

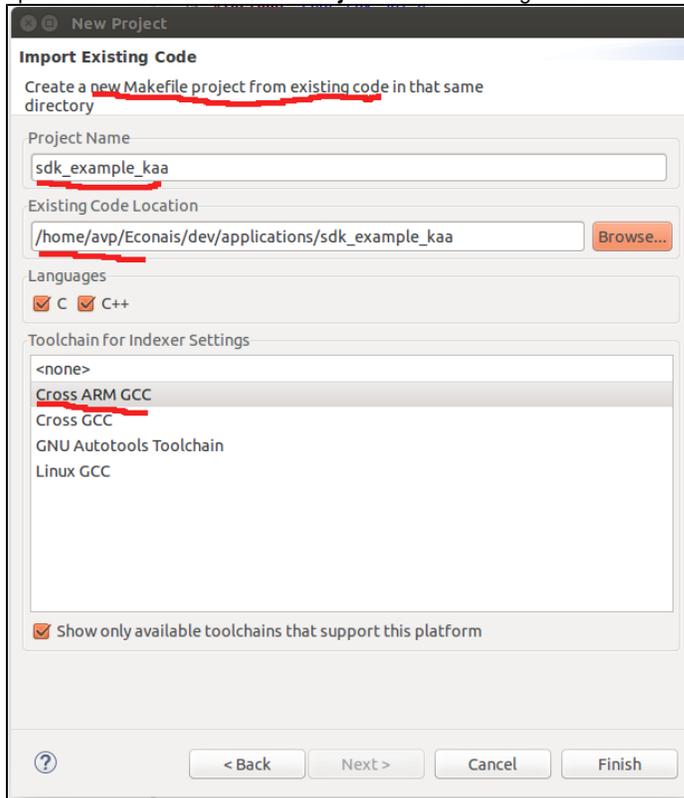
# Econais

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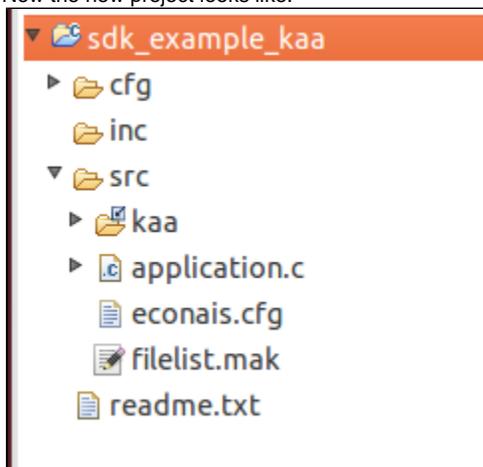
This page explains how to set up the development environment and create applications for Econais.

## Eclipse setup

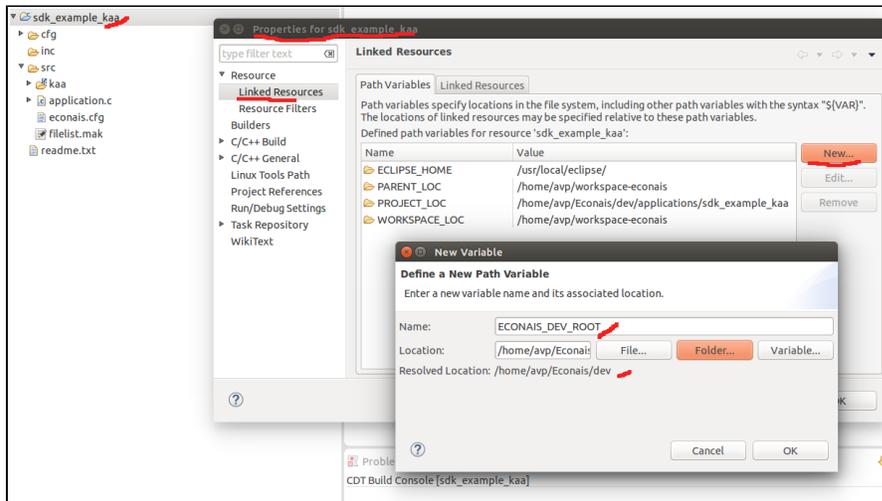
1. Install Eclipse ARM plugin.
2. Open **File => New => Makefile Project** with the existing source.



