

# JoomlaPack User Manual

for Version 1.2

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# 1 Introduction

## 1.1 What is JoomlaPack?

JoomlaPack is a multi-purpose backup and cloning component for the awarded Open Source CMS Joomla!. In a simple and transparent operation it will grab a copy of your site's files and a snapshot of your site's database and package them in a compressed archive file with a restoration script. The restoration script follows the spirit of the familiar Joomla! installer, ensuring a trouble free restoration experience. It even comes with a wizard (JoomlaPack Kickstart) which makes unpacking the archive and restoring your site a piece of cake!

JoomlaPack is more than a backup tool; it is a site cloner. This means that the resulting backup can be restored on any server, not only on the one it was taken from. This lets you very easily grab a copy of your live site, running on a Linux host, and restore it on your local test server, running on Windows. Or even vice versa.

The possibilities for using this component are just too many. Some indicative uses might be:

- **Security backups.** Taking a snapshot of your site should your server fail, or a hacker exploit some security hole to deface or compromise your site.
- **Template sites.** Web professionals have used JoomlaPack in order to create “template sites”. This means that you can build a site on a local server, install every component you usually do on most clients' sites and back it up. You now have a canned site that can serve as a great template for future clients. Using the same method you can have a snapshot of all the sites you have built for your clients, without the need to have them installed on your local server.
- **Build a site off-line, upload the finished site easily.** Web professionals can build a complete site off-line – on a local server – and when done take a snapshot with JoomlaPack, then restore it on the production site.
- **Testing upgrades locally, without risking breaking the on-line site.** Joomla! updates have the potential of breaking things, especially in complex or badly written components and modules. Web masters use JoomlaPack to get a site snapshot, restore it on a local test server, perform the upgrade there and test for any problems without the live site being at risk.
- **Debugging locally.** Almost the same as above, web professionals have used JoomlaPack to take a snapshot of a client's Joomla! site in order to perform bug hunting. Using JoomlaPack again, they can upload the fixed site back on the live server.
- **Relocating a site to a new host.** Web masters who want to take their site to a new host have found JoomlaPack to be their saviour. Just backup the original site and restore on the new host; presto, your site is relocated with virtually no effort at all.

JoomlaPack can save you hours of your time. This is what hundreds of our users tell us. Moreover, this invaluable tool comes to you at no cost. JoomlaPack is licensed under the GNU General Public License Version 2 or any later version.

JoomlaPack does not try to reinvent the wheel. There are other backup components for Joomla!, both free and commercial. There is also the possibility to write `cron` scripts yourself using standard utilities such as `tar` and `mysqldump`. We felt that these utilities did not do what we wanted, the way we wanted or were overpriced or took a lot of time to use. JoomlaPack is our personal view on usability and efficiency. It seems, though, that thousands of web masters agree with our perspective and this gives us the incentive to keep on coding.

## Requirements

In order to work, JoomlaPack requires the following software environment on your server:

- Joomla! 1.0.11 or later in the 1.0.x range; or Joomla! 1.5.x. It works in Native Mode for both Joomla! versions.
- PHP 4.3.9 or later; PHP 5.2.1 recommended for optimal performance, but not strictly required.
- Minimum 8Mb of PHP `memory_limit`.
- The PHP function 'opendir' or 'glob' to be available ('opendir' recommended).
- Available free space or quota limit about 75%-80% of your site's size.
- The PHP safe mode should be preferably turned off (after all it offers no real security), but JoomlaPack will still work with it enabled.
- This component has not been extensively tested against PHP strengthening mechanisms / modules, like `mod_suhosin`.

And when it comes to your browser we need Internet Explorer 6+, Konqueror 3.5.9+ or Firefox 1.5+ with JavaScript enabled and `xmlHttpRequest` not blocked by group policies and/or firewalls. This component *may* work with other AJAX-capable browsers, but it has not been tested against them.

## 1.2 Overview

The way JoomlaPack works is of great importance in the event of troubleshooting. Therefore, this is a small presentation of the inner workings of JoomlaPack.

Each backup procedure consists of four individual *operations* (or “*domains*” in JoomlaPack jargon), occurring one after the other. Each *operation* is performed in several *steps*. The operations are:

- **File list creation.** In order to know which files it has to include in the archive, JoomlaPack first scans the site's root for files and creates a list of files. As it scans each directory, it adds the files to the file list and internally stores the list of directories. This process goes on until it has scanned all directories. Each time JoomlaPack scans a directory it performs a *step*. The file list itself is broken down to several *fragments*, each consisting of either up to 1Mb worth of files, or a maximum of 100 files, for maximum efficiency during the packing operation.
- **Installer deployment.** The files of the selected installer are extracted on the temporary directory and added to a new fragment of the file list. This operation is always performed in a single step.

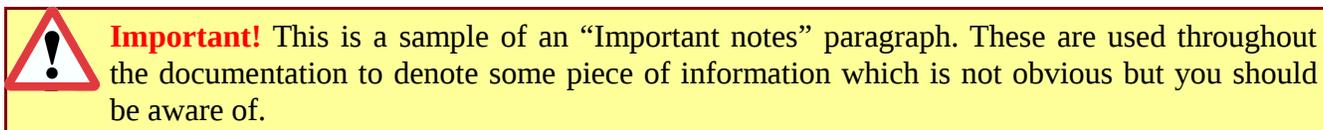
- **Database backup.** The database is dumped in SQL files. Each step consists of dumping up to 100 rows of a single table. The SQL files are added to a new file list fragment at the end of the operation.
- **Archive creation (packing).** The files contained in the file list are added to the archive. Each step consists of adding the files of a single fragment to the archive.

Finally, JoomlaPack performs some housekeeping, removing the temporary files and temporary database entries. This operation is logged as a special domain named 'finale'.

### 1.3 Documentation Conventions

This documentation uses some typographic conventions to convey important information.

The first thing you should be aware of are the “Important notes” paragraphs. They look like this:



These paragraphs point out some non-obvious information you must be aware of. Reading these thoroughly will decrease the chance of getting stuck and will alleviate the need to post to the support forums for help.

Then, there are code sections, which look like this:

```
This is a code section.  
Please note how this very long line wraps. As you can see the wrapped portion  
  does not start exactly at the start of the line, but leaves a small space in the  
  beggining.  
This is a normal line which doesn't wrap.  
And this is yet another line of code.
```

Code sections are used mainly for configuration file contents.

## 2 Installation

### 2.1 Getting the component

#### 2.1.1 Latest published version

The latest version of the component is always available from the File Release System on our project's JoomlaCode.org page, available at <http://www.joomlancode.org/gf/project/jpack/frs>.

There are two component packages available for each version. The one ending in -j10 is the version compatible with Joomla! 1.0.x (and Joomla! 1.5.x with the Legacy Plugin enabled). The other one, ending in -j15 is the Joomla! 1.5.x Native Mode compatible version.



**Important!** Please download and install the proper version of the component. Failure to do so will result in installation errors and you'll have to eventually use the correct version.

#### 2.1.2 Development snapshots

For the adventurous among you, there is the option to download the latest development version via SVN. The development code is located at <http://joomlancode.org/gf/project/jpack/scmsvn/>.



**Important!** SVN code is not meant to be secure, stable or thoroughly tested; it is just a snapshot of the development progress. You use it at your own risk. Support is minimal but we welcome all your comments and bug reports which help us make JoomlaPack a better component.

First of all, make sure you've got [Subversion](#) installed. You can get the latest snapshot by creating a new directory and issuing the command:

```
svn checkout http://joomlancode.org/svn/jpack
```

This results in a set of directories, containing the latest development files. In order to create an Joomla!-installable ZIP archive you have to go into the 'scripts' directory and use the `makejp.php` script.



**Important!** The `makejp.php` script is supposed to be run from the command line, not from a web server. If you try accessing the script from a web server you'll get an explanatory text.

In order to create an installable ZIP, you have to go into the 'scripts' directory and issue the command:

```
php makejp.php --makezip --makejpi --version=svn
```

If the PHP executable is not in your path, you'll have to accommodate for that in the aforementioned instructions by supplying the full path to the PHP executable. Make sure the 'release' folder and its contents are writeable. If no errors occurred, you will find in there a file named `com_joomlapack-svn-j10.zip`. This is the component's installation archive for Joomla! 1.0.x. You'll also get a file named `com_joomlapack-svn-j15.zip` for Joomla! 1.5.x.

## 2.2 *Installing the component*

The installation of the component is no different than the installation of any other Joomla! component. In case you are not familiar with the procedure yet, the following is a quick summary of it.

After you have downloaded the component, log in as a Super Administrator in your website. From the top menu bar choose Installer, Components. Click browse and locate the archive you have already downloaded. Then click on "Upload & Install".

The component is available only to the Super Administrator group. This is a security measure, since the generated backup files contain everything in your site! For more information on security concerns and advice, please take a look at the "[Security concerns](#)" chapter in this document.



**Important!** Make sure you have deinstalled any previous versions of the component prior to installing the new version. Joomla! does not offer a component upgrade path and will complain if you try to install the new version over the old one.

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## 4 Using the component

All of the instructions below were written while operating JoomlaPack on a Joomla! 1.5.x site in native mode. While the essence of the component's functions is the same, there will be some minor layout differences in the Joomla! 1.0.x version.

### 4.1 Common Elements

All pages have their title displayed above their contents. On the far right of the title there is a “home” button. Clicking on this will get you back to the JoomlaPack Control Panel.

On the bottom of each page, just above the Joomla! footer, there is a textual link to the JoomlaPack Control Panel and the license information. On the Control Panel page there is also a donation link; if you feel that JoomlaPack was useful for you do not hesitate to donate any amount you deem appropriate.

### 4.2 JoomlaPack Control Panel

#### JoomlaPack Control Panel



 Options	 Exclude Directories	 Single File Exclusion	 Exclude DB Tables	<div> <p>▼ Overview</p> <p>Status: <span style="color: green;">✔ Ready to backup</span></p> <p>► Details</p> </div>
 Multiple DB backup	 Backup Now	 Administer Backup Files	 View Log	
 Cleanup & Reset Locks				

The main page – which loads when you click on Components > JoomlaPack – is called the “Control Panel” screen. From here you can see if everything is in working order and access all of the component's functions and configuration options.

On the right hand portion of the page you can see two tabs. The first, named “Overview,” will show if your configuration is in working order (green text) or there are errors (red text). The tab named “Details” gives you the specifics of each configuration value monitored. There are currently two locations being monitored, both need to be writeable for the application to work correctly:

- **Temporary Folder** is where JoomlaPack stores temporary files while it is packing your site. This will also contain a snapshot of your database at least until the archive is ready, so make sure the directory is not world-readable!

- **Output Folder** is where your site backup (ZIP archives) will be stored.

The left navigation panel allows access to the different functions of the component:

- **Options** allows you to edit the configuration options that control the backup process.
- **Exclude Directories** allows you to select whole directories that will be excluded from the backup. This is very useful if your host keeps access statistics in the web server's root (a very common practice these days).
- **Single File Exclusion** lets you forbid specific files from being included in the backup. This is useful for excluding host-specific files, that large video file in the downloads section, etc.
- **Exclude DB table** allows you to specify which tables from your site's database will not be included in the backup. This is useful for excluding tables belonging to non-Joomla! Scripts (i.e. a forum).
- **Multiple DB backup** lets you include other MySQL databases besides the one Joomla! is using for itself. These databases will be dumped verbatim, no filters will be applied.
- **Backup now** does all the magic, as it navigates to the screen where the actual backup process occurs.
- **Administer Backup Files** lets you administer your backup files (download, delete) through a handy web interface.
- **View Log** allows you to view the log file for the most recent backup session.
- **Cleanup and Reset Locks** will try to clean up the temporary folder and remove the lock from the database. It is intended to recover and clean up after a failed automatic backup.

