PHPBU Manual

Edition for PHPBU 3.0.

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Chapter 1. Installing PHPBU

Requirements

PHPBU 3.0 requires PHP 5.4, but using the latest version of PHP is highly recommended.

PHPBU requires the dom [http://php.net/manual/en/dom.setup.php] and json [http://php.net/manual/en/json.installation.php] extensions, which are normally enabled by default.

PHPBU also requires the spl [http://php.net/manual/en/spl.installation.php] extension. It is required by the PHP core since 5.3.0 and normally cannot be disabled.

The different backup sources may need their respective executable binary f.e. `mysqldump`.

PHP Archive (PHAR)

The easiest way to install PHPBU is to download a PHP Archive (PHAR) [http://php.net/phar] that has all required dependencies of PHPBU bundled in a single file.

If the Suhosin [http://suhosin.org/] extension is enabled, you need to allow execution of PHARs in your `php.ini`:

```
suhosin.executor.include.whitelist = phar
```

To globally install the PHAR:

```
$ wget http://phar.phpbu.de/phpbu.phar
$ chmod +x phpbu.phar
$ sudo mv phpbu.phar /usr/local/bin/phpbu
$ phpbu --version
phpbu x.y.z
```

You may also use the downloaded PHAR file directly:

```
$ wget https://phar.phpbu.de/phpbu.phar
$ php phpbu.phar --version
phpbu x.y.z
```

Composer

If you are using Composer [https://getcomposer.org/] to manage your dependencies, simply add `phpbu/phpbu` to your `composer.json` file.

```
{
    "require": {
        "phpbu/phpbu": "3.0.*"
    }
}
```

For a system-wide installation via Composer, just run:

```
composer global require "phpbu/phpbu=3.0.*"
```

Make sure you have `~/.composer/vendor/bin/` in your path.

Framework integrations

The following framework integrations are available:

`phpbu-laravel`	Integrates phpbu with the laravel artisan command line tool. See the section called “Laravel” for details.

Chapter 2. Configuration

To use PHPBU and create your backups you first have to create a configuration file.

The configuration of PHPBU is done with a simple XML file. You can validate your config files with the respective PHPBU schema definition found at schema.phpbu.de [http://schema.phpbu.de].

XML-Configuration

You should name your configuration file `phpbu.xml` or `phpbu.xml.dist` so you don't have to specify the path with the `--configuration` option.

The following skeleton is a good point to start and get into detail from here.

Example 2.1. XML-Configuration

```
<?xml version="1.0" encoding="UTF-8"?>
<phpbu xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
       xsi:noNamespaceSchemaLocation="http://schema.phpbu.de/3.0/phpbu.xsd">
  <backups>
    <backup>
      <!-- backup source -->
      <source type="mysqldump">
        <option name="databases" value="mydbname"/>
        <option name="user" value="user.name"/>
        <option name="password" value="topsecret"/>
      </source>
      <!-- where should the backup be stored -->
      <target dirname="backup/mysql"
              filename="mysqldump-%Y%m%d-%H%i.sql"
              compress="bzip2"/>
      <!-- check the created backup -->
      <check type="SizeMin" value="10M"/>
      <!-- cleanup the backup location
           as soon as all created backups exceed 500MB
           remove oldest backups -->
      <cleanup type="Capacity">
        <option name="size" value="500M"/>
      </cleanup>
    </backup>
  </backups>
</phpbu>
```

List of tags

<phpbu>

The XML root element with at least xmlns:xsi and xsi:noNamespaceSchemaLocation.

Table 2.1. <phpbu> attributes

Name	Values	Required	Default	Description
bootstrap	filename	no	null	Include a php file to extend PHPBU
verbose	true | false	no	false	Controls the output verbosity

Name	Values	Required	Default	Description
debug	true | false	no	false	Controls the debug output

<backup>

Configures a backup process. You can have as many of these as you need.

Table 2.2. <backup> attributes

Name	Values	Required	Default	Description
name	string	no	null	A custom name for your backup used in the PHP-BU output.
stopOnError	true | false	no	false	Tells if the execution of phpbu will be stopped if this backup fails.

<source>

Defines the data that is backed up.

Table 2.3. <source> attributes

Name	Values	Required	Default	Description
type	string	yes	-	Type of backup, Chapter 9, *Logging* has a list of all supported source types.

<target>

Defines where the backup is stored.

Table 2.4. <target> attributes

Name	Values	Required	Default	Description
dirname	string	yes	-	Path to the directory where the backup is stored, absolute or relative to the config file.
filename	string	yes	-	Filename of the stored backup.
compress	string	no	null	Type of compressor to use to compress the backup.

<check>

Specifies what kind of tests should be performed to validate the backup.

Table 2.5. <check> attributes

Name	Values	Required	Default	Description
type	string	yes	-	Type of check, Chapter 5, *Backup Validation* has a list of all supported check types.
value	string	yes	-	Value the backup is getting checked against.

<crypt>

Specifies what kind of encryption should be used to encrypt the backup.

Table 2.6. <crypt> attributes

Name	Values	Required	Default	Description
type	string	yes	-	Type of encryption, Chapter 6, *Encryption* has a list of all supported crypt types.
skipOnFailure	true | false	no	false	You can still execute the encryption, even of some failure occurred.

<sync>

Copy the created backup to another location.

Table 2.7. <sync> attributes

Name	Values	Required	Default	Description
type	string	yes	-	Type of sync, Chapter 7, *Sync Backups* has a list of all supported sync types.
skipOnFailure	true | false	no	false	You can still execute the sync, even of some failure occurred.

<cleanup>

Tells phpbu which files to delete after a successful backup.

Table 2.8. <cleanup> attributes

Name	Values	Required	Default	Description
type	string	yes	-	Type of cleanup, Chapter 8,

Name	Values	Required	Default	Description
				Cleanup backups has a list of all supported cleanup types.
skipOnFailure	true | false	no	-	You can still execute the cleanup, even of some failure occurred.