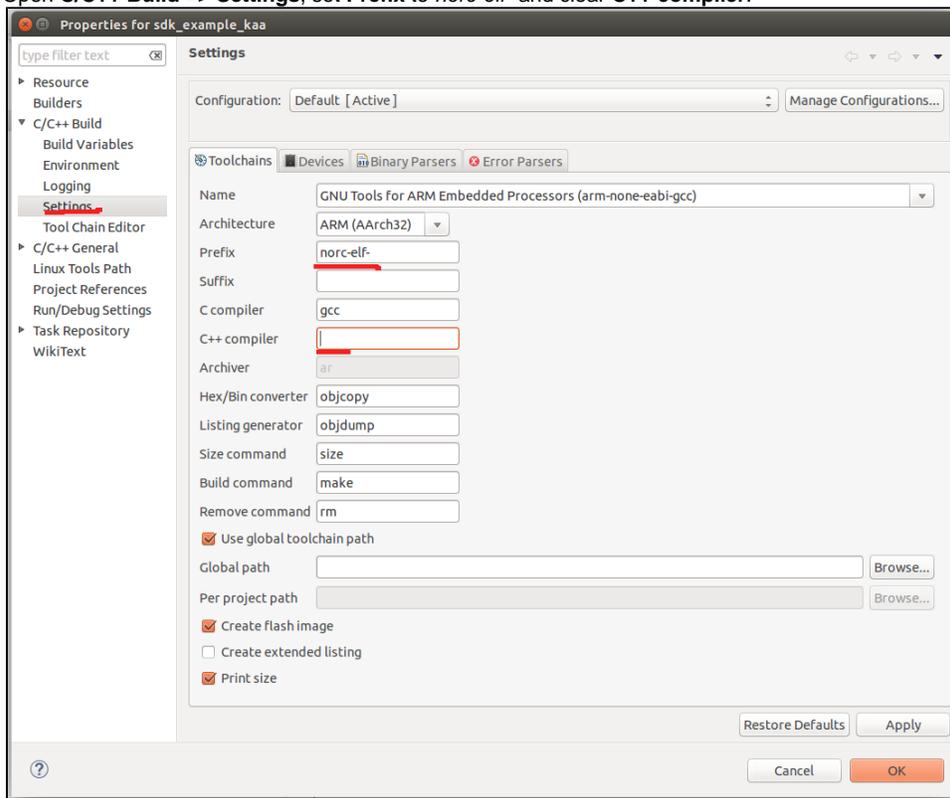
Now the new project looks like:



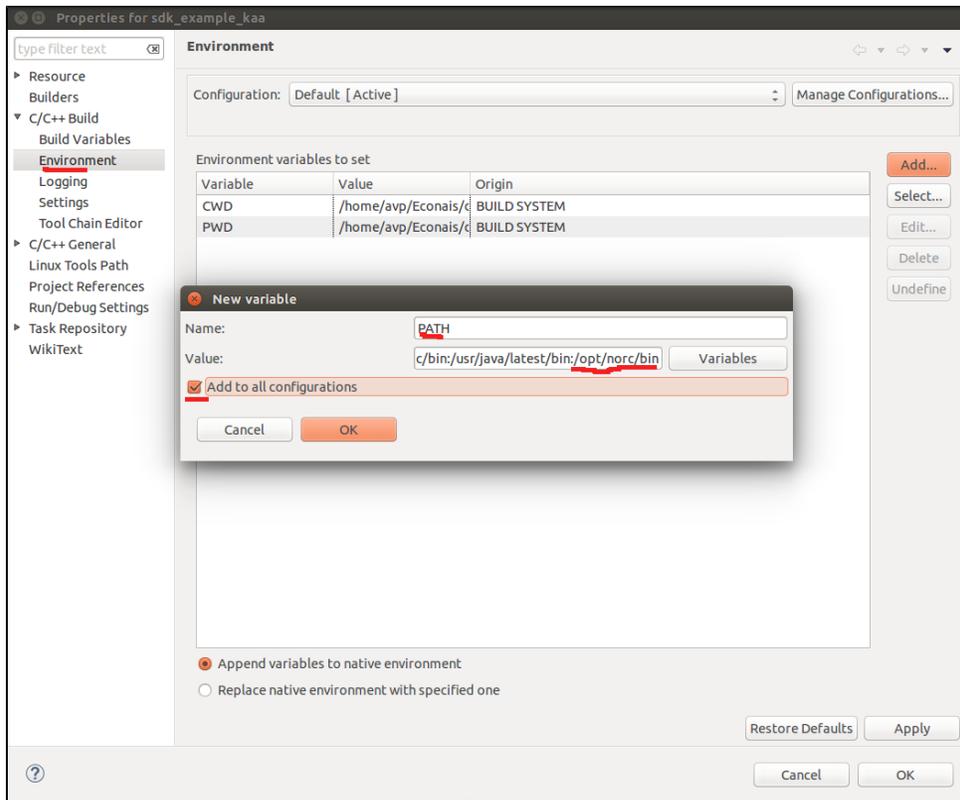
3. Open the project properties and add a new linked resource with the name *ECONAIS\_DEV\_ROOT* which points to the directory with the SDK root.