## 4.3

## 4.4 Options

The options page is split in three sections by means of standard Joomla! slider or tabbed panes, depending on your Joomla! version. The instructions below cover each configuration parameters section on its own.

Anyway, on the top of the page you can see if the configuration file is writeable (green text) or not (red text). The configuration file exists under the `com_joomlapack` root installation directory (`/administrator/component/com_joomlapack`) and is named `jpack.config.xml`. It – obviously – needs to be writeable for changes in this page to take effect.

### 4.4.1 Basic

#### Options



Configuration file is **Writable**

Option	Current Settings
Output Directory	<input type="text" value="/var/www/backup"/> <input type="button" value="Reset to default"/>
Temporary Directory	<input type="text" value="/var/www/backup"/> <input type="button" value="Reset to default"/>
Archive Name Template	<input type="text" value="site-{HOST}-{DATE}-{TIME}"/>
Log Level	<input type="text" value="Errors and Warnings"/>

Basic  
 Advanced  
 Frontend

- **Output directory** is where you want your site backup to be stored. By default it is set to be a sub-folder of the JoomlaPack installation, inside the default temporary directory, namely `/administrator/components/com_joomlapack/temp` (relative to your site's root). Keep in mind that you have to enter an absolute path, meaning that if your site's root is `/var/www/html/myjoomla`, the aforementioned directory must be entered as `/var/www/html/myjoomla/administrator/components/com_joomlapack/temp`.
- **Temporary directory** is where you want the component to store some temporary files during the site packing operation. By default it is set to be a sub-folder of the JoomlaPack installation, namely `/administrator/components/com_joomlapack/temp` (relative to your site's root). Keep in mind that you have to enter an absolute path, meaning that if your site's root is `/var/www/html/myjoomla`, the aforementioned directory must be entered as `/var/www/html/myjoomla/administrator/components/com_joomlapack/temp`.



**Important!** When you use “Clean up and Release Locks” a secure .htaccess is written on the temporary directory, disabling browser access to it. **This might render your site inoperable if you're not careful!** Do not use your site's root or any other accessible folder as a temporary directory! Moreover, during archive creation, an installation folder is written on the output directory. If you use your site's root as temporary directory there will be a temporal window for exploiting the installer to compromise and/or take your site down! You might want to use an off-site directory for maximum security whenever possible.

- **Archive name template** controls the name that will be used for the backup file, but without an extension. The template name can contain any of the following “macros” in any order and quantity. The macros are expanded only at the time the backup procedure starts (file list creation) and can be used to make the backup name much less obvious to malicious users. Keep in mind that “macro” names are case sensitive!
  - **[DATE]** – It is replaced by the date at the moment the backup starts in the YYYYMMDD format .e.g. 20070127 for January 27<sup>th</sup> 2007.
  - **[TIME]** – It is replaced by the time at the moment the backup starts in the HHMMSS format, e.g. 231753 for 11:17:53 p.m.
  - **[HOST]** – It is replaced by the host domain name , e.g. www.example.com
- **Log level** is the level of detail that will be kept in the backup log file. The options are:
  - **Errors only.** JoomlaPack reports only fatal errors that cause the backup to fail.
  - **Errors and warnings.** JoomlaPack reports fatal errors that cause the backup to fail and warnings, such as unreadable files or directories that will not be included in the backup archive (highly recommended).
  - **All Information.** Detailed step-by-step log of all JoomlaPack operations.
  - **All Information and Debug.** JoomlaPack will log step-by-step all of its operations, plus any debug information useful when submitting bug reports.
  - **None.** No log will be kept (not recommended).

## 4.4.2 Advanced

### Options



Configuration file is **Writable**

Option	Current Settings
Database Export Style	Default compatibility
File List Creation Algorithm	Smart
Database Backup Algorithm	Smart
File Packing Algorithm	Smart
Archive Type	ZIP (.zip)
Installer Included in Archive	JoomlaPack Installer 2.0 (compatible with Joomla! 1.0.x and 1.5.x)
Backend backup method	AJAX (Refreshless)

In the “Advanced Options” section you can find a set of options that define the backup behaviour of JoomlaPack.

- **Database export style.** In the event that the host on which you will restore your backup is different than the host which you are taking the backup from, this option might come in handy as it sets the target version the exported MySQL snapshot will be compatible with. This option has only effect to newer versions of MySQL (I think 4.1 at least), otherwise it will be silently ignored. The available options are:
  - **Default compatibility** (default). JoomlaPack will not try to take corrective actions on the exported backup. If you're running on MySQL 5.0 or later and then try to restore on an older version of MySQL your site will probably be rendered inoperative.
  - **Force MySQL 4 Compatibility.** JoomlaPack will try to get a backup of your database that is compatible at least with version 4.0 of MySQL. Specifically, it disregards extended MySQL table options (i.e. character set, type of MySQL engine, etc.) so that earlier version of MySQL do not choke on the file when creating the tables. Use this on MySQL 5 or greater hosts only, please.
- **File list creation algorithm.** This option can accept three settings and determines how JoomlaPack works to find out which files it has to compress.
  - **Fast.** This algorithm tries to execute all steps of the operation at once. If you have a moderately sized site (about 100Mb) and a restrictive `max_execution_time` (less than 10 seconds) this is bound to fail with a time-out. However, for small sites or for sites without restrictions it is the best setting as it offers great speed. This algorithm does not provide any feedback when the backup process is running.

- **Slow.** This is a “fail-safe” algorithm that runs each step by itself. Since the component has to perform a whole lot of steps, it becomes very slow, but it should never time-out under regular usage. Using this algorithm, if the server imposes a limitation on the number of times per second any script may run, this might cause the process to fail for no apparent reason.
- **Smart (default).** A new option for the 1.1 Series, it tries to provide the best compromise between Fast and Slow algorithms. It keeps on executing steps until it estimates we are approaching the execution time limit imposed by `max_execution_time`. Then, it will stop and call a new AJAX step to proceed with the rest of the operation. If it detects a server without restrictions, it will fall back to Fast algorithm, when run on a very restrictive server it performs exactly like the Slow algorithm. This is the recommended setting, unless you know what you are doing.
- **Database backup algorithm.** This option can accept three settings and determines how JoomlaPack works to take a snapshot of your database.
  - **Fast.** This algorithm tries to execute all steps of the operation at once. If you have a moderately sized site (about 100Mb) and a restrictive `max_execution_time` (less than 10 seconds) this is bound to fail with a time-out. However, for small sites or for sites without restrictions it is the best setting as it offers great speed. This algorithm does not provide any feedback when the backup process is running.
  - **Slow.** This is a “fail-safe” algorithm that runs each step by itself. Since the component has to perform a whole lot of steps, it becomes very slow, but it should never time-out under regular usage. Using this algorithm, if the server imposes a limitation on the number of times per second any script may run, this might cause the process to fail for no apparent reason.
  - **Smart (default).** A new option for the 1.1 Series, it tries to provide the best compromise between Fast and Slow algorithms. It keeps on executing steps until it estimates we are approaching the execution time limit imposed by `max_execution_time`. Then, it will stop and call a new AJAX step to proceed with the rest of the operation. If it detects a server without restrictions, it will fall back to Fast algorithm, when run on a very restrictive server it performs exactly like the Slow algorithm. This is the recommended setting, unless you know what you are doing.
- **File packing algorithm.** This option can accept three settings and determines how JoomlaPack works to take a compress your backup.
  - **Fast.** This algorithm tries to execute all steps of the operation at once. If you have a moderately sized site (about 100Mb) and a restrictive `max_execution_time` (less than 10 seconds) this is bound to fail with a time-out. However, for small sites or for sites without restrictions it is the best setting as it offers great speed. This algorithm does not provide any feedback when the backup process is running.
  - **Slow.** This is a “fail-safe” algorithm that runs each step by itself. Since the component has to perform a whole lot of steps, it becomes very slow, but it should never time-out under

regular usage. Using this algorithm, if the server imposes a limitation on the number of times per second any script may run, this might cause the process to fail for no apparent reason.

- **Smart** (default). A new option for the 1.1 Series, it tries to provide the best compromise between Fast and Slow algorithms. It keeps on executing steps until it estimates we are approaching the execution time limit imposed by `max_execution_time`. Then, it will stop and call a new AJAX step to proceed with the rest of the operation. If it detects a server without restrictions, it will fall back to Fast algorithm, when run on a very restrictive server it performs exactly like the Slow algorithm. This is the recommended setting, unless you know what you are doing.
- **Archive type.** This is actually the archive type and archive creation method JoomlaPack will follow during the packing step. The available options are:
  - **ZIP (.zip).** JoomlaPack will generate a standard ZIP archive. Please note that on large files (above 2Mb) the CRC32 calculation on some hosts can sometimes cause the backup to fail or produce erroneous results which will make extraction of the archive challenging with most ZIP clients. This is a PHP limitation which we can't overcome.
  - **JoomlaPack Archive (.jpa).** This is a custom archive format combating the deficiencies of creating ZIP archives from a PHP script. However, you can only extract it using the JoomlaPack Kickstart script, or the `unjpa.php` script from the JPA Utils package.
- **Installer Included in Archive.**
  - **JoomlaPack Installer 2.0 (compatible with Joomla! 1.0.x and 1.5.x).** This is an installer written from scratch, designed to be able to restore Joomla! 1.0.x and 1.5.x sites alike, even with huge databases, keeping the original configuration settings. This is the *only* installer compatible with Joomla! 1.5.x.
  - **JoomlaPack Installer 1.0 (derived from standard Joomla! Installer).** Derived from the Joomla! 1.0.11 installer, it keeps the original site's configuration settings, but will restore only Joomla! 1.0.x sites. It is designed to support huge databases by restoring them a small chunk at a time, using AJAX technology.
  - **Joomla! 1.0.11 modified installer.** A slightly modified Joomla! 1.0.11 installer which keeps original configuration settings. It is only suitable for sites with a very small database size. On larger databases (more than 1-2Mb) it is bound to fail.
- **Backend backup method** lets you choose how JoomlaPack will instruct your browser to navigate through the backup steps.
  - **AJAX (Refreshless).** This is the original method, using AJAX calls to navigate between steps. It is very fast but needs Javascript enabled, an AJAX-compatible browser and nothing interfering with the process (such as firewalls, security suites, etc.). This method will work on 90% of occasions.

- **Javascript Redirect** will reload the backup page after each step using a small Javascript fragment instructing the browser to reload the page. This lets you use the component with non-AJAX browsers, or with websites which interfere with AJAX calls.



**Important!** Please make sure you take a look at the “[Security concerns](#)” chapter for a more in-depth discussion of security issues regarding the JoomlaPack configuration.

### 4.4.3 Frontend

#### Options



Configuration file is  **Writable**

▶ Basic	
▶ Advanced	
▼ Frontend	
<b>Option</b>	<b>Current Settings</b>
Enable front-end backup	<input type="checkbox"/>
Secret word	<input type="text"/>
Frontend backup is executed upon visiting the following URL: http://localhost/joomla/index2.php?option=com_joomlapack&act=fullbackup&key=secret_key&no_html=1	

The Frontend options control the behaviour of the front end backup.

