

JoomlaPack User Manual

for Version 2.4.1

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JoomlaPack User Manual: for Version 2.4.1

by Nicholas Dionysopoulos, Dale, and Geoffrey

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Abstract

This book covers the use of the JoomlaPack site backup component for Joomla!™ -powered web sites, as well as the accompanying utilities (Kickstart, DataRestore, JPA, UnJPA and UnZIP) of the standard JoomlaPack distribution. It does not cover the Native Tools which have documentation of their own.

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Introduction

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.

Backup - restoration / migration workflow with Joomla-Pack

As stated, JoomlaPack is designed to make your life easier. It does that by streamlining the workflow of backing up and restoring (or migrating) your site.

Note

From JoomlaPack's perspective, restoring to the same host and location, copying your site in a subdirectory / subdomain of the same host or transferring your site to a completely new host is identical. That's right, JoomlaPack doesn't care if you are restoring, copying, cloning or migrating your site! The process is always the same, so you only have to learn it once. The learning curve is very smooth, too!

The typical workflow involves using three utilities from the JoomlaPack suite: the JoomlaPack component itself, Kickstart and the JoomlaPack Installer (JPI). Here is the overview:

1. Install JoomlaPack and configure it to taste. Hit on the Backup Now button and let your site back up. When it finishes up, click on the Administer Backup Files button. Select the only backup entry from the list and click on Download , saving the backup archive somewhere on your local PC.
2. Extract the kickstart- *VERSION* .zip file you downloaded from our File Release System. The only contained file is `kickstart.php` . Upload it to the server on which you want to restore your site to.
3. Upload the backup archive (do not extract it, just upload the whole archive!) to the server on which you want to restore your site to (called hereforth the *target server*). Your server's directory should now contain the `kickstart.php` and the backup archive.
4. Fire up your browser and visit the Kickstart URL on your target server, for example `http://www.example.com/kickstart.php` .
5. Change any option - if necessary - and hit the big green Start button. Sit back while Kickstart extracts the backup archive directly on the server! It's ultra-fast too (when compared to FTP uploading all those 4000+ files!).
6. In the next page, click on the first link labelled "here". A new window pops up, it's the JoomlaPack Installer. Do not close the Kickstart window yet!
7. Follow the prompts of the JoomlaPack Installer, filling in the details of the new server (ost importantly, the new database connection and FTP connection information).
8. When the JoomlaPack Installer is done, it prompts you to delete the installation directory. Ignore this prompt and simply close the JPI window.
9. Back to the Kickstart window, click the second link titled "here". Kicstart removes the installation directory, restores your .htaccess file (if you had one in the first place), removes the backup archive and itself.
10. Believe it or not, you have a working site! Honestly!

According to what fiathful users tell us, once you get the hang of this procedure, it only takes less than five minutes (plus download/upload time)! Yours truly has clocked himself restoring a site in under 3 minutes, while talking on the phone at the same time. It's *that* easy! No FTP uploading of thousands of files, no messing with phpMyAdmin, no editing of configuration files.

Warning

We strongly advise new users to practice on the restoration procedure on a local server or a test host first, in order to get the hang of it. Just because this procedure is so easy, it doesn't mean it's absolutely safe! The restoration procedure - unlike backing up - replaces files on your server and overwrites database tables! You'd better be sure of what you're doing, or you might end up causing trouble to yourself. You don't want this to happen, neither do we.

Requirements

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

- Joomla!™ 1.5.0 or later in the 1.5.x range. JoomlaPack 2 is a native component; it doesn't require Legacy Mode but can work with it if it's enabled.
- PHP 4.3.9 or later; PHP 5.2.1 or greater recommended for optimal performance, but not strictly required.
- MySQL 4.0 or later. MySQL 5.0 or greater recommended for optimal performance.

Important

JoomlaPack 2.0.b1 and earlier have a bug when installing against a MySQL 4.0 database; the tables wouldn't be created. Read the installation section of this manual for more information.

- Minimum 8Mb of PHP `memory_limit` (sufficient *only* for trivial web sites). More is better. 32Mb recommended for optimal performance on large sites.
- 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. We recommend double than that, especially if you plan to use the tar or tar.gz formats.
- The PHP safe mode should be preferably turned off (after all it offers no real security), but JoomlaPack will still work with it enabled.

And when it comes to your browser we need Internet Explorer 6+, Konqueror 3.5.9+, Google Chrome (beta, or newer) 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. Alternatively, you may use the Javascript Redirects mode of operation which works with virtually every Javascript capable browser.

Warning

Some browser extensions will block or otherwise obstruct Javascript from running. As a result, they will hinder or disable you from backing up and / or restoring your site properly. While it is impossible to maintain a complete list of incompatible extensions, we have found that Firebug disables proper restoring of your site and NoScript will - obviously - disable Javascript from a domain, unless you specifically add it to its "whitelist".

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. You should read this section even if you are familiar with JoomlaPack; the work flow has changed ever since version 1.2.1.

Each backup procedure consists of three individual *operations* (or *domains* in JoomlaPack jargon), occurring one after the other. Each operation is performed in several *steps* to avoid timing out. The operations are:

Initialization	<p>When you start the backup, JoomlaPack has to do some housekeeping. It will create the (now empty) archive file, load filter settings and clean-up after any previous failed backup attempts. After that, the archive will be loaded with the files which make up the selected installer. The inclusion of the installer files happens without using temporary files, for security reasons (a vast improvement since version 1.2) This all happens transparently, without you ever noticing it.</p> <p>After this short initialization a transparent process begins, in which the installer files are included in the backup archive. This can be performed in multiple steps, but doesn't appear in the backup operations check-list. On most servers it completes almost instantaneously.</p>
Database backup	<p>The database is dumped in SQL files. Each step consists of dumping a pre-set, user-definable, amount of data of a single table. The SQL files are added to the archive at the end of the operation and the temporary files are disposed of immediately.</p>
Archive creation	<p>This is the step in which your files are added to the backup archive. JoomlaPack starts scanning your site's file system structure for files and directories, applying any directory / file exclusion filters you may have imposed. Upon finishing scanning a directory, it will add the files to the archive. To counter time-outs on directories with many and/or big files, it will keep backing up on a single step until a user-definable, pre-set amount of data has been archived. The rest of the data, if any, will be archived on the next step.</p>
Finalization	<p>Finally, JoomlaPack performs some housekeeping, removing the temporary files and temporary database entries. This operation is logged as a special domain named 'finale'.</p>

Documentation Conventions

This documentation uses some typographic conventions to convey important information. The most important feature is the "admonitions" styles. These are specially styled paragraphs, used to denote some piece of information which is not obvious but you should be aware of. There are four levels of importance used in this manual: Warning, Important, Note, Tip. Here are some samples:

Warning

The highest level is Warning. This is used to stress out a specific condition which will cause the software to fail or might compromise your site's integrity.

Important

The second level of importance is Important. It is used to highlight some not very obvious information you should be aware of in order to avoid software failure.

Note

This is a low level of importance piece of information, usually informing you on background or otherwise non-critical facts.

Tip

Last, but not least, we have the Tips. These are used to give you advice for doing something you probably didn't know it was possible.

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.

JoomlaPack comes in two editions: JoomlaPack Core and JoomlaPack Plus. When we are referring to features present only in JoomlaPack Plus, we will mark them with a **[JP+]** marking right beside them.

Note

The JoomlaPack Core and Plus are both available free of charge. JoomlaPack Core is designed for novice users, whereas JoomlaPack Plus is designed for power users and web professionals.

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

```
This is a code section.  
This is one code line of the section.  
Here is another line.  
And yet another one.
```

Code sections are used mainly for external configuration file contents.

Part I. The JoomlaPack Component Reference

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Chapter 1. Getting and Installing JoomlaPack

Getting the component

Latest published version

Since JoomlaPack 2.1 Stable, there are two "flavours" of JoomlaPack, called JoomlaPack Core (formerly the Free edition) and JoomlaPack Plus (formerly the Special Edition). The major difference is that JoomlaPack Plus has some more advanced options, designed for power users and web professionals.

You can find the latest version of both JoomlaPack Core and Plus on our official website, at <http://www.joomlapack.net/download.html> [<http://www.joomlapack.net/download.html>] .

Note

JoomlaPack 2.0 and later versions only support Joomla! 1.5.x. If you wish to use JoomlaPack on Joomla! 1.0.x sites, please download the latest release from the 1.2.x series. There may be two component packages available for a given version. The one ending in -j10 is the version compatible with Joomla! 1.0.x.

Development snapshots

Warning

Building JoomlaPack from sources **is not officially supported** . We will not answer any question regarding the build process on our support forum or by any other means.

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

Warning

If you just want to use JoomlaPack, **you don't have to use the SVN snapshots or compile it yourself!** Just go to our official site and download the latest stable or beta package. SVN snapshots are not meant to be thoroughly tested. Please use them if you need to test the latest features, or if you are instructed to do so by our support team on our forum.

Pre-built SVN snapshots

There is an unofficial repository of pre-built SVN snapshots of JoomlaPack we call The Bleeding Edge. It's available at <http://www.dionysopoulos.me/bleedingedge> [<http://www.dionysopoulos.me/bleedingedge>] . It's not frequently updated. As a matter of fact, it is only updated when new features reach a state adequate for alpha or beta testing, or when important bug fixes are incorporated in the SVN trunk. These releases are what we use in order to perform pre-release testing.

Public availability of this repository is subject to a number of conditions, including the bandwidth usage (I can't afford it to suck up all my available bandwidth) and potential abuse. In other words, treat it as a convenience service, not a formal method of distribution. Please respect this service and, if you found it

useful, consider donating to the project. Donations help cover the expenses of running the Bleeding Edge, among other things!

Note

All SVN snapshots are JoomlaPack Plus builds.

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.

If you have Joomla! 1.5.5 or newer, component upgrade is supported with this procedure. If you have an older version of Joomla!, make sure you have deinstalled any previous versions of the component prior to installing the new version. Joomla! versions prior to 1.5.5 do not offer a component upgrade path and will complain if you try to install the new version over the old one.

Warning

Do not try to directly upgrade JoomlaPack 1.2.x to 2.x. Even though Joomla! won't complain, the backup operation will not work. If you need to upgrade a JoomlaPack 1.2.x installation, you have to completely remove (uninstall) JoomlaPack 1.2.x first, then install JoomlaPack 2.x.

If you are installing JoomlaPack Core, it will only be available in the English language, unless you install the appropriate language pack. Language packs are available from our File Release System, the same place you download the component from. Please download the appropriate pack for your language, e.g. `com_joomlapack-el_GR-VERSION.zip` for the Greek language pack.

Note

JoomlaPack Plus contains all of the languages available at the time of release. However, if a language has been updated you might want to download the new language pack and install it on top of your JoomlaPack Plus installation.

Alternative installation

Some hosts will fail when they try to install the component. This is caused due a to timeout during the installation archive's extraction, an integral part of Joomla! extension installation. This will also happen with other big components, whose installation package exceeds 300Kb (sometimes this threshold can be smaller, depending on the server's speed). The root of this problem is that the host is too slow to extract the archive without hitting its predefined timeout limit. However, a workaround is possible.

Tip

If you don't need the advanced JoomlaPack features, you might want to try JoomlaPack Core instead. The package is much smaller and might install through the standard Joomla! extension installer, without having to perform the alternative installation outlined below.

Start by extracting `com_joomlapack-VERSION.zip` to an empty directory on your local computer. Then, connect to your site through FTP, browse inside your site's temporary directory (the default is `tmp` under your site's root) and create a new directory named `jpac`. After that, upload the extracted files to this directory.

Login to your site's administrator back end and go to the menu Extensions, sub-menu Install/Uninstall. The second gray box's title reads Install from directory. Append (do not replace!) to the contents of the edit box the name of the directory you created through FTP. For example, if the box read `/home/www/htdocs/tmp`, edit it so that it now reads `/home/www/htdocs/tmp/jpac` and click on Install button next to it.

Normally, this process should complete successfully; Joomla! will notify you upon component installation.

