DVT IDE for Eclipse

My First e Language Project

The DVT Perspective

- Switch to the **DVT Perspective** from

  menu Window > Perspective > Open Perspective > Other... > DVT

- The DVT Perspective presents different Views (GUI components) around the Editor

Views

Types

Compile Order

Verification Hierarchy

Type Hierarchy

...

The Project Location

- You typically create a project in a folder that contains the source code files

It is not mandatory to create a project where the source files are.
All “outside the project” sources will be presented under DVT Auto-Linked.

- DVT creates **.dvt** and **.project** in the project location folder

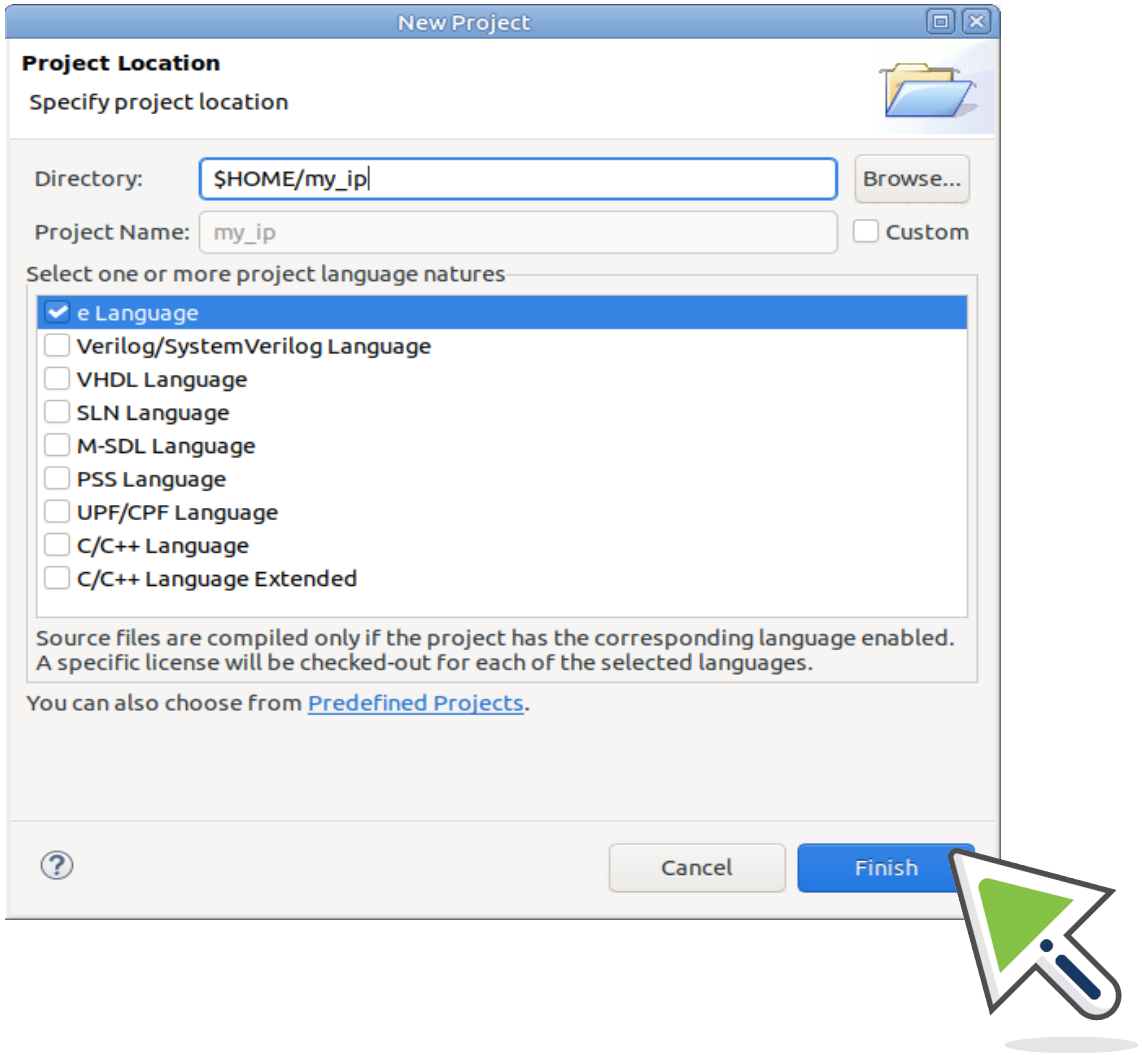
*The **.dvt** folder contains various DVT specific project settings.*
*The **.project** file indicates to Eclipse that a project exists in the folder.*

```
my_vip/
    sv/
        core/
        examples/
```

