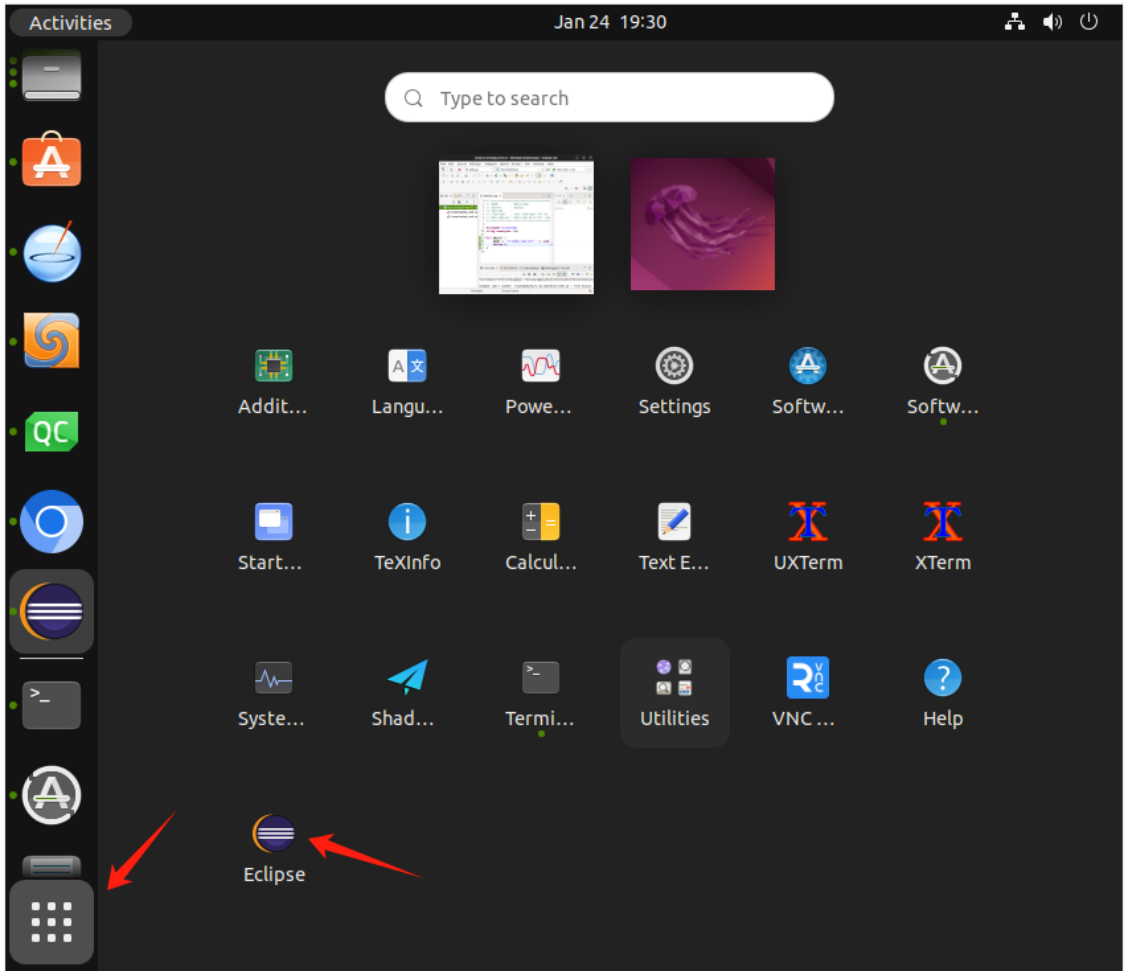
Installing Eclipse

- Choose the ***Eclipse IDE for C/C++ Developers***



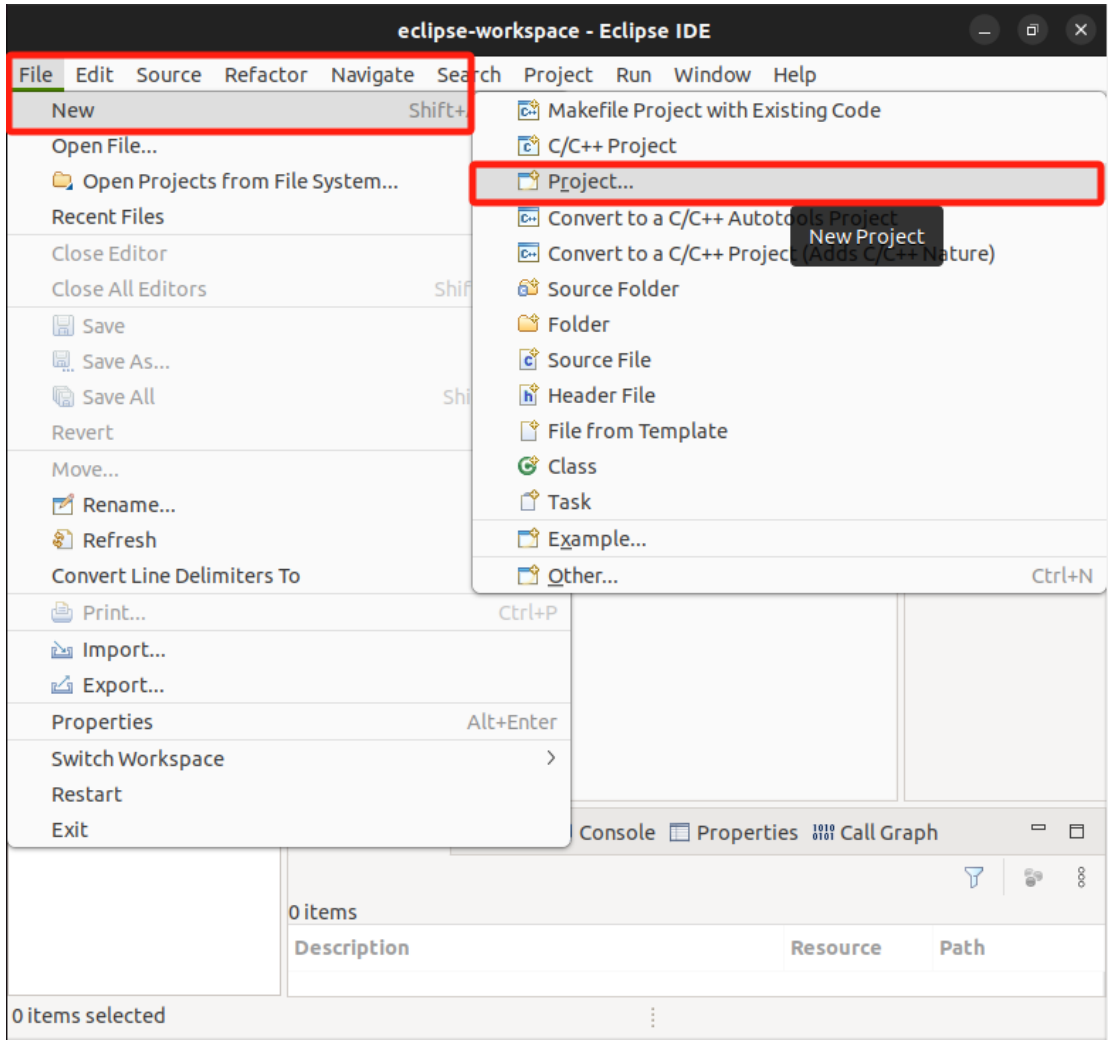
Launching Eclipse

- From Application Launcher, find the Eclipse and run it.