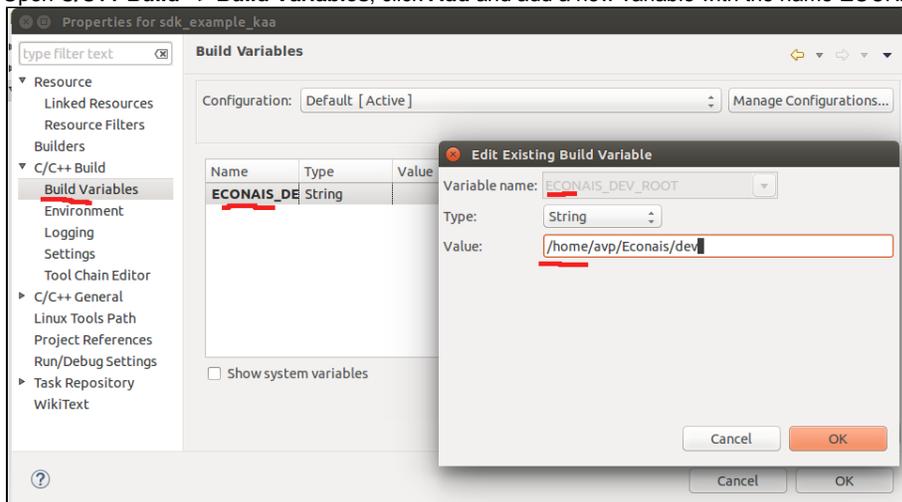
4. Open **C/C++ Build => Settings**, set **Prefix** to **norc-elf-** and clear **C++ compiler**.



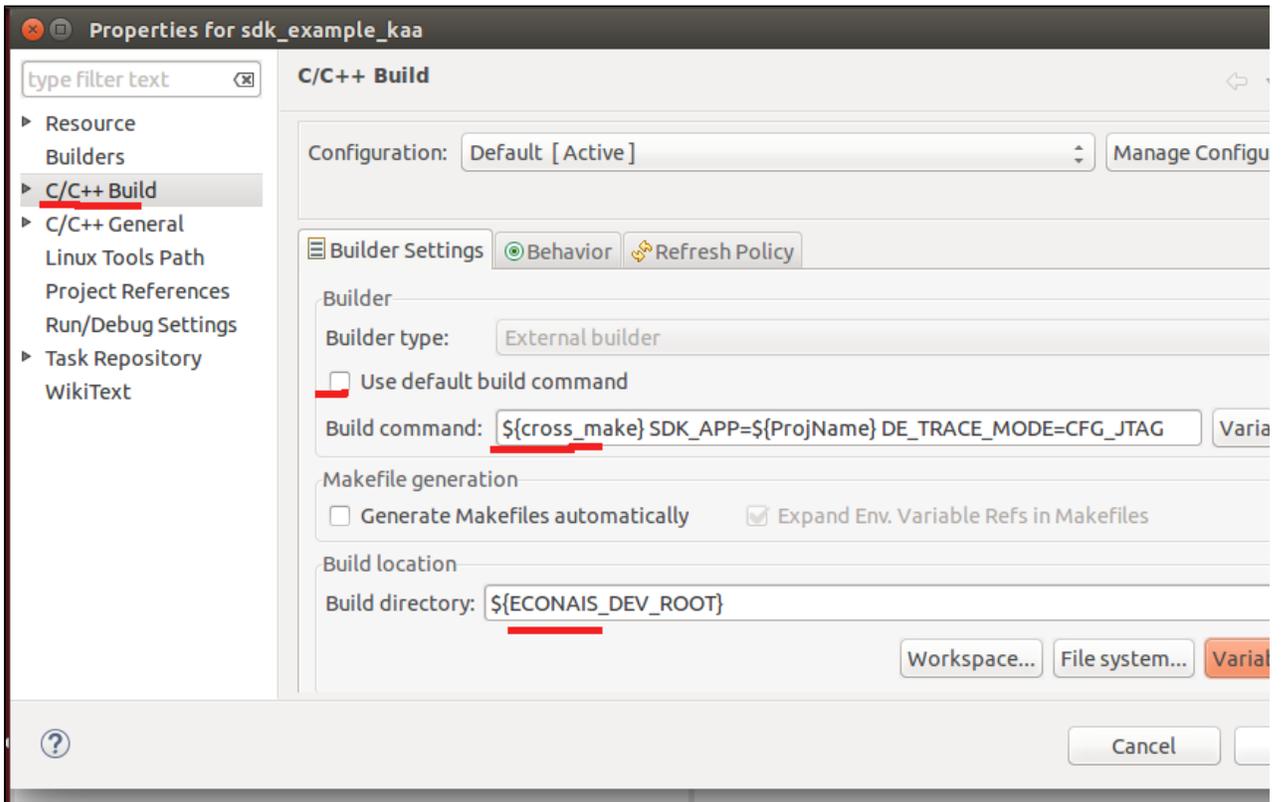
5. Open **C/C++ Build => Environment**, add or modify **PATH** to include **/opt/norc/bin**.