Note

Some servers are extremely slow and even this won't work. In such a case, we can give you specific instruction on how to install JoomlaPack on your site. Please start a post on our support forum [<http://forum.joomlapack.net>], asking for help on this matter, stating that the alternative installation didn't work for you.

Common pitfalls

Sometimes people get a "JFTP Invalid mkdir response" when trying to install JoomlaPack. This isn't actually a JoomlaPack bug, but a problem regarding how your host's FTP server interacts with the Joomla! FTP layer. This can be resolved by turning off the FTP layer and using an absolute path for Joomla's temporary directory. Read the full discussion on <http://forum.joomla.org/index.php/topic,226417.msg1192126.html>.

Finally, if you try to install JoomlaPack on Joomla! 1.5.8 or previous versions, you will always get what looks like installation errors regarding the translation (language) files. This is a Joomla! cosmetic bug, fixed in 1.5.9. Please note if you have received only those errors, JoomlaPack is installed correctly. Joomla! is just complaining because it encountered translations for languages which are not installed on your site. No loss of functionality is caused as a result of these error messages.

Upgrading the Component in Joomla! versions earlier than 1.5.5

Since Joomla! 1.5.5 there is a built-in but not widely known component upgrade path. JoomlaPack installation ZIP is capable of using this functionality. All you have to do is merely install the new version without uninstalling the previous one. Honestly! That's all there is to it!

If you are using Joomla! versions prior to 1.5.5 there is no clear and concise way of upgrading components. In order to upgrade one has to deinstall the previous version and install the new one. This has one major shortcoming: the configuration is lost in the process as the table holding the configuration data file gets deleted like the rest of the JoomlaPack database tables.

In order to counter this significant shortcoming, we came up with the "configuration migration" feature of JoomlaPack. Using this feature you can take a backup of your entire configuration set (configuration options and all of the filters' settings) into an XML file, stored on your local computer. When you're done upgrading, you can use the same feature to upload the configuration backup file and regain all of your previous settings.

Important

You can not directly upgrade from JoomlaPack 1.x to JoomlaPack 2.x. Before installing the new release you must uninstall JoomlaPack 1.x and make sure that all the jos_jp_* tables have been removed from the database. **Failure to do so will result in inability to use the component.**

Chapter 2. Using the JoomlaPack Component

Common Navigation Elements

All pages have their title displayed above their contents. On the far right of the tool bar there is a Back icon. Clicking it will bring you back to the Control Panel .

On pages where editing takes place (e.g. the Configuration page, the profiles editor, etc) instead of the Back icon there is a Cancel icon which discards any changes made and returns you to the previous page. On those pages you will also find a Save icon which saves settings and returns you to the previous page, as well as an Apply icon which saves settings and returns you to the same editing page.

On the bottom of each page, just above the Joomla!™ footer, there is 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.

JoomlaPack Control Panel

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 top of the page there is the component's title. Beneath it you can find quick links to the most vital functions which is what you'll have to deal with 99% of your time using the component.

JoomlaPack 2.1.b2 or later is equipped with an automatic error detection and correction feature. This will kick in whenever you visit the Control Panel and JoomlaPack detects that the last backup did not finish up properly. In such a case, it will display a big yellow box beneath the quick links, offering you to switch to a pre-defined "Balanced" set of configuration options. If the last backup with this set has failed, it will prompt you to apply a "Conservative" set of configuration options. If - again - the backup fails, it will prompt you to contact our support forum.

Tip

If the last backup attempt is detected as a failure because you interrupted it before it ends or because the network connection is lost, you can ignore this message. In order to make it go away you'll have to open the Backup Files Administration page and delete the entry of the latest failed backup attempts.

There are two interface modes in JoomlaPack: the Easy and the Expert mode. Their main difference is that the Easy mode features a cut-down interface with simplified options, geared towards new users, whereas the Expert mode gives you full control, in the price of being more complicated.

Note

JoomlaPack Free Edition (the one you can freely download without charge), defaults to the Easy Mode. You can switch to the Expert Mode using the relevant button.

The Control Panel in the Expert Mode

[JP+] Under the quick links, there is the profile selection box. It serves a double purpose, indicating the active profile and letting you switch between available profiles. Clicking on the drop down allows you to select a new profile. Changing the selection (clicking on the drop down list and selecting a new profile) automatically makes this new profile current and JoomlaPack notifies you about that. Should this not happen, you can manually click on the Switch Profile button on the right to forcibly make the selected profile current.

Tip

The active profile is applied in all functions of the component, including configuration, filter settings, inclusion options, etc. The only settings which are immutable (they are not dependent on the active profile) is the location of the backup output and the front-end backup settings. Keep this in mind when editing any of JoomlaPack's settings!

On the left side of the profile selection box there is a handy JoomlaPack news ticker. It shows the latest headlines from the JoomlaPack announcements news feed, so that you can always get the late-breaking JoomlaPack activity at a glance. This feature is powered by FeedBurner, so that it doesn't consume any of your precious server memory.

On the right hand side of the page, you will find a slider with useful information arranged in panels. There are several panels:

Status Summary

In this panel you can find information regarding the status of your backup output directory. JoomlaPack will warn you if the directory is unwritable. If the text reads that there are potential problems you **must** take a look at the Status Details pane to find out what these might be!

Status Details

In this panel you will find specific status information, for example the writable status of your output and temporary folders, as well as any problems and warnings JoomlaPack may have detected.

Note

Older versions reported the Temporary directory status, too. Since JoomlaPack 2.0, all temporary files are written on Joomla!™'s temporary directory. This is the same place used for component installation and should, therefore, be writable already. If JoomlaPack detects that it is not writable, it will report it and abort the backup operation.

Important

No matter what the PHP Safe Mode setting is, it is possible that your host enforces open_basedir restrictions which only allow you to have an output or temporary directory under a handful of predefined locations. On this occasion, JoomlaPack will report the folder unwritable even though you might have enforced 0777 (read, write and execute allowed for all) permissions. These restrictions are reported in this pane as an item entitled "open_basedir restrictions".

A novelty of JoomlaPack 2.0, the "Status Details" section lets you diagnose potential problems before even happening, with helpful information right

from the Control Panel. Just click on each warning's description to get a pop up window explaining the potential problem, it's impact on your backup and precautionary or corrective steps you can take. If this section is empty, no detectable problems were found; this is a good thing, indeed!

Important

You are supposed to read the full text of the warnings by clicking on each item. Quite often users post for support on our forum asking something which is already written in the full text of the warnings. **DO NOT SEEK SUPPORT IN OUR FORUM IF YOU HAVE NOT TRIED TO READ THE DETAILED DESCRIPTION OF POTENTIAL PROBLEMS APPEARING ON THIS BOX! I KNOW MOST OF YOU IGNORE THIS, BUT I WILL NOT ANSWER ANY MORE QUESTIONS COVERED IN THOSE DESCRIPTIONS.**

Backup Statistics	This panel informs you about the status of your last backup attempt. The information shown is the date and time of backup, the origin (backend or frontend), the profile used and the backup status.
JoomlaPack News	This is service provided by FeedBurner, displaying a rendering of the RSS feed of the JoomlaPack.net project page. You should check it out as it contains important release announcements. Remember, each new version of JoomlaPack contains several important bug fixes and amazing new features.

Note

In contrast with previous JoomlaPack versions, 2.2 and later releases do not parse the feed on your server but use FeedBurner's services instead. This ensures that you won't face a memory exhaustion condition which would effectively lock you out of JoomlaPack's Control Panel. You expressed your concerns, we found the optimal solution!

Translation Credits	Each translation file contains information about the language and the translator. This information is displayed in this panel.
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The left navigation panel allows access to the different functions of the component:

- **Switch to Easy Mode** will switch the user interface to the Easy Mode, a cut-down but easier to use version of the JoomlaPack Interface.
- **[JP+] Profile Management** lets you manage different configuration sets, called Backup Profiles.
- **Configuration** allows you to edit the configuration options that control the backup process.
- **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.

- **[JP+] Multiple Databases Definitions** 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.
- **[JP+] Off-site Directories Inclusion** allows you to backup directories above your site's root, even if they are outside your web server's root!
- **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.
- **Directory Exclusion** 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 practise these days).
- **[JP+] Skip Directory Contents** allows you to exclude the contained files and/or subdirectories of a directory from the backup set. Useful if you want to have, for example, a directory present in the backup, but you don't want its files to be backed up. Usually this is used on cache directories, whose contents are dynamically regenerated (so there's no point backing them up).
- **[JP+] Database Tables Exclusion** 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).
- **[JP+] Extension Exclusion Filters** allows you to exclude any component, module, plug-in, template or language with a single click. Extremely useful for web professionals!
- **Check for upgrades** . This button is the Live Update feature of JoomlaPack. Starting with version 2.2, JoomlaPack is able to automatically check for new releases, notify you about them and install them after your approval. In order to do this, it fetches a small updates notification file every 24hrs from our server. If a new release is found, this button turns into a white X inside a red hexagon and the caption changes to "UPGRADES FOUND". Please refer to the chapter of the Live Update feature for more information on how to use it.

Important

This button only appears if your server is compatible with the Live Update feature of JoomlaPack. The minimum requirement is that either URL fopen() wrappers are enabled, or the cURL extension is installed and activated in your PHP installation. If JoomlaPack detects that neither of these two options is available, this button *will not display at all*.

If any of the filters have active elements, the number of the active elements will appear next to its name in parentheses. For example, let's say that you have defined five (5) Directory Exclusion filters, that means that you have excluded five directories from the backup. The label of the respective Control Panel button will read "Directory Exclusion (5)". This is very useful to get a bird-eye view of the active filters in the current profile before backing up your site.

The Control Panel in the Easy Mode

The Control Panel looks a lot more simple in the Easy Mode. There is no notion of profiles, to begin with, even in the JoomlaPack Plus builds. In fact, the Easy mode works only with the default profile (the one whose ID is 1).

On the right hand side of the page, you will find a slider with useful information arranged in panels. There are several panels:

Status Summary

In this panel you can find information regarding the status of your backup output directory. JoomlaPack will warn you if the directory is unwritable.

Warning

If a list of problems appears on the bottom section **you are supposed to click on the items of the list**. Doing so will open a page which thoroughly describes the nature of the problem and potential workarounds. **PLEASE DO NOT SEEK SUPPORT IN OUR FORUM IF YOU HAVE NOT TRIED TO READ THE DETAILED DESCRIPTION OF POTENTIAL PROBLEMS APPEARING ON THIS BOX! I KNOW MOST OF YOU IGNORE THIS, BUT I WILL NOT ANSWER ANY MORE QUESTIONS COVERED IN THOSE DESCRIPTIONS.**

Translation Credits

Each translation file contains information about the language and the translator. This information is displayed in this panel.

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

- **Switch to Expert Mode** will switch the user interface to the Expert Mode, the full featured but slightly more complicated JoomlaPack interface.
- **Configuration** allows you to edit the configuration options that control the backup process. The Configuration page displayed is a simplified version of the one you get in the Expert Mode.
- **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.
- There is also the Live Update button discussed in the previous section.

Profiles management

Important

This feature is only available in the JoomlaPack Plus builds.

The Profiles Management page is the central place from where you can define and manage *backup profiles*. Each backup profiles can be regarded as a container holding JoomlaPack configuration values and filter settings. Each one uniquely and completely defines the way JoomlaPack will perform its backup process.

The main page consists of a list of all backup profiles. On the left hand column there is a check box allowing the selection of a backup profile so that one of the toolbar operations can be applied. The other column displays the description of the backup profile. Clicking on it leads you to the editor page, where you can change this description.

On the page's toolbar you can find the operations buttons:

- | | |
|--------|--|
| New | Creates a new, empty profile. Clicking on this button will lead you to the editor page, where you can define the name of the new profile, or cancel the operation if you've changed your mind. |
| Copy | Creates a pristine copy of the selected backup profile. The copy will have the same name and include all of the configuration options and filter settings of the original. |
| Delete | Permanently removes a backup profile. All associated configuration options and filter settings are removed as well. This is an irreversible operation; once a profile is deleted, it's gone forever. |

Note

Due to functionality reasons you can not delete the default profile (the one with an ID of 1). This is used as a fall-back choice in case of ambiguity, or when you are starting JoomlaPack for the first time.

