
Bldr.io Documentation

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Bldr, in the simplest terms, is a task runner, and an awesome one at that. It was written with simpler configs in mind. If you are used to build systems, you've probably seen some pretty complicated build files, and they were probably written in xml that is clunky and a pain to maintain.

Well, here's one written for Bldr using yaml (json and php are also supported):

This is a sample configuration. Your project may not have the dependencies required to run this configuration.

```
bldr:
  name: bldr-io/bldr
  description: Super Extensible and Awesome Task Runner

  profiles:
    default:
      description: Development Profile
      jobs:
        - prepare
        - lint
        - phpcs
        - test

  jobs:
    prepare:
      description: Cleans up old builds and prepares the new one
      tasks:
        -
          type: filesystem:remove
          continue
          files: [build/coverage, build/logs]
        -
          type: filesystem:mkdir
          files: [build/coverage, build/logs]
        -
          type: filesystem:touch
          files: [build/coverage/index.html]
        -
          type: exec
          executable: composer
          arguments: [install, --prefer-dist]
    lint:
      description: Lints the files of the project
      tasks:
        -
          type: apply
          src:
            - { path: [src, tests], files: *.php, recursive: true } # Checks src and tests
          executable: php
          arguments: [-l]
    phpcs:
      description: Runs the PHP Code Sniffer
      tasks:
        -
          type: exec
          executable: php
          arguments:
            - bin/phpcs
            - -p
            - --standard=build/phpcs.xml
```

```
        - --report=checkstyle
        - --report-file=build/logs/checkstyle.xml
        - src/

test:
  description: Runs the PHPUnit Tests
  tasks:
    -
      type: exec
      executable: php
      arguments:
        - bin/phpunit
        - --testdox
        - --coverage-text=php://stdout
```

And here's the output:



The screenshot shows a terminal window with a dark background. At the top, the text 'B L D R . I O' is displayed in a large, outlined, monospace font. Below this, there are two colored boxes: a blue one with the text 'Building the 'bldr-io/bldr' project - Build System with YAML in mind -' and a yellow one with 'Using the 'default' profile - Development Profile -'. The main part of the terminal shows the output of the 'prepare' task, which includes cleaning up old builds, creating new build directories, touching an index.html file, and running composer to install dependencies. Finally, the 'lint' task is shown, which runs a syntax check on several PHP files in the 'src' directory, reporting no errors.

```
B L D R . I O

Building the 'bldr-io/bldr' project
- Build System with YAML in mind -

Using the 'default' profile
- Development Profile -

Running the prepare task
> Cleans up old builds and prepares the new one

[prepare] Deleting build/coverage
[prepare] Deleting build/logs

[prepare] Creating build/coverage
[prepare] Creating build/logs

[prepare] Touching build/coverage/index.html

[prepare] composer
[prepare] Loading composer repositories with package information
[prepare] Installing dependencies (including require-dev) from lock file
[prepare] Nothing to install or update
[prepare] Generating autoload files

Running the lint task

[lint] /usr/bin/php
[lint] No syntax errors detected in src/Call/AbstractCall.php
[lint] /usr/bin/php
[lint] No syntax errors detected in src/Call/CallInterface.php
[lint] /usr/bin/php
[lint] No syntax errors detected in src/Command/BuildCommand.php
[lint] /usr/bin/php
[lint] No syntax errors detected in src/Command/InitCommand.php
[lint] /usr/bin/php
[lint] No syntax errors detected in src/Helper/DialogHelper.php
```

```
[prepare] Touching build/coverage/index.html
[prepare] composer
[prepare] Loading composer repositories with package information
[prepare] Installing dependencies (including require-dev) from lock file
[prepare] Nothing to install or update
[prepare] Generating autoload files

Running the lint task

[lint] /usr/bin/php
[lint] No syntax errors detected in src/Call/AbstractCall.php
[lint] /usr/bin/php
[lint] No syntax errors detected in src/Call/CallInterface.php
[lint] /usr/bin/php
[lint] No syntax errors detected in src/Command/BuildCommand.php
[lint] /usr/bin/php
[lint] No syntax errors detected in src/Command/InitCommand.php
[lint] /usr/bin/php
[lint] No syntax errors detected in src/Helper/DialogHelper.php

Running the phpcs task
> Runs the PHP Code Sniffer

[phpcs] /usr/bin/php
[phpcs] .....
[phpcs]

Running the test task
> Runs the PHPUnit Tests

[test] /usr/bin/php
[test] PHPUnit 4.0.12 by Sebastian Bergmann.
[test]
[test] Configuration read from /Users/ascherer/Projects/bldr/phpunit.xml.dist
[test]
[test] The Xdebug extension is not loaded. No code coverage will be generated.
[test]
[test] BldrTestsApplication
[test] [x] Constructor
[test] [x] Get dispatcher
[test]

Build Success!
```

For now (while we are still working on the documentation), this will hopefully serve as ample documentation.