→

```
my_vip/
    .dvt
    .project
    sv/
        core/
        examples/
```

The New Project Wizard



- Invoke the wizard

  From menu File > New > DVT Project

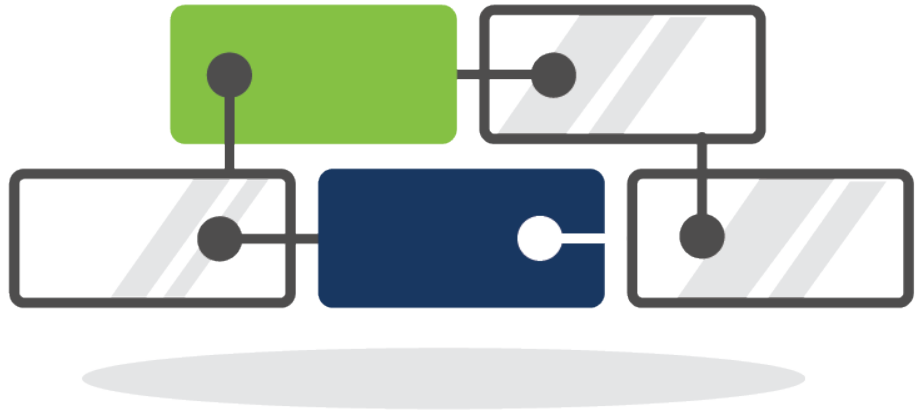
- Specify the project location

- Specify the project nature. If a project was already configured, that is if .dvt and .project already exist, the wizard recognizes the existing project.

You can open one of the Predefined Projects,
if you want to see how an example project is configured.

Build Configurations

- In order to provide advanced functionality (like error signaling, hyperlinks, autocomplete, design and UVM components hierarchy, etc.) DVT analyzes the source code files in your project. This analysis process is called **build**.
- In order to build, DVT uses the compilation arguments that you specify in a build file. The default build file is **.dvt/default.build**.
- By default DVT scans the project folder and automatically detects how to compile the source code files. This is specified by the **+dvt_init_auto** directive used by default in the build file.



The .build File Syntax

- In a .build file you can specify:

  Absolute paths or project root relative paths
  System variables like $var, ${var} or %var%
  +dvt_setenv+SPECMAN_PATH=<path> directives to configure the SPECMAN_PATH
  +define+<DEFINE>=<replacement> or -define <DEFINE>=<replacement> directives
  -f <path> or -F <path> to include a file containing more arguments

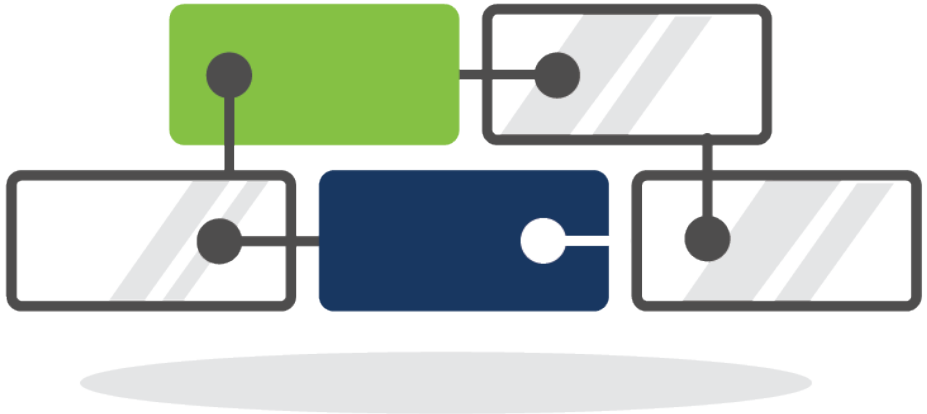
- For more options see:
  https://eda.amiq.com/documentation/eclipse/elang/toc/build-config/index.html

Build the Project

- Building a project means compiling and indexing all the source files in order to provide hyperlinks, autocomplete, class browsing ...