- **Enable front-end backup**, if checked the front end backup capability is on. When unchecked, the front end backup is not possible.
- **Secret word** is the “password” used to control access to the front end backup function. The calling process must provide the secret word in order to perform a backup.



**Important!** The “secret word” is not so secret as it looks. It is transmitted in clear text when calling the backup script, so anybody who can “eavesdrop” on your Internet connection can find it out. It is therefore not advisable to use your administrator password or any other security-related key you use anywhere else.

### 4.4.4 Magic Numbers

**TODO**

## 4.5 Exclude Directories

Let's say you have a downloads folder with a size of 10Gb you don't want to backup every time. Or, maybe, your host saves Apache logs in your site's root so that they can be accessible by the provided analyser script. Possibly, you have another script (for example, a forum, a torrent tracker, you name it) in a subdirectory of your site's root – or even buried deeper in the directory structure – that you don't want to backup. Anyway, you need to exclude the contents of a directory from your backup. This is where the Directory Exclusion Filters fit the bill.

Directory Exclusion Filters (DEF for short) is a utility function that lets you select which directories to exclude from the backup. All you have to do is filter out a directory and you can rest assured that this directory and its subdirectories will be missing from your backup. The whole process is done in an explorer-like interface; point, click, done.

To activate the interface to Directory Exclusion Filters, click on “Exclude Directories from Backup” from the component's start page. You'll get a page like the following:

**Exclude Directories** 

`/var/www/html/joomla`

Exclude?	Directory
<input type="checkbox"/>	<a href="#">.cache</a>
<input type="checkbox"/>	<a href="#">.settings</a>
<input type="checkbox"/>	<a href="#">addon-modules</a>
<input type="checkbox"/>	<a href="#">administrator</a>
<input type="checkbox"/>	<a href="#">cache</a>
<input type="checkbox"/>	<a href="#">comments</a>

In order to exclude a directory, just tick (by clicking) the check box next to the directory's name. The directory name becomes black and can't be clicked. This means that the filter is active for that directory and its subdirectories and they will be excluded from the next backup.

In order to remove the filter, just remove the tick (by clicking) the check box next to the directory's name. The directory name becomes a link that can be clicked. This means that the filter is removed for that directory and it will be included in the next backup.

When you click on a directory name, the page displays its contents. You will only see the names of the directories, not the files (since this is a directory exclusion filter interface after all). Very simple, but hopefully effective.



**Important!** It is imperative that the user excludes from the backup system folders, such as log files folders or server stats folders, because doing otherwise might cause the backup process to fail.

## 5 Single File Exclusion

Ever had a file in your site's root put there by your host? Or how about that 200Mb video file in the media directory you don't want to backup? If you need to exclude just a few files here and there but let the other files in the directory be backed up, you can use the Single File Exclusion.

### Exclude Directories



**/var/www/html/joomla**

Directory		File
<a href="#">.cache</a>	<input type="checkbox"/>	index.html
<a href="#">.settings</a>	<input type="checkbox"/>	CREDITS.php
<a href="#">addon-modules</a>	<input type="checkbox"/>	index.php
<a href="#">administrator</a>	<input type="checkbox"/>	robots.txt
<a href="#">cache</a>	<input type="checkbox"/>	COPYRIGHT.php
<a href="#">components</a>	<input type="checkbox"/>	.project
<a href="#">images</a>	<input type="checkbox"/>	INSTALL.php
<a href="#">includes</a>	<input type="checkbox"/>	LICENSE.php
<a href="#">language</a>	<input type="checkbox"/>	

The Single File Exclusion operates in an explorer like interface. Just below the page's title you can see the absolute path to the current directory, in bold letters. Below it, there are two tables.

The left hand table is a list of directories below the current directory. You can click on a directory to make it current. Some directories do not have link (black text). This means that you have excluded them from the backup using the Exclude Directories functionality and, as a result, there is no point excluding their files.

The right hand table is a list of files in the current directory. Each of them has a check box beside it. If the tick box is checked, this file will not be included in the backup. Just click the check box to toggle the filter. Changes are applied immediately by means of AJAX requests.

## 6 Exclude DB tables

Sometimes you can have multiple sites installed in the same database, a common situation with sub-domains on cheap hosts who allow only one MySQL database per account. Some other times you have installed a forum, a torrent tracker or whatever on a subdirectory of your site and it has created tables in your site's database. Before JoomlaPack 1.2 excluding those tables was impossible; now it is possible using Exclude DB Tables.

**Exclude DB Tables**[Reset exclusion filters - Exclude non-Joomla! tables](#)

Exclude?	Table
<input type="checkbox"/>	nic_banner
<input type="checkbox"/>	nic_bannerclient
<input type="checkbox"/>	nic_bannertrack
<input type="checkbox"/>	nic_categories
<input type="checkbox"/>	nic_components
<input type="checkbox"/>	nic_contact_details
<input type="checkbox"/>	nic_content

The AJAX-operated page consists of two sections.

The section just below the page's title has the quick filter links. Clicking on a link will enforce the respective filters.

- **Reset exclusion filters** will delete all database table exclusions you may have previously set. This is very useful if you messed up and want to reset the filters back to the factory default.
- **Exclude non-Joomla! tables** will remove all filters and then exclude all database tables JoomlaPack believes that have nothing to do with the Joomla! installation your site is running. It operates based on the table prefix; each and every table whose name begins with the prefix set during Joomla! installation (default: jos\_) will not be excluded, whereas all other tables will be excluded.

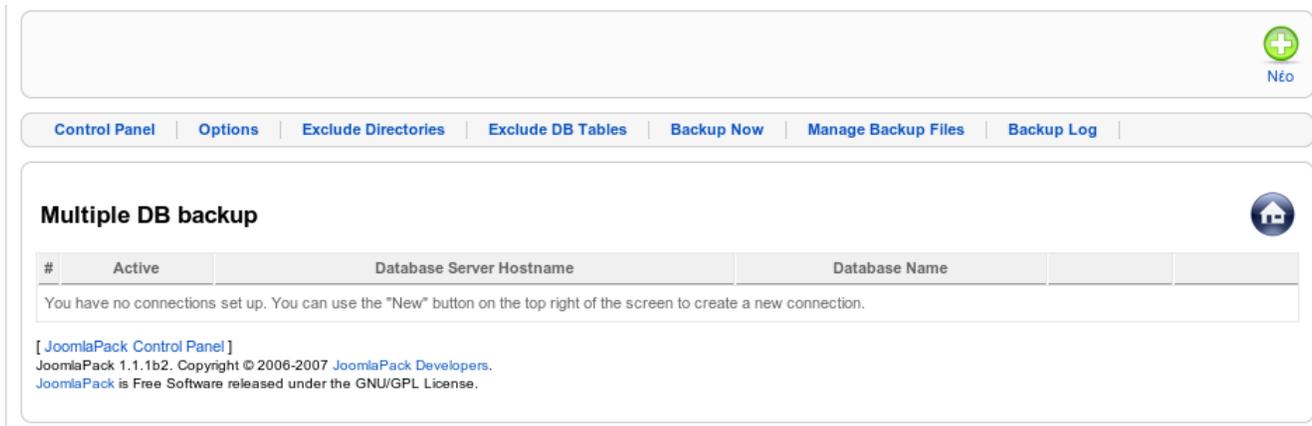
The section below the quick filters is a tabular representation of your database's tables. A tick mark on the "Exclude?" column means that the table will not be backed up. You can toggle the filters by clicking on the check boxes. Changes are applied immediately.

## 7 Multiple DB Backup

Sometimes your site grows beyond Joomla!. A forum, a torrent tracker, a custom script... Some of them get to be installed in a database of their own, not as tables in the same database as the one Joomla! is using. If you really want to take a *full* site backup, you really need these databases backed up as well. The solution to this is the Multiple DB Backup option of JoomlaPack. You can define an unlimited number of additional MySQL databases which will get to be backed up (and restored!) along with your regular Joomla! database.



**Important!** Backup and restoration of multiple databases is only supported in conjunction with JoomlaPack Installer 2. If you choose any other installer from the options screens the multiple DB backup will silently fail. Also note that these databases will be dumped verbatim; no filters will be applied.



Control Panel | Options | Exclude Directories | Exclude DB Tables | Backup Now | Manage Backup Files | Backup Log

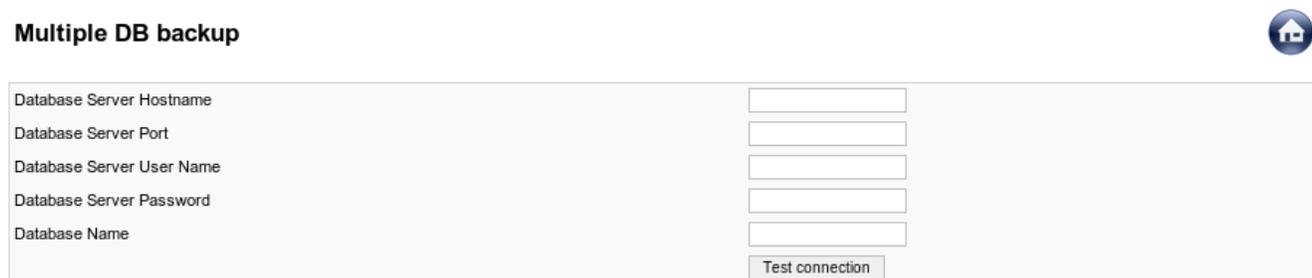
### Multiple DB backup

#	Active	Database Server Hostname	Database Name
You have no connections set up. You can use the "New" button on the top right of the screen to create a new connection.			

[ JoomlaPack Control Panel ]  
 JoomlaPack 1.1.1b2. Copyright © 2006-2007 JoomlaPack Developers.  
 JoomlaPack is Free Software released under the GNU/GPL License.

At first, you are presented with a familiar Joomla! grid view, listing all database definitions, or a warning message if no definitions are found. Clicking on an entry will open the database definition editor page.

In order to add a database definition, click on the New button, in the toolbar below Joomla!'s back-end menu. This will also lead you to the database definition editor page.



### Multiple DB backup

Database Server Hostname

Database Server Port

Database Server User Name

Database Server Password

Database Name

Test connection

You have to specify the following parameters for connecting to a database:

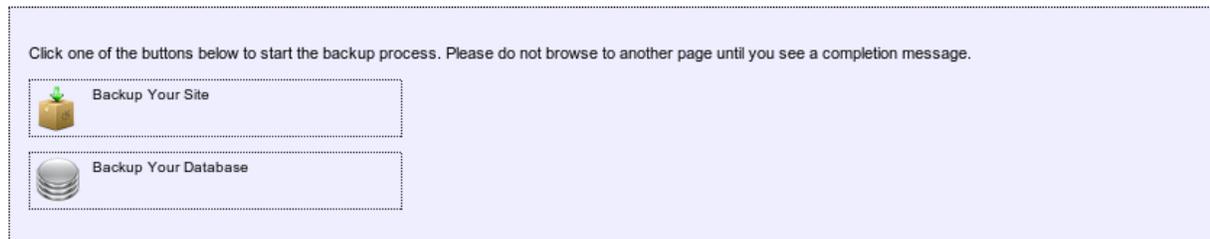
- **Database Server Hostname.** The host name or IP address of the MySQL server to connect to; usually this is localhost.
- **Database Server Port.** If your MySQL server uses a non-standard port, specify it here. If unsure, leave it blank.
- **Database Server User Name.** The user name to connect to the MySQL server.
- **Database Server Password.** The password to connect to the MySQL server.
- **Database Name.** The name of the database to back up.