1.1 Installation

This should be installed via composer, for now. You can either install it globally, or in your own project. If it is the first time you globally install a dependency then make sure you include `~/composer/vendor/bin` in `$PATH` as shown [here](#).

Global Setup

```
$ composer global require bldr-io/bldr=~7.0.0 dflydev/embedded-composer=dev-master@dev composer/composer
# Or
$ curl -sS http://bldr.io/installer | php
$ mv bldr.phar /usr/bin/bldr
# You can also install specific versions (Anything greater or equal to 5.0.0)
# Example: 5.0.0, 5.0.1, stable (latest tag in github), dev (last commit in master)
$ curl -sS http://bldr.io/installer | php -- --version=dev # Stable by default
```

Project Setup

It is suggested that you use the phar, as you can get conflicts with dependencies by including it in your project or globally!

```
$ curl -sS http://bldr.io/installer | php
# Or
$ composer require bldr-io/bldr "~7.0.0"
```

And that's it! From here, you should be able to run `bldr` if you set it up globally, or `./bin/bldr` or `php ./vendor/bin/bldr` if you set it up in your project.

1.2 Usage

To start, you are going to want to generate a `.bldr.yml` file for your project. This (for now) has to be done manually, but it's pretty simple.

Create a `.bldr.yml` (`.dist`) file:

```
bldr:
  name: some/name
  description: A description about the project # (Not Required)
  profiles: # A list of profiles that can be ran with `./bldr.phar run`
    someJob:
      description: Gets ran when `./bldr.phar run someJob` is called
      jobs:
        - foo
    someOtherJob:
      jobs:
        - bar
    inheritanceExample:
      description: Will run the tasks from `someJob` and then `someOtherJob`.
      uses:
        before: [someJob]
        after: [someOtherJob]
  jobs:
    foo:
      description: Foo job
      tasks:
        -
          type: exec
          executable: echo
          arguments: [Hello World]
    bar:
      description: Bar job
      tasks:
        -
          type: exec
          executable: sleep
          arguments: [1]
```

To view a list of available task types, run:

```
./bldr.phar task:list
```

And to get more information on a particular task, run:

```
./bldr.phar task:info <task name>
```

To run your profiles: (This has changed since version 7)

```
./bldr.phar run <profile name>
```

1.3 Extensions

When starting Bldr, I wanted it to be highly extensible, and because of that, I decided to use the Symfony2 Dependency Injection component, but Bldr takes it a step further. Its mostly just a rename with a little added functionality for ease of use.

With that, we've come up with the idea for *Bldr Blocks*. *Bldr Blocks* are basically Symfony Extensions (with a little difference), that add some functionality to bldr. There are a bunch of *Bldr Blocks* already in the core of *bldr*, and they are listed below. To find other blocks, we are working on a site where people will be able to upload links to their repositories. But in the mean time, just use the list below. If I missed anything, you can find it here: <https://www.versioneye.com/php/bldr-io:bldr/references>

- **Frontend Block** - Used for tasks like CSS/JS Minification and Less/Sass/SCSS/Coffeescript compilation

- **Gush Block** - Used for integrating with Gush
- [Out Of Date] **Symfony Block** - Used for integrating with the Symfony2 Framework
- [Out Of Date] **Git Block** - Used for integrating with git

To add your own task types to Bldr, you will have to write your own *Bldr Block*. By default, there are a couple blocks that already come with Bldr, but it is easy enough to add your own. For a quick baseline on how to write one, check out the documentation.

Adding third party blocks is a three step process. First, you need to create a *bldr.json* file (if you don't have one):

```
{
  "require": {
    "acme/demo-block": "@stable"
  }
}
```

Then, install/update your bldr dependencies:

```
./bldr.phar install
# OR
./bldr.phar update
```

Then, add it to your *.bldr.yml* file:

```
bldr: ~

# If you have configs
acme_demo:
  some_setting: some_value
```

Below is some minor documentation on the core blocks.