<option>

A simple key value tag to configure <source>, <crypt>, <sync> and <cleanup>.

Table 2.9. <option> attributes

Name	Values	Required	Default	Description
name	string	yes	-	Option key.
value	string	yes	-	Option value.

JSON-Configuration

This is roughly the same skeleton as shown above at the XML-Section.

Example 2.2. JSON-Configuration

```
{
  "verbose": true,
  "logging": [
    {
      "type": "json",
      "target": "backup/json.log"
    }
  ],
  "backups": [
    {
      "source": {
        "type": "mysqldump",
        "options": {
          "databases": "mydbname",
          "user": "user.name",
          "password": "topsecret"
        }
      },
      "target": {
        "dirname": "backup",
        "filename": "mysql-%Y%m%d-%H%i.sql",
        "compress": "bzip2"
      },
      "checks": [
        {
          "type": "sizemin",
          "value": "10M"
        }
      ],
      "syncs": [
        {
          "type": "sftp",
```

```
          "options": {
            "host": "backup.example.com",
            "user": "user.name",
            "password": "topsecret",
            "path": "backup/someName"
          }
        }
      ],
      "cleanup": {
        "type": "Capacity",
        "options": {
          "size": "200M"
        }
      }
    }
  ]
}
```

Schedule backups

Scheduling your backups is not part of phpbu. Nevertheless here is an example how to do it with Cron [https://de.wikipedia.org/wiki/Cron]. Adding one of the following lines to your crontab will execute your backup every morning at 3:10 AM.

Example 2.3. Crontab example

```
# +------------------------ min (0 - 59)
# |    +-------------------- hour (0 - 23)
# |    |    +--------------- day of month (1 - 31)
# |    |    |    +---------- month (1 - 12)
# |    |    |    |    +----- day of week (0 - 7) (Sunday=0 or 7)
# |    |    |    |    |
# *    *    *    *    *

# this requires phpbu to be in the cron users path
10     3    *    *    * phpbu --configuration=/var/www/my-backup/phpbu.xml

# alternatively you can specify the full path
#10     3    *    *    * /home/user/bin/phpbu.phar --configuration=/var/www/my-backup/ph
```

Chapter 3. The Command-Line-Runner

If you have a configuration file named `phpbu.xml` in your current working directory you can execute phpbu like this

```
~$ phpbu
phpbu 3.0.0

Runtime:       PHP 7.0.2
Configuration: /home/user/phpbu.xml

OK (1 backup, 0 checks, 0 encryption, 0 syncs, 0 cleanups)
```

If you want to use a custom name for your configuration file you have to use the `--configuration` option.

```
~$ phpbu --configuration=MyConfig.xml
phpbu 3.0.0

Runtime:       PHP 7.0.2
Configuration: /home/user/MyConfig.xml

OK (1 backup, 0 checks, 0 encryption, 0 syncs, 0 cleanups)
```

Command-Line-Runner options

Here is the list of available options for the command line runner.

```
$ phpbu --help
phpbu 3.0.0

Usage: phpbu [option]

--bootstrap=<file>     A "bootstrap" PHP file that is included before the backup.
--configuration=<file> A phpbu xml config file.
--colors               Use colors in output.
--debug                Display debugging information during backup generation.
--simulate             Show what phpbu would do without actually executing anything.
-h, --help             Print this usage information.
-v, --verbose          Output more verbose information.
-V, --version          Output version information and exit.
```

`--bootstrap` A "bootstrap" PHP file that is included before executing the backup.

`--configuration` Path to the phpbu config file to use. See Chapter 2, *Configuration* for more details.

`--colors` Use colors in output.

`--debug` Display debugging information during backup generation.

`--simulate` Execute phpbu without actually executing any backup, check, encryption, sync or cleanup task. See the simulation section for details.

Simulation

In order to check what actions phpbu would perform, phpbu supports a simulation mode where no backup is actually created and no sync and cleanup tasks are executed. In simulation mode, phpbu will show you, what it would have done, if it would not have been a simulation run. You will get detailed output, which enables you to track every action phpbu would have performed.

This is a great way to test if the correct backup commands will be executed and if all the right backups will be cleaned up.

Warning

If phpbu has to use any kind of credentials executing a binaries, like for example the `mysql-dump` command, this credentials will maybe displayed in the simulation output.

If you are extending phpbu, you can support simulation as well. You can find detailed information on this in Chapter 10, *Extending PHPBU*.

Chapter 4. Backup Sources

You can configure multiple Backups in one configuration file. Each backup is represented by a `<backup>` Tag. To configure the data that is stored use the `<source>` Tag.

Table 4.1. Supported types of backup sources:

Type	Description
arangodump	Backup ArangoDB with the arangodump command line tool.
mongodump	Backup MongoDB with the mongodump command line tool.
mysqldump	Backup MySQL with the mysqldump command line tool.
pgdump	Backup PostgresSQL with the pg_dump command line tool.
redis	Backup redis with the redis-cli command line tool.
tar	Backup a directory with the tar command line tool.
xtrabackup	Backup MySQL with the percona xtrabackup command line tool.

ArangoDB

Backup a ArangoDB database with arangodump.

Table 4.2. arangodump-Options

Name	Value	Required	Default	Description
endpoint	string	no	tcp://localhost:8529	URI to your ArangoDB endpoint.
username	string	no	null	Username for the ArangoDB authentication.
password	string	no	null	Password for the ArangoDB authentication.
disableAuthentication	boolean	no	false	Disable the ArangoDB authentication.
database	string	no	_system	Database to backup.
dumpData	boolean	no	true	Dump database data.
includeSystemCollections	boolean	no	false	Dump system collections as well.
collections	string	no	all	List of collections to dump.

Example 4.1. arangodump XML example

```
<!-- source arangodump -->
<source type="arangodump">
  <option name="database" value="myDatabase" />
  <option name="dumpData" value="true" />
  <option name="collections" value="myCollection1,myCollection2" />
</source>
```

Example 4.2. arangodump JSON example

```
{
  "type": "arangodump",
  "options": {
    "database": "myDatabase",
    "dumpData": "true",
    "collections": "myCollection1,myCollection2"
  }
}
```

MongoDB

Backup a MongoDB database with mongodump.