You can use the button labelled “**Test Connection**” to make sure you have entered the correct connection information for your database. Shortly after pressing it, a pop-up dialogue will inform you on the validity of your settings.

Click on the “Save” button on the Joomla! toolbar to apply the settings and get back to the Multiple DB backup start page, or the “Cancel” button to return without applying the changes.

## 7.1 Backup Now

### Backup Now



Before we discuss the options on the Backup Now screen, there are a couple of important issues that we need to cover:

 **Important!** In order for the restoration to work properly, the original site must have a readable and valid configuration.php on its root. This means that a 'trick' many webmasters use, that is providing a configuration.php which includes an off-server-root PHP file, is incompatible with the restoration procedure. The provided installers are hard-coded to look for the configuration.php in the site's root, include it and read the configuration variables off the resulting memory array. If the 'trick' has been effective on the original site, the installer will have blanks in its options and if the user proceeds with the restoration/installation procedure the site will not work as expected, as crucial options will have the default or no value at all!

 **Important!** Do not navigate away from this page or close your browser window until the packing is complete. Otherwise, the backup process will be interrupted and no backup file will be created (or you'll get stuck with an incomplete backup file).

Whenever JoomlaPack has reasons to believe that the process has been halted, it will issue a timeout warning, informing you of the next steps you should take. This will not happen if you've chosen the "JavaScript Redirects" back-end backup method. Always try different configuration options before submitting a bug report.

 **Important!** Some hosts produce warning messages that interfere with JoomlaPack's backup procedure. In order to alleviate this problem, please go to Joomla!'s Global Configuration. Under the "Server" tab set the "Error Reporting" to "None" and save the configuration. Keep in mind, however, that this setting disables error reporting in Joomla!, so if you are a developer you will most probably have to switch it back on at some point.

- **Backup Your Site** is the normal option which will create a complete backup of both the files and database of your site.

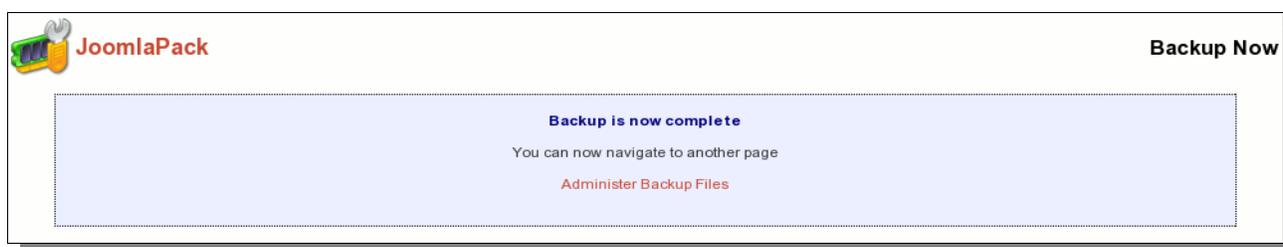
- **Backup Your Database** is a generic database backup option. It produces a dump of your database only. This dump is in a form that can be readily restored to your site with any MySQL client, including the extremely popular phpMyAdmin web client.



**Important!** If you are not clear on what this option does, do not use it, use the “Backup Your Site” option instead.

Depending on which type of backup you are doing and which configuration options you have chosen, you will see a series of messages telling you that various steps in the backup are being processed.

After the whole process is complete, JoomlaPack will clean up any temporary files it has created and empty the temporary database tables it uses.



By that point, your site backup file has been created. You can now navigate out of the packing page and possibly into the “Backup File Administrator” screen.



**Important!** There have been reports that some server settings prevent JoomlaPack from creating a usable zip file. After downloading your backup, **test the zip file to make sure it is valid**. There have also been rare instances where WinZip refused to extract a zip file but 7-Zip or WinRAR would extract it.

## 7.2 Frontend Backup

The Frontend backup function is intended to provide the capability to perform an unattended, timed backup of your site.

The script performs one backup step and sends an HTTP 302 header to force the client to advance to the next page, which performs the next step and so forth. You will only see a message upon completion, should it be successful or not.

1. It is NOT designed to be run from a normal web browser, but from an **unattended** cron script, utilizing wget or cron as a means of accessing the function.
2. The script is not capable of showing progress messages.
3. Normal web browsers tend to be "impatient". If a web page returns a bunch of 302 headers pointing to itself, the web browser thinks that the web server has had some sort of malfunction and stop bothering with the page. It might also show some kind of "destination unreachable"

message. Remember, these browsers are meant to be used on web pages which are supposed to show some content to a human. This behavior is normal.

4. Command line utilities will give up on a page after it has been redirected a number of times. For example, `wget` gives up after 20 redirects, `curl` after 50 redirects. Since JoomlaPack redirects once for every step, it is advisable to configure your command line utility with a large number of redirects; I believe 1000 will do for 99,9% of sites.
5. If a frontend or backend backup fails, you **must** use the reset locks button to clear the lock and let the frontend backup option work again. Failure to do so will result in 501 messages. Otherwise, wait for 2 minutes for the lock to expire.

Most hosts offer a CPanel of some kind. There has to be a section for something like “CRON jobs”, “scheduled tasks” and the like. The help screen in there describes how to set up a scheduled job. One missing part for you would be the command to issue. Simply putting the URL in there is not going to work. If you are on a UNIX-style OS host (usually, a Linux host) you most probably have access to a command line utility called `wget`. It's trivial to use:

```
wget --max-redirect=1000 "http://www.yoursite.com/index2.php?
option=com_joomlapack&act=fullbackup&key=YourSecretKey&no_html=1
"
```

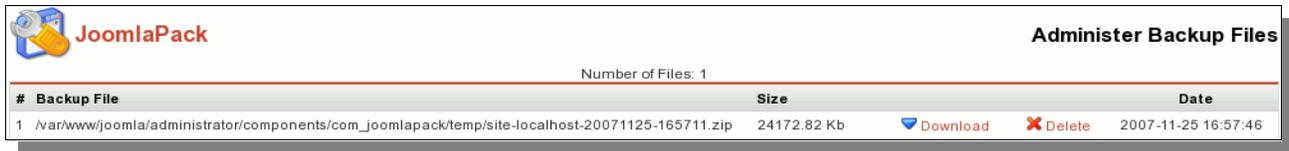
If you're unsure, check with your host. Sometimes you have to get from them the full path to `wget` in order for CRON to work, thus turning the above command line to something like:

```
/usr/bin/wget --max-redirect=1000
"http://www.yoursite.com/index2.php?
option=com_joomlapack&act=fullbackup&key=YourSecretKey&no_html=1
"
```

Contact your host; they usually have a nifty help page for all this stuff.

`wget` is multi-platform command line utility program which is not included with all operating systems. If your system does not include the `wget` command, it can be downloaded at this address: <http://wget.addictivecode.org/FrequentlyAskedQuestions#download>. The `wget` homepage is here: <http://www.gnu.org/software/wget/wget.html>. Please note that the option `--max-redirect` is available on `wget` version 1.11 and above.

### 7.3 Administer Backup Files



#	Backup File	Size		Date
1	/var/www/joomla/administrator/components/com_joomlapack/temp/site-localhost-20071125-165711.zip	24172.82 Kb	<a href="#">Download</a> <a href="#">Delete</a>	2007-11-25 16:57:46

The “Backup File Administration” screen is the centralized location from where you can see all of the backup files that reside in the output folder and perform two basic administration tasks: download them to your local computer or delete them.

The download function is not supposed to absolutely replace using FTP to get the backup archives; it is meant as a convenience feature. Due to some configuration combinations beyond our control, the download function *might* fail. In this case use an FTP client to download your backup archives.

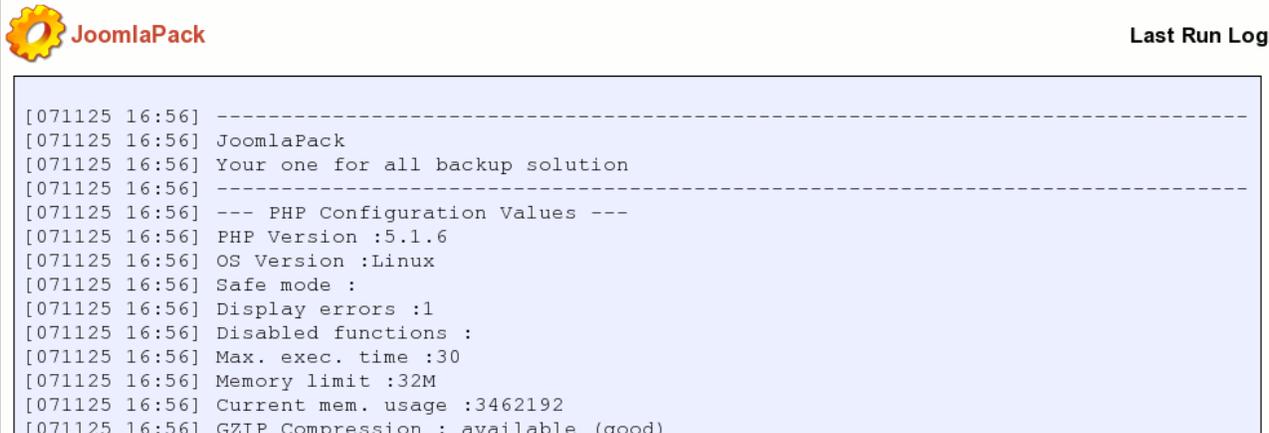


**Important!** Some browsers running under Windows – most notably, Internet Explorer – believe that the archive file is a text file with UNIX-style line endings and try to “fix” it while downloading. This corrupts the archive. If you end up with a corrupted archive this way, please use an FTP client to download the backup file.

What you get as soon as you enter this screen is a list of files. From left to right you see the following columns:

- **Backup File.** The name of the backup file (backup files have an extension of .zip).
- **Size.** The size of the backup file in kilobytes (1 Kb = 1024 bytes).
- **Download.** Lets you download the file. Please note that the only thing this selection does is to channel the backup file through PHP in order that your browser can get it.
- **Delete.** Lets you delete the backup file, provided that you have not changed its access permissions. JoomlaPack will ask you to confirm this choice before actually deleting the file.
- **Date.** The date and time the backup file was created. It appears in the format YYYY-MM-DD HH:MM:SS.

## 7.4 View Log



```
[071125 16:56] -----  
[071125 16:56] JoomlaPack  
[071125 16:56] Your one for all backup solution  
[071125 16:56] -----  
[071125 16:56] --- PHP Configuration Values ---  
[071125 16:56] PHP Version :5.1.6  
[071125 16:56] OS Version :Linux  
[071125 16:56] Safe mode :  
[071125 16:56] Display errors :1  
[071125 16:56] Disabled functions :  
[071125 16:56] Max. exec. time :30  
[071125 16:56] Memory limit :32M  
[071125 16:56] Current mem. usage :3462192  
[071125 16:56] GZIP Compression : available (good)
```

The View Log option allows you to download or view the output from the most recent backup operation. This information may be useful in diagnosing problems if you are having a problem completing a backup. If you wish to download the raw log (a text file), click on the download link right under the “JoomlaPack” header text.

The bulk of this page is the log visualization. Each line is prepended by a time stamp, in the format YYMMDD hh:mm (that's year, month, date with two digits, a space and time in 24-hour format).