1.3.1 Execute Block (Official)

The Execute Block (Included with Bldr)

This extension lets you run `exec` and `apply` tasks.

```
jobs:
  sample:
    tasks:
      -
        task: exec
        executable: php
        arguments: [bin/phpcs]
      -
        task: apply
        executable: php
        output: /dev/null
        src:
          - { path: [src, tests], files: *.php, recursive: true } # Checks src and tests d
        arguments: [-1]
```

1.3.2 Filesystem Block (Official)

The Filesystem Block (Included with Bldr)

This extension lets you run filesystem commands.

This one needs some work, as not all of the commands are there (mkdir, remove, touch, and dumpFile are).

Some examples:

```
jobs:
  sample:
    tasks:
      -
        task: filesystem:mkdir
        files: [testDir]
      -
        task: filesystem:remove
        files: [testDir]
      -
        task: filesystem:touch
        files: [test.tmp]
```

1.3.3 Notify Block (Official)

The Notify Block (Included with Bldr)

This extension lets you run the `notify` commands. It will either print to the screen, or email a message.

To use this:

```
jobs:
  sample:
    tasks:
      -
        task: notify
        message: Test Message
        email: test@gmail.com
```

When adding this extension, you can specify *smtp* connections:

```
notify:
  smtp:
    host: smtp.google.com
    port: 465
    security: ssl
    username: google
    password: is4awesome
```

1.3.4 Watch Block (Official)

The watch Block (Included with Bldr)

This extension lets you run the `watch` commands. It will let you watch the filesystem for changes.

This one needs some work. Right now, you can only have one watch task.

```

jobs:
  sample:
    tasks:
      -
        task: watch
        src:
          - { path: [src, tests], files: *.php, recursive: true } # Checks src and tests d
          - { path: vendor/, files: [*.php, *.yaml], recursive: true } # Checks vendor/ dire
        profile: someProfile
  sample2:
    tasks:
      -
        task: watch
        src:
          - { path: [src, tests], files: *.php, recursive: true } # Checks src and tests d
          - { files: *.yaml } # Checks current directory, non-recursively
        task: someTask

```

1.4 Creating A Block

Creating a *Bldr Block* for *Bldr* is fairly similar to creating a Bundle for Symfony. Here's a quick guide:

1.4.1 1. Create a repo

Try and stay with the naming convention used by the other blocks: <name>-block

1.4.2 2. Initialize composer in the repo

```
cd your-repo && composer init
```

1.4.3 3. Add Bldr as a dev dependency

In your composer.json file, you will want to add *bldr-io/bldr* as a *require-dev* dependency. Because embedded composer and composer are unstable packages by definition or they do not have a stable release you will have to add them too into your composer.json as below:

```

{
  "require-dev": {
    "bldr-io/bldr": "~7.0.0",
    "dflydev/embedded-composer": "dev-master@dev",
    "composer/composer": "dev-master@dev"
  }
}

```

1.4.4 4. Create a Block class

All of bldr, and the official extensions follow [PSR-4](#) (as well as all the other applicable PSR's, and most, if not all, of the bylaws). With that, create your directory structure and your Block class:

```
mkdir src && vim src/AcmeDemoBlock.php
```

All blocks must extend the `BldrDependencyInjectionAbstractBlock`, so your class, empty, will look something like this:

src/AcmeDemoBlock.php

```
<?php

/**
 * License Information
 */

namespace Acme\Block\Demo;

use Bldr\DependencyInjection\AbstractBlock;
use Symfony\Component\DependencyInjection\ContainerBuilder;

/**
 * @author John Doe <john@doh.com>
 */
class AcmeDemoBlock extends AbstractBlock
{
    /**
     * {@inheritdoc}
     */
    protected function assemble(array $config, ContainerBuilder $container)
    {
    }
}
```

The assemble function is where the magic happens. If you take a look at the `AbstractBlock`, there are some helper functions in there to make it easier to add new calls, services, and parameters to the Container.

1.4.5 5. Create your Task

As a demo, let's say we want to make a task that will output a random number to the user when running the task.

First, let's create the task. Directory structure doesn't really matter, but the core structure is normally *src/Task/<Name>Task.php*. Similar to blocks, all tasks should extend '`Bldr\Block\Core\Task\AbstractTask`' and must implement '`Bldr\Task\TaskInterface`'.