Full Build or Rebuild = compile all using directives from the current build file.
Rebuild Tests = compile only test files; faster than full build when adding/removing tests.
Incremental Build = compile changes; as you edit files, DVT incrementally builds the project.

- **After changing .dvt/*.build, you have to Rebuild the project from the toolbar button**



Check the Build

- The **Compile Order View** shows all the compiled files

> *You can open the Compile Order View from menu Window > Show View > Compile Order.*
> *It is typically located on the right side of the Editor, next to the Outline View.*

- The **Problems View** shows all the errors and warnings in your project
- It is recommended to walk through the errors in the following order:

> *Build Config Errors: file not found, imported file not found ...*
> *Syntax Errors: unrecognized action “whie” instead of “while” ...*
> *Semantic Errors: duplicate declarations, extending non existing types ...*
>
> *You can open the Problems View from menu Window > Show View > Problems.*
> *It is typically located below the Editor.*

Features Overview [1]

- **Hyperlinks:** in the editor press Ctrl and hover struct names, method names, and in general any identifier. A hyperlink appears. Click it to go to the definition. In addition to the hyperlink, a list presents more options, for example Show Usages.
- **Show Usages/Readers/Writers:** in the editor press Ctrl and hover an identifier. From the hyperlinks list chose Show Usages/Readers/Writers to see all places where a variable, function, struct, macro etc. is used/read/written.
- **Autocomplete:** in the editor Ctrl + Space triggers autocomplete.
  For example driver. <Ctrl+Space here> will show driver API.
- **Quick Fixes:** in the editor on a line with errors Ctrl +1 pops-up quick fix proposals to correct typos, to declare missing variables etc.
- **Rename Refactoring:** place the cursor over an identifier and right click > Refactor > Rename or Shift+Alt+R to rename and update all usages across the entire project.

Features Overview [2]

- **Type Hierarchy:** place the cursor over a struct name and press F4 to see the OOP inheritance. Ctrl + T is a quick way to navigate the OOP hierarchy – it works for structs and methods/TCMs
- **Verification Hierarchy:** place the cursor over a unit name and press Shift + F6 to see the unit instance tree
- **Layers:** place the cursor on a struct/unit/method/event and press Shift + F3 to see all its extensions

- **All Structs/Units/Enums/...:** menu Window > Show View > Types
- **All Macros:** menu Window > Show View > Macros
- **All TODOs/FIXMEs:** menu Window > Show View > Tasks
- **Code Templates:** menu Window > Show View > Code Templates

- **To quickly find a struct, unit, macro or compiled file:** Ctrl + Alt + Q
- **To quickly open a file:** Ctrl + Shift + R

Features Overview [3]

- **Diagrams:**
  - right click on a struct to get UML diagrams
  - other diagrams available from dedicated contexts: unit instace diagram / Bitfield for vr_ad registers
- **Semantic Search:** Ctrl + H to search for a struct, variable... both definitions and/or where it is used
- **Code Formatting:** press Ctrl+Shift+F to format the whole editor or selection
- **Toggle Comment:** Ctrl + / for current line or selection
- **Matching Begin – End:** double-click after curly or paren.
- **Column Selection:** Shift+Ctrl+A or from the main toolbar button

- **All Shortcuts:** press Ctrl + Shift + L to pop-up a list of all shortcuts

And many more, please contact support@amiq.com for a demo.