Each line is color coded, for your convenience. Debug information is in smaller, gray type. Normal information is in black type. Warnings appear in bold yellow letters. It is important to read them as they convey information about skipped directories or other things that will be missing from the backup archive. If any errors occurred, these appear in bold red type. Whenever you report bugs, this information is absolutely necessary.

In order to reveal as little sensitive information as possible, whenever a file path has to be logged, your site's root folder is replaced with the string '<root>'. Keep this in mind when reading warnings and errors.

## 8 Administering and restoring backups

### 8.1 Restoring backups

Currently, there is no integrated backup restoration option. In order to restore your backups you'll have to use the same procedure you use for installing a fresh copy of Joomla!. Below I outline this procedure.

### 8.2 Extracting using site management utility

Many hosting sites use cpanel or a similar utility to allow you to manage files on your site. This utility may allow you to extract the contents of your compressed backup file directly to your site. When this utility is available, it is usually much faster than transferring the extracted files via FTP.

### 8.3 Transferring the backup contents manually

At first, you should have downloaded the archive that JoomlaPack generated somewhere on your local computer. Unpack that file (Windows users can use 7-Zip, WinRAR or the integrated Windows Compressed Folder handling to do that) in some directory.

Following, you'll have to transfer all of the extracted files to your web host, for instance via FTP.

### 8.4 Using JoomlaPack Kickstart

Please refer to the appendix for the Kickstart documentation.

### 8.5 Restoring the backup (installation)



**Important!** In order for the restoration to work properly, the original site must have a readable and valid configuration.php on its root. This means that a 'trick' many webmasters use, that is providing a configuration.php which includes an off-server-root PHP file, is incompatible with the restoration procedure. The provided installers are hard-coded to look for the configuration.php in the site's root, include it and read the configuration variables off the resulting memory array. If the 'trick' has been effective on the original site, the installer will have blanks in its options and if the user proceeds with the restoration/installation procedure the site will not work, as crucial options will have the default no value at all!



**Important!** When restoring a backup, JoomlaPack restores the .htaccess file as well. Since this file may contain filters and restrictions appropriate only for a configured site (such as SEO redirection filters or access permissions on system folders) it is advisable to temporarily rename this file to something like temp.htaccess, restore your site, then rename it back to .htaccess to get your site working.

The following instructions assume that you have used “JoomlaPack Installer 2” during backup (the default installer). If you have used “JoomlaPack Installer 1” the process will be similar, but not exactly the same as the one outlined in this section. The installer used is selected on the Advanced Options screen.

Assuming that your site's domain is `www.example.com` , point your browser to `http://www.example.com/installation/index.php`.

Follow the installation screens. If you are restoring to the same host as the one you got your backup from, you simply have to click on “Next” at every screen. Otherwise, make sure the database parameters are correct, or enter the correct values.



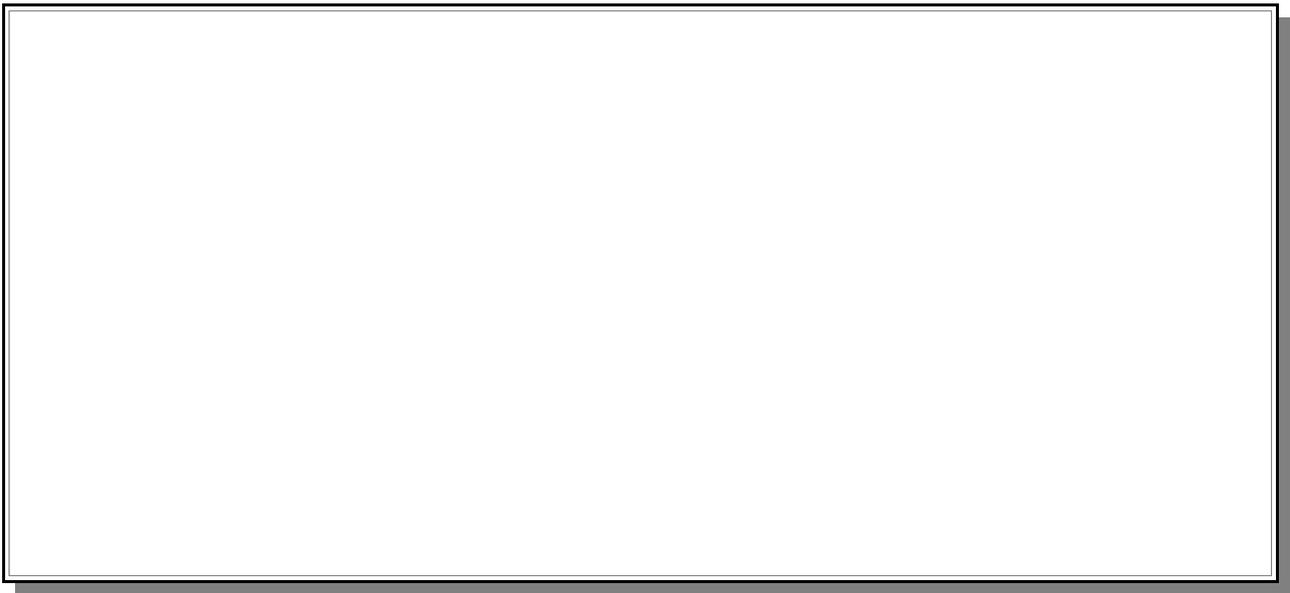
**Important!** Do not navigate to the site's root, i.e. `http://www.example.com` as it will simply give you an error instead of the installation screen! Many users delete the `configuration.php` from their server root in order to make `http://www.example.com` point to the installation page.

**This is wrong!** If you do that, any customized behavior in `configuration.php` will be lost!

On the following screen, note the “Default configuration source” field. This shows the source of the defaults used in the installer. If your backed up `configuration.php` file can not be read, or is not found, a stored “default” file is used.



In the next step, the connection information to the MySQL database is confirmed and the database restore begins.



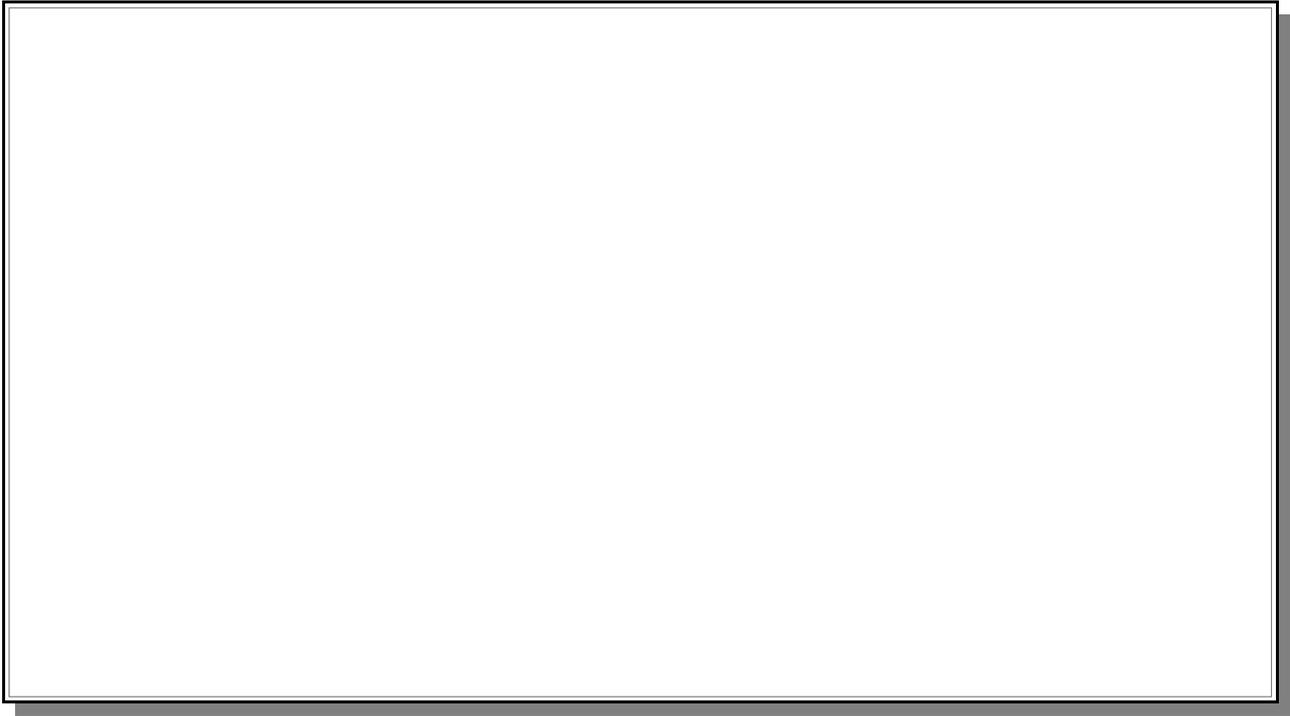
Your site name and administrator email defaults to the values used when the site was backed up. You may change the values if necessary.

Setting the administrator password is a major change from previous version of the software. The choice that you select here *is* written to the database. You may:

- Leave the password blank to keep it the same as the backed up site.
- Enter a new administrator password.
- Press the Random password button to generate a new, random password for the administrator. Be sure to record this password as it is not displayed on subsequent screens.



**Important!** JoomlaPack Installer 2 works as expected and sets the administrator password used on this screen. This is a major change from JoomlaPack Installer 1, where setting a new administrator password had no effect.



At this point, the site restoration is complete.



Finally, using your FTP client or any other preferred means, remove the installation folder. You are ready!

# Appendices

## 9 Frequently asked questions and problem solving

**Q.** When trying to pack the site, even before generating a file list, I instantly get a timeout warning. Can you help me?

**A.** Before starting the packing process, JoomlaPack runs a “ping” test to ensure AJAX is working. If this test fails, it can be because a number of problems went wrong:

- PHP warnings mess AJAX result parsing. In this case, try setting Joomla!'s Error Reporting to None (this option is located in Joomla!'s General Configuration under the Server tab).
- Your browser does not support (or only partially supports) AJAX. Confirmed working browsers are Internet Explorer 6 & 7, Konqueror 3.5.9, Firefox 1.5 & 2+. If you use older versions of Konqueror, Safari or any other KHTML-powered browser, you will get errors during file list creation (this is due to the way those browsers parse Javascript). No other browsers have been tested. In any case, try using one of the supported browsers.
- You have an unstable network link or your server is non responsive. This can easily happen with crowded shared hosting servers (most notably, the free ones) or over a low signal Wi-Fi internet connection. Even if the network gets disconnected for a second or so, it can cause the AJAX call to fail, as the response never comes back to the browser.
- Some other error has occurred. First, check out the support forums at <http://www.joomlapack.net/forum/>. If you do not find a relevant entry in the forum, then start a new thread. We will answer to you as soon as we can (usually, it takes 1-3 days, at most a week). Alternatively, you can try using the JavaScript Redirects mode.

---

**Q.** When trying to pack the site, JoomlaPack issues a timeout warning in the first step (generating file list). Is it broken?

**A.** Please see the discussion in the relevant section of this manual. Also note that the answer to the above question also applies here.

---

**Q.** In Step 1 of the restore, I get a message “Could not connect to database,” with a description of “The password and username provided are incorrect.”