Table 4.3. mongodump-Options

Name	Value	Required	Default	Description
host	string	no	localhost	Hostname of your MongoDB-Server.
user	string	no	OS-User	Username for the MongoDB authentication.
password	string	no	null	Password for the MongoDB authentication.
authenticationDatabase	string	no	null	MongoDB database that holds the user credentials.
databases	string	no	all	List of databases you want to backup, all by default.
excludeCollections	string	no	null	List of collections you don't want to backup.
excludeCollectionsWithPrefix	string	no	null	List of collection prefixes to exclude matching collections from backup.

Example 4.3. mongodump XML example

```
<!-- source mongodump -->
<source type="mongodump">
  <option name="databases" value="myDatabase"/>
```

```
  <option name="user" value="user.name"/>
  <option name="password" value="topsecret"/>
  <option name="excludeCollections" value="collectionFoo,collectionBar"/>
</source>
```

Example 4.4. mongodump JSON example

```
{
  "type": "mongodump",
  "options": {
    "databases": "myDatabase",
    "user": "user.name",
    "password": "topsecret",
    "excludeCollections": "collectionFoo,collectionBar"
  }
}
```

MySQL - mysqldump

Backup a MySQL database with mysqldump.

Table 4.4. mysqldump-Options

Name	Value	Required	Default	Description
host	string	no	localhost	Hostname of your MySQL-Server.
user	string	no	OS-User	Username for the MySQL authentication.
password	string	no	null	Password for the MySQL authentication.
databases	string	no	all	List of databases you want to backup, all by default.
ignoreTables	string	no	null	List of tables you don't want to backup.
structureOnly	string	no	null	List of tables where only the table structure will be stored.
hexBlob	true | false	no	false	Use the --hex-blob option to dump blog fields in hex.
lockTables	true | false	no	null	Use the --lock-tables option to lock tables during the dump.
extendedInsert	true | false	no	false	Use multiple-row INSERT syntax. This results in a smaller dump file and speeds up in-

Name	Value	Required	Default	Description
				serts when the file is reloaded.

Example 4.5. mysqldump XML example

```
<!-- source mysqldump -->
<source type="mysqldump">
  <option name="databases" value="myDatabase"/>
  <option name="user" value="user.name"/>
  <option name="password" value="topsecret"/>
  <option name="ignoreTable" value="tableFoo,tableBar"/>
  <option name="structureOnly" value="logTable1,logTable2"/>
</source>
```

Example 4.6. mysqldump JSON example

```
{
  "type": "mysqldump",
  "options": {
    "databases": "myDatabase",
    "user": "user.name",
    "password": "topsecret",
    "ignoreTable": "tableFoo,tableBar",
    "structureOnly": "logTable1,logTable2"
  }
}
```

MySQL - xtrabackup

Backup a MySQL database with percona xtrabackup.

Table 4.5. xtrabackup-options

Name	Value	Required	Default	Description
dataDir	string	no		MySQL data directory.
host	string	no	localhost	Host to connect to.
user	string	no	OS-User	User to connect with.
password	string	no	false	Password to authenticate the user.
databases	string	no	-	List of databases to backup, all by default.
include	string	no	-	Pattern to include databases and tables to the backup e.g. `^mydatabase[.]mytable`.

Example 4.7. xtrabackup XML example

```
<!-- source xtrabackup -->
<source type="xtrabackup">
```

```
  <option name="databases" value="myDB1,myDB2" />
</source>
```

Example 4.8. xtrabackup JSON example

```
{
  "type": "xtrabackup",
  "options": {
    "databases": "myDB1,myDB2"
  }
}
```

pgdump

Backup PostgresSQL databases using the pg_dump command line tool.

Table 4.6. tar-Options

Name	Value	Required	Default	Description
pathToPgdump	string	no	-	Path to the pg_dump binary.
host	string	no	-	Host to connect to.
port	integer	no	-	Port to use to connect to the PostgresSQL server.
user	string	no	-	User to use to connect.
password	string	no	-	Password to use to authenticate.
database	string	yes	-	Database to backup.
schemaOnly	bool	no	false	Dump only schema information.
dataOnly	string	no	false	Dump no schema information.
schemas	string	no	-	List of schemas to dump, separated by comma.
excludeSchemas	string	no	-	List of schemas to exclude, separated by comma.
tables	string	no	-	List of tables to backup, separated by comma.
excludeTables	string	no	-	List of tables to exclude, separated by comma.
excludeTableData	string	no	-	List of tables where data is not dumped, separated by comma.

Name	Value	Required	Default	Description
noPermissions	bool	no	false	Don't dump any permission schemas.
noOwner	bool	no	false	Don't dump any owner changing statements.
format	string	no	plain	Dump format, plain, custom, directory.
encoding	string	no	-	Set the dump encoding.

Example 4.9. pgdump XML example

```
<!-- source pgdump -->
<source type="pgdump">
  <option name="database" value="myDstabase"/>
  <option name="user" value="myName"/>
  <option name="password" value="topSecret"/>
</source>
```

Example 4.10. pgdump JSON example

```
{
  "type": "pgdump",
  "options": {
    "database": "myDatabase",
    "user": "myName",
    "password": "topSecret",
  }
}
```

redis

Backup redis data structure store using redis-cli.

Table 4.7. tar-Options

Name	Value	Required	Default	Description
pathToRedisData	string	yes	-	Path to the redis data .rdb file.
pathToRedisCli	string	no	-	Path to the redis-cli binary.
port	integer	no	6379	Port to use to connect to the redis server.
password	string	no	-	Password to use to authenticate.

Example 4.11. redis XML example

```
<!-- source redis -->
<source type="redis">
```

```
  <option name="pathToRedisData" value="/var/lib/redis/6379/dump.rdb"/>
</source>
```

Example 4.12. redis JSON example

```
{
  "type": "redis",
  "options": {
    "pathToRedisData": "/var/lib/redis/6379/dump.rdb"
  }
}
```

Directories

Backup directories using tar.