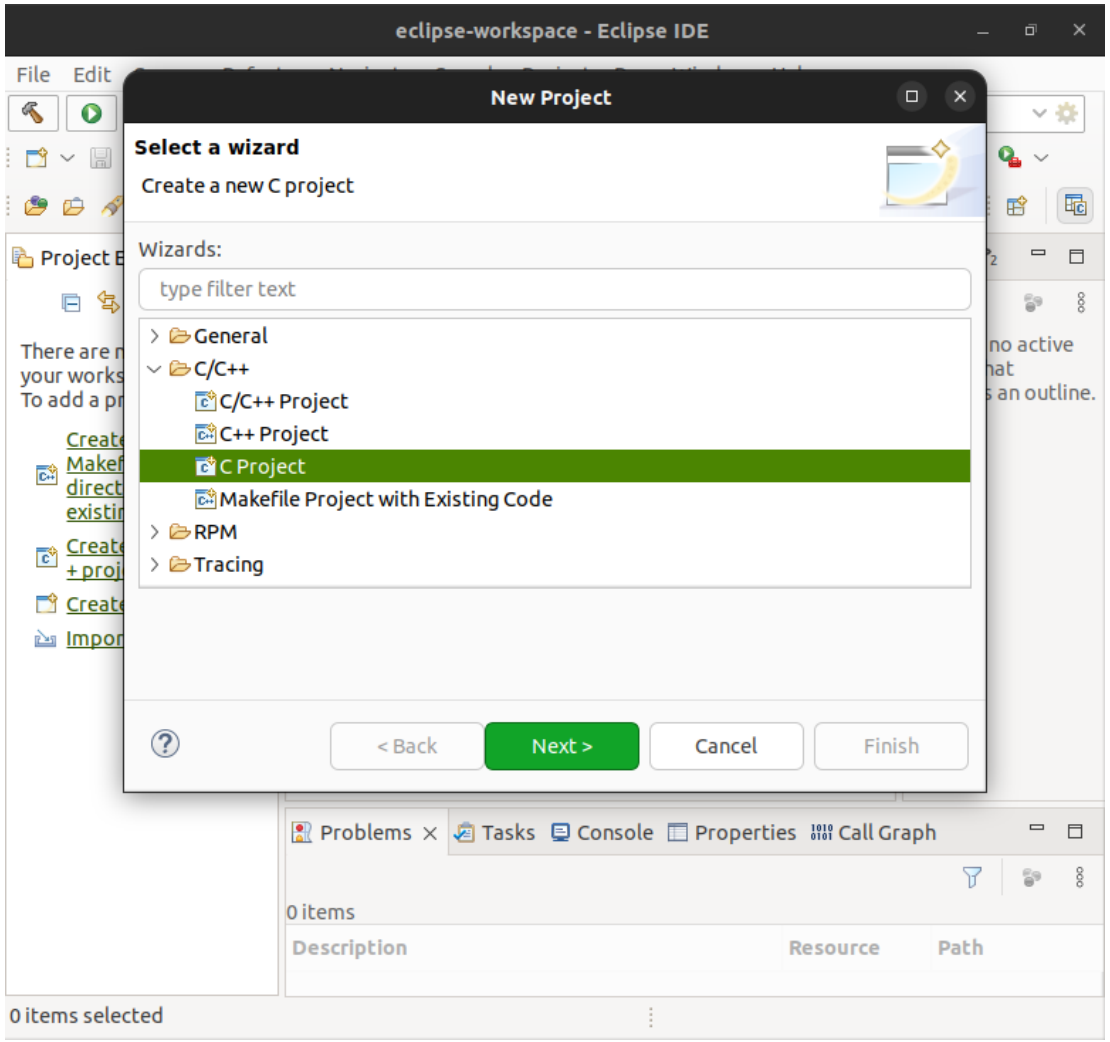
Creating Project

- Create a ***New Project*** from ***File*** menu
  →File →New →Project



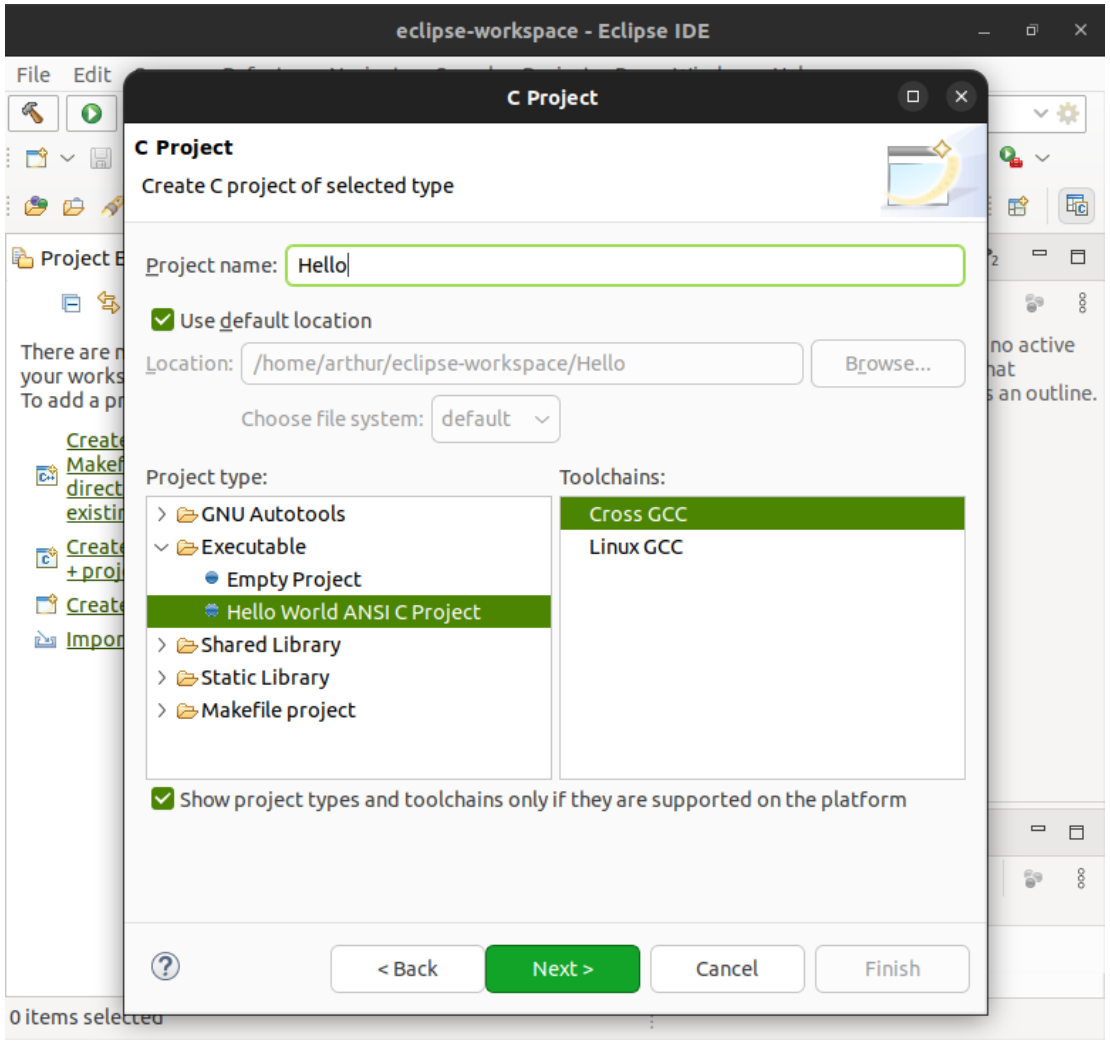
Creating Project

- Choose the ***C Project***
- Then click the ***Next*** to forward



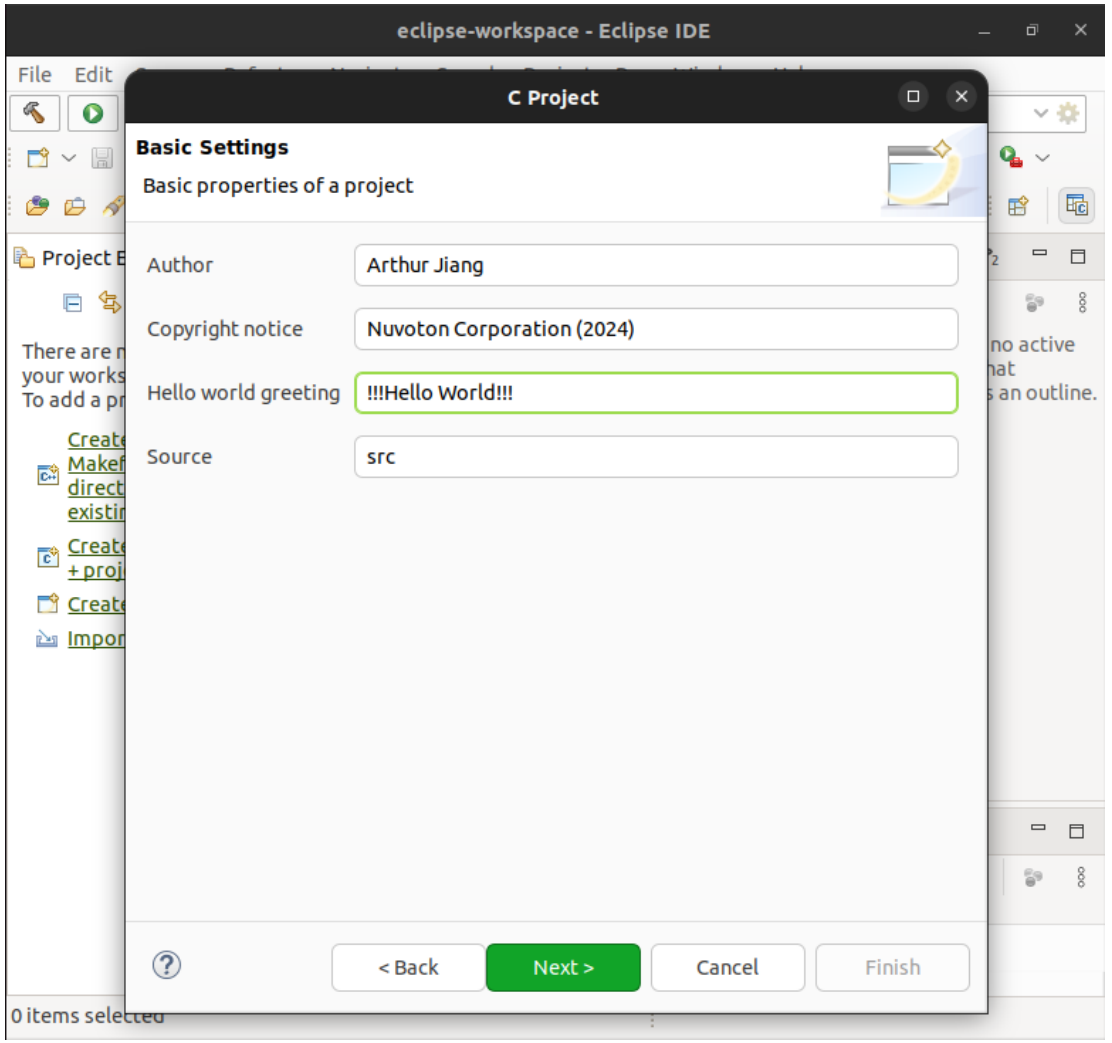
Creating Project

- Give a name ***Hello*** to the new project
