Transpiling SASS, LESS, and SCSS to CSS

SASS, *LESS*, and *SCSS* code is not processed by browsers that work with CSS code. Therefore to be executed, *SASS*, *LESS*, or *SCSS* code has to be translated into CSS. This operation is referred to as *transpilation* and the tools that perform it are called *transpilers*.

IntelliJ IDEA supports integration with transpiler tools that translate *SASS*, *LESS*, and *SCSS* code into CSS.

In IntelliJ IDEA, transpiler configurations are called *File Watchers*. For each supported transpiler, IntelliJ IDEA provides a predefined *File Watcher* template. Predefined *File Watcher* templates are available at the IntelliJ IDEA level. To run a transpiler against your project files, you need to create a project-specific *File Watcher* based on the relevant template, at least, specify the path to the transpiler to use on your machine.

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Installing the SASS/SCSS transpiler

SASS and *SCSS* transpilers are managed through the *Ruby Gem manager*.

1. Download and install Ruby ⊡.

2. Specify a `path` variable for the folder where the Ruby executable file and the `gem.bat` file are stored. This lets you launch *Ruby* and *Gem Manager* from any folder and ensures that *Ruby* is successfully launched during transpilation.

3. Type one of the following commands at the command line prompt:

   ```
   gem install sass
   ```

   or

   ```
   gem install scss
   ```

   The tool is installed to the folder where Ruby executable file and the `gem.bat` file are stored.

Installing the LESS transpiler

The easiest way to install the LESS transpiler is to use the *Node Package Manager (npm)*, which is a part of Node.js ⊡.

Depending on the desired location of the LESS transpiler executable file, choose one of the following methods:

- Install the transpiler *globally* at the IntelliJ IDEA level so it can be used in any IntelliJ IDEA project.
- Install the transpiler in a specific project and thus restrict its use to this project.
- Install the transpiler in a project as a development dependency.

In either installation mode, make sure that the parent folder of the LESS transpiler is added to the `PATH` variable. This enables you to launch the transpiler from any folder.

IntelliJ IDEA provides user interface both for *global* and *project* installation as well as supports installation through the command line.

Installing the LESS transpiler globally

Global installation makes the transpiler available at the IntelliJ IDEA level so it can be used in any IntelliJ IDEA project. Moreover, during installation the parent folder of the transpiler is automatically added to the PATH variable, which enables you to launch the transpiler from any folder. To install the transpiler *globally*, do one of the following:

1. Run the installation from the command line in the *global* mode:

   1. Switch to the directory where *NPM* is stored or define a PATH variable for it so it is available from any folder, see Installing NodeJs.

   2. Type the following command at the command line prompt:

      ```
      npm install -g less
      ```

      The -g key makes the transpiler run in the *global* mode. Because the installation is performed through *NPM*, the LESS transpiler is installed in the npm folder. Make sure this parent folder is added to the PATH variable. This enables you to launch the transpiler from any folder.

      For more details on the *NPM* operation modes, see npm documentation 🔗. For more information about installing the LESS transpiler, see https://npmjs.org/package/less 🔗.

2. Run *NPM* from IntelliJ IDEA using the **Node.js and NPM** page of the **Settings** dialog box.

   1. Open the project settings and then click **Node.js and NPM**.

   2. On the **Node.js and NPM** page that opens, the **Packages** area shows all the Node.js-dependent packages that are currently installed on your computer, both at the *global* and at the *project* level. Click ➕.

   3. In the **Available Packages** dialog box that opens, select the less package.

   4. Select the **Options** check box and type -g in the text box next to it.

   5. Optionally specify the product version and click **Install Package** to start installation.

Installing the LESS transpiler in a project

Installing the transpiler in a specific project restricts its use to this project. To run *project* installation, do one of the following:

- In the command line mode, switch to the project root folder and type the following command at the command line prompt:

  ```
  npm install less
  ```

- Run *NPM* from IntelliJ IDEA using the **Node.js and NPM** page of the **Settings** dialog box.

  1. Open the project settings and click **Node.js and NPM**.

  2. On the **Node.js and NPM** page that opens, the **Packages** area shows all the Node.js-dependent packages that are currently installed on your computer, both at the *global* and at the *project* level. Click ╋.