Table 4.8. tar-Options

Name	Value	Required	Default	Description
path	string	yes	-	Path to the source directory.

Example 4.13. tar XML example

```
<!-- source tar -->
<source type="tar">
  <option name="path" value="htdocs/uploads"/>
</source>
```

Example 4.14. tar JSON example

```
{
  "type": "tar",
  "options": {
    "path": "htdocs/uploads"
  }
}
```

Chapter 5. Backup Validation

You can validate your backup after creation with some simple Checks.

Table 5.1. Available checks:

Type	Description
SizeMin	Checks if the backups is at least as big as the configured size.
SizeDiffPreviousPercent	Checks if your backup doesn't differ more then a configured value from the previous backup.

Minimal size

Example 5.1. SizeMin XML example

```
<!-- check min size -->
<check type="SizeMin" value="30M"/>
```

Example 5.2. SizeMin JSON example

```
{"type": "SizeMin", "value": "30M"}
```

Compare to previous Backups

Example 5.3. SizeDiffPreviousPercent XML example

```
<!-- check size against previous backups -->
<check type="SizeDiffPreviousPercent" value="10"/>
```

Example 5.4. SizeDiffPreviousPercent JSON example

```
{"type": "SizeDiffPreviousPercent", "value": "10"}
```

Chapter 6. Encryption

PHPBU can encrypt your backup using `openssl` or `mcrypt`.

Hint

If the choice is yours, I strongly recommend using openssl. Here [https://paragonie.com/blog/2015/05/if-you-re-typing-word-mcrypt-into-your-code-you-re-doing-it-wrong] is a good article explaining why.

Table 6.1. Available crypts:

Type	Description
mcrypt	Encrypts your backup with the mcrypt command line tool.
openssl	Encrypts your backup with the openssl command line tool.

mcrypt

Table 6.2. mcrypt options

Name	Value	Required	Default	Description
algorithm	string	yes	-	Algorithm to use to encrypt the backup.
key	string	yes	-	Secret key to use for encryption.

Example 6.1. mcrypt XML example

```
<!-- encryption -->
<crypt type="mcrypt">
  <option name="algorithm" value="blowfish"/>
  <option name="key" value="mySecretKey"/>
</crypt>
```

Example 6.2. mcrypt JSON example

```
{
  "type": "mcrypt",
  "options": {
    "algorithm": "blowfish",
    "key": "mySecretKey"
  }
}
```

openssl

Please be sure to use *only* `password` or `certFile`.

Table 6.3. openssl options

Name	Value	Required	Default	Description
password	string	yes	-	Encrypt backup with 'openssl enc -pass...'.
certFile	string	yes	-	Encrypt backup with 'openssl smime ... myCert.pem'.
algorithm	string	yes	-	Algorithm to use to encrypt the backup. *Attention* you have to specify different algorithm names for using `password` and using a `certfile`.
keepUncrypted	boolean	no	false	Don't remove the uncrypted backup.
pathToOpenSSL	string	no	-	Used to specify a special path to the openssl command.

Example 6.3. openssl XML example using password encryption

```
<!-- encryption -->
<crypt type="openssl">
  <option name="password" value="mySecretPassword"/>
  <option name="algorithm" value="aes-256-cbc"/>
</crypt>
```

Example 6.4. openssl JSON example using password encryption

```
{
  "type": "openssl",
  "options": {
    "password": "mySecretPassword",
    "algorithm": "aes-256-cbc"
  }
}
```

Example 6.5. openssl XML example using SSL cert encryption

```
<!-- encryption -->
<crypt type="openssl">
  <option name="certFile" value="ssl/MyCert.pem"/>
  <option name="algorithm" value="aes256"/>
</crypt>
```

Example 6.6. openssl JSON example using SSL cert encryption

```
{
  "type": "openssl",
  "options": {
```

```
    "certFile": "ssl/MyCert.pem",
    "algorithm": "aes256"
  }
}
```

Create a private key and a certificate pem file

To encrypt your backups with a cert file you have to create a *private key* and a *certificate pem file*.

```
$ openssl req -x509 -new -days 100000 -key private.pem -out certificate.pem
```

The created `certificate.pem` is used to encrypt your backups and should be referenced in your phpbu configuration as `certFile`. The `private.pem` file is used to decrypt your backups.

Decrypt

Decrypt a cert file encoded backup

```
$ openssl smime -decrypt -aes256 -inform DER \
  -in backup.tar.bz2.enc \
  -out backup.tar.bz2 \
  -inkey private.pem
```

Decrypt a password encoded backup

```
$ openssl enc -d -a -aes-256-cbc \
  -in backup.tar.bz2.enc \
  -out backup.tar.bz2 \
  -pass pass:mySecretPassword
```

Chapter 7. Sync Backups

It's best practice to not store all you backups locally or not only storing them locally. With PHPBU you can copy your backups to different locations.

Caution

If you are syncing your backup to a cloud service it's advised to encrypt your backup beforehand. Especially if your backup contains personal identifiable information [https://en.wikipedia.org/wiki/Personally_identifiable_information].

Table 7.1. Supported types of syncs:

Type	Description
amazon	Copy your backup to your amazon s3 account.
copy.com	Copy your backup to a copy account.
dropbox	Copy your backup to a dropbox account.
rsync	Sync your backups with rsync.
sftp	Copy your backup to a server via SFTP.
SoftLayer Object Storage	Sync your backup to a Softlayer Object Storage account.

Amazon S3

Sync your backup to an amazon S3 account.

If you are not using the PHAR Version you have to require `"aws/aws-sdk-php": "2.7.*"` in your composer file.

Table 7.2. amazons3-Options

Name	Value	Required	Default	Description
key	string	yes	-	The amazon s3 key.
secret	string	yes	-	The amazon S3 secret.
bucket	string	yes	-	A bucket where to store the backup.
region	string	yes	-	The region where the bucket is located e.g. 'eu-central-1'.
path	string	no	/	Path where to store the backup in your bucket.