- Choose the ***Project type*** to ***Executable***
- Select ***Toolchains*** as ***Cross GCC***
- Click the ***Next*** to proceed



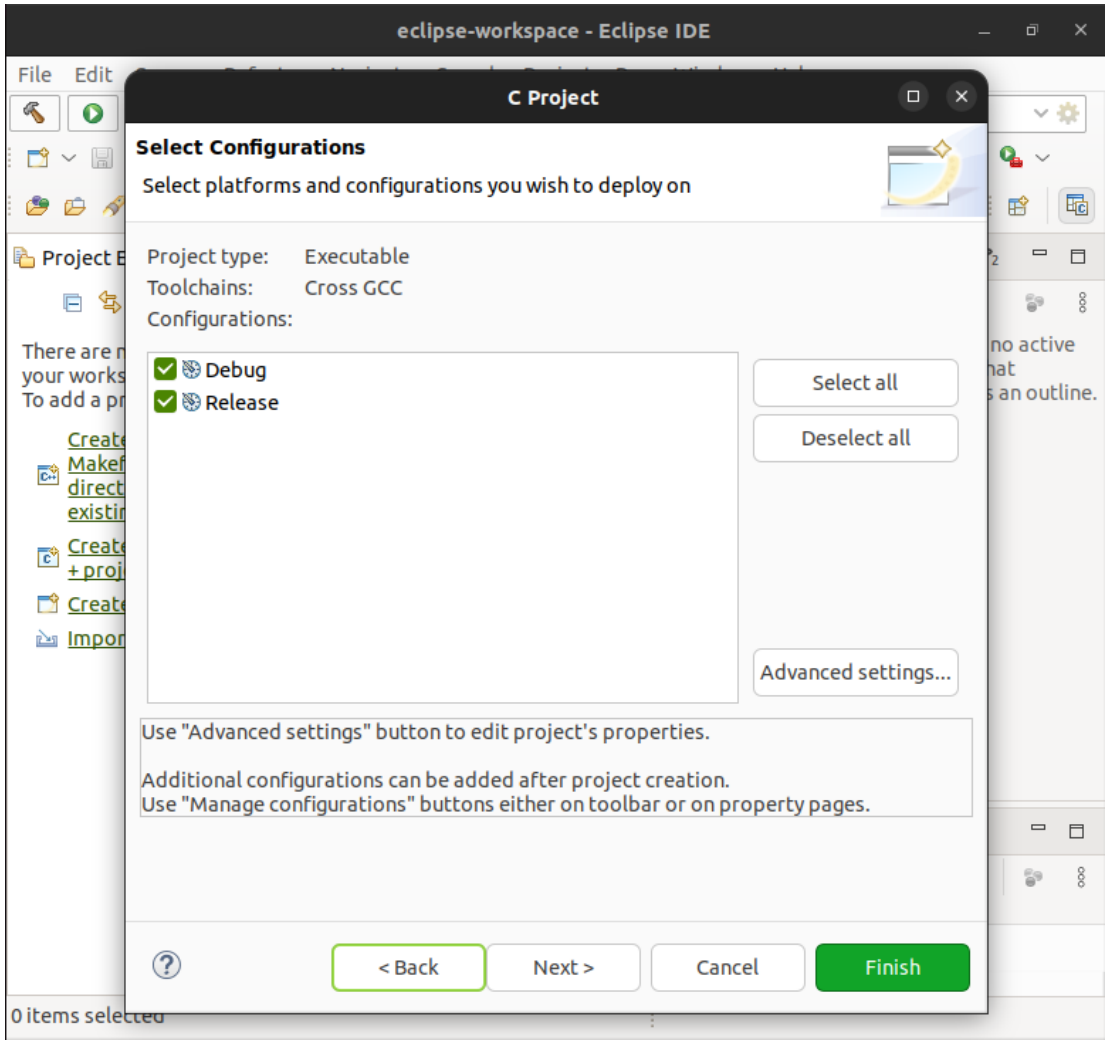
Creating Project

- Fill the ***Basic Settings*** with author, copyright notice and greeting.



Creating Project

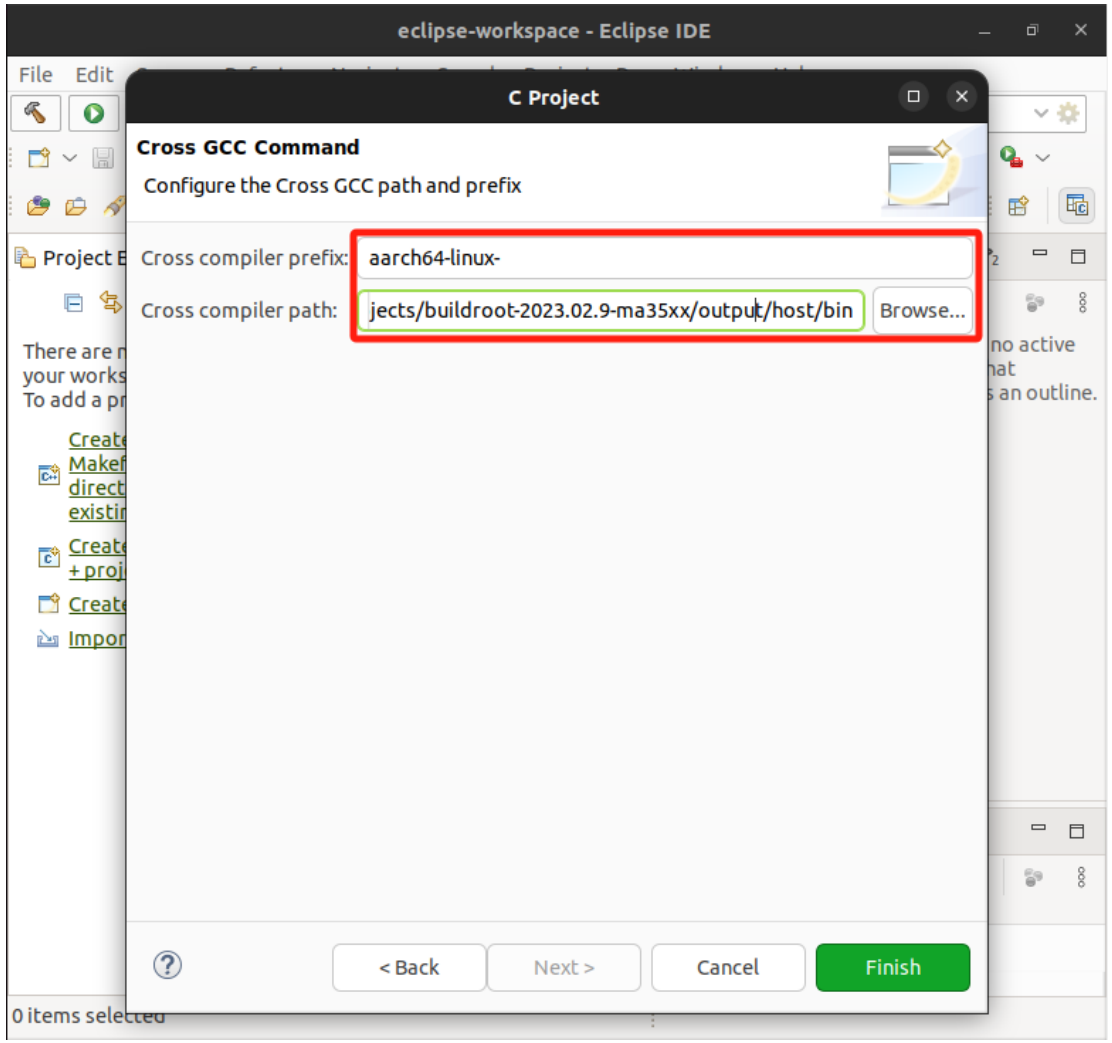
- Select both configurations ***Debug*** and ***Release***