Export	Exports the selected backup profile's configuration options and filter settings to an XML back-up file for safe-keeping. This is useful when upgrading JoomlaPack.
Import	Imports a previously saved XML backup file, the opposite of the Export operation. The imported settings appear in a newly created profile at the end of the list.

Since JoomlaPack 2.2, when you create a new profile or copy an existing profile, the newly generated profile becomes current. This means that you can work on your new profile as soon as you're finished creating it, without the need to manually make it current from the Control Panel page.

The editor page

The editor page is trivial. The only changeable parameter is the profile's description. Clicking on Save applies the settings and gets you to the main Profile Management page. Clicking on Apply applies the settings and returns you to the editor page. Finally, clicking on Cancel will disregard any changes made and get you to the main Profile Management page.

Configuration

Important

Some options make sense and are available only in the JoomlaPack Plus builds.

The options page is split in sections by means of standard Joomla! slider panes. The page itself contains two areas entitled "Common Settings" and "Profile Settings". The former contains the configuration options which are common among all profiles, while the latter contains the profile-specific settings.

The Basic tab options on the Common Settings section are:

- **Output Directory.** This is the directory where the result of the backup process goes. The result of the backup - depending on other configuration options - might be an archive file or an SQL file. The output directory must be accessible and writable by PHP.

Important

Providing a directory with adequate permissions might not be enough! There are other PHP security mechanisms which might prevent using a directory, for example the `open_basedir` restriction which only allows certain paths to be used for writing files from within PHP. JoomlaPack will try to detect and report such anomalies in the Control Panel page before you attempt a backup.

Since JoomlaPack 2.3, this setting supports two variables:

- **[ROOT]** is automatically replaced by the absolute path to your site's root
- **[ROOTPARENT]** is automatically replaced by the absolute path to the parent directory of your site's root (that is, one directory above your site's root)

JoomlaPack will intelligently detect when it can use these variables and apply them automatically upon saving or applying the configuration changes. The real utility of these variables is that if you use output directories relative to these two predefined locations, you can use JoomlaPack without reconfiguration even if you move your site to a completely different host, e.g. from your live Linux host to your local Windows testing server.

You can use the Reset to default button in order to reset this setting to the factory default location (a subdirectory inside the component's back-end directory) or the Browse... button to launch a visual directory browser which allows you to easily select the output directory without typing a lengthy absolute path manually.

- **Minimum Access Level.** This defines the minimum Joomla! access level a back-end user must have in order to be able to access the component's functions. The default level ("Super Administrator") limits access to JoomlaPack to the Super Administrator group. Choosing "Administrator" allows both Administrator and Super Administrator group members to access the component, useful if you don't make a habit of logging in as a Super Administrator user. The last option, "Manager", effectively allows all back-end users to access the component which is dangerous! Use this option responsibly.

Warning

JoomlaPack backups contain all of the files and database records of your site. Anyone who is given access to this component must be absolutely and undisputably trusted because he will be able to clone the site on another - live or local - server, bypassing any restriction you might have implemented.

- **Store temporary backup data in files, instead of in database.** Normally, JoomlaPack stores its engine state information in the database between subsequent steps. If you have a site which has directories with a lot of files and subdirectories or have non-latin and/or accented characters in some file names, or if your database server is old you might experience errors during this operation. As a workaround, you can enable this option so that JoomlaPack can store its engine state information in files inside your site's temporary directory. We strongly suggest that you turn on this option!

The Frontend tab options on the Common Settings section are:

- **Enable front-end backup.** Controls the availability of front-end backup. The front-end backup feature allows you to perform a backup operation using any profile you'd like without logging in the Joomla! administrator section. It is primarily used for automating the backup process using `cron` scripts, or other automated utilities.
- **Email Super Administrators on successful front-end backup.** If enabled, JoomlaPack will send a canned email message to all of the site's Super Administrators once a successful front-end backup has been made. This is useful in order to monitor that your CRON-scheduled backups work and result in successful backups. Please keep in mind that JoomlaPack considers backups performed by JoomlaPack Remote as front-end backups for the purpose of sending email notifications to Super Administrators.
- **Secret word.** In order to prevent DoS (Denial of Service) type of attacks by malicious users flooding your server with front-end backup requests, JoomlaPack implements the "secret word" approach. The "secret word" is an arbitrary string which has to be passed along in the front-end backup request URL in order for the process to begin.

Important

We suggest you to use only alphanumeric characters (a to Z and 0 to 9) for the secret word. If you use any special symbols, they will have to be passed URL-encoded for the front-end

backup request URL to be valid and work at all. If you don't understand what URL encoding means, just follow our advice!

Note

JoomlaPack will email all Super Administrators whenever a backup attempt is finished successfully, or with a catchable backup error. If something goes awry and the backup attempt is halted abruptly on the cause of a PHP error, JoomlaPack is unable to report failure. As a result, it is always a good idea to log in periodically to JoomlaPack's administration page to review the backup status of your site.

The Basic tab options on the Profile Settings section are:

- **Backup Type.** It defines the kind of backup you'd like to take. The backup types for JoomlaPack are:
 - **Full site** which backs up the Joomla! database, any extra databases you might have defined and all of the site's files. This produces a backup archive with an embedded installer so that you can restore your site with ease. This is the option 90% of the users want; it is the only options which creates a full backup of your site.
 - **Database only** which backs up only the Joomla! database. It results in a single SQL file which can be used with any MySQL administration utility (e.g. phpMyAdmin) to restore only your database should disaster strike. This option is recommended for advanced users only.
 - **All databases, no files** which creates an archive file containing SQL files with dumps of your main site's database and all the defined multiple databases. The database dumps can be restored by either any MySQL administration tool (for example phpMyAdmin) or by JoomlaPack itself.
- **Archive Name Template.** Here you can define the naming template of backup files. There are a few available macros. Macros are special strings which will be expanded to something else at backup time. They can be used to make the names of the files harder to guess for potential attackers, as well as allow you to store multiple backup archives on the output directory at any given time. The available macros and their expansion at backup time are:

[HOST]	The configured host name of your site
[DATE]	The current server date, in the format YYYYMMDD (year as four digits, month as two digits, day as two digits), for example 20080818 for August 18th 2008.
[TIME]	The current server time, in the format HHMMSS (hour as two digits, minutes as two digits and seconds as two digits), for example 221520 for 10:15:20 pm.
[RANDOM]	This is a nice security measure, as it generates a 64 character semi-random string (the MD5 hash of the server's time, accurate up to the millisecond). This is almost impossible to guess, unless you know the exact millisecond the template name was processed by the server. Yes, the chance to find this is very, very slim indeed! Please note that some hosts impose a limit on the maximum length of a file's name. On such hosts using RANDOM will most probably result to backup failure for no other apparent reason.
- **Log level.** This options controls the verbosity of the JoomlaPack's log file. The available log levels are:
 - **Errors only.** Only fatal errors are reported. Use this on production boxes where you have already confirmed there are no unreadable files or directories.

- **Errors and warnings.** The recommended setting, reports fatal errors as well as warnings. JoomlaPack communicates unreadable files and directories which it wasn't able to backup through warnings. Read the warnings to make sure you don't end up with incomplete backups!
- **All information.** As "Error and Warnings" but also includes some informative messages on JoomlaPack's backup process.
- **All Information and Debug.** This is the recommended setting for reporting bugs. It is the most verbose level, containing developer-friendly information on JoomlaPack's operation. This is what we need to help you in case of a problem.
- **None.** This log level *is not recommended*. You should only use this if you are paranoid and want no log files written on the server. However, if you are truly concerned about security, you should protect the backup directory instead of using this log level!

The Advanced tab options on the Profile Settings section are:

- **Database export style.** This option controls the MySQL version compatibility when creating the database SQL dump file. In fact, it forces JoomlaPack to request the appropriate CREATE TABLE commands from your database server. It is useful when migrating your site to another host with a different MySQL version. The available options are:
- **Default compatibility.** JoomlaPack will not try to enforce MySQL compatibility mode. Recommended if you are making a backup for security reasons, or if you are migrating to a host with MySQL 5 or greater.
- **Force MySQL 4 compatible.** JoomlaPack will request from your database server to provide table definitions (CREATE TABLE commands) in a MySQL 4 friendly format.

Important

This option will take effect in MySQL 4.1 or greater database hosts. If you use it on older MySQL version the backup might fail!

Warning

Do not use this option if your site is already running on MySQL 4.x or if both your site and the target host run on MySQL 5.x. Otherwise, crucial information about the database's encoding might be lost in the process, causing broken text on sites using non-ASCII character sets.

- **Database backup algorithm.** This option determines how JoomlaPack will operate in order to try avoiding timing out when it is backing up your database. The available options are:

- | | |
|-------|--|
| Slow | JoomlaPack will only perform a single step at a time. This is the fail-safe setting, but it is also slowing the backup down because a new HTTP request has to be made for every step. Use this option only if the Smart algorithm doesn't work for you. |
| Smart | JoomlaPack will try to group together and perform many steps in a single go. The success of this algorithm depends on the availability of certain server configuration information to JoomlaPack. Since it tries to be a best compromise between speed and efficiency, it is possible that it fails. You can control this algorithm's behaviour through the Magic Numbers configuration options. |

- **File packing algorithm.** This option determines how JoomlaPack will operate in order to try avoiding timing out when it is scanning your site for files to back up and while archiving these files. The available options are:

Slow JoomlaPack will only perform a single step at a time. This is the fail-safe setting, but it is also slowing the backup down because a new HTTP request has to be made for every step. Use this option only if the Smart algorithm doesn't work for you.

Smart JoomlaPack will try to group together and perform many steps in a single go. The success of this algorithm depends on the availability of certain server configuration information to JoomlaPack. Since it tries to be a best compromise between speed and efficiency, it is possible that it fails. You can control this algorithm's behaviour through the Magic Numbers configuration options.

Please note that JoomlaPack 2.2 onwards use a vastly improved implementation of this algorithm during file packing. If your site used to backup only with the Slow algorithm, it's worth switching to the Smart algorithm. JoomlaPack, among other things, will try to detect whenever an operation it's about to carry will cause a timeout and defer its execution to a new step. This improves backup speed while enhancing compatibility with a wider array of server configurations.

- **File list engine.** This option controls how JoomlaPack will scan your site for files to back up during the File Packing process. The available options are:

- **Pure PHP file system scanner.** This is the classic default engine available since the first versions of JoomlaPack. It uses standard PHP functions to read the contents of the directories and determine the files to be backed up.

- **Joomla!-powered file system scanner.** This engine uses the Joomla! Framework functions for accessing the file system and reading the contents of the directories. It is somewhat more efficient for sites with large directories than the Pure PHP engine.

- **Smart scanner for big sites.** This engine is the most advanced JoomlaPack can offer, as of version 2.2. It can detect when it is scanning large directories and enforce that this scanning takes place inside a single step. This minimises the possibility of a timeout happening during this stage, which is crucial when backing up large sites. This is the default engine, for new installations only. *You are strongly advised to use this engine.*

- **Database backup engine.** This option controls how JoomlaPack will access your database and produce a dump of its contents to an SQL file. It is used during the Database Dump operation and applies to all backup types. The available options are:

- **Joomla!-powered database dump.** This is the classic default engine available since JoomlaPack 1.1. It uses the Joomla! database connectivity library to access the database and produce the SQL dump.

- **mysqldump-powered database dump.** This is a new, hybrid mode engine. It should be used by advanced users only! The command line utility **mysqldump** is used to produce an SQL dump of your database. Afterwards, PHP code post-processes the resulting file, taking it into a form suitable for use with the restoration script (JoomlaPack Installer).

Warning

This option is only compatible with JoomlaPack Installer 3. Even though it is possible to select it together with JoomlaPack Installer 2, the resulting backup archive *will not restore!*

This is due to peculiarities of that restoration script and it is not considered a bug. JoomlaPack will not warn you of such an erroneous combination either.