**A.** There are two possible causes:

1. The user name or password that you provided are not correct.

2. The restore process will not create the database, only restore your data to an existing database. On a new host, you must manually create the database before you start the restore. Part of the process of creating the database will be to create the user and password.
- 

**Q.** There are files missing from the backup! Why?

**A.** In the rare event that you have files with permission settings that do not enable your web server to read them, JoomlaPack can't access them and therefore can't pack them either. This might happen if you upload your files with FTP and don't change the permissions manually. In this case, you should also experience malfunctions on your Joomla! site prior to using JoomlaPack. Sometimes, you can have directories with wrong permissions and files with correct permissions, which makes things a little more complicated. As a general rule of thumb, the minimum permissions to be on the safe side are:

- Directories: Readable by user, group and other, executable by user, group and other
- Files: Readable by user, group and other

The execution bit for directories might also be labeled “browse” permission by some software.

Also, you'll have missing files when the backup fails.

For another explanation, take a look at the next FAQ entry.

---

**Q.** I downloaded the ZIP archive but my archiver software says it's broken. I've tried everything, to no avail! What's this all about? Can't JoomlaPack produce valid ZIP archives?! Why did you release it, then?

**A.** This is not a yes or no question. The situation is somewhat complex and requires a little bit of technical explanation. If you want the executive summary, JoomlaPack is unable to produce valid-looking ZIP files under certain configurations. However, the data is intact and you can extract the archive if your archiver software can be set up to ignore CRC errors in the archive. Alternatively, you can use the `unzip.php` script from the JPA Utils package.

And here goes the technical explanation. The ZIP archive format specifies that a CRC32 checksum must be stored for each file included in the archive. PHP before version 5.1.2, only had a CRC32 calculation function for in-memory data. As a result, JoomlaPack had to read the entire file to memory to calculate its CRC32 hash. However, due to memory consumption limitations imposed by PHP configuration, this is usually not possible for large files. “Large files” for PHP usually means around 1Mb. A workaround was attempted but it was not successful, since PHP is a typeless language and the required bitwise arithmetic could not be performed.

The effect of all of this is that a dummy CRC32 value is stored for those files. Archiver software, adhering to the ZIP standard, check the CRC32 for each file they try to extract and when they come to such a file with a dummy CRC32 they think that the archive is broken and omit the extraction of the offending file. In fact, the file data is correct, the CRC32 is wrong. Some archiver software can be configured to ignore CRC errors and the ZIP will extract just fine.

Since PHP 5.1.2 there was the “hash” extension available. This PHP extension provides a method for quickly and accurately calculating any file's CRC32 without having to read all of it in memory. In systems with PHP 5.1.2 or better with the “hash” extension available, JoomlaPack will produce correct ZIP files, adhering to the ZIP standard.

Please note that this is a PHP limitation, beyond our control. We are not irresponsible, releasing a software which doesn't work. The current behaviour is a compromise between required features and technical possibility.

---

**Q.** I am on GoDaddy hosting and this component keeps failing during the “packing” step. What's wrong?

**A.** There is an unresolved compatibility issue with GoDaddy hosting and JoomlaPack, when set up to backup to ZIP files. Switch to JPA archives from the JoomlaPack Options page and it'll work again.

---

**Q.** I think I have found a serious bug. What should I do?

**A.** First, check out the support forums at <http://www.joomlapack.net/forum/>. If you do not find a relevant entry in the forum, then start a new thread. We will answer to you as soon as we can (typically, it takes 1-3 days, at most a week; most posts are replied within the day, depending on our availability).

---

**Q.** Will this component work with my Joomla! 1.5 site?

**A.** Yes, of course! This version is designed and tested to be Joomla! 1.5 compatible, in native mode, as long as you install the -j15 package. However, in order to *restore* your site you need to select “JoomlaPack Installer 2” from the configuration page. As Joomla! 1.5 is becoming widely adopted by the webmaster community, we will drop Joomla! 1.0.x support in the 1.3 release.

## 10 Security concerns

As every solution that can have access to your site as a whole, JoomlaPack can arouse some security concerns.

The first major concern is about keeping its functions accessing your site's file and database available only to authorized persons. To this end I made JoomlaPack accessible only to the Super Administrators. This is the group of people that already have infinite access to the site, making it a perfect candidate for people that can perform backups.

The other concern is where the backup files go and who can access them. By default, JoomlaPack uses a non secure place to store files, a folder within your site's folder hierarchy. It is the folder `/administrator/components/com_joomlapack/temp`, which is also used for other temporary files. This configuration makes it very easy for a malicious person to point his browser to the location of this folder and try downloading backup files. There are two courses of action a site administrator could possibly follow:

- secure access to the folder, or

- use a folder outside the web server's root

Both methods are outlined later on this chapter.

Another security risk is what happens in the case of an anomalous interruption of the packing process. If the process hangs while or any point after the creation of the database backup, it is possible that the temporary folder (by default located in `/administrator/components/com_joomlapack/temp`) contains SQL backups of your database. Since all the previous points about the output folder also stand true for the temporary directory, a malicious user could possibly download a copy of your database.

Please use the “Clean up and release locks” function after a failed backup, especially if you haven't positively secured your temporary folder. The SQL backup file is always named `joomla.sql` and its location is **predictable**. Do not rely on “security through obscurity”; even if you place an `index.html` in your temporary directory, it won't even slow down a semi-knowledgeable and determined attacker from potentially grabbing files off your temporary folder, unless you positively secure the folder itself.



**Important!** When you use “Clean up and Release Locks” a secure `.htaccess` is written on the temporary directory. **This might render your site inoperable if you're not careful and use your site's root as temporary folder!** Do not use your site's root or any other folder meant to be directly accessible by a browser as a temporary directory!

## 10.1 Securing access to the folder

In order to secure access to the folder, the site administrator should use the web server provided methods of user authentication for this folder. If you are using Apache and you are able to use `.htaccess` files, you could create an `.htaccess` file inside `/administrator/components/com_joomlapack/temp` with the following contents:

```
AuthType Basic
AuthName "Restricted Files"
# (Following line optional)
AuthBasicProvider file
AuthUserFile /path/to/your/passwords/file
Require user name_of_your_user
```

The drawback of this method is that you have to manually create the passwords file and store it somewhere outside your server's root, thus requiring a lot of expertise. More information on that subject is available at the Apache documentation website.

Please note that most web hosts provide some kind of control panel that allows you to “password-protect” directories much more easily than you could by following the aforementioned procedure. In that case, you might choose to simply use the provided method to password protect `/administrator/components/com_joomlapack/temp`.

## 10.2 Using a folder outside the web server's root

The easiest and most fail-safe method is to use a folder outside the web server root. This method requires some knowledge on the directories used by your web server, so the following procedure is

somewhat sketchy. The main idea is to create a folder somewhere outside the folder hierarchy used by your web server to serve files from and have JoomlaPack store its backups there.

Let's say you are using a Linux shared web host (a typical case for most people). When I FTP to my account, I can see various folders, one of which is www. Knowing that Joomla! located my site's root in /home/webfarm2/mydomain/www, I can figure out that folders in my account are located inside /home/webfarm2/mydomain and that only sub-folders of www are published to the web.

I create a folder named backups inside my account's root, so it won't be publicized on the web. I can also figure out that its path is /home/webfarm2/mydomain/backups. When I create this folder I pay great attention to the access rights. It seems that the folder I create belongs to user mydomain, but the server runs under the user www. So, I change the rights of "Other" users to read, write and execute. I go back to JoomlaPack configuration screen and change "Output folder" to /home/webfarm2/mydomain/backups. I check on the "Application Status Check" screen that the folder is indeed writable.



**Important!** Several hosts use open\_basedir restrictions to limit PHP scripts from accessing directories outside the domain's root. Obviously, trying to use an off-site folder on these hosts will always fail, no matter what the folder permissions are.



**Important!** When you create a folder with FTP, the owning user is *different* than the web server user. This implies that you need to set 0777 (read, write and execute to everybody) folder permissions for JoomlaPack to be able to write to that folder.

## 11 Kickstart User Guide

## **11.1 Introduction**

### **11.1.1 Purpose**

Even though JoomlaPack is designed as an effortless way of backing up your site, it is only good up to the point of having a backup archive. Restoring it is a pretty much different story.

At first, you have to download the file to your PC. Then extract it. Then upload all the files, via FTP, to you site (and, man, this is *slow* or what?). Then rename .htaccess to htaccess.txt. Go through the restoration process, which is the easy part. Then remove the installation directory. Finally, rename htaccess.txt to .htaccess.

Did you notice something? Most of this is a common predefined procedure. The only human intervention trully required is for the restoration process part. Moreover, FTP'ing all those 3000+ files is an overkill. Because of all of this, Kickstart was born.

Kickstart works in conjunction with the ZIP / JPA archive, directly on the target server. Nothing else is required. You just upload kickstart.php and your archive to the server, visit <http://www.yourdomain.com/kickstart.php>, select the archive, wait, go through the restoration process, click the finish link and presto! Your site is up and running; the kickstart.php, the backup archive and the installation folder all gone, automatically. Even the .htaccess renaming took care of itself. Isn't this too good to be true?

Well, it is. You actually need to either turn off PHP Safe Mode, or make sure the target folder is owned by the same user as the one your web server runs on: this is a PHP limitation we can't overcome.

### **11.1.2 Why call it "Kickstart"?**

The naming of this script is a small tribute to one of the first computing platforms I came to know: the Amiga 500. The initial bootloader, pretty much responsible for initializing the operating system's boot process was called Kickstart. This script has an analogous function in the restoration process of JoomlaPack-generated backup archives: it takes care of everything up to the point the actual restoration process starts.

Moreover, the term "kickstart" is used in soccer to signal the start of the game. This script starts the game for... your site! It is so simple to get the process going, like kicking a soccer ball.

#### **11.1.2.1 Who made this?**

Most of the script's code was written by Nicholas Dioysopoulos, the JoomlaPack Lead Developer. Some parts of the code were written by the (S)AJAX project. All of it is released under the terms of the GNU General Public License, version 2 or later.

There are two handy libraries inside the script, the Simple UnZIP and the UnJPA. They are both written from scratch and their goal is to extract ZIP and JPA archives, respectively, without consuming large ammount of memory, while being able to operate within AJAX calls, extracting a handfull of files at a time.

## **11.2 Before using Kickstart**

### *11.2.1 Getting Kickstart*

**TODO**

### *11.2.2 Requirements*

JoomlaPack's Kickstart requirements generally match those of [Joomla! 1.5.x](#) :

- PHP 4.3.10 or greater
- Apache 1.3 or above (might work with IIS)
- mod\_zlib
- PHP Safe Mode disabled or correct ownerships

The last requirement must be further explained. PHP with Safe Mode enabled will refuse to create folders inside another folder which is not owned by the same user as the one the web server (Apache) runs under, even if the folder is otherwise writable. Kickstart will detect such a misconfiguration and report it upon starting up, even in the absence of a ZIP / JPA file. Thus, it is a good idea to run Kickstart on your intended target server prior to uploading the backup file in order to evaluate its compatibility with the server.

Moreover, if you already have a site installed on the target server you have to ensure that all folders and files are writable. If not, Kickstart will fail and leave your site in a possibly broken state.

## **11.3 Using Kickstart**

### *11.3.1 Procedure overview*

The procedure for restoring your site is very simple and consists of four easy steps:

- Uploading the necessary files
- Launching Kickstart wizard to extract the backup
- Go through the restoration procedure
- Finalize the Kickstart wizard

### *11.3.2 Uploading the files*

There are two files you need in order to deploy and restore your JoomlaPack archive: the archive itself (in ZIP or JPA format) and kickstart.php itself. All you have to do is upload them to the intended server location where your (restored) site will reside.