Example 7.1. amazons3 XML example

```
<!-- sync amazon s3 -->
<sync type="amazons3">
  <option name="key" value="myAwsKey"/>
```

```
  <option name="secret" value="myAwsSecret"/>
  <option name="bucket" value="backup"/>
  <option name="region" value="eu-central-1"/>
  <option name="path" value="/some/dir"/>
</sync>
```

Example 7.2. amazons3 JSON example

```
{
  "type": "amazons3",
  "options": {
    "key": "myAwsKey",
    "secret": "myAwsSecret",
    "bucket": "backup",
    "region": "eu-central-1",
    "path": "/some/dir"
  }
}
```

Dropbox

Sync your backup to a dropbox account.

If you are not using the PHAR Version you have to require `"dropbox/dropbox-sdk": "1.1.*"` in your composer file.

Table 7.3. dropbox-Options

Name	Value	Required	Default	Description
token	string	yes	-	The dropbox authentication token. Go to www.dropbox.com/developers/apps [https://www.dropbox.com/developers/apps] Create your app Choose: dropbox api app files and datastore yes provide some app name "my-dropbox-app" generate access token to authenticate connection to your dropbox
path	string	yes	-	Directory where to store the backup in your dropbox account.

Example 7.3. dropbox XML example

```
<!-- sync dropbox -->
```

```
<sync type="dropbox">
  <option name="token" value="myCrazyLongApiTokenThatIGotFromDropbox"/>
  <option name="path" value="/some/dir"/>
</sync>
</section>
```

Example 7.4. dropbox JSON example

```
{
  "type": "dropbox",
  "options": {
    "token": "myCrazyLongApiTokenThatIGotFromDropbox",
    "path": "/some/dir"
  }
}
```

Rsync

Sync your backup via the rsync command.

Table 7.4. rsync-Options

Name	Value	Required	Default	Description
path	string	yes	-	The remote path where your backups should be synced to.
host	string	yes	-	The remote host where your backups should be synced to.
user	string	no	OS-User	The user to connect to the remote host. Make sure the user is able to connect without entering a password otherwise you get prompted for a password while executing phpbu.
dirsync	boolean	no	false	Sync the target directory instead of syncing only the target file.
delete	boolean	no	false	Add the --delete option to the rsync call, so locally deleted files will be deleted remotely as well.
exclude	string	no	-	List of files to exclude from the sync sepa-

Name	Value	Required	Default	Description
				rated by ":" e.g. "*.suffix:foo.bar".
args	string	no	-	Advanced mode to use completely custom options. "rsync {args}". WARNING: phpbu is not escaping this in any way so use with caution! Use %TARGET_FILE% and %TARGET_DIR% as reference to your created backup.

Example 7.5. rsync XML example

```
<!-- sync rsync -->
<sync type="rsync">
  <option name="path" value="/backup/some/path"/>
  <option name="dirsync" value="true"/>
  <option name="host" value="backup.example.com"/>
  <option name="user" value="backup"/>
</sync>
```

Example 7.6. rsync JSON example

```
{
  "type": "rsync",
  "options": {
    "path": "/backup/some/path",
    "dirsync": "true",
    "host": "backup.example.com",
    "user": "backup"
  }
}
```

SFTP / FTP

Copy your backup to another server via SFTP or FTP.

If you want to use SFTP and you are not using the PHAR version you have to require `"phpseclib/phpseclib": "2.0.*@dev"` in your composer file. For this to work you have to set the `minimum-stability` to `dev`.

If you want to use the FTP-Sync your PHP has to be compiled with `--enable-ftp`.

Table 7.5. (s)ftp-Options

Name	Value	Required	Default	Description
host	string	yes	-	The host you want do copy your backups to.

Name	Value	Required	Default	Description
user	string	yes	-	The user you want to connect with.
password	string	no	-	The password to authenticate the user.
path	string	yes	-	The remote path where to copy the backup.

Example 7.7. sftp XML example

```
<!-- sync sftp -->
<sync type="sftp">
  <option name="host" value="backup.example.com"/>
  <option name="user" value="user.name"/>
  <option name="password" value="topsecret"/>
  <option name="path" value="backup/someName"/>
</sync>
```

Example 7.8. sftp JSON example

```
{
  "type": "sftp",
  "options": {
    "host": "backup.example.com",
    "user": "user.name",
    "password": "topsecret",
    "path": "backup/someName"
  }
}
```

If you want to use plain FTP just use `ftp` as type, options stay the same.

Softlayer Object Storage

Sync your backup to a Softlayer account.

If you are not using the PHAR Version you have to require `"softlayer/objectstorage": "dev-master"` in your composer file. For this to work you have to set the `minimum-stability` to `dev`.

Table 7.6. softlayer-Options

Name	Value	Required	Default	Description
user	string	yes	-	The user you want to connect with.
secret	string	no	-	The api key to authenticate the user.
host	string	yes	-	The host you want do copy your backups to.
container	string	yes	-	The Object Storage Container where to put the backup.

Name	Value	Required	Default	Description
path	string	yes	-	The remote path where to copy the backup.

Example 7.9. softlayer XML example

```
<!-- sync softlayer object storage -->
<sync type="softlayer">
  <option name="user" value="user.name"/>
  <option name="secret" value="topsecret"/>
  <option name="host" value="some.softlayer.domain.com"/>
  <option name="container" value="backup"/>
  <option name="path" value="/backup/someName"/>
</sync>
```

Example 7.10. softlayer JSON example

```
{
  "type": "softlayer",
  "options": {
    "user": "user.name",
    "secret": "topsecret",
    "host": "some.softlayer.domain.com",
    "container": "backup",
    "path": "/backup/someName"
  }
}
```

Chapter 8. Cleanup backups

You can remove old backups to limit the space your backups consume on your local hard drive. It's important to note, that only *local* backups will be cleaned up. So whatever kind of `Sync` you are using. `Cleanup` won't touch your remote files.