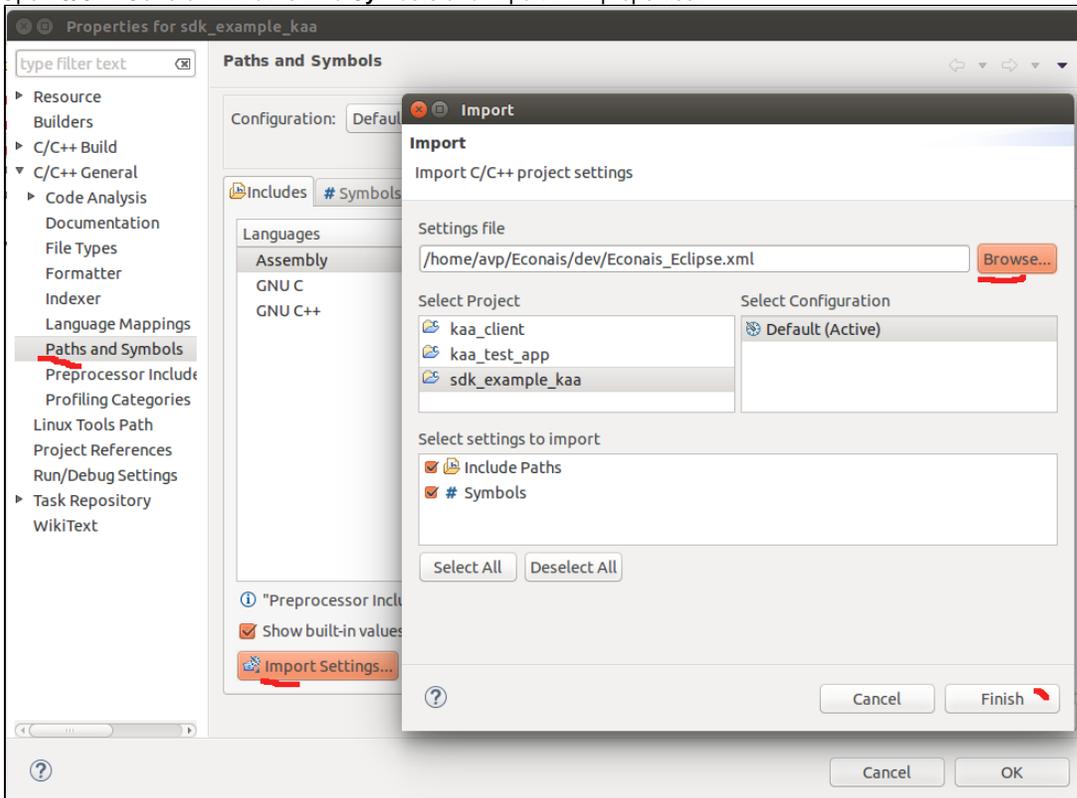
- Open **C/C++ Build => Build Variables**, click **Add** and add a new variable with the name *ECONAIS\_DEV\_ROOT*.