Creating Project

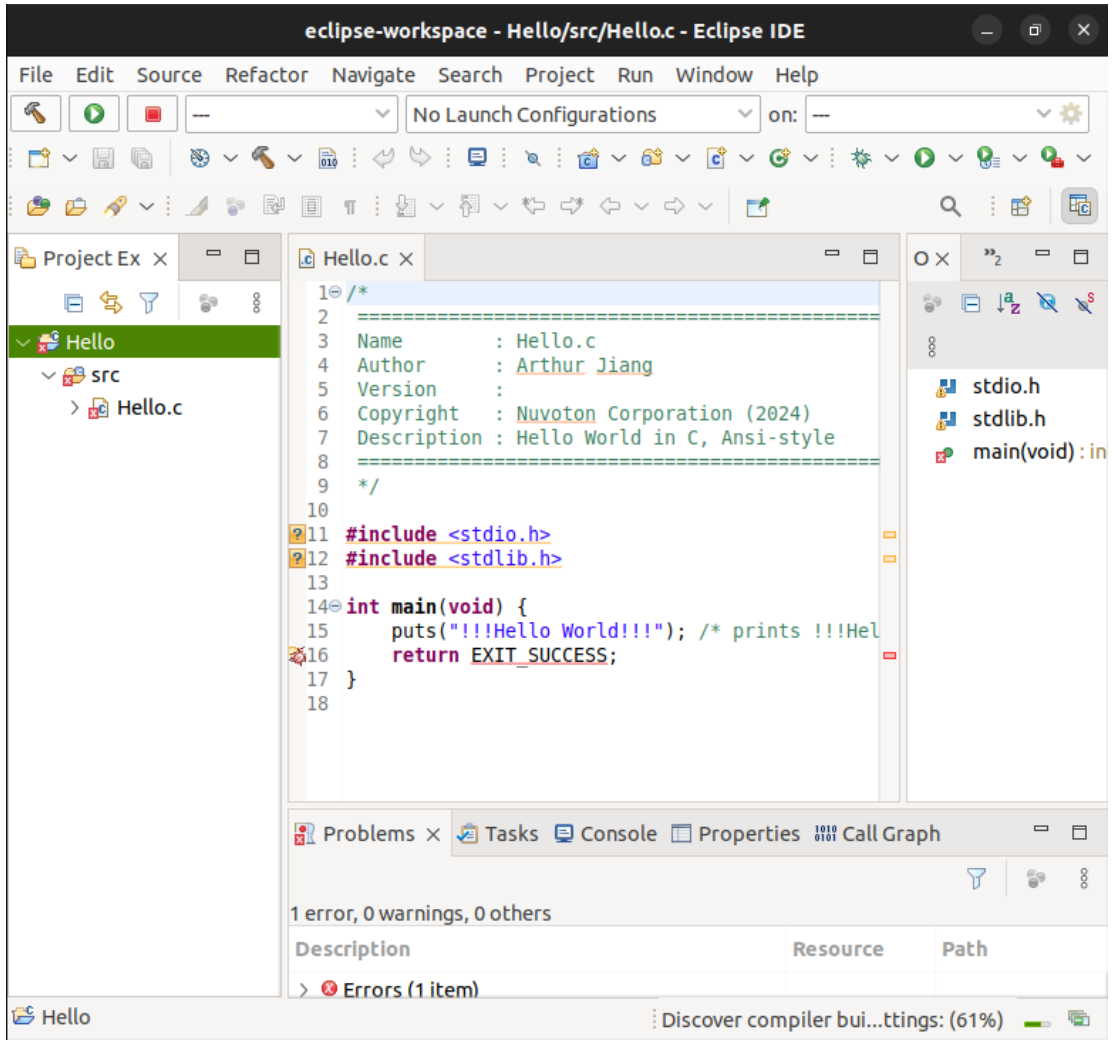
- Fill **Cross Compiler Prefix** with *aarch64-linux-*
- Fill **Cross Compiler Path** with *${BR2_DIR}/output/host/bin*

NOTE: **${BR2_DIR}** is the root directory of Buildroot. Do not use environment variable ${BR2_DIR} here, use the actual path of Buildroot instead.



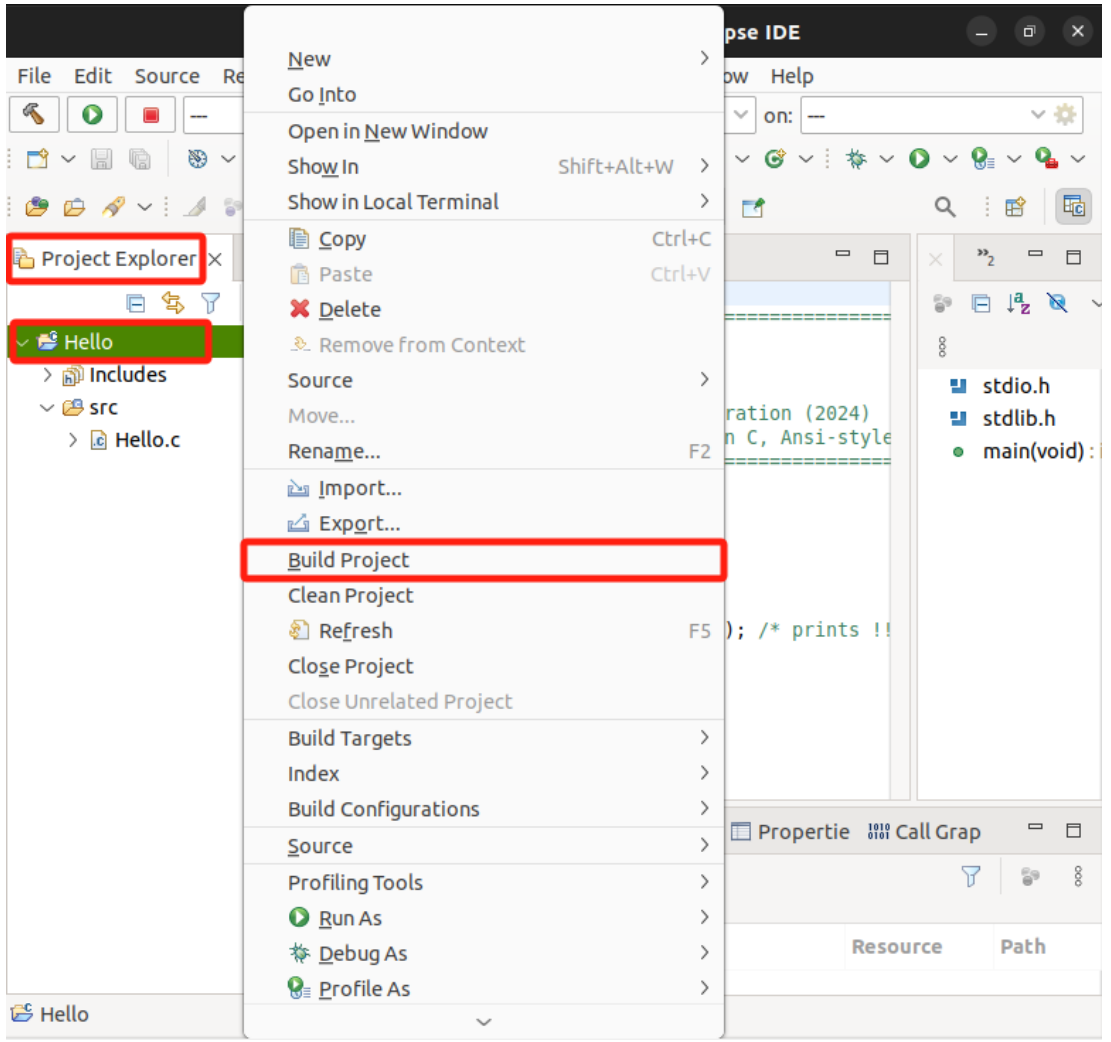
Building Project

- Before debugging the remote target, project must be built in ***Debug*** mode.