Important

In order to use this option the **mysqldump** utility must be available on your system, the `exec` function available to PHP, `safe` mode preferably disabled and you have to correctly configure the parameters in the relevant configuration section.

- **Archiver engine.** This option controls what JoomlaPack will do with the files to be backed up. The available options are:
 - **JPA JoomlaPack Archive.** JoomlaPack will produce a backup archive in the JPA format. JPA is a renowned archive format, optimised for efficiency, developed in order to combat problems pertaining to ZIP files created by PHP.
 - **ZIP, using PHP functions.** JoomlaPack will produce a backup archive in the standard ZIP format. The ZIP format is compatible with PKZIP and is natively supported by all modern operating systems, including but not limited to Windows and Linux.

Warning

Depending on server configuration, it is possible that the resulting archive might appear corrupt during extraction. This is a limitation originating from how PHP works and trying to avoid the risk of timing out during archiving. For this reason, if this option is selected, JoomlaPack will issue a warning in the Control Panel page with a link to more information on this matter.

- **Uncompressed TAR, using PHP functions.** JoomlaPack will create an uncompressed tar archive, very common in the UNIX world. The process is powered by a modified version of PEAR's Archive_Tar library. This is considered a fail-safe backup method because no compression takes place.

Important

Kickstart and eXtract *do not* support tar archives!

- **GZipped TAR, hybrid processing.** This works as above, but at the end of the backup process the archive is processed by your system's gzip binary in order to produce a tar.gz archive. In order to work it requires the `exec()` command to be available, you have to enter the path to your system's gzip binary and the PHP Safe Mode preferably turned off.

Important

Kickstart and eXtract *do not* support tar.gz archives!

Warning

The gzip process consumes a substantial amount of time. This can cause timeouts, server 500 errors or "MySQL server has gone away" errors. There's nothing we can do about it. If this option doesn't work on your host, try one of the other archiver engines.

- **DirectFTP.** This is a new feature which allows you to directly clone your site to another server. Because of its complexity, It is discussed in a documentation chapter of each own.

- **Installer included in backup.** JoomlaPack will include a restoration script, the installer selected here, in the backup archive in order to make restoring easy. The installers retain the familiar Joomla! installer appearance so that you feel at home! All installers keep the settings in your configuration.php, modifying only those necessary (for example, the database connection information), allowing you to create pristine copies ("clones") of your site to any host. The available installers are:
 - **JoomlaPack Installer 2 (JPI2).** This is the older incarnation of the restoration script. It behaves generally well, but it can't check the validity of FTP settings nor use them during restoration for writing to the configuration.php. It also has issues with error reporting should a database error occur. Finally, it won't work with the SQL dump produced by mysqldump. It is included partly for historical reasons and partly for convenience, should the JPI3 won't work for you.
 - **JoomlaPack Installer 3 (JPI3).** JPI3 is the recommended restoration script. It is build upon the Joomla! Framework, just like the original Joomla! 1.5.x installer. It is very powerful, behaves excellently with huge SQL dumps and supports writing to your configuration.php using FTP access functions, should this be necessary. This is the default option.
- **Backup method.** This option controls how JoomlaPack will interact with the server both at backup time (for back-end backups) and when setting filter options. The available options are:
 - **AJAX (Refreshless).** When set, this option forces JoomlaPack to use the AJAX (Web 2.0) method for contacting with the server. All server communication happens in the background, using specialised JavaScript code to perform server requests and process the results. It is the fastest method. However, this option requires a compatible browser (IE6+, Firefox, Konqueror 3.5.9+, etc.). It is also possible that it won't work on certain hosts, for example free hosts with forced pop up advertisements or with certain proxies and/or firewalls which modify the server response before it reaches the browser. For these cases, we recommend using JavaScript redirects.
 - **JavaScript Redirects.** This is the fail-safe method. Instead of using background server requests, JoomlaPack will reload the page every time it needs to contact the server. Since the amount of data transferred is much higher than that with AJAX, it is slower, but because the server data is parsed mostly on server-side it is bound to work in the broadest spectrum of server-proxy-firewall-browser combinations imaginable.

Warning

If you are using FireBug or any other Javascript debugger you **must disable it** before using JoomlaPack. FireBug is known to cause adverse effects on JavaScript-intensive web applications like GMail and JoomlaPack. The apparent symptom is that JoomlaPack seems to be sitting idle in the middle of a backup process. In fact, it's FireBug that has unfortunately

- **Minimum execution time per step (in milliseconds).** JoomlaPack accomplishes its backup task by reloading the backup page many times, until the process is over. Under some circumstances this can happen many times per second. Many servers tend to mistake this behaviour with an attempt to bring down the server (a DoS attack), so they "pull the plug" on JoomlaPack. This usually causes server error 403 or 500 pages to appear in mid-process. This is especially true if you are using Joomla! Plugin Sentinelle, mod_security, mod_evasive or any similar anti-DoS security measure. To avoid this, JoomlaPack can artificially "lengthen" the time of very fast steps, ensuring that they last no less than the time you enter here (in milliseconds).

If your server is set up to trigger DoS protection at more than one page load per second, the minimum value you should enter here is 1000 (one second). If, however, it is set up to trigger a DoS protection at more than one page load per five seconds, you have to enter the value 5000 (five seconds, expressed in milliseconds). Remember: 1 second = 1000 milliseconds. You have to enter milliseconds in this field!

If this setting is less than or equal to 0 or empty then no delay is introduced between subsequent backup page reloads. If you enter a value which is greater than your server's configured PHP `max_exec_time`, JoomlaPack will automatically and transparently adjust this setting to be at most equal to the `max_exec_time` PHP directive.

This setting takes effect in all types of backup: Back-end AJAX backup, back-end Javascript Redirects backup, front-end backup, CRON Scripts Manager backup scripts, front-end Light Mode (PDA / cell phone / thin client access) and XML-RPC backup (JoomlaPack Remote).

Note

As of JoomlaPack 2.4, this parameter replaces the "**Delay between backup steps (in milliseconds)**", as it does pretty much the same thing while being more generic and reliable, as well as usable in far more backup types.

- **Erase old backup files if the total size is over the size quota.** When enabled, older backup files will be deleted if the total size of the backup files (including the one being generated) is over the size specified in the option named "Size quota, in Megabytes".
- **Erase old backup files if they are more than the max. number of files to keep.** When enabled, older backup files will be deleted if the total number of backup files (including the one being generated) is over the number of files specified in the option named "Maximum number of backup files to keep".
- **Size quota, in Megabytes.** Defines the maximum aggregated size of backup files to keep, for use with the "Erase old backup files if the total size is over the size quota" option.
- **Maximum number of backup files to keep.** Defines the maximum number of backup files to keep, for use with the "Erase old backup files if they are more than the max. number of files to keep" option.

Tip

The quotas are applied only after a successful backup, at the backup finalization stage. This makes sure that old backup files will not be deleted accidentally in the case of a failed backup. This also means that archives from failed backup attempts also remain on your server and do not count towards the quota limits! The only way to get rid of the "failed" archives is to delete the failed attempt from the backup statistics, or delete the archive manually (for example, through FTP).

- **Force database keep-alive during long operations.** Some servers irrevocably drop the database connection to scripts running over a predefined period of time without database traffic. This period is usually very small, in the area of 5-10 seconds. Because JoomlaPack spends a lot of time doing file operations without database activity, this measure would be in effect and cause "MySQL server has gone away" errors in the log file, while aborting the backup process. To this end, we have implemented a smart feature which will try to generate database traffic every half a second if you turn this option on.

Note

This is far from being a panacea to those problems. It is very possible for database errors to occur on extremely slow hosts, or if the server imposes another constraint, for example limiting the amount of time a database connection can remain open.

- **Location of gzip executable file.** If you use the GZipped Tar archiver, you have to enter in this box the path to the `gzip` binary. Normally it should be in your system's path so leaving it to the default, "`gzip`", should be fine. You'll have to check with your host in order to find out what is the path to your `gzip` binary.

- **Dereference symbolic links.** This option is only valid on Linux and compatible *NIX hosts. Normally, when JoomlaPack encounters symbolic links ("symlinks"), it follows them and treats them as regular files and directories, backing up their contents. Some site configurations may have symbolic links set up in such a way as to create an infinite loop, causing the backup to fail. When this option is set to NO, JoomlaPack will not follow symbolic links, but store their name and their target in the archive. Of course, if your symbolic links use absolute paths, restoring to a different server than the one you backed up from will result in broken symlinks.

Important

This option is available on *NIX hosts and for the ZIP packer engine only, in JoomlaPack 2.3 or later.

- **Part size for archive splitting.** JoomlaPack 2.3 and later support the creation of Split Archives. In a nutshell, your backup archive is spanned among one or several files, so that each of these files ("part") is not bigger than the value you specify here. This is a useful feature for hosts which impose a maximum file size quota. The part size must be given in bytes. Useful and frequently used values are 524288 (512 Kilobytes), 1048576 (1 Megabyte), 5242880 (5 Megabytes) and 10485760 (10 Megabytes). If you use a value of 0, no archive splitting will take place and JoomlaPack will produce a single backup archive.

Important

This option is only used by the ZIP packer engine. Using it in conjunction with any other packer engine will have no effect.

The Magic Numbers options allow expert users to fine-tune the internal workings of JoomlaPack's backup engine. Modifying the default values should not be necessary for normal operation. We discourage using this options unless you know what you are doing or you are instructed to do so by our support personnel. The available options are:

- **Maximum database rows dumped per step.** This has effect on the default database dump engine and defines the maximum number of rows of a single table which will be extracted in a single step. If you have tables with huge amounts of data per row, it is wise to set this to something significantly lower, let's say 20, in the expense of a slower backup process.
- **Maximum total size of a single fragment's files, in bytes.** Effective in default file list engine. This determines the maximum amount of data to write to the archive in a single step. This defaults to 1Mb, but on very restrictive or slow hosts this might lead to time-outs. You can try setting it to a smaller value in such a case, in the expense of a slower backup process. If you feel adventurous, you can set it to a bigger value to speed things up, but beware of time-outs!
- **Maximum number of files in a single fragment.** Effective in default file list engine. Similar to the above, a single step might be interrupted before the total size is met, as long as the number of files set here is reached. This allows JoomlaPack to efficiently backup large directories with a big number of small files. In such a case, the time spent to put each individual file in the archive - that is, updating the archive's data structures - is more than the time taken to actually read the file. This value is sane enough, but if the process halts with unexpected time-outs, you might want to lower it to something like 20, or even 10. If you have a generous, fast host you could try setting it to 100 or even 200 to speed things up.
- **Override archiver's chunk size (bytes).** Each file is read in small increments, we call chunks. Larger chunks will result in faster backup, in the price of each of them taking longer, therefore preventing the keep-alive feature from working. Smaller chunks lead to slower backups, therefore it's prudent to decrease the previous parameter (Maximum number of files in a single fragment). If you set this option to the default value (0), JoomlaPack will try to allocate a chunk size using as much memory as it possibly

can. On very slow hosts which also need the keep-alive feature, this parameter should be set to a low value, for example 262144 (this is 256Kb), or even lower, for example 65536 (64Kb). Values lower than this indicate that your server is too slow and using JoomlaPack on it may not always yield successful results.