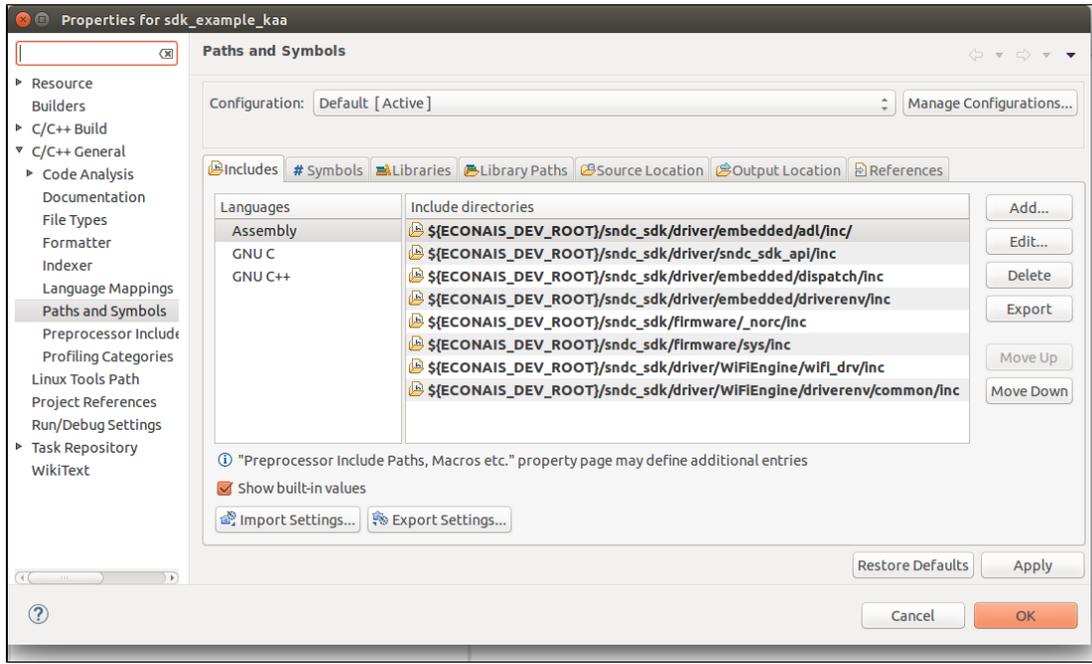
- Open **C/C++ Build**, set **Build Command** to `$(cross_make) SDK_APP=${ProjName} DE_TRACE_MODE=CFG_JTAG` and set **Build location**.



8. Open **C/C++ General** => **Paths And Symbols** and import XML properties.



Now **Paths and Symbols** looks like:



9. The settings file is attached:[Econais\\_Eclipse.xml](#)

## Econais specific TCP/IP issues with session initiation SYN packet

### Issue

When a new TCP/IP session initiated on the Econais EC19D board, it always starts from port 49153 and a SYN packet does not have the tsval tcp option value. So, on the next time when the Econais board is restarted, it sends the first same SYN packet which will be treated as re-transmission by the TCP stack of the server. The following wireshark dump illustrates the problem.

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The server treats this SYN packets drop as re-transmitted, therefore a new connection can't be established until the timeout expires and a new source port is chosen.

### Solution

Use a random source port on the new connection opening:

To open a new TCP/IP session on the Econais board, use randomly generated source ports.

## Building Kaa sample applications for Econais

To build a sample application for Econais, at first you need to set up the development environment as described in the official "Econais programming guide."

After the development environment setup is finished, proceed as follows:

1. Download an archive with a Kaa sample application and untar it.

```
$ cd /path_to_the_folder_with_the_archive
$ tar -xf./archive_with_application.tar.gz
```

2. Set the `ECONAIS_HOME_VAR` environment variable.

```
$ export ECONAIS_HOME_VAR=/path_to_the_econains_root_folder
```

where `path_to_the_econains_root_folder` is the path to the econais folder which is referenced in the Econais programming guide as `<root>`.

3. Go into the directory with the Kaa sample application and run the `deploy.sh` script. The script will create the folder with all necessary files inside the `<root>/applications` folder.

```
$ cd KaaSampleApplication  
$ ./deploy.sh
```

4. Go into the `<root>` folder and run the following `make` command.

```
$ cd <root>  
$ make SDK_APP=KaaSampleApplication
```