Building Project

- Browse the **Project Explorer**, select the project, right click to pop up the context menu, choose **Build Project** to build ***Debug*** executable target.



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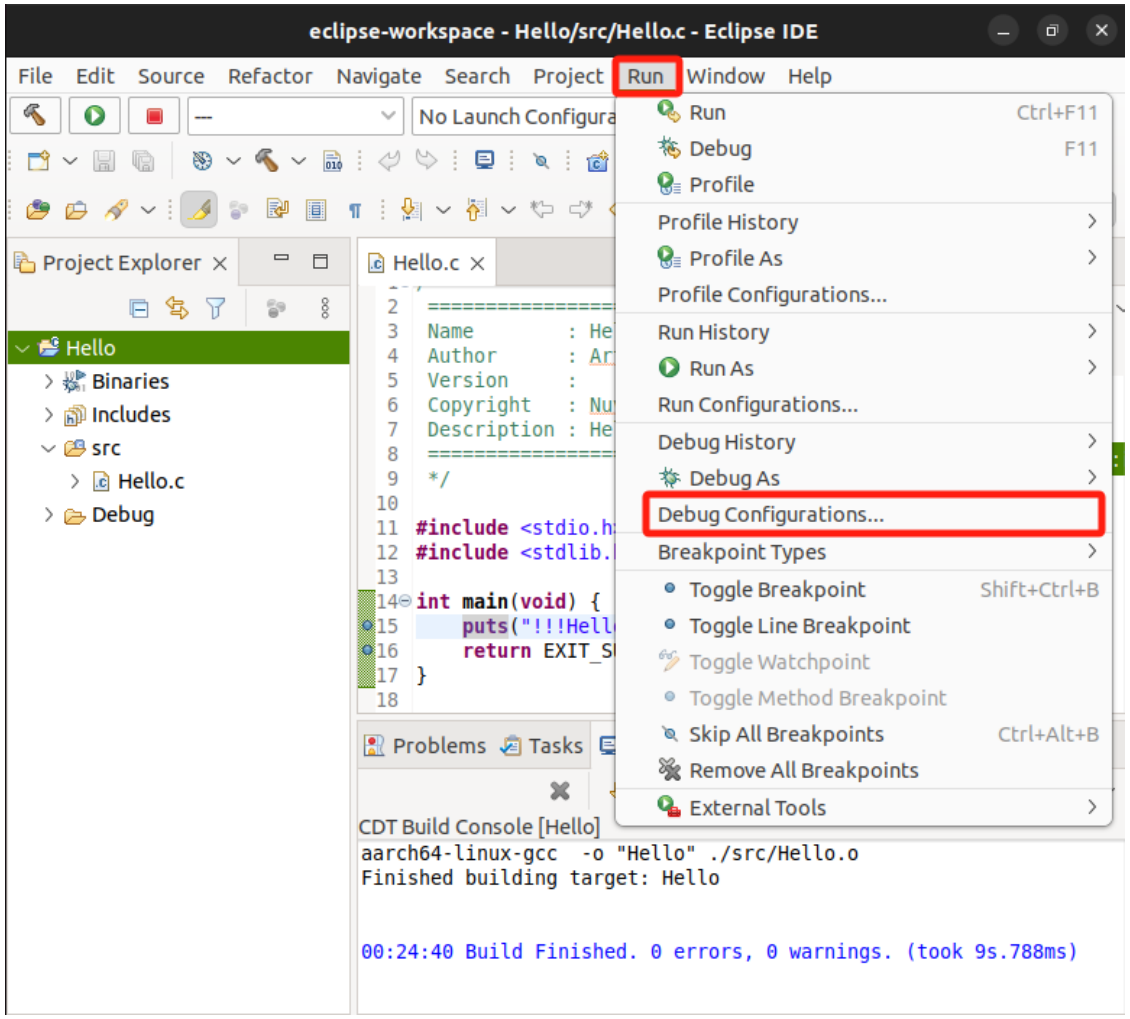
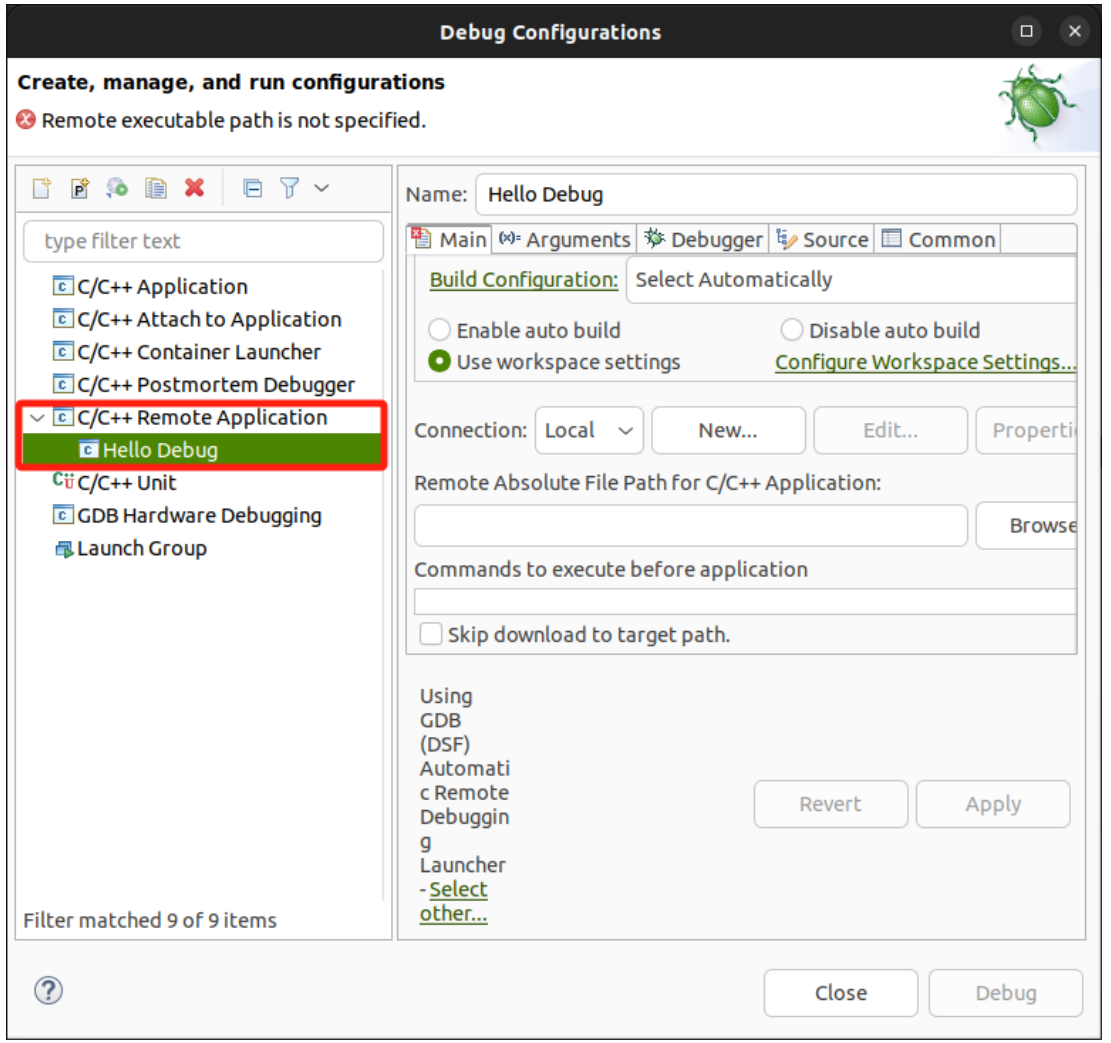
Configuring Debug