If you want to remove your synced backups as well, currently the only way to do this is to use the Rsync sync with it's `delete` option.

Table 8.1. Supported types of cleanups:

Type	Description
Capacity	Define the size your backups should occupy. If your backups start to exceed this value PHPBU will start to delete backups, starting with the oldest ones.
Outdated	Remove backups older than a configured time-value. For example "2W" to delete all backup older than two weeks.
Quantity	Keep only a configured amount of backups.

Cleanup by capacity

Remove oldest backups if all created backups exceed the configured limit.

Table 8.2. Capacity-Options

Name	Value	Required	Default	Description
size	string	yes	-	Space your backups are allowed to occupy. e.g. 500M for 500 Megabytes or 1G for one Gigabyte.
deleteTarget	boolean	no	false	If you don't want to keep any backups locally, just specify a size of "0B", set this to "true" and even the current backup will be deleted.

Example 8.1. capacity XML example

```
<!-- cleanup capacity: keep 250 Megabytes of backups -->
<cleanup type="capacity">
  <option name="size" value="250M"/>
  <option name="deleteTarget" value="false"/>
</cleanup>
```

Example 8.2. capacity JSON example

```
{
```

```
  "type": "capacity",
  "options": {
    "size": "250M",
    "deleteTarget": "false"
  }
}
```

Cleanup by date

Remove backups that are older than a configured value.

Table 8.3. Outdated-Options

Name	Value	Required	Default	Description
older	string	yes	-	Time to keep backups. e.g. 1m for one month or 20d for twenty days.

Example 8.3. outdated XML example

```
<!-- cleanup outdated: keep backups for 2 weeks -->
<cleanup type="outdated">
  <option name="older" value="2W"/>
</cleanup>
```

Example 8.4. outdated JSON example

```
{
  "type": "Outdated",
  "options": {
    "older": "2W"
  }
}
```

Cleanup by quantity

Keep only a configured amount of backups.

Table 8.4. Quantity-Options

Name	Value	Required	Default	Description
amount	string	yes	-	The amount of backups to keep.

Example 8.5. quantity XML example

```
<!-- cleanup quantity: keep the last 20 backups -->
<cleanup type="quantity">
  <option name="amount" value="20"/>
</cleanup>
```

Example 8.6. quantity JSON example

```
{
```

```
  "type": "quantity",
  "options": {
    "amount": "20"
  }
}
```

Chapter 9. Logging

JSON

You can create a simple json logfile with PHPBU's json logger.

Example 9.1. json XML example

```
<!-- create a json logfile -->
<log type="json" target="backup/log.json"/>
```

Example 9.2. json JSON example

```
{"type": "json", "target": "backup/log.json"}
```

E-Mail

PHPBU uses SwiftMailer to send backup reports to one or more configured E-Mail-Addresses. If you just want to get notified if something went wrong, you can use the `sendOnlyOnError` option to not send any E-Mail on a successful backup.

Table 9.1. Capacity-Options

Name	Value	Required	Default	Description
recipients	string	yes	-	List of emails separated by semi-colon.
transport	string	yes	-	SwiftMailer Transport that's used to send the E-Mail (mail, sendmail, smtp, null).
sender.mail	string	phpbu@hostname	-	The sender E-Mail-Address
sender.name	string	no	OS-User	The sender name.
sender.name	string	no	OS-User	The sender name.
sendmail options				
sendmail.path	string	no	-	Path to local sendmail binary.
sendmail.options	string	no	-	Sendmail options (e.g. -bs).
SMTP options				
smtp.port	string	no	587	Port to use to connect to SMTP server.
smtp.host	string	no	-	SMTP hostname.
smtp.username	string	no	-	The SMTP login.
smtp.password	string	no	-	The SMTP password.

Name	Value	Required	Default	Description
smtp.encryption	string	no	-	Type of encryption (e.g. ssl).

Example 9.3. mail XML example

```
<!-- use mail to keep up to date with you backup creation -->
<log type="mail">
  <option name="transport" value="mail"/>
  <option name="recipients" value="user.name@example.com"/>
</log>
```

Example 9.4. mail JSON example

```
{
  "type": "mail",
  "options": {
     "transport": "mail",
     "recipients": "user.name@example.com"
   }
}
```

Chapter 10. Extending PHPBU

You can extend PHPBU with your own Source, Check, Crypt, Sync, Cleanup and Logger implementations.

All you have to do is to register your implementation at the PHPBU Factory. You can do this by adding you own bootstrap file.

```
phpbu --bootstrap=extend.php
```

Your extend.php file could look something like this:

Example 10.1. Extend bootstrap

```
<?php
  // make your class accessible
  require 'Acme/MySource.php';
  // register your class as a source
  try {
      phpbu\App\Factory::register('source', 'mysource', '\\Acme\\MySource');
  } catch (Exception $e) {
      die($e->getMessage());
  }
```

For this to work your class Acme\MySource hast to implement the `phpbu\App\Backup\Source` Interface. After registering your Source you can use `mysource` as source-type within your XML configuration like this.

Example 10.2. Custom Source XML example

```
<source type="mysource"></source>
```

If the alias is already taken this will throw an Exception. You can force phpbu to overwrite any previously registered class using the $force Parameter. Even the phpbu sources could be replaced with custom implementations.

Example 10.3. Overwrite default sources

```
<?php
// make your class accessible
require 'Acme/MyMysqldump.php';
// register your class as source, override already registered class
phpbu\App\Factory::register('source', 'mysqldump', '\\Acme\\MyMysqldump', true);
```

Executing and simulating

If you are extending phpbu you have two options. The first is to simply implement the execution interface. This way you can execute your own Source, Check, Crypt, Sync or Cleanup tasks. The second option is to implement the respective `Simulator` interface. Choosing this option you not only have to implement the execution part but rather implement a simulation part as well.

Simulation is supported out of the box for every implementation, but choosing option two enables you to add viable information about the actions you perform in your code within a simulation run.