- **Do not use file_get_contents in the archiver.** Effective in ZIP and JPA archiver engines. By default, these archivers will use the PHP function file_get_contents() if available, to increase the file processing speed. On a few buggy hosts, or on hosts with weird settings, this might not work as expected. Selecting this options overrides JoomlaPack's default behaviour and always uses a conservative fall back method for reading the files to be archived.
- **Do not compress files over this size (in bytes).** Effective in ZIP and JPA archiver engines. Both formats use the GZip library to compress files before putting them into the archive. However, compression takes a significant amount of time and it won't result into significant space gains when applied to certain file types (e.g. archives, media files, ISO images, etc). In order to save time and avoid timing out, JoomlaPack will store files of size equal or greater to this value uncompressed. If you have a very slow host you might want to reduce it to about a half. Increasing it is not really recommended, unless you are sure timeouts will not happen due to very lax settings.
- **Maximum chunk size for ZIP Central Directory glueing.** Effective in ZIP archiver engine. A ZIP file consists if two parts: the data section, where compressed file data is stored and the Central Directory section where a "packing list" of all files contained in the archive is stored. In order to achieve a speedy operation, JoomlaPack stores these two parts as two physically different files and "glues" them together at the end of the backup process. This value indicates how much data of the Central Directory will be read at a time when "glueing" together these two parts. If you have a very low memory limit you should reduce this value to something much smaller, about a fourth of the default. Increasing it is not recommended.
- **Maximum execution time allowance [seconds].** Effective for the Smart algorithm. JoomlaPack tries to determine the maximum execution time allowance of PHP before running anything under the smart algorithm. It is possible that your installation does not report this value, or that it has no limit. Imposing no time limit will, on the former case, lead to PHP time-outs, on the latter case it can lead to web server time-outs. This setting defines the maximum execution time JoomlaPack will allow the smart algorithm to use. Of course, if the PHP setting is lower, that value will override the setting here. If you are on a restrictive or slow server, you might want to lower this to a value between 5 and 10.
- **Minimum execution time allowance to trigger Slow algorithm [seconds].** Effective for the Smart algorithm. If the maximum allowed execution time reported by PHP is lower than this setting, the Smart algorithm will fall back to the Slow algorithm, to avoid potential time-outs. This setting is too conservative per default. If you are on a very slow server, please use the Slow algorithm instead of tweaking this value.
- **Maximum run time bias (in % of maximum_execution_time).** Effective for the Smart algorithm. JoomlaPack knows how much time has elapsed between two individual steps. If the elapsed time is more than a given amount, the AJAX call / page load operation is stopped and execution will resume within a new AJAX call / page load. This amount is calculated by maximum execution time times run time bias divided by 100. So, if your maximum execution time is 10 seconds and you set the runtime bias to 75, the formula yields $10 \times 75 / 100 = 7.5$ seconds. In other words, if 7.5 seconds has elapsed executing consecutive steps the control will be passed back to the browser and execution will resume in the next AJAX call or page load. If the Smart algorithm fails all the time, you might want to lower this setting to 50, or an even lower value.
- **Maximum operations per step.** This option allows you to strike a balance between the slow and smart algorithms. We are aware of some hosts where the Smart algorithm would fail, but the Slow would work fine. It turns out that these hosts apply some tricks that confuse the Smart algorithm into not working.

We also know that the Slow algorithm is slower than a snail on flypaper. This option lets you define the maximum number of the smallest backup steps which can occur during a Smart algorithm's go. Putting a value around 10 made the Smart algorithm work on servers which previously supported only the Slow algorithm. The result was a much faster than the Slow algorithm and much slower the regular Smart algorithm. Finding the "right" value for this option is a matter of trial and error.

Note

Remember that for this setting to have any effect you **must** use the Smart algorithm!

Tip

Setting a value of 1 here simulates the behavior of the Slow algorithm.

Tip

If you want to make your backup faster, you can try setting a higher value. On some very fast hosts we were able to raise it to around 2000! Setting it too high will not break your backup on most hosts; the Smart algorithm's timeout avoidance routine will kick in to protect you. However, on some hosts - and depending on the settings of the maximum time allowance and bias - this might be just not possible, causing a backup failure. As stated above, finding the "right" value is subject to trial and error. Think of it as the "overclocking" feature of JoomlaPack.

The mysqldump tab options on the Profile Settings section define the operation of the homonymous database dump engine and are:

- **Absolute path to mysqldump binary.** The absolute path to the executable file of the mysqldump command-line utility. You might need to ask your host for that. It is usually /usr/bin/mysqldump on Linux hosts.
- **Data chunk for database dump post processing.** During post-processing, the raw mysqldump raw file is read in small chunks, individual queries are identified and post-processed. This setting defines how many bytes will be read off the file at once. Keep it low to avoid memory exhaustion errors, or set it to a higher value to speed up the execution.
- **Maximum number of lines a query can have.** This determines the maximum number of lines in the raw mysqldump file which can be regarded as part of a single query. This setting is generous enough, unless you have a huge table with dozens of columns and a lot of indices and keys.
- **Maximum number of lines to process per step.** How many queries to post process in a single step. Post-processing requires a significant amount of time. The default value is good for most servers, but if you are on a restrictive host or have some very big database rows (for instance, huge articles), you might want to lower it to 50, or even 20, just to be on the safe side.

The DirectFTP tab options are discussed in the DirectFTP engine documentation chapter.

Configuration in Easy Mode

When you are using the Easy Mode of the JoomlaPack component, the configuration page has an oversimplified look and feel. Instead of numerous options, you have a handfull of settings which let novice users successfully configure the component.

The available options are:

- **Output Directory** . This is the directory where the result of the backup process goes. The result of the backup - depending on other configuration options - might be an archive file or an SQL file. The output directory must be accessible and writable by PHP .

Important

Providing a directory with adequate permissions might not be enough! There are other PHP security mechanisms which might prevent using a directory, for example the `open_basedir` restriction which only allows certain paths to be used for writing files from within PHP . JoomlaPack will try to detect and report such anomalies in the Control Panel page before you attempt a backup.

- **Archive Name Template** . Here you can define the naming template of backup files. There are a few available macros. Macros are special strings which will be expanded to something else at backup time. They can be used to make the names of the files harder to guess for potential attackers, as well as allow you to store multiple backup archives on the output directory at any given time. The available macros and their expansion at backup time are:

[HOST]	The configured host name of your site
[DATE]	The current server date, in the format YYYYMMDD (year as four digits, month as two digits, day as two digits), for example 20080818 for August 18th 2008.
[TIME]	The current server time, in the format HHMMSS (hour as two digits, minutes as two digits and seconds as two digits), for example 221520 for 10:15:20 pm.
[RANDOM]	This is a nice security measure, as it generates a 64 character semi-random string (the MD5 hash of the server's time, accurate up to the millisecond). This is almost impossible to guess, unless you know the exact millisecond the template name was processed by the server. Yes, the chance to find this is very, very slim indeed! Please note that some hosts impose a limit on the maximum length of a file's name. On such hosts using RANDOM will most probably result to backup failure for no other apparent reason.

- **Settings Mode** . This governs the overall performance of the JoomlaPack component. There are three available options:
 - **Optimistic** . Backups to ZIP files using Javascript redirects mode, including JoomlaPack Installer 3, using the Smart algorithm and relatively generous time and memory allowances. This is a good choice for fast servers and/or small sites.
 - **Balanced** . Same as above, using the JPA archive format, stricter time and memory allowances, with the MySQL Keep-Alive feature enabled. This is the recommended setting for most production-grade sites.
 - **Conservative** . Same as above, with very conservative settings, using the Slow algorithm and very strict time and memory allowances. This should be used in problematic cases where the Balanced settings mode does not work. If this settings mode does not work either, the only way to get JoomlaPack to work is to switch to the Expert mode and tweak the advanced settings there.
- **Log Level** .
 - **None** . No log file is created. Not recommended unless you are sure of what you're doing!
 - **Simple** . Only errors and warnings are logged. Only recommended if you are able to take backups regularly.

- **Full** . This is the default setting since JoomlaPack 2.1. It produces a detailed log file and it is absolutely necessary when you file a support request in our support forum [<http://forum.joomlapack.net>] .

Important

Whenever you seek support in our forum, you are supposed to download, ZIP and attach the detailed (debug) log file with your support request. This greatly enhances our ability to understand what may be the problem with your site and work out a solution.

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 end up with an incomplete backup file). JoomlaPack disables the Joomla! menu during backup to prevent accidentally switching to a different page.

Sometimes, JoomlaPack will appear to be stuck for a long time (about 2-3 minutes). This is normal and is caused on slow servers processing large files. If JoomlaPack doesn't refresh its screen for more than 6 minutes, you should navigate away from the backup page and take a look at the log file for any error messages. Always try different configuration options - especially switching to the JavaScript Redirects mode! - before submitting a bug report on our support forum.

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.

The initial backup page lets you select a backup profile, define a short description (required) and an optional lengthy comment for this backup attempt. This information will be presented to you in the backup administration page to help you identifying different backups. The default description contains the date and time of backup. The backup profile pre-selected is the one you have chosen in the Control Panel page. You can switch to any profile you wish using the drop down list. Whenever you are ready to start the backup, just click the Backup Now button.

If JoomlaPack has determined that there are confirmed or potential problems with your configuration and/or server setup, it will notify you by placing a big box on top of the form fields. This box will explicitly warn you that JoomlaPack may not work as expected and lists the detected problems. Clicking on any of the detected problems will open a pop-up window with the long description of the problem and any known workarounds. Please, read these pages. Sometimes JoomlaPack will fail because of a known error you can work around easily. Asking for help on our support forum with respect to this kind of problems is a waste of *your* time, as it will take at least 24 hours to tell you the workaround, whereas you could have easily read it in less than 24 seconds. That's quite a difference, isn't it?

During backup, a backup progress panel shows up. The upper sections consists of three lines, indicating each backup operation's status. The current step is highlighted in yellow with a blue arrow marker on its left. Successfully completed steps are highlighted in pale green and have a green check mark to their left. Steps not yet processed will appear in grey. If an error occurs, the step with the error will appear highlighted in red with a red X sign on its left. This will also trigger the display of an error box.

Note

Counter-intuitively, even you are backing up only your database, all steps will become green. This is neither a bug, nor it means that JoomlaPack processed your files. In fact, JoomlaPack skips over backing up your files by having the file backup operation run with the "null" algorithm. This internal algorithm will simply skip over the operation but report it complete to the backup engine, hence the green marker.

Should a minor error occur, JoomlaPack displays a yellow warning box below the status lines. This box holds at most the latest ten minor errors which may have occurred during the backup process. These are also logged in the JoomlaPack Debug Log and marked with the WARNING label, that is if your log level is at least Errors and Warnings. Usual causes of warnings are unreadable files and directories. JoomlaPack regards them as minor errors because even though the backup process can go through, what you get might be a partial backup which doesn't meet your expectations. In case warnings appear on your screen you are advised to review them and assess their importance.

After the whole process is complete, JoomlaPack will clean up any temporary files it has created and empty the temporary database tables it uses. JoomlaPack will also clean temporary files and tables and delete incomplete archive files upon detecting a failure.

By that point, your site backup file has been created. You can now navigate out of the packing page and possibly into the backup administration page, clicking on the handy button which appears below the backup completion message.

Important

There have been reports that some server settings in conjunction with non standards compliant browsers prevent downloading a usable archive. After downloading your backup, test the archive file to make sure it is valid. There have also been instances where WinZip refused to extract a zip file but 7-Zip or WinRAR would extract it. Please read more about the ZIP format on the warning message which appears on the Control Panel page.

In case of backup failure

If JoomlaPack dies with an uncatchable error - for example a server timeout or a PHP error - no feedback will be given to the user. This is a limitation of the way PHP works. In such a case, revisiting the JoomlaPack Control Panel page will allow JoomlaPack to detect this error state and offer to apply one of two sets of pre-defined configuration options which are known to work on a large number of sites. This automatic problem detection and solving feature is described in the Control Panel documentation section above.

Tip

You should try the automatic troubleshooter first. If its proposed changes do not lead to a successful backup you can try to manually apply the proposed changes below.

Should the backup fail for any reason and in a way that JoomlaPack can detect (for example, inability to write to the output file), the error page appears. It contains the last error message reported to JoomlaPack's backup engine and a link to the log viewer page.

Depending on server setup and your site's nature, it is possible that the default options do not work for you as expected. The first line of problem solving is trying out different settings. We give you a list of settings adjustments and other actions which usually work out well for our users. You should try changing one of them at a time, until you get satisfactory results.