- Click the **Run** item in menu bar
- Select the **Debug Configurations**



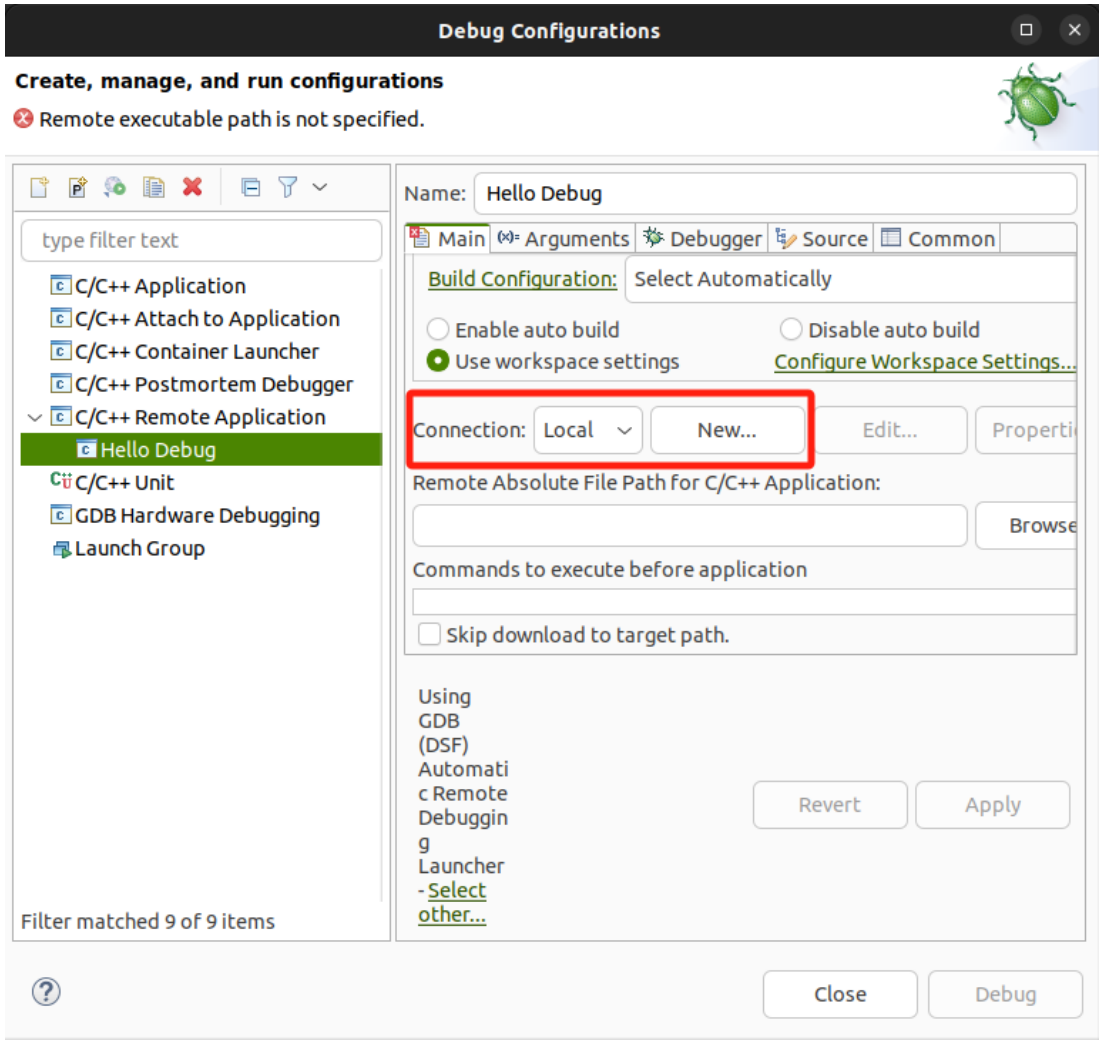
Configuring Debug

- Double click the **C/C++ Remote Application** to create a remote debugging configuration