Table 10.1. Types to register:

Type	Interface for execution only	Interface for execution and simulation
source	phpbu\App\Backup\Source	phpbu\App\Backup\Source \Simulator
check	phpbu\App\Backup\Check	phpbu\App\Backup\Check\Simulator
crypt	phpbu\App\Backup\Crypt	phpbu\App\Backup\Crypt
sync	phpbu\App\Backup\Sync	phpbu\App\Backup\Sync\Simulator
cleanup	phpbu\App\Backup\Cleanup	phpbu\App\Backup\Cleanup \Simulator
logger	phpbu\App\Backup\Logger	-

Create a custom Source

A minimal custom Source class could look like this.

Example 10.4. Create a custom source

```
<?php
namespace Acme;

use \phpbu\App\Backup\Result;
use \phpbu\App\Backup\Source;
use \phpbu\App\Backup\Target;

class MySource implements Source
{
    /**
     * Some data that has to be configured.
     */
    private $someConfigValue;

    /**
     * Here you should validate the configuration and setup your class.
     *
     * @param array $conf
     */
    public function setup(array $conf)
    {
        // here you are getting all of your configured options
        // $conf[ <option name> ] = <option value>
        $this->someConfigValue = $conf['foo']
    }

    /**
     * In here you should create your backup.
     *
     * @return \phpub\App\Backup\Source\Status
     * @throws \phpbu\App\Backup\Source\Exception
     */
    public function backup(Target $target, Result $result)
    {
        // use these methods to store the backup at the configured location
        // $target->getPath()
        // $target->getPathname()
        // $target->getFilename()
```

```
        // to know if the backup should be compressed use
        // $target->shouldBeCompressed()
        // to get the compression settings use
        // $target->getCompressor()
        // if you want to log some debug information use
        // $result->debug('some message');
        // anything bad happens throw a \phpbu\App\Exception
        // return a backup status
        // this is important so the runner knows if it still has to compress the backup
        // return Status::create()->uncompressed($pathToUncompressedFile);
    }
}
```

Create a custom Check

Custom Check implementation example.

Example 10.5. Create a custom check

```
<?php
namespace Acme;

use \phpbu\App\Backup\Check;
use \phpbu\App\Backup\Collector;
use \phpbu\App\Backup\Target;

class MyCheck implements Check
{
    /**
     * Perform your check.
     */
    public function pass(Target $target, $value, Collector $collector)
    {
        // use Target to refer to the created backup
        // $target->getPathname()
        // $value is the configured value
        // <check type="mycheck" value="myvalue"/>
        // $value = "myvalue"
        // use the collector to get a list of previous backups array<splFileInfo>
        // $history = $collector->getBackups()
        // throw a \phpbu\App\Backup\Check\Exception if something bad is happening
        // finally return if the check passes or not
        return $boolean;
    }
}
```

Create a custom Sync

Implementing a custom Sync.

Example 10.6. Create a custom sync

```
<?php
namespace Acme;

use \phpbu\App\Backup\Sync;
use \phpbu\App\Backup\Target;

class MySync implements Sync
{
```

```
    /**
     * Some data that has to be configured.
     */
    private $someConfigValue;

    /**
     * Here you should validate the configuration and setup your class.
     */
    public function setup(array $conf)
    {
        // here you are getting all of your configured options
        // $conf[ <option name> ] = <option value>
        $this->someConfigValue = $conf['foo']
    }

    /**
     * Execute your sync.
     */
    public function sync(Target $target, Result $result)
    {
        // use Target to refer to the created backup
        // $target->getPathname()
        // execute your sync
        // if you want to log some debug information use
        // $result->debug('some message');
        // throw a \phpbu\App\Backup\Sync\Exception if something is going wrong
    }
}
```

Create a custom Cleaner

Implementing a custom cleaner.

Example 10.7. Create a custom cleaner

```
<?php
namespace Acme;

use \phpbu\App\Backup\Collector;
use \phpbu\App\Backup\Sync;
use \phpbu\App\Backup\Target;

class MyCleaner implements Sync
{
    /**
     * Some data that has to be configured.
     */
    private $someConfigValue;

    /**
     * Here you should validate the configuration and setup your class.
     */
    public function setup(array $conf)
    {
        // here you are getting all of your configured options
        // $conf[ <option name> ] = <option value>
        $this->someConfigValue = $conf['foo']
    }

    /**
     * Execute your cleanup.
     */
```

```
    public function cleanup(Target $target, Collector $collector, Result $result)
    {
        // use Target to refer to the created backup
        // $target->getPathname()
        // use the collector to get a list of previous backups array<splFileInfo>
        // delete files matching your cleanup rules
        // $history = $collector->getBackups()
        // if you want to log some debug information use
        // $result->debug('some message');
        // throw a \phpbu\App\Backup\Cleaner\Exception if something is going wrong
    }
}
```

Create a custom Logger

List of available events:

- phpbu.debug
- phpbu.app_start
- phpbu.app_end
- phpbu.backup_start
- phpbu.backup_failed
- phpbu.backup_end
- phpbu.crypt_start
- phpbu.crypt_failed
- phpbu.crypt_end
- phpbu.check_start
- phpbu.check_failed
- phpbu.check_end
- phpbu.sync_start
- phpbu.sync_failed
- phpbu.sync_skipped
- phpbu.sync_end
- phpbu.cleanup_start
- phpbu.cleanup_failed
- phpbu.cleanup_skipped
- phpbu.cleanup_end

Implementing a custom logger.