- Make sure the JoomlaPack tables (starting with jos_jp_, where jos_ should be replaced with your site's database prefix) exist in your database. If they don't, you'll have to create them manually, as illustrated in Chapter 1, Section 2.2 "Common pitfalls" of the JoomlaPack User's Guide.
- Some hosts impose a maximum file size, for example 10Mb. If the backup always hangs and the generated archive always has the same size, please contact your host and ask them if they impose such a limit. In such a case you can use JoomlaPack's archive splitting feature; just set the **Part size for archive splitting** to a non-zero value, according to the documentation of the Configuration page. You might consider discussing this issue with your host and even switch hosts, as split archives are harder to manage.
- Check for any directories with a large number of files and / or big files. It's a good idea to clean or exclude cache and temporary directories (for example, the "cache" and "tmp" directories of your Joomla! installation). Also, if you have directories with huge files (for example, large videos, MP3's, big download files) it might be worth trying to exclude them.
- If you have open_basedirs restrictions in effect, make sure that your output directory is not outside the allowed paths. The same holds true for your site's folders, especially if there are any "soft links" pointing to files and directories outside the allowed paths; PHP will resolve them to absolute paths and cause the backup to fail.
- If you use the "[RANDOM]" keyword in your Archive Name Template, try removing it. Some hosts are not happy with filenames which are too long.
- Try the "Joomla!-powered filesystem scanner" option in the "File list engine".
- Try the "JPA JoomlaPack Archive" setting in the "Archiver engine" option.
- Switch the "Backup Method" to "JavaScript Redirects".
- If you get strange database errors, such as "MySQL server has gone away", please set the "Force database keep-alive during long operations" option to Yes. In this case, we strongly advise you to set the parameter named "Override archiver's chunk size (bytes)" (look for it in the Magic Numbers section) to a value of 262144, or - if the problem persists - to an even lower number, down to 65536.
- If you still get timeouts, you can try tweaking the Magic Numbers section:
 - If you get timeouts (the backup freezes) please set "Maximum execution time allowance [seconds]" to 7 and "Maximum run time bias (in % of maximum_execution_time)" to 50. You can try lower values, for example 3 and 40 respectively.
 - Try using lower values in the "Maximum operations per step" setting. Many hosts require as low as 10, or even 5 steps. This takes effect if and only if you use the Smart algorithm.

- If the "Maximum operations per step" setting does no good, try setting the "Database Backup Algorithm" or the "File Packing Algorithm" to Slow.
- If the backup hangs during database dumping operation, please set "Maximum database rows dumped per step" to a lower value, for example 50 or even 20 (especially if you have tables with huge rows, for example articles tens of pages long, or copied and pasted from Microsoft Word).
- You can also try using lower values for the other Magic Numbers.

If all else fails, you might have stumbled upon a bug. Submitting a bug report is really simple. Just visit the support forum [<http://forum.joomlapack.net>] and post your problem in the relevant forum. In order to help us help you, we need the following information:

- A clear description of your problem. Saying "Um... it just doesn't work" is *not* a clear description. Tell us exactly what you were trying to do, at what exact operation it failed and any error messages which were output on the page.
- Joomla! version. It is best to tell us the exact version, for example 1.5.7.
- JoomlaPack version. It is best to tell us the exact version, for example 2.0.b1.
- A copy of the JoomlaPack log taken with log level set to All Information and Debug when the problem happened. You can download a copy of the log from within the View Log page. If it doesn't work for you (for example, you get an empty file), the log is available inside the configured output directory, named joomlapack.log. Since our forum rejects certain file extensions, zip it before attaching it. If you are concerned about the possibility of revealing potentially sensitive information, password-protect the ZIP file and send a private message with the password, addressed to users *dlb* and *nicholas*.
- If you are writing about an error related to the restoration process do not forget to tell us which Joomla-Pack Installer is embedded in the backup and how you extracted the archive file (using Kickstart, using our UnZIP/UnJPA scripts or with an external utility).

We will get back to you promptly. It usually takes less than a calendar day to respond. If developer's support is required for your problem, the support team will forward your request to the development team and it will take an extra one to three business days to get a response. Usually, problems are solved within two days. Some pesky bugs take a little over than a week. We try to be fast with supporting you; after all, you are the reason this project exists in the first place!

Administer backup files

Important

Some features of this page (like some information columns and the integrated "Restore" feature) are only available in the JoomlaPack Plus builds.

This page is the single place you can review all your JoomlaPack backup history, as well as administer the backup files. The bulk of the page consists of a standard Joomla! list table. Each row represents a backup attempt and displays a whole lot of information:

The check box column

Clicking the check box on the leftmost cell of a row selects this backup for an operation to be applied to it. Operations are activated by clicking on tool bar buttons. In case of an operation allowing a single row to be selected, the topmost selected row is considered as the sole selection.

Description	Displays the description you have set when you started the backup. In case of frontend backups, this contains the default description which was assigned.
Start	The date when the backup started. The date is expressed in the user's preferred time zone, as it is set in the User Management page of Joomla! itself.

Note

JoomlaPack 2.1.b1 and earlier always expressed dates in UTC (GMT+0) timezone. This was considered inconvenient and has, therefore, changed.

Duration	The duration of the backup in hours : minutes : seconds format. This information is not available for failed backups!				
Status	Indicates the status of the backup and can be one of: <table> <tr> <td>OK</td><td>A complete backup whose backup archive is available for download.</td></tr> <tr> <td>Obsolete</td><td>A complete backup whose backup archive is either deleted, or was overwritten by another backup attempt.</td></tr> </table>	OK	A complete backup whose backup archive is available for download.	Obsolete	A complete backup whose backup archive is either deleted, or was overwritten by another backup attempt.
OK	A complete backup whose backup archive is available for download.				
Obsolete	A complete backup whose backup archive is either deleted, or was overwritten by another backup attempt.				

Note

If you move your backup output directory's location, all your previous backups will appear as "Obsolete", even though you might have moved these backup files as well. This is not a bug. JoomlaPack internally stores the absolute path to the backup files. When you move the output directory its absolute path changes, so JoomlaPack is unable to locate the old backup files.

	<table> <tr> <td>Pending</td><td>A backup attempt which is still running. You should not see any such record, unless a backup attempt started while you were loading this page. In this case, you should not navigate to the Control Panel page! Doing so would invalidate the backup and wreck havoc. You have been warned! Another reason to see such an entry is a backup attempt which failed with a PHP fatal error, or which was abruptly interrupted (by the user or a PAHP error). In this case, you can safely delete the entry and get rid of the backup file as well.</td></tr> <tr> <td>Failed</td><td>A backup attempt which failed with a catchable error condition.</td></tr> </table>	Pending	A backup attempt which is still running. You should not see any such record, unless a backup attempt started while you were loading this page. In this case, you should not navigate to the Control Panel page! Doing so would invalidate the backup and wreck havoc. You have been warned! Another reason to see such an entry is a backup attempt which failed with a PHP fatal error, or which was abruptly interrupted (by the user or a PAHP error). In this case, you can safely delete the entry and get rid of the backup file as well.	Failed	A backup attempt which failed with a catchable error condition.
Pending	A backup attempt which is still running. You should not see any such record, unless a backup attempt started while you were loading this page. In this case, you should not navigate to the Control Panel page! Doing so would invalidate the backup and wreck havoc. You have been warned! Another reason to see such an entry is a backup attempt which failed with a PHP fatal error, or which was abruptly interrupted (by the user or a PAHP error). In this case, you can safely delete the entry and get rid of the backup file as well.				
Failed	A backup attempt which failed with a catchable error condition.				
Origin	Indicates the origin of the backup and can be either frontend for backups originating from the front-end - or XMLRPC interface - or backend for backups originating from the back-end (regular backups).				
Type	Indicates the backup type and can be Full for full site backups (database and files), DB Only for database only backups or Multi DB for multiple				

	databases backup (an archive containing SQL dumps of the main site's database and the defined multiple databases).
Profile	Displays the numeric identifier of the backup profile used during the backup. It is possible that since then the profile may have been modified or even deleted!
Archive	Displays the name of the backup file, if it is available. Clicking on the backup file name will let you download it, directly from your browser. If it is a split archive the file name is not clickable but you will be given as much download links as the parts of your backup are. For example, you might see links labelled "Part 01", "Part 02" through "Part 10" in a split archive consisting of ten files.

On the top of the page you can find a tool bar with operations buttons. The Delete button will remove the selected backup attempt entries along with their backup archives (if applicable). The Download button will download the archive file of the currently selected backup row. It is possible that your server and/or browser don't work well with the download feature of JoomlaPack. In this case you should download your file through FTP, making sure that your FTP client is set up to use the BINARY transfer mode. In fact, we urge you to test restoring your backups. If your backup fails to extract, you can be sure that your browser is not compatible with JoomlaPack's download feature and you'll have to resort to the FTP download method anyway.

Tip

The Download button will only download the last part of a split archive. Please use the links in the Archive column in order to download all of the parts of a split archive. Forgetting to download even a single part will result in inability to extract the archive!

The View / Edit Comment button will open a page showing the description and comment of the currently selected backup row. You can freely edit both the description and the comment on that page and save your changes using the Save button.

The Restore button - available only in the JoomlaPack Plus builds - is a new and exciting feature of JoomlaPack, as it allows you to restore full backups, as well as database only backups. In the former case, it will copy `kickstart.php` and the backup archive on your site's root, so that you can restore all of your site's files and database. You can read Kickstart's documentation for more information regarding the restoration process. In the latter case, JoomlaPack will copy the DataRestore script (`datarestore.php`) on your site's root, so that you can restore your Joomla! database without Joomla! interfering with the process.

Warning

Familiarize yourself with the restoration process on a local test server first. Never restore a live site, unless you have a tested, functional backup file stored in a secure location on local media (for example a USB key or a CD-ROM). Be very cautious when restoring; the process could potentially break your site! If you are only test driving this feature, do so in a local server!

JoomlaPack developers will not be responsible for any loss resulting from the use or misuse of the restoration feature. Common sense *should* be applied when using this feature.

In either case, if the necessary files could be copied on the site's root, you will be presented with a page containing a password and a link to open the restoration script. Please note down this password; it is absolutely necessary for the restoration script to run. This is a security feature to protect you against unauthorized or unintentional restoration which could lead to site compromise or inoperability.

Important

Pay great attention when writing down the password as it is case sensitive. This means that abc, Abc and ABC are different, as far as the restoration script is concerned! The best approach is to copy the password on your clipboard and paste it as soon as you are prompted for it. Failure to enter this password will result in inability to restore.

For more information regarding the restoration process, please refer to the Kickstart and DataRestore documentation (not included in the on-line help integrated with the component, but available in the PDF version of the documentation and the full on-line help on our official web site).

Administer backup files in Easy Mode

This page is a cut-down version of the regular "Administer Backup Files" page and it is only available when the Easy Mode is active.

It is the single place where you can review your JoomlaPack backup history, as well as administer the backup files. The bulk of the page consists of a standard Joomla! list table. Each row represents a backup attempt and displays a whole lot of information:

The check box column	Clicking the check box on the leftmost cell of a row selects this backup for an operation to be applied to it. Operations are activated by clicking on tool bar buttons. In case of an operation allowing a single row to be selected, the topmost selected row is considered as the sole selection.
----------------------	--

Start	The date when the backup started. The date is expressed in the user's preferred time zone, as it is set in the User Managment page of Joomla! itself.
-------	---

Note

JoomlaPack 2.1.b1 and earlier always expressed dates in UTC (GMT+0) timezone. This was considered inconvenient and has, therefore, changed.

Status	Indicates the status of the backup and can be one of:
OK	A complete backup whose backup archive is available for download.
Obsolete	A complete backup whose backup archive is either deleted, or was overwritten by another backup attempt.

Note

If you move your backup output directory's location, all your previous backups will appear as "Obsolete", even though you might have moved these backup files as well. This is not a bug. JoomlaPack internally stores the absolute path to the backup files. When you move the output directory its absolute path changes, so JoomlaPack is unable to locate the old backup files.

Pending	A backup attempt which is still running. You should not see any such record, unless a backup attempt started while
---------	--

you were loading this page. In this case, you should not navigate to the Control Panel page! Doing so would invalidate the backup and wreck havoc. You have been warned! Another reason to see such an entry is a backup attempt which failed with a PHP fatal error, or which was abruptly interrupted (by the user or a PHP error). In this case, you can safely delete the entry and get rid of the backup file as well.