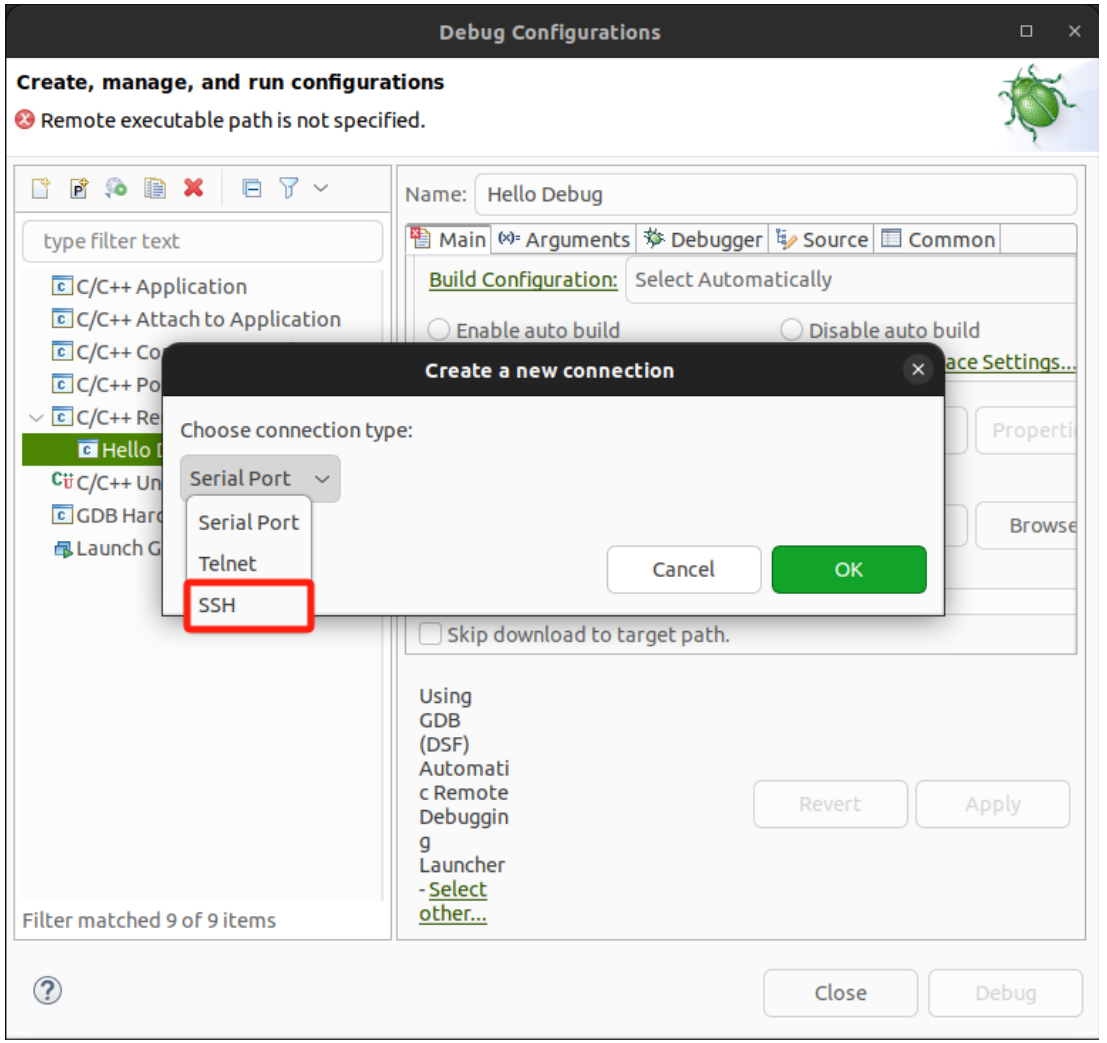
Configuring Debug

- Click the **New** button to create a SSH connection



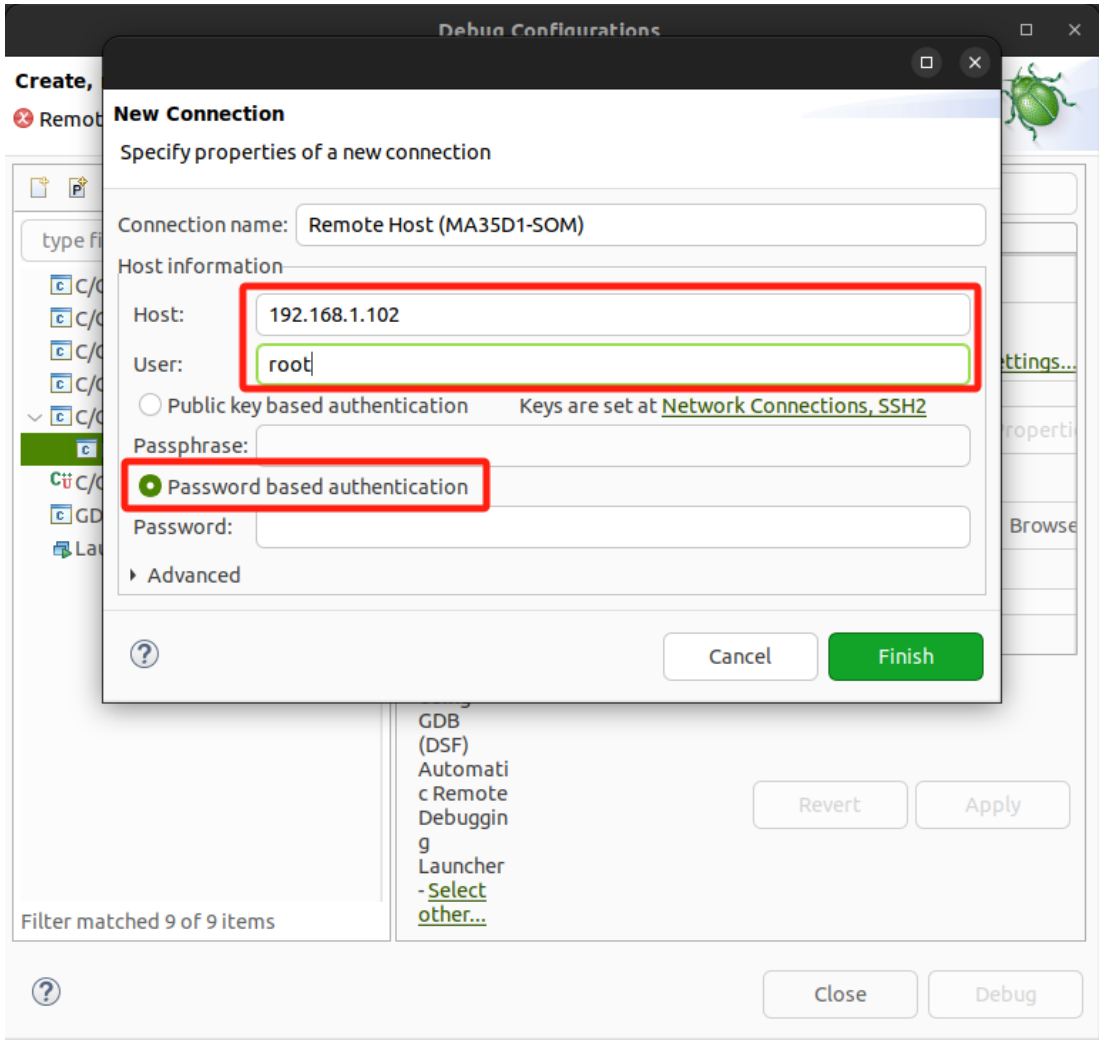
Configuring Debug

- Choose the connection type: **SSH**



Configuring Debug

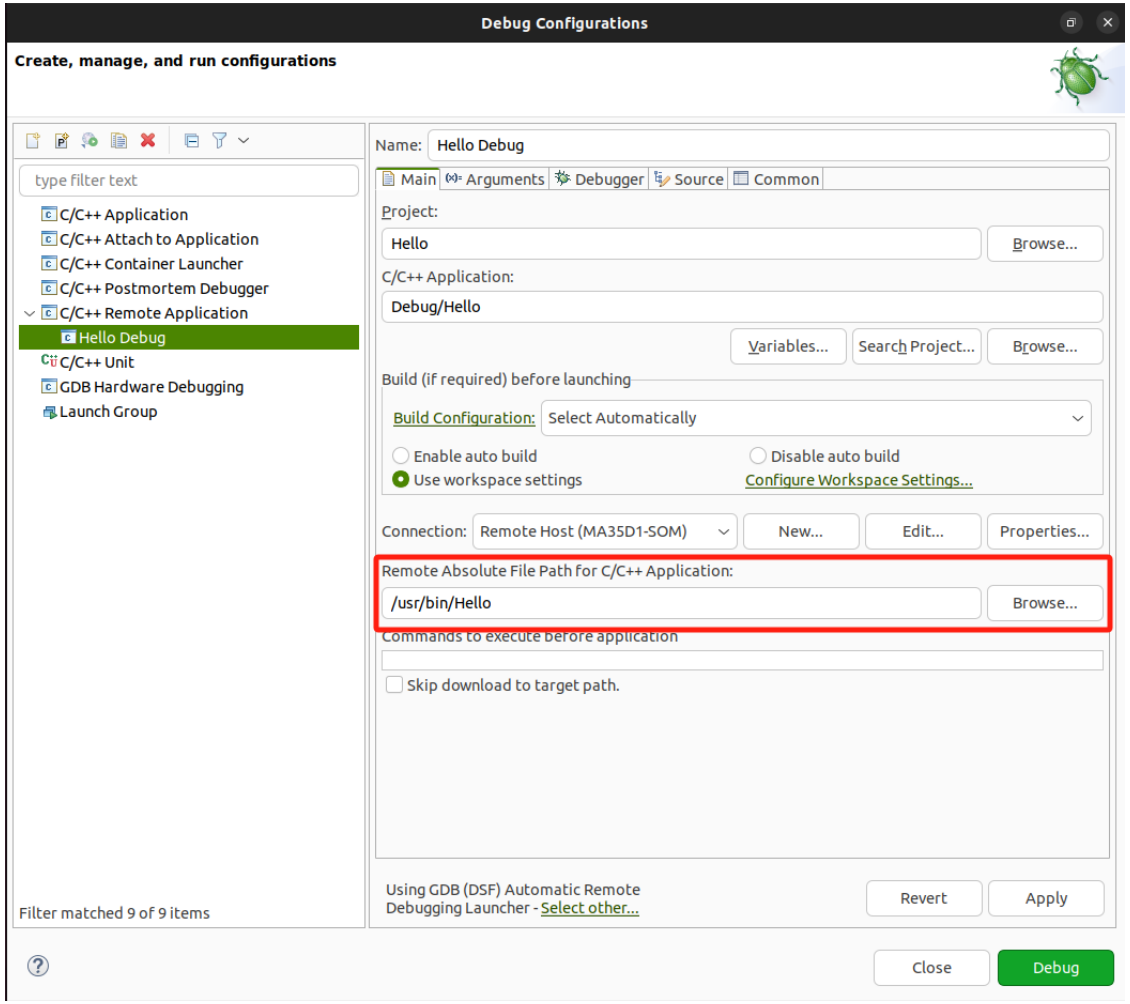
- Fill **Host** with actual IP address (*192.168.1.102*) of remote target board
- Fill the **User** with *root*
- Choose the **Password based authentication**
- Name the Connection to *Remote Host (MA35D1-SOM)*



Configuring Debug

- Click Browse to set **Remote Absolute File Path for C/C++ Application**.

  NOTE: This can test whether the *SSH connection* is lost.

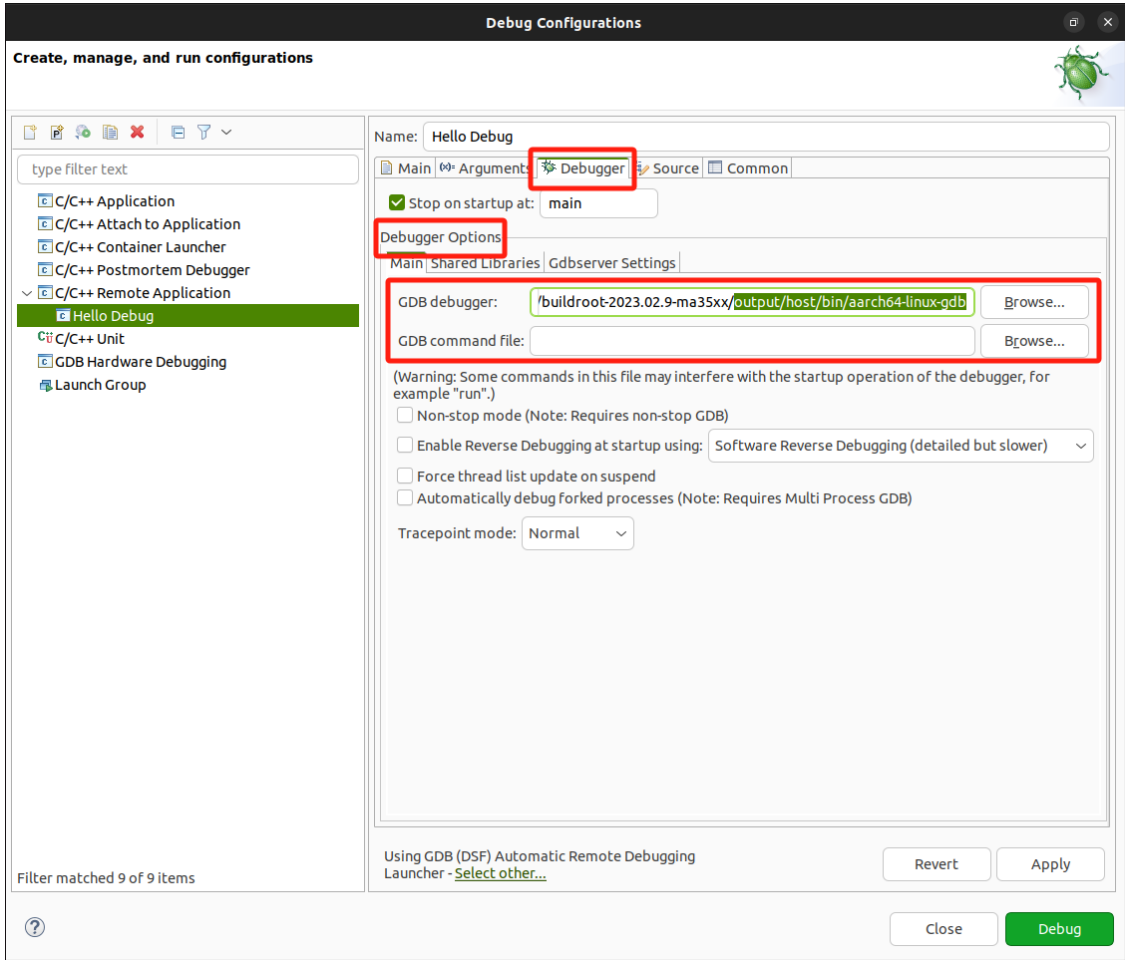


Configuring Debug

- In Tab page **Debugger**, under **Debugger Options**, set **GDB debugger** to *${BR2_DIR}/output/host/bin/aarch64-linux-gdb*