Kickstart can also be used against plain Joomla! distribution files in ZIP format; instead of uploading a JoomlaPack-generated backup archive you can upload a Joomla! distribution ZIP file and follow the same procedure.

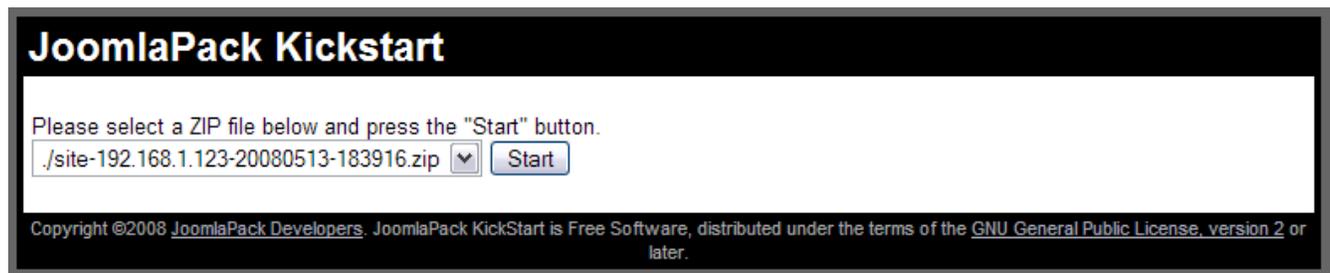
Make sure that any folders in common with your backup file, if they exist, are writable! This is only required if you are restoring over an existing site.

### 11.3.3 The Kickstart wizard

In order to launch the Kickstart wizard, you simply visit the <http://www.example.com/mysitefolder/kickstart.php>, replacing [www.example.com](http://www.example.com) with your server's host name and [mysitefolder](#) with whatever folder you uploaded your files into.

For example, if you uploaded the files to a folder named `joomla` and your host name is `www.mygreatsite.com`, location to put in your browser's address bar is `http://www.mygreatsite.com/joomla/kickstart.php`. If you uploaded your files to the web server root and the host name is `www.mybigsite.com` then the location in the address bar should be `http://www.mybigsite.com/kickstart.php`.

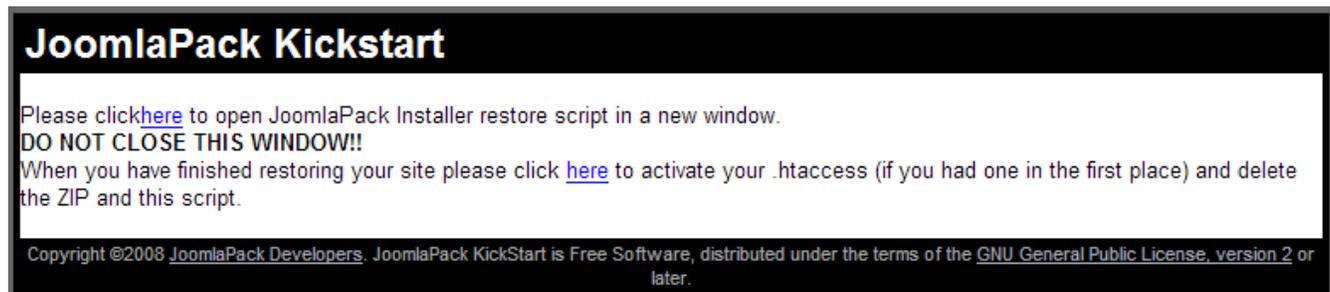
When you first launch Kickstart you will see a backup file selection drop-down list. If Kickstart detects that it is incompatible with your server setup it will show a warning instead.



Select your backup file, or leave the default if you have only uploaded a single file. Then press the "Start" button. The screen will get updated with the extraction process.



When Kickstart finishes the extraction of your backup file, the final wizard page appears.



The first link (“click here”) will open the installer embedded in the backup archive. More specifically, it will open the script `installation/index.php`, relative to the current directory. At this point **do not close the Kickstart window!**

### 11.3.4 Finishing installation

Go through your restoration process as usual. When it's done and you're prompted to delete the installation directory, get back to the Kickstart window.

Then click the second link. Seemingly nothing happens, but Kickstart restored your `.htaccess` (if you had one), deleted the backup archive and itself. You're done; close the Kickstart window.

## 12 JoomlaPack Utilities

The JoomlaPack Utilities is a set of command-line PHP scripts used to extract backup archives created by [JoomlaPack](#).

You can not execute them from a web browser. Doing so will result into a warning and the operation will be aborted. In order for the scripts to work, you'll need to know the absolute path to the PHP executable (`php.exe` on Windows). Whenever you see `/path/to/php` in this file, substitute it with the absolute path to the PHP executable.

Most Linux users needn't know the absolute path, as the PHP executable is added to a folder in their path when its package is installed. For more information you can refer to your distribution's documentation.

### 12.1 JoomlaPack UnZIP

The JoomlaPack UnZIP is a command-line script which extracts a ZIP file to the current directory. Its purpose is to overcome the corrupt file warning which other UnZIP utilities produce when they encounter a JoomlaPack generated ZIP archive. In order to use it, copy the ZIP archive and `unzip.php` inside the target directory somewhere on your filesystem. From the command line, go to this directory and use the utility:

```
/path/to/php unzip.php myarchive.zip
```

Substitute `/path/to/php` with the absolute path to your PHP executable and `myarchive.zip` with the name of the ZIP file you want to extract. As the extraction process goes on you'll see the names of the files being extracted on your screen.

Be careful! This script overwrites existing files without prompting. Make sure you don't have files you want to keep named the same as some files inside the archive, as they *will* get overwritten.

### 12.2 JoomlaPack UnJPA

The JoomlaPack UnJPA is a command-line script which extracts a JoomlaPack Archive (JPA) file to the current directory. Its purpose is to provide users with a command line utility which can extract JPA archives. As JPA is a custom format, UnJPA is the only known command line utility able to handle this

format. In order to use it, copy the JPA archive and unjpa.php inside the target directory somewhere on your filesystem. From the command line, go to this directory and use the utility:

```
/path/to/php unjpa.php myarchive.jpa
```

Substitute `/path/to/php` with the absolute path to your PHP executable and `myarchive.jpa` with the name of the JPA file you want to extract. As the extraction process goes on you'll see the names of the files being extracted on your screen.

Be careful! This script overwrites existing files without prompting. Make sure you don't have files you want to keep named the same as some files inside the archive, as they *will* get overwritten.

### **12.3 Why should you use JPA**

The ZIP file format was created many years ago, with the main purpose to provide a versatile archiver for DOS systems. Back then, storage media was unreliable. Floppies could very easily get damaged by mechanical or magnetic forces. Modems seldomly had error detection and recovery. As a result, the authors decided to use a CRC32 checksum for every file packed. Moreover, at the end of the archive, they appended the "Central Directory", a list of files included in the archive and their properties. These features let compatible software to determine if the archive was complete and that extracted data was intact. Very useful features, but processor and memory intensive nevertheless.

When a PHP script, like JoomlaPack, tries to create a ZIP file, it has to face several restrictions. There is an upper limit on memory usage, so you can't just load each file in memory to calculate the CRC32. There is also no way to calculate the CRC32 by reading chunks of the file, as the necessary bit-level manipulation required to combine the CRC32 of those chunks is impossible in PHP due to the lack of strong typing. All of these, plus some other technically difficult aspects of ZIP creation, result in a risky operation which can break for a myriad of reasons. Moreover, since you can't calculate the CRC32 for files which do not fit in memory, the resulting ZIP archive will appear to be corrupt in the eyes of archive extractors.

In the light of those problems, the JoomlaPack Developers team decided to create the JPA archive format. It is based on the ZIP standard, but it doesn't store CRC32 values and it doesn't use a "Central Directory". It is inherently more sensitive to transfer errors, but on the other hand it is also much easier for a PHP script to generate. As a rule of thumb we suggest using JPA for large sites or slow servers to enhance performance and limit the possibility of timeouts.

Anyway, you now have a set of tools which overcome both the "corrupt ZIP file" problem and the lack of utilities supporting JPA archives.

## **13 About the JoomlaPack project**

### **13.1 The future of JoomlaPack**

The development of JoomlaPack is subject to the amount of free time the members of the team have. We are very busy, but this doesn't mean we ever stopped developing JoomlaPack. It only takes a little

longer to develop cool new features. The following is a list of features we are planning to implement in upcoming versions:

- Forcibly include directories outside the site's root (but readable by the web server) in the backup set
- Proper Joomla! 1.5 support, utilizing the new Joomla! 1.5.x framework.
- Selectively exclude components, modules and plug-ins from the backup set
- Backup profiles
- FTP the backup file and start the restoration process to a remote host (site cloning/migration from within the component)
- Directly “backup” to a remote host using FTP, effectively making JoomlaPack backup operation some sort of migration wizard.

### ***13.2 Support and how to help the development of JoomlaPack***

If you want to help the development of JoomlaPack there are various ways you can do that. First of all, you can try to use it in any configuration you can get your hands on and report any bugs you find along the way, or even send us a patch with the fix, if you're a PHP programmer. Bugs can be reported at <http://joomlancode.org/gf/project/jpack/tracker/>.

Then, you could translate JoomlaPack to your native language. We can't translate it into every possible language ourselves.

If you are a PHP programmer and have come up with some idea to extend JoomlaPack you can share your thoughts (and possibly code) with the Development team.

Donate; a secure donation button exists towards the bottom of the first page of the component. Donating a small amount of money will help us continue developing this component. It is optional and you only have to do it if you really feel like it. Keep in mind that commercial backup components cost around 50€, this one's free (as in speech and also as in beer).

You can help out in the support forum at <http://www.joomlapack.net/forum/>. If you have read this far in the documentation, there are questions you can answer!

If you can do none of the above, but have comments, wishes and feature requests you can post in the relevant forum section. We take seriously into account what people think of the application and how they want it to evolve. Open Source software is community driven; you can all make a difference!

So, for comments / questions / feature requests / wishes / bug fixes / other code to contribute, please post at <http://www.joomlapack.net/forum/>.

### ***JoomlaPack Project Team Structure***

*Development:*

Nicholas – Group Leader

Geoffrey

*Documentation/Support:*

Dale – Group Leader

*Sites and Infrastructure:*

Geoffrey – Group Leader

Nicholas

*Translations:*

Nikolaos – Group Leader

### **13.3 Project History**

Back in 2004, when Mambo was receiving great attention as an easy to use, yet powerful Open Source CMS, Nicholas started using it to produce commercial sites. One of the early problems was uploading these sites on live hosts. FTP'ing all the files was tedious, restoring the database with phpMyAdmin had its shortcomings, especially when MySQL versions didn't match. After two years of pondering on the subject, nothing was done. Commercial backup components were too expensive. Then, something happened.

Nicholas had an idea of producing an “all inclusive” Joomla! distribution, with components possibly required on most sites. While researching the subject, it was obvious that a Joomla! distribution “maker” had to be written. After a few failed attempts and a lot of experimentation, the JoomlaPack backbones were coded, initially named “Pack'N'Go”. Unfortunately, the name was taken by Microsoft, so the project was quickly renamed JoomlaPack, long before being released. It was at that time that it occurred to him; what he was writing was in fact a site backup script, the kind of software he was pondering on the last two years. Soon after that, on January 2007, the first JoomlaPack beta version was released. After all, it was high time somebody wrote a decent Open Source utility for backing up and restoring Joomla! sites.