Advanced: Linked Resources [1]

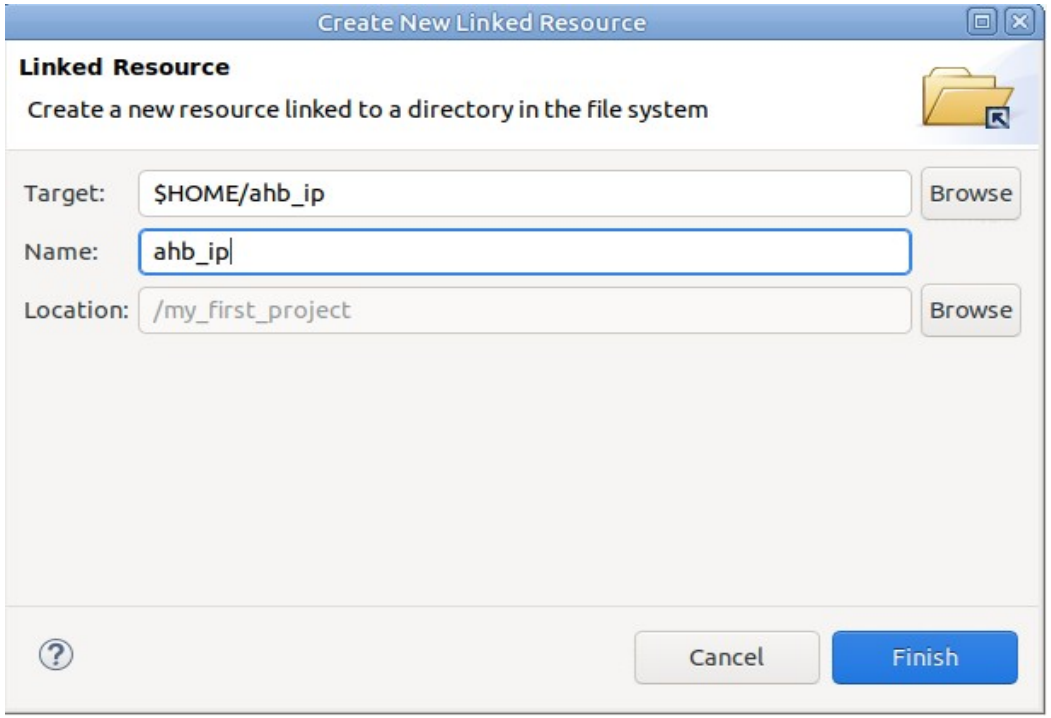
- Sometimes your source code is spread on the disk, not everything is under one “source code root” folder

- Files outside the Project Location folder (“external files”) are by default automatically brought during a full build under the **DVT Auto-Linked virtual folder**
- What you see there are the actual files, any change will be visible on the disk and the other way around

- The hierarchy under DVT Auto-Linked may be too deep. To bring the files “closer” you can:
  - Use **+dvt_auto+link_root+alias=/path/to/folder** directives in **default.build**
  - Use **Linked Resources**. Linked Resources are logical entities, no additional files are created on your disk. Their definition is stored in the **.project** file.

Advanced: Linked Resources [2]

Right click on Project > New > DVT Linked Resource, specify the target location and linked resource name.



Rebuild the project in order to avoid duplicate files in the newly created folder and DVT Auto-Linked.

More Information

- Demo Movies: **https://eda.amiq.com/tutorials**
- Cheatsheet for commonly used keyboard shortcuts: **https://eda.amiq.com/cheatsheets/DVT_Eclipse_IDE_Keyboard_Shortcuts.pdf**
- Step by step basic tutorial:

  https://eda.amiq.com/getting-started/My_First_e_Language_Project_with_the_DVT_Eclipse_IDE.pdf

  Please contact us for more training materials
- Features with snapshots:

  https://eda.amiq.com/documentation/eclipse/elang/toc/tips-and-tricks/index.html
- User Guide: **https://eda.amiq.com/documentation/eclipse/elang/index.html**
- Datasheet: **https://eda.amiq.com/datasheets/amiq_dvt_ide_datasheet.pdf**

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