	Failed	A backup attempt which failed with a catchable error condition.
Size	Indicates the backup archive's size.	
Archive	Displays the name of the backup file, if it is available.	

On the top of the page you can find a tool bar with operations buttons. The Delete button will remove the selected backup attempt entries along with their backup archives (if applicable). The Download button will download the archive file of the currently selected backup row.

View log

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 header text.

The bulk of this page is the log visualization box. Each line is preceded by a time stamp, in the format YYMMDD hh:mm:ss (that's year, month, date with two digits, a space and time in 24-hour format). Each line is colour coded, for your convenience. Debug information is in smaller, grey 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, all of 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.

Downloading the log

Sometimes, when you ask for support in our forum, we will ask you to post a Debug Log so that we can understand how JoomlaPack processes your site and where it got stuck. Whenever we ask you to provide a Debug Log, you are supposed to use the "Download log file" link on the top of the page to do so. Clicking on this link will download a text file on your local computer. Please compress it into the ZIP or tar.gz format and attach it to your forum post.

Warning

Make sure that the Log Level was set to "All Information and Debug" in the Basic section of the Configuration page *before* backing up. Otherwise the log will be useless for supporting you.

Please, do not copy and paste information directly off this page! Copied and pasted text makes it very hard for us to process your site's log and decreases the chance to find a solution for your problem. In fact, JoomlaPack 2.1.b2 or later won't even allow you to copy text from this page, in order to utterly deter such behaviour.

Multiple databases definitions

Important

This feature is only available in the JoomlaPack Plus builds.

Warning

Do not use this feature to add your site's database. This will cause errors during the restoration of your site!

Warning

If you add an empty database (one which has no tables) will result in backup errors!

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 databases definitions 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.

Note

The settings on this page are defined *per profile* . Make sure you have selected the desired profile in the Control Panel page.

Important

Backup and restoration of multiple databases is only supported in conjunction with the Full back-up mode. Also note that these databases will be dumped verbatim; no filters will be applied and the prefixes will not be turned into their abstract form. For instance, jos_banner will remain jos_banner, it won't be turned into #__banner.

At first, you are presented with a familiar Joomla! grid view, listing all database definitions. Clicking on an entry will open the database definition editor page. Selecting a row - by marking its check box on the left hand column - and clicking the Copy button will create a verbatim copy of this definition.

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.

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

Host	The MySQL server hostname. This is usually localhost, but many commercial hosts (especially those with server clusters) deviate from this rule. If unsure, consult your host's domain control panel or ask for their help.
Port	If your host's using a different port than the default, you have to define it here. If you do not understand what this is all about, just leave it blank; you probably don't even need this.
Username	Supply the user name you use to connect to the database. This might or might not be the same as the user name for your hosting account! Check with your host if you are unsure, we won't be able to help you with this.

Password	Supply the password you use to connect to the database. This might or might not be the same as the password for your hosting account! Check with your host if you are unsure, we won't be able to help you with this.
Database	Supply the database name. Usually, you have to check with your host's domain control panel or otherwise contact your host's support to get this information.

Clicking the Check connectivity to database button will attempt to connect to the database using the supplied settings and will inform you on the results.

Note

This feature requires AJAX. If your settings interfere with AJAX responses sent back to the browser you will get no feedback upon clicking the button.

The Save button will apply the settings and get you back on the Multiple databases definitions page, while the Cancel button will discard any changes and return to the Multiple databases definitions page.

Off-site Directories Inclusion

Important

This feature is only available in the JoomlaPack Plus builds.

Introduction to the off-site directories inclusion feature

More often than not, seasoned web masters prefer to place file repositories outside the site's root (usually, outside the web server's root as well!) in order to deter potential crackers and "leechers" from having direct access to those files. Such repositories can include downloads, image galleries, media (audio and video) or controlled access documents files. As you know, JoomlaPack will only backup files under the site's root, which made these files impossible to backup. Not any more!

Using the off-site directories inclusion, JoomlaPack can be instructed to look for files in arbitrary locations, even if they are outside the site's root (hence the name). All the directories included with this filter will be placed in the archive as subdirectories of another folder, in order to avoid directory name clashes. We call this folder the "virtual folder", because it doesn't physically exist on the server, it only exists inside the backup archive.

For example, if you want to backup an off-site directory named `images`, if we weren't using the virtual folder its contents would end up being backed up (and subsequently restored!) inside the Joomla! `images` directory. This is something you'd like to happen. If your virtual folder is called `my_offsite_includes`, this directory would end up being backed up as something like `my_offsite_includes\1-images`. Notice the number and the dash before the actual directory name? This is a smart feature which allows you to backup many directories of the same name. You could, for instance, backup two directories named `images`, confident that there would be no name clash inside the archive.

Since keeping track of these folders is a pain, JoomlaPack includes a `readme.txt` text file inside the virtual folder which tells you which backed up folder corresponds to which physical folder, making it easy for you to restore these directories to their rightful place.

Important

JoomlaPack *will not* automatically restore the off-site directories to their original location. Since JoomlaPack is meant for backing up, restoring and *migrating* sites to another host we chose not

to automatically restore off-site directories, as this would break the migration process. A future version of JoomlaPack might address this issue more elegantly. We are open to suggestions!

Using the management page

The main page of this feature is a standard Joomla! back-end list page, showing all the configured off-site directories. The directory column shows the absolute path to the directory you have entered. Clicking on it will show the editor page.

You are provided with the standard administrator list controls, namely adding a new directory definition with the New button, copying a definition with the Copy button and completely removing a definition with the Delete button.

Important

The availability of this feature is subject to host restrictions, especially the `open_basedir` restrictions. Many hosts disallow access to folders outside the site's root. Make sure to check with your host beforehand.

Another common grief might be the **permissions of the directory itself**, not those of its contained files! The directory permissions must allow browse access (the execution bit must be set). Other Joomla! components using this directory may be able to work even if this condition is not met, simply because they *know* the filenames they want to access beforehand, whereas JoomlaPack has to *determine* them, hence it has to *browse* the directory, therefore it *needs* the necessary permissions! If this doesn't make sense to use, please read our chapter on permissions **before trying to use this feature** !

The editor page

The only thing you have to enter in the editor page is the absolute path to the directory you want to be backed up. On Windows hosts it will be something like `C:\path\to\directory` whereas on Linux (and other UNIX-based OSes) hosts it will be something like `/path/to/directory`.

In order to help you acquire a valid path, JoomlaPack offers you two buttons: clicking on the Check directory access button will try to access the directory in order to read its contents and inform you of the result of this operation. The Reset to site's root button will replace the text in the box with the absolute path to the site's root. This is the easiest way to determine the absolute path to a directory if all you know is, for example, its name and that it's one level above the site's root!

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 feature of JoomlaPack.

Note

The settings on this page are defined *per profile*. Make sure you have selected the desired profile in the Control Panel page.

The Single File Exclusion operates in an explorer like interface. Just below the page's title you can see the path to the current directory, relative to the site's root, in bold letters. Below it, there are two tables. The left hand table displays the subdirectories of the current directory. Clicking on an entry will make that directory current. The right-hand table displays the files contained in the current directory. Excluded files are displayed in red bold type. Clicking on a file will toggle its exclusion status.

Tip

Directories excluded by means of the Directory Exclusion option appear in the left hand table in black italicised type. You can't make these directories current because there is no point; their files will not be part of the backup anyway.

You may have noticed that there is a button entitled Tabular View in the toolbar of this page. Clicking on this icon changes the view to a Joomla!-standard tabular view. Its purpose is to provide a convenient interface for getting an overview of all applied filters, no matter how deep they are in the file system hierarchy and - possibly - delete some of them.

All of the set filters are shown in a table, one filter per row. Clicking the check box on the left of the filter selects it. The Delete button on the toolbar removes the selected filters. The Normal View button returns you to the default view (non-tabular) of this filter.

Directory exclusion

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 feature fits the bill.

Note

The settings on this page are defined *per profile* . Make sure you have selected the desired profile in the Control Panel page.

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.

The Directory Exclusion operates in an explorer like interface. Just below the page's title you can see the path to the current directory, relative to the site's root, in bold letters. Below it, there is a table displaying the subdirectories of the active directory. Each row displays a link entitled " Toggle " and the directory's name. Clicking on " Toggle " toggles the exclusion status of that directory. Clicking on the directory name will make that directory current. Excluded directories have their names appear in red bold type.

You may have noticed that there is a button entitled Tabular View in the toolbar of this page. Clicking on this icon changes the view to a Joomla!-standard tabular view. Its purpose is to provide a convenient interface for getting an overview of all applied filters, no matter how deep they are in the file system hierarchy and - possibly - delete some of them.

All of the set filters are shown in a table, one filter per row. Clicking the check box on the left of the filter selects it. The Delete button on the toolbar removes the selected filters. The Normal View button returns you to the default view (non-tabular) of this filter.

Database tables exclusion

Important

This feature is only available in the JoomlaPack Plus builds.

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. Now it is possible to exclude these tables using the Database tables exclusion feature.

Note

The settings on this page are defined *per profile* . Make sure you have selected the desired profile in the Control Panel page.

On the upper part of the page you can find two quick links. The first one, entitled Reset table filters will remove all database tables filters, usefull if you messed up and want to start over. The other one, entitled Filter non-Joomla! tables will exclude all tables not appearing to belong to your current Joomla! site from the backup set.

The main part of the page consists of a list of tables of your database. Clicking on a table name will toggle its exclusion status. Excluded tables appear in red bold type.

You may have noticed that there is a button entitled Tabular View in the toolbar of this page. Clicking on this icon changes the view to a Joomla!-standard tabular view. Its purpose is to provide a convenient interface for getting an overview of all applied filters, no matter how deep they are in the file system hierarchy and - possibly - delete some of them.

All of the set filters are shown in a table, one filter per row. Clicking the check box on the left of the filter selects it. The Delete button on the toolbar removes the selected filters. The Normal View button returns you to the default view (non-tabular) of this filter.

Skip Directory Contents

Important

This feature is only available in the JoomlaPack Plus builds.

Using the files or directory exclusion filters is good if you can put up with two inherent restrictions: you have to know the names of the files or directories to exclude before the backup starts and you have to accept that the excluded directories do not appear at all in the archive. The first condition is next to impossible to meet with log, cache and temporary directories, as the names of the contained files and directories are not known beforehand and change over time. The second restriction is simply inconvenient if you are migrating your site to a different server: you might want to have this directory created, even if it's empty, because otherwise some component - which looks for this particular directory - might fail! Well, now you have the **Skip Directory Contents** filters, which is actually two filters in one!

How do these filters work?

The **Skip Files** filter works in a straightforward manner. Choose a directory and rest assured that all of its files - and its files only - will not appear in the backup. You don't have to know the file names beforehand; JoomlaPack will simply not try to list this directory's files *at all* when performing the backup. However, some special files *will* be included if they exist in the directory at the time of the backup:

- .htaccess
- index.htm
- index.html
- robots.txt

These special files are commonly used by webmasters and web developers to protect files and directories from unauthorized access. We wouldn't like JoomlaPack to compromise your site's security when you migrate it to a different host or, generally, restore it to an empty host; therefore we chose to not skip these special files.

Tip

Skip Files should be used on log, cache and temporary directories to avoid backing up useless files, or - most importantly - risking backup failure on extremely slow hosts. JoomlaPack automatically does that for you for the log, cache and temporary directories of Joomla! itself. If you have any extensions with directories of this nature, you'll have to enable this filter on them manually.

The **Skip Directories** filter is much simpler in operation. Choose a directory and rest assured that no subdirectories of it will be included *at all* in the backup set. There are no exceptions and you can not force some of the subdirectories to be immune to this filter. It's all or nothing.

The great thing about those two filters is that they can work in parallel. Activating each of them does not affect the area where the other would operate. For example, if you apply only the Skip Files filter on a directory, its files will not be backed up but its subdirectories will be backed up. On the other hand, if you select only the Skip Directories filter, its subdirectories will be excluded from the backup while its files will be backed up normally.