The initial beta was not a component, but a standalone PHP application, with virtually no options. It was obvious that this approach limited the potential of JoomlaPack. A small course correction and a couple of weeks later, the first stable version to ever be released was a proper Joomla! component.

The component stayed in active development by the same author until September 2007, when it was clear that the lack of time and the torrent of support requests would doom further development. The only responsible move was to hand over development to somebody who had what it takes to keep this project going. At that time, Geoffrey took up the task of further developing and maintaining JoomlaPack software.

In February 2008, Nicholas returned to the project and the current team structure was formed.

The official site of the project can be found at <http://www.joomlapack.net>.

### **13.4 Revision History**

JoomlaPack is a software under constant development. Throughout its build / test / release cycle, a lot of things under the hood - as well as what you see - get changed, enhanced or added. This change log is sorted by release with the latest entries on top.

### 13.4.1 Version 1.2

- **Joomla 1.5 Native mode.** The component can be used in J! 1.0.x or 1.5 native modes, depending on which package is installed.
- **Multiple databases backup** allows you to backup other MySQL databases alongside your site's core database
- **Single File Exclusion filter** lets you hand-pick specific files to be excluded from the backup set.
- Custom and efficient **JPA format** in addition to the established ZIP format. The JoomlaPack Archive format is specially developed to provide efficient archiving for PHP applications and can be used either directly with Kickstart or extracted by means of the UnJPA script.
- **Kickstart** (AJAX) and Kickstart2 (JavaScript Redirects) scripts to extract the archives directly on the server and bootstrap the restoration procedure.
- **UnZIP** command-line utility to extract JoomlaPack generated ZIP files
- **UnJPA** command-line utility to extract JoomlaPack Archives (JPA), generated by JoomlaPack
- Interface enhancements:
  - The default temporary folder will be created upon clicking Cleanup & Reset Locks
  - A secure .htaccess will be created on the temporary folder upon clicking Cleanup & Reset Locks
  - Buttons to revert to default output and temporary directories in config page
  - Added index.htm on every component's folder (security)
  - Ability to perform a backend backup without AJAX, but with JavaScript redirects instead
  - You can now append &tweak=browser to the front-end URL to use META HTTP redirects, compatible with browsers (but incompatible with wget and curl)
  - "Magic numbers" throughout the component are now user-exposed ultra-advanced options
  - Added secure .htaccess to default temp directory
  - More debug information to aid debugging any problems
  - Configuration is stored in jpack.config.xml XML file
  - Frontend backup locks expire after two minutes of inactivity
  - Relaxed requirements on JPI2
- Bug fixes
  - Removed redundant database operations
  - Optimized Singleton objects for optimal memory usage (correct use of the & operator to conserve memory on PHP4 environments)

- Fixed handling of installations with an empty database prefix
- The databases.ini containign sensitive information is no longer written on disk (security fix)
- Missing strings in translations would cause text to be missing in the component's backend
- JPI2: Illegal characters in database name caused restoration to fail, due to missing backticks.
- Fixed JPI2's AJAX error on wrong database credentials
- Language files wouldn't get loaded under some circumstances
- Fix for accessing the backend through HTTPS
- Use a PHP-only INI file parser on PHP versions lower than 5.1; previous versions have notorious glitches in INI parsing
- Rare case when memory\_limit is less than 0
- Rare case when apache root is the same as the system's root
- Fixed SiteURI for Joomla! 1.5.x
- Fixed errors in install.sql which caused failed component installation. Also removed MySQL 5 specific statements from installation packages
- Code cleanup

#### 13.4.2 *Version 1.1.1 (Beta 3/RC2)*

- **Stability oriented release.** We tried to fix all the bugs we discovered during the beta 2 and make JoomlaPack a stable and usable software.
- **Improved JoomlaPack Installer 2.** A number of show stoppers slipped in the last release but were promptly squashed out. It should work flawlessly with most hosts, but we still consider this beta quality software.

#### 13.4.3 *Version 1.1.1 (Beta 2)*

- **Universal backup.** Works with both published Joomla! branches: 1.0.x (native component) and 1.5.x (with Legacy Mode enabled).
- **JoomlaPack Installer 2** addresses a number of past deficiencies in the restoration process:
  - Support for the stable Joomla! 1.5.x branch
  - Able to restore very large database backups using a renowned AJAX-powered database restoration process
  - Selectively backup and drop existing tables before database restoration
  - Selectively skip non-Joomla! tables during restoration
  - Preservation of user settings in configuration.php
  - Ability to change the administrator's password upon restoration

- **Front-end backup support.** You can initiate a backup by calling a special front-end URL, without need for authenticating as super administrator beforehand. This functionality can be toggled from the configuration and is protected by a "secret word" which must be provided for the backup to start. This enables the component to function in conjunction with `CRON` or similar utilities in order to provide **scheduled backups**.
- **Stability** is the key word behind our efforts. This release incorporates a number of fixes for bugs discovered during the first beta.

### *Version 1.1.1 (Beta 1)*

#### **Bugs found during the beta were fixed:**

- Error in Administer Backup Files
- Various bug fixes by Joomla.ru (Russian Joomla! community, thanks)
- JPA archive option commented out temporarily (until feature is implemented)
- Updated configuration.php file for 1.0.X in JPI to reflect changes in Joomla! 1.0.13.

#### **New features were added:**

- Link to administer backup files after backup completion
- Administer backup files list total number of files
- Option to disable JoomlaPack logging
- Submenus in Joomla! admin

#### **Known issues:**

- Does not work with Joomla! 1.5.
- When saving / updating the settings, Joomla! might prompt you to log in again. This happens with Joomla! version 1.0.13 and a fix for Joomla! is on the Joomla! forum.

### *Version 1.1.0*

#### **Bugs found during the beta were fixed:**

- ZIP file corrupted / CRC32 errors in backup file with PHP 5.1.2 or greater
- A warning about pass by reference was causing the backup to fail
- Function `fnmatch` doesn't exist in non-POSIX systems (e.g. Windows)
- Directory exclusion filters were not working under Windows
- Large files would not get their contents included in backup (zero length after decompression)
- Internet Explorer throws an error when trying to delete a backup file
- When `open_basedir` restrictions are in effect, an attempt to read `<root>/..` could result into failure of the backup

#### **New features were added:**

- Ability to backup only the database, like phpMyAdmin does (after popular request). This feature is in preliminary stage and should be used with caution (test restoring the resulting backup in another database server with the restoration utility of your choice).

**Known issues:**

- On hosts with `open_basedir` restrictions the backup may fail if you set a temporary or output directory outside the directories imposed by `open_basedir`. This is a PHP limitation that can not be circumvented in code.
- When saving / updating the settings, Joomla! might prompt you to log in again. This happens with Joomla! version 1.0.13 and a fix has not been found yet.
- There is a misleading option about 'JoomlaPack Archive Format'. This feature is not yet implemented and results in ZIP file generated with a different extension. Please ignore it.
- TAR and `.tar.gz` support has been removed. It is not likely to come back because memory allocation errors happen due to the way PHP tries to compress the `.tar` into a `.tar.gz`, especially for large sites. Linux users might want to install the `zip` utility which offers standard zip support for their systems.

**Version 1.1 (Beta)**

- **New engine under the hood.** The core functionality was rewritten from scratch and now allows for even more features to come.
- **More compatible.** Several places in the code that could cause failure due to server settings now offer a workaround, making the component more stable.
- **More efficient.** The heavy usage of database the 1.0 series suffered is history. This version makes spartan use of memory and database to reduce problems and timeouts.
- **More thorough.** The new Log facility lets you identify files and directories with too restrictive permissions that make them to not be backed up.
- **Much faster.** This version is 3 to 10 times faster than the 1.0 series!
- **More localisable.** Using standard `.ini` files for translation makes creating new language files a snap, even for non-programmers.
- **New archive creator.** Now using a renowned library for creating ZIP archives, employing selective compression, aggressive memory management and reducing the overhead of multiple step creation of the archives. Please note that support for `.tar` and `.tar.gz` has been dropped.
- **New algorithms.** The old "small sites" and "huge sites" algorithms are now called "fast" and "slow". But there is a new option "smart" that tries to use as much of the available resources as possible in each step, without timing out. This algorithm now allows for even greater speed.

**13.4.4 Version 1.0.4 (Beta 1)**

- Fixed the serious security hole that plagued versions 1.0.4-a2 onwards.
- Ran a security audit over all of the code.

- Improved error handling in the code to reduce possibility of PHP warnings causing backup to fail.
- Included a new option: select installer to be included in the backup.
- Added a new installer that - hopefully - does not choke on restoring huge databases.
- Fixed a bug where backup to ZIP would only include about 300Kb and not the rest of your site.
- Minor bug-fixes and code polishing.

### *Version 1.0.4 (Alpha 3)*

- Occasionally, the AJAX proxy URL would not get output to the page, apparently making the application non-responsive; fixed.
- Even though JPack claimed to replace database prefix (i.e. jos\_ ) with Joomla!'s placeholder (#\_) on the backup's DB dump, it did not when using single-step DB dump; fixed.
- Component failed on hosts running Solaris and other OS where GLOB\_BRACE is not supported; fixed.
- New ZIP compression option; it is also the least memory consuming option with compression I could think of.
- New Directory Exclusion Filters. You can chose to omit whole directories from the backup. Very useful if your host uses a directory within your root to store Apache logs (one of mine does and I'm not really happy about it).
- More detailed debug screen will - hopefully - let me shed light on bugs not yet resolved.
- Some more stability fixes.

### *Version 1.0.4 (Alpha 2)*

- Fix for JavaScript bug introduced in 1.0.4-a1
- New multi-step database backup strategy
- Minor stability fixes

### *Version 1.0.4 (Alpha 1)*

- Timeout detection - don't guess if it's stuck, it will tell you!
- Debug information & self-test option, when a timeout is detected (it will help me providing better support)
- More verbose compression screen, giving feedback on bytes compressed over total bytes
- Fixed AJAX proxy bug causing hangs on many hosts
- Fixed database export bug when magic quotes was enabled
- Fixed use of implicit include paths that caused failure on certain hosts

### *Version 1.0.3.3*

- New file list creation method (Huge Site) is slower to the original, but supports huge sites without requiring Safe Mode to be disabled

- Domain related error message eliminated

### *Version 1.0.3.2*

- Fixed timeouts on file list creation (requires Safe Mode to be off)
- Improved Backup Administrator to help you manage your backup files
- Backup compression is optional. Set it to off if it hangs while creating the backup
- Backup filename templates to limit exposure to hackers (no longer forces the name of "site.tar.gz")

### *Previous versions*

We have not kept a change log on versions before 1.0.3.2. You can say it was the starting point of what JoomlaPack is today.

## **14 Document History**

### **14.1 JoomlaPack User Manual for Version 1.2**

Authors: Nicholas, Geoffrey, Dale

Year: 2008

### **14.2 JoomlaPack User Manual for Version 1.1.1-b3**

Authors: Nicholas, Geoffrey, Dale

Year: 2008

### **14.3 JoomlaPack User Manual for Version 1.1.1-b2**

Authors: Nicholas, Geoffrey, Dale

Year: 2008

### **14.4 JoomlaPack User Manual for Version 1.1.1-b1**

Authors: Nicholas, Geoffrey, Dale

Year: 2007, 2008

### **14.5 JoomlaPack User Manual for Version 1.0.4-a3**

Author: Nicholas

Year: 2007

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