  3. In the **Available Packages** dialog box that opens, select the less package.

  4. Optionally specify the product version and click **Install Package** to start installation.

Project level installation is helpful and reliable in template-based projects of the type *Node Boilerplate* or *Node.js Express*, which already have the node_modules folder. The latter is important because *NPM* installs the LESS transpiler in a node_modules folder. If your project already contains such folder, the LESS transpiler is installed there.

Projects of other types or *empty* projects may not have a node_modules folder. In this case *npm* goes upwards in the folder tree and installs the LESS transpiler in the first detected node_modules folder. Keep in mind that this detected node_modules folder may be *outside* your current project root.

Finally, if no node_modules folder is detected in the folder tree either, the folder is created right under the current project root and the LESS transpiler is installed there.

In either case, make sure that the parent folder of the LESS transpiler is added to the PATH variable. This enables you to launch the transpiler from any folder.

Creating a File Watcher

IntelliJ IDEA provides a common procedure and user interface for creating *File Watchers* of all types. The only difference is in the predefined templates you choose in each case.

1. Install and enable the *File Watchers* repository plugin.

   The plugin is <u>not</u> bundled with IntelliJ IDEA, but it is available from the IntelliJ IDEA plugin repository ⬈. Once enabled, the plugin is available at the IDE level, that is, you can use it in all your IntelliJ IDEA projects. See Installing, Updating and Uninstalling Repository Plugins and Enabling and Disabling Plugins for details.

2. To start creating a *File Watcher*, open the **Project Settings** by choosing **File | Settings** on the main menu, and then click **File Watchers**. The File Watchers page that opens, shows the list of *File Watchers* that are already configured in the project.

3. Click the **Add** button ➕ or press `Alt+Insert`. Depending on the tool you are going to use, choose the appropriate predefined template from the pop-up list:

   - **LESS**
   - **SASS**
   - **SCSS**

4. In the **Program** text box, specify the path to the compiler executable file or archive depending on the chosen predefined template.

   - `lessc.cmd` for **LESS** If you installed the tool through the *Node Package Manager*, IntelliJ IDEA locates the required file itself at `<node.js_home>/node_modules/bin/lessc.cmd` and fills in the field automatically. Otherwise, type the path manually or click the **Browse** button 🔲 and choose the file location in the dialog box that opens.

   - `sass.bat` for **SASS**

   - `scss.bat` for **SCSS**

   If you installed the *SASS* and *SCSS* tools through *Ruby*, IntelliJ IDEA locates the required files itself at `<ruby_home>/bin/sass.bat` `<ruby_home>/bin/scss.bat` respectively and fills in the field automatically. Otherwise, type the path manually or click the **Browse** button 🔲 and choose the file location in the dialog box that opens.

5. Proceed as described on page Using File Watchers.

Transpiling the code

When you open a TypeScript file, IntelliJ IDEA checks whether an applicable file watcher is available in the current project. If such file watcher is configured but disabled, IntelliJ IDEA displays a pop-up window that informs you about the configured file watcher and suggests to enable it.

If an applicable file watcher is configured and enabled in the current project, IntelliJ IDEA starts it automatically upon the event specified in the New Watcher dialog.

- If the **Immediate file synchronization** check box is selected, the *File Watcher* is invoked as soon as any changes are made to the source code.

- If the **Immediate file synchronization** check box is cleared, the *File Watcher* is started upon save (**File | Save All**, `Ctrl+S`) or when you move focus from IntelliJ IDEA (upon frame deactivation).

IntelliJ IDEA creates a separate file with the generated output. The file has the name of the source *SASS*, *LESS*, or *SCSS* file and the extension `css`. The location of the generated files is defined in the **Output paths to refresh** text box of the New Watcher dialog. However, in the **Project Tree**, they are shown under the source file which is now displayed as a node.

See Also

Procedures:

- Using File Watchers
- Minifying CSS

Reference:

- File Watchers
- New Watcher Dialog

External Links:

- http://sass-lang.com/ 🖅
- http://lesscss.org/ 🖅
- http://www.nongnu.org/scss/ 🖅

Web Resources:

- Developer Community 🖅