Tip

Skip Directories should be used on log, cache and temporary directories to avoid backing up useless files, or - most importantly - risking backup failure on extremely slow hosts. JoomlaPack automatically does that for you for the log, cache and temporary directories of Joomla! itself. If you have any extensions with directories of this nature, you'll have to enable this filter on them manually.

The best way to fully grasp the power and function of these filters is to perform a few trial backups playing with them and comparing the results.

Using the filter manipulation page

Note

The settings on this page are defined *per profile*. Make sure you have selected the desired profile in the Control Panel page.

The page operates in an explorer like interface. Just below the page's title you can see the path to the current directory, relative to the site's root, in bold letters. Below it, there is a table displaying the subdirectories of the active directory. Each row displays two links entitled " Toggle Files " and " Toggle Directories " respectively and finally the subdirectory's name.

Clicking on " Toggle Files " toggles the exclusion status of the contained files of this subdirectory. If nothing is filtered, it appears on blue type and clicking it enables the filter. If the filter is active, it appears in green type and clicking it disables the filter. If this particular subdirectory is already excluded by the Directory Exclusion Filters, it appears in gray italicized type and clicking on it has no effect whatsoever.

Clicking on " Toggle Directories " toggles the exclusion status of the contained subdirectories of this subdirectory. If nothing is filtered, it appears on blue type and clicking it enables the filter. If the filter is active, it appears in green type and clicking it disables the filter. If this particular subdirectory is already excluded by the Directory Exclusion Filters, it appears in gray italicized type and clicking on it has no effect whatsoever.

Clicking on the directory name will make that directory current. If the subdirectory exclusion filter or the regular directory exclusion filter is active, then the affected directories have their names appear in red bold type.

You may have noticed that there is a button entitled Tabular View in the toolbar of this page. Clicking on this icon changes the view to a Joomla!-standard tabular view. Its purpose is to provide a convenient interface for getting an overview of all applied filters, no matter how deep they are in the file system hierarchy and - possibly - delete some of them.

Note

The tabular view does not discriminate between Skip Files and Skip Directories filters, neither does it indicate which filter is of what type.

All of the set filters are shown in a table, one filter per row. Clicking the check box on the left of the filter selects it. The Delete button on the toolbar removes the selected filters. The Normal View button returns you to the default view (non-tabular) of this filter.

Extension filters

Important

This feature is only available in the JoomlaPack Plus builds.

In our quest to provide the optimal feature set for web professionals, JoomlaPack 2.1 and above include the Extension Filters feature. Using it you can exclude any Joomla! extension (component, module, plugin, language or template) from the backup set, as if it was never installed! This allows web professionals to have a single "template site", where every common extension is installed. Creating a new site's skeleton is as easy as taking a backup with a different exclusion set. The benefit is that instead of maintaining multiple "template sites" - having to update Joomla! and the installed extensions on every issued update - you only have to manage one master installation. It's sheer efficiency!

When you use this feature, JoomlaPack will automatically exclude the extension's files and/or directories, as well as any database entries pointing to it, effectively "cleaning" the backup from any traces of the extension.

Important

This feature is known to work erratically when using JoomlaPack with the Google Chrome browser. It seems that it defies any cache control method and therefore does not call the JoomlaPack page which toggles the filters. There is no known workaround to this problem other than using a different browser, e.g. Mozilla Firefox.

The Extensions Filters page has four sub-pages, presented as links below the page's toolbar.

Note

The settings on these pages are defined *per profile* . Make sure you have selected the desired profile in the Control Panel page.

All sub-pages share the same toolbar icons. The Back icon gets you back to JoomlaPack's Control Panel. The Re-apply button updates JoomlaPack's tables with the status of the current sub-page's filters status. This is normally not needed (it is done automatically whenever you toggle any item's state) and should only be used if an error occurred while trying to toggle an item's status or if you observed that the backup doesn't take into account your filter preferences.

Components

The most evident use of the Extension Filters is to exclude components, the essential building blocks of any Joomla!-powered web site.

The Components exclusion page presents a list with all installed non-core components. Each component lists its State and the Component name. When the State column contains a green check mark, it means that this module will be included in the backup. A white X in a red circle means that the component will be excluded from the backup set. Clicking on the status icon toggles its state.

Important

JoomlaPack is unable to automatically identify the database tables used by components. Joomla! enforces no naming standard for components' tables and there is also no standard way to automatically determine which tables are created by which component either. As a result, excluding components' database tables *is your responsibility* . Do not ask us to automate this process. The only method to do so is to implement a workaround for certain components only. This is not an optimal solution as it would mislead most users into believing that JoomlaPack can do this for every component they might have installed, which would simply be false.

Modules

From this page you can exclude any installed front-end or back-end non core module. The modules are displayed as a flat list spanning three columns.

The first column, labelled State , indicates the filtering status of this item. A green check mark, it means that this module will be included in the backup. A white X in a red circle means that the module will be excluded from the backup set. Clicking on the status icon toggles its state.

The Module column contains the module's name.

The Area column indicates if this is a front-end (labelled as Public front-end) or a back-end module (labelled as Administrator back-end). The front-end modules are always listed first.

Plug-ins

From this page you can exclude any installed front-end or back-end non core plug-ins. The plug-ins are displayed as a flat list spanning four columns.

The first column, labelled State , indicates the filtering status of this item. A green check mark, it means that this plug-in will be included in the backup. A white X in a red circle means that the plug-in will be excluded from the backup set. Clicking on the status icon toggles its state.

The Plug-in column contains the plug-in's name. The Type column displays the plug-in type, as reported by Joomla!.

The Area column indicates if this is a front-end (labelled as Public front-end) or a back-end plug-in (labelled as Administrator back-end). The front-end plug-ins are always listed first.

Languages

From this page you can exclude any installed, non-default language. This means that each and every language marked as default for the back-end or the front-end will not be listed at all in this page! Languages are displayed in a list spanning three columns.

The first column, labelled State , indicates the filtering status of this item. A green check mark, it means that this language will be included in the backup. A white X in a red circle means that the language will be excluded from the backup set. Clicking on the status icon toggles its state.

The Language column contains the language's ISO code, for example en-GB for British English.

The Area column indicates if this is a front-end (labelled as Public front-end) or a back-end language (labelled as Administrator back-end). The front-end languages are always listed first.

Templates

From this page you can exclude any installed, non-default template. This means that each and every template marked as default for the back-end or the front-end will not be listed at all in this page! Templates are displayed in a list spanning three columns.

The first column, labelled State , indicates the filtering status of this item. A green check mark, it means that this template will be included in the backup. A white X in a red circle means that the template will be excluded from the backup set. Clicking on the status icon toggles its state.

The Template column contains the template's name.

The Area column indicates if this is a front-end (labelled as Public front-end) or a back-end template (labelled as Administrator back-end). The front-end languages are always listed first.

The Live Update feature

Since JoomlaPack 2.2 there is the possibility to be automatically notified on available updates to the component and - optionally - install them on-the-fly, with your approval, without having to manually download them from our file servers. We call this feature Live Update.

Per-requisites and concept

The Live Update feature works by retrieving a small file with update notifications from our server at most once every 24 hours. In order to do that it requires at least one of the following remote file retrieval option to be available in your server's PHP installations:

- URL fopen() wrappers. This is a built-in feature of modern PHP distributions, allowing direct access to remote files, as if they were local. Some hosts turn off this feature for security reasons, as it can be manipulated to provide attack vectors - in conjunction with flaws in other PHP scripts.
- The cURL extension. This is more seldomly available, but provides the best interface for retrieving files from a remote server. JoomlaPack will try to use it first, if both options are available.

If none of those options is available at your server, the live update button will not display at the Control Panel at all.

Tip

If the Live Update feature is not compatible with your server, you can subscribe to our RSS news feed [<http://www.joomlapack.net/news/feed/rss.html>] with your favourite browser / e-mail client / on-line or off-line RSS reader in order to be notified whenever we release new software versions!

JoomlaPack caches the update information for at least 24 hours. This is a precaution so that our server doesn't get swamped by update notifications requests. When an update is detected, you will be notified

to install it. Should you choose to install it, JoomlaPack will delegate the installation to Joomla! itself, making use of the "Install from URL" feature of Joomla!. This procedure is not guaranteed to always work; it depends on your server configuration, defined by your host.

Another smart idea of the Live Update feature, is that it displays updates relevant only to your flavour of JoomlaPack. Not only it distinguishes the JoomlaPack Core and Plus, but it can also tell the SVN (developer's releases) from the "official" releases. So, if you have a developer's release you'll *only* receive notifications about new developer's releases. On the other hand, if you have an "official" release (alpha, beta or stable) you'll be only notified about new "official" releases.

Updates view when no new version is available

When there is not available update, clicking on the Control Panel button brings you to a page where you can view some information about your latest version. You can see the version and release date of both your current version and the latest version available. You will also see the URL of the installation package of the latest published release; you can - for example - right click on this link in order to download it to your PC and install it on another site.

The Manually requery update server allows you to forcibly ask the updates server if a new update is available. This is useful only on the day of a new release. Since JoomlaPack caches the update server's answer for 24 hours, it is possible that the update notification will come to you one day after the new version is released. If you have dozens of sites, soe of them may have not "caught up" with this new release notification, making the auto-installation unavailable for a day. Clicking on this button overcomes this problem.

Important

Please do not abuse this feature. If we experience a traffic overload caused by this feature we might have to discontinue the live updates feature. So, for the sake of everybody, do not click on this button all the time; rest assured that JoomlaPack will notify you when new updates are available.

Updates view when a new version is available

When new versions (updates) are published, clicking on the Control Panel button brings you to a page where you can not only review some information about your current and new version, but also update your component to the latest release with a single click. You can see the version and release date of both your current version and the latest version available. You will also see the URL of the installation package of the latest published release; you can use this to download and install the latest release manually, should the automatic installation fail.

The Update button makes use of a not very well known feature of Joomla!, the installation from a URL. Clicking on this button calls the Joomla! extension installer component (a core component of Joomla!), instructing it to download the update package and install it on your site. Some servers - especially cheap, oversold, shared hosts - will experience a server timeout (blank page) during this step. Should this happen, you can download the latest release manually and follow the steps of the alternative installation procedure. In all other cases, the next page you'll see (after a while) is the component's installer page, informing you that the latest JoomlaPack release has just been installed.

Performing front-end backups

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

Tip

Since JoomlaPack 2.0 Stable there is a more efficient way to remotely initiate a site backup. You can use our new JoomlaPack Remote utility for Windows (part of the JoomlaPack Native Tools distribution) to backup your sites right from your desktop, automatically downloading the backup files as well. However, it does not allow for backup scheduling with the same flexibility as **cron** used with the front-end backup feature does.

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. There are a few limitations, though:

- 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.
- The script is not capable of showing progress messages.
- 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 behaviour is normal. Most browsers will quit after they encounter the twentieth page redirect response, which is bound to happen if you use the Slow algorithm or have a large web site.
- 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.

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 almost trivial to use:

```
wget --max-redirect=1000 "http://www.yoursite.com/index2.php?option=com_joomlapack&view=backup&key=YourSecretKey&format=raw"
```

Of course, the line breaks are included for formatting clarity only. You should not have a line break in your command line!

Important

Do not miss the **--max-redirect=1000** part of the **wget** command! If you fail to include it, the backup will not work with **wget** complaining that the maximum number of redirections has been reached. This is normal behavior, it is not a bug.

Warning

Do not forget the double quotation marks which surround the URL. Otherwise the ampersands and other special characters will be interpreted by your shell and cause the backup to fail.

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&

view=backup&key=YourSecretKey&format=raw"
```

Contact your host; they usually have a nifty help page for all this stuff. Read also the section on CRON jobs below.

Optionally, you can also include an extra parameter to the above URL, `&id=profile_id`, where `profile_id` is the numeric ID of the profile you want to use for the backup. If you don't specify this parameter, the default backup profile (ID=1) will be used. In this sense, the aforementioned URL becomes:

```
/usr/bin/wget          --max-redirect=1000      "http://www.yoursite.com/index2.php?
option=com_joomlapack&

view=backup&key=YourSecretKey&format=raw&profile=profile