Let's make the *src/Task* directory, and create the new task: .. code-block:: shell

```
mkdir src/Task && vim src/Task/OutputRandomNumberCall.php
```

Then, let's build the task class! Extending the `AbstractTask`, suggests that we implement `configure` and requires that we implement `run`.

src/Task/OutputRandomNumberTask.php

```
<?php

/**
 * License Information
 */

namespace Acme\Block\Demo\Task;
```

```

use Bldr\Block\Core\Task\AbstractTask;
use Symfony\Component\Console\Output\OutputInterface;

/**
 * @author John Doe <john@doh.com>
 */
class OutputRandomNumberTask extends AbstractTask
{
    /**
     * {@inheritdoc}
     */
    public function configure()
    {
        $this->setName('acme_demo:output_random_number')
            ->setDescription('This call outputs a random number. If min and max are specified, it will
            ->addParameter('min', true, 'Minimum number in range', 0)
            ->addParameter('max', true, 'Maximum number in range', 100)
    }

    /**
     * {@inheritdoc}
     */
    public function run(OutputInterface $output)
    {
        $random = rand($this->getParameter('min'), $this->getParameter('max'));
        $output->writeln(['', 'Random Number: '.$random, '']);
    }
}

```

Next, we need to add the task to the container, so we can use it in `.bldr.yml(.dist)` files:

`src/AcmeDemoBlock.php`

```

<?php

/**
 * License Information
 */

namespace Acme\Block\Demo;

use Bldr\DependencyInjection\AbstractBlock;
use Symfony\Component\DependencyInjection\ContainerBuilder;

/**
 * @author John Doe <john@doh.com>
 */
class AcmeDemoBlock extends AbstractBlock
{
    /**
     * {@inheritdoc}
     */
    protected function assemble(array $config, ContainerBuilder $container)
    {
        // Here's one of the shortcut methods! This method will return a Symfony DI Definition
        // that is tagged as `bldr`. If you need to, you can easily add arguments to the constructor,
        // or calls to methods.
        $task = $this->addTask('acme_demo.output_random_number', 'Acme\Block\Demo\Task\OutputRandomNumberTask');
    }
}

```

```
// If you need dependencies, you could do the following:
// $task->setArgument(0, new Reference('some_service'));
// or
// $arguments = array(new Reference('some_service'));
// $task->addMethodCall('someMethodName', $arguments);

// If you want to add a service, that isn't a task, you can also use:
// $this->addService($name, $class);
// Which will also return a Symfony DI Definition
}
}
```

1.4.6 6. Register block with bldr

In the composer.json file, add the following:

```
{
  "extra": {
    "block-class": "Namespace\\To\\Your\\Block\\Class"
  }
}
```

With this, you should be able to install it with the *bldr.json* file and add it to a *.bldr.yml* file:

```
bldr:
  name: some/name
  profile:
    test:
      jobs:
        - randomize

  jobs:
    randomize:
      tasks:
        -
          type: acme_demo:output_random_number
          min: 0
          max: 100000
```

And run it!

```
./bldr.phar run test
```

There's some more advanced stuff, like being able to specify configuration:

src/AcmeDemoBlock.php

```
<?php

/**
 * License Information
 */

namespace Acme\Block\Demo;

use Bldr\DependencyInjection\AbstractBlock;
use Symfony\Component\DependencyInjection\ContainerBuilder;
```



```

/**
 * @author John Doe <john@doh.com>
 */
class AcmeDemoBlock extends AbstractBlock
{
    // ...

    /**
     * {@inheritDoc}
     */
    protected function getConfigurationClass()
    {
        return 'Acme\Block\Demo\Configuration';
    }
}

```

1.4.7 7. Advanced Config

Then make a Configuration.php file. This config is the config from Symfony. You can read their docs for more information.

src/Configuration.php

```

<?php

/**
 * License Information
 */

namespace Acme\Block\Demo;

use Symfony\Component\Config\Definition\ConfigurationInterface;
use Symfony\Component\Config\Definition\Builder\TreeBuilder;

/**
 * @author John Doe <john@doh.com>
 */
class Configuration implements ConfigurationInterface
{
    /**
     * {@inheritDoc}
     */
    public function getConfigTreeBuilder()
    {
        $treeBuilder = new TreeBuilder();
        $rootNode    = $treeBuilder->root('acme_demo');

        // here you will build the configuration tree

        return $treeBuilder;
    }
}

```