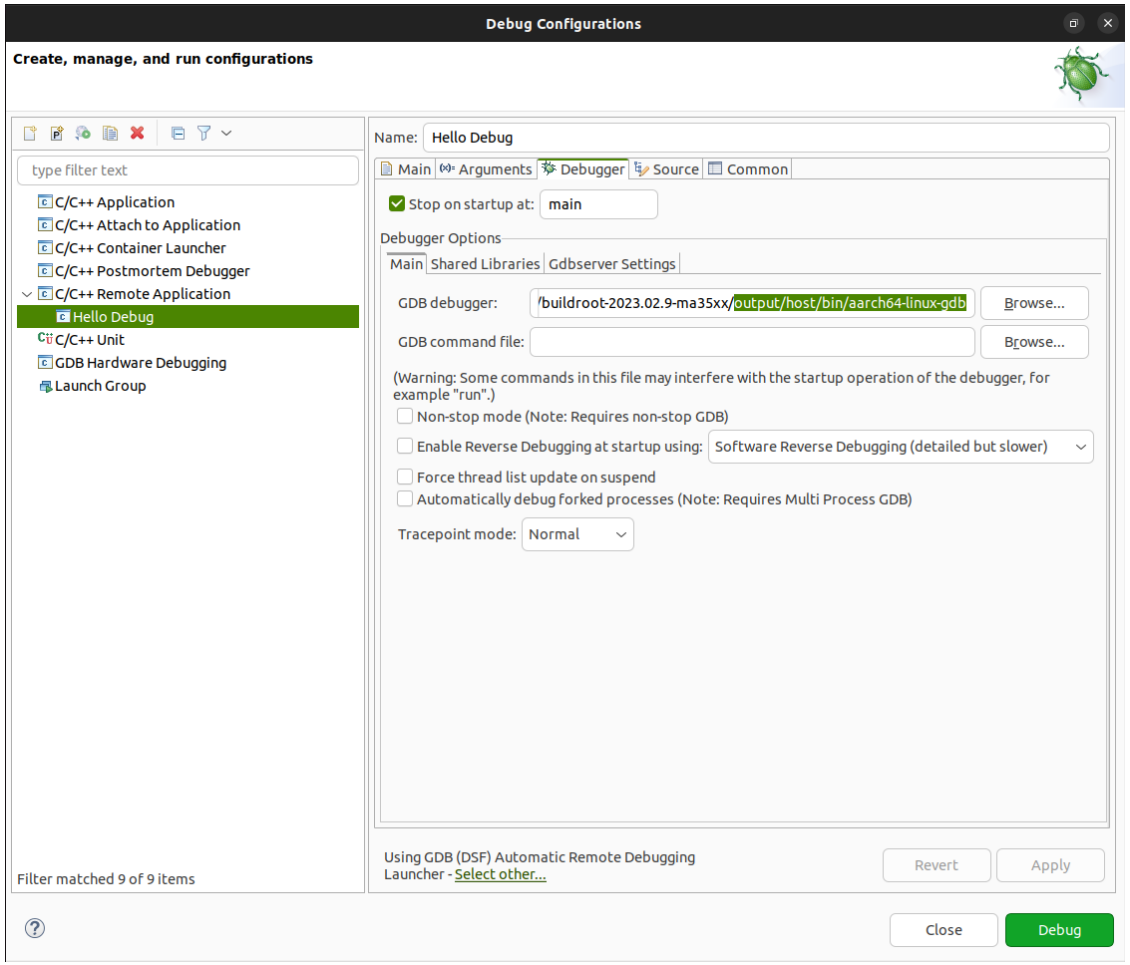
  NOTE: **${BR2_DIR}** is the root directory of Buildroot. Do not use ${BR2_DIR} here, use the actual path of Buildroot instead.

- Leave the **GDB command file** *blank*



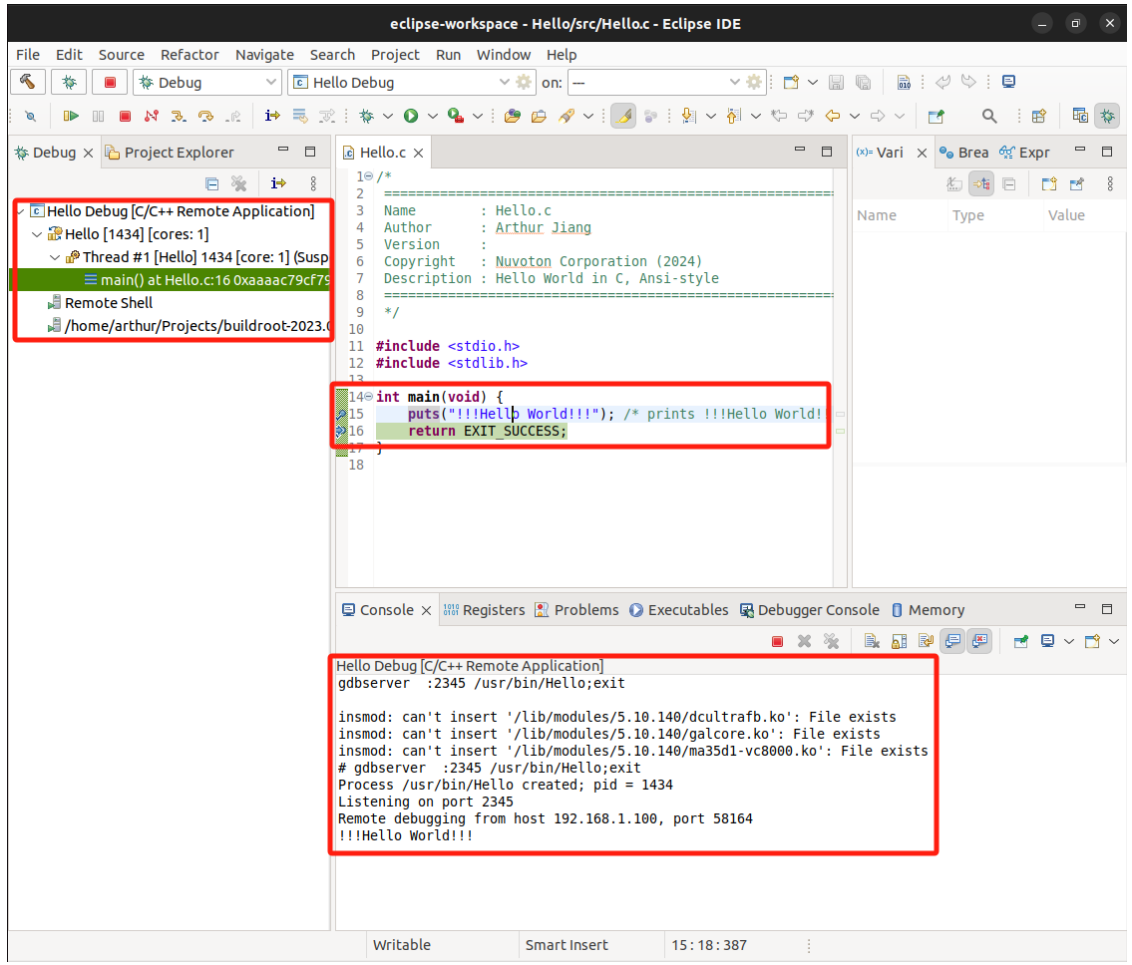
Beginning Debugging

- Click **Debug** to begin debugging



Debugging Target

- Double click a line of source code to toggle breakpoint



Joy of innovation

NUVOTON

谢谢

謝謝

Děkuji

Bedankt

Thank you

Kiitos

Merci

Danke

Grazie

ありがとう

감사합니다

Dziękujemy

Obrigado

Спасибо

Gracias

Teşekkür ederim

Cảm ơn