Example 10.8. Create a custom logger

```
<?php
namespace Acme;
```

```
use phpbu\App\Event;
use phpbu\App\Log\Logger;

class MyLogger implements Logger
{
    /**
     * Logger interface requires 'getSubscribedEvents' method.
     * Define the events you want to get notified about.
     */
    public static function getSubscribedEvents()
    {
        return array(
            'phpbu.debug'   => 'onDebug',
            'phpbu.app_end' => 'onPhpbuEnd',
        );
    }

    /**
     * Logger interface requires 'setup' method to configure your logger.
     * Here you should validate the configuration and setup your class.
     */
    public function setup(array $conf)
    {
        // here you are getting all of your configured options
        // $conf[ <option name> ] = <option value>
    }

    /**
     * Handle the debug event.
     */
    public function onDebug(Event\Debug $event)
    {
        // use $event->getMessage() to get the debug message
    }

    /**
     * Handle phpbuEnd event
     */
    public function onPhpbuEnd(Event\App\End $event)
    {
        // handle the phpbuEnd
        // use $event->getResult() to get the application result
    }
}
```

Summary

Example 10.9. Example file structure

```
acme/
├── backup/
├── src/
|   ├── bootstrap.php
|   ├── MyCheck.php
|   ├── MyCleaner.php
|   ├── MyCrypt.php
|   ├── MySource.php
|   └── MySync.php
|
├── phpbu.phar
└── phpbu.xml.dist
```

Example 10.10. Example bootstrap.php

```
<?php
// use your autoloader or require your classes manually
// so phpbu can find them while executing you backup
// register your class as source, you may override already registered classes
phpbu\App\Factory::register('source', 'mysource', '\\Acme\\MySource');
phpbu\App\Factory::register('check', 'mycheck', '\\Acme\\MyCheck');
phpbu\App\Factory::register('cleanup', 'mycleanup', '\\Acme\\MyCleaner');
```

Example 10.11. Example phpbu.xml.dist

```
<?xml version="1.0" encoding="UTF-8"?>
<phpbu xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
       xsi:noNamespaceSchemaLocation="http://schema.phpbu.de/3.0/phpbu.xsd">
  <backups>
    <backup>
      <!-- source -->
      <source type="mysource">
        <option name="foo" value="bar"/>
      </source>
      <!-- where should the backup be stored -->
      <target dirname="backup"
              filename="mysource-%Y%m%d-%H%i.backup"
              compress="bzip2"/>
      <!-- check the created backup -->
      <check type="mycheck" value="100"/>
      <!-- cleanup the backup location -->
      <cleanup type="mycleanup">
        <option name="foo" value="bar"/>
      </cleanup>
    </backup>
  </backups>
</phpbu>
```

Chapter 11. Framework integrations

Laravel

The `laravel-phpbu` package integrates `phpbu` into the laravel framework so you can use the `artisan` command to execute your backups and a laravel style php configuration to set them up.

Requirements

- PHP 5.5
- Laravel 5.*
- phpbu 3.0.*

Installation

Use composer to install the package.

```
composer require "phpbu/phpbu-laravel"
```

Add the package ServiceProvider to your `config/app.php` configuration file.

```
'providers' => [
    /*
    * phpbu Backup Service Providers...
    */
    phpbu\Laravel\ServiceProvider::class,
];
```

Finally use the laravel `artisan` command to create a configuration skeleton by publishing the package.

```
php artisan vendor:publish --provider="phpbu\Laravel\ServiceProvider"
```

After publishing the ServiceProvider a `phpbu.php` configuration file is created in your config directory.

Configuration

There are two ways of configuring your backup.

1. Use the created `phpbu.php` configuration file
2. Use a standard `phpbu.xml` or `phpbu.json` configuration file

The main difference between those two options is the implemented feature set.

While the phpbu configuration files give you full access to all features of phpbu the laravel configuration file currently does not support all features of phpbu f.e. encryption.

Using the laravel configuration

The main concept of configuring backups stays the same. A backup consists of a source and a target. The source represents the data you want to backup. The target represents the location where you want

to store your backup. You can add checks, cleanups and syncs to a backup to validate, cleanup or sync your backup to another location.

In the laravel configuration file you can specify two types of backups, `directories` and `databases`.

Directories

Define the directory you want to backup and the target location where to store your backup.

```
'directories' => [
        [
            'source' => [
                'path'    => storage_path('app'),
                'options' => [],
            ],
            'target' => [
                'dirname'     => storage_path('/backup/app'),
                'filename'    => 'app-%Y%m%d-%H%i.tar',
                'compression' => 'bzip2',
            ]
        ]
    ],
```

Databases

Just define the laravel database connection configured in your `databases.php` configuration you want to backup and you are done. You can overwrite every setting defined with the specific option f.e. `username` or `password` in case you have to use different credentials to backup your database.

You can use every option the mysqldump source supports f.e. to exclude some tables. Just use the *option-name* as index and the *option-value* as value.

```
'databases' => [<emphasise>
        [
            'source' => [
                'connection' => 'mysql',
                'options'    => []
            ],
            'target' => [
                'dirname'     => storage_path('backup/db'),
                'filename'    => 'dump-%Y%m%d-%H%i.sql',
                'compression' => 'bzip2',
            ]
        ],
    ],
```

Adding Check, Sync and Cleanup

Add *check*, *sync* and *cleanup* definitions to your backup configuration.

```
'check' => [
                'type'  => 'SizeMin',
                'value' => '10B',
            ],
            'sync' => [
              'filesystem' => 's3',
              'path'       => '/backups/db'
            ],
            'cleanup' => [
                'type'    => 'quantity',
```

```
                'options' => [
                    'amount' => '20'
                ]
            ]
```

For a list of available `checks` and `cleanups` check the corresponding documentation sections.

To sync your backups you can use every filesystem defined in your laravel `filesystems.php` configuration file.

Using a phpbu configuration file

If you want to use a phpbu configuration file your laravel phpbu.php configuration should look something like this.

```
<?php
return [
    /*
    |--------------------------------------------------
    | phpbu configuration
    |--------------------------------------------------
    |
    | Path to a phpbu configuration xml or json file.
    */

    'phpbu' => base_path('phpbu.xml'),
];
```

For this to work you have to setup a valid phpbu.xml configuration file in your project root.

Remember that all paths in a phpbu configuration have to to absolute or relative to the specified phpbu configuration file.

Usage

To execute the backup use the `artisan` command line tool.

```
php artisan phpbu:backup
```

Appendix A. Index

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Appendix B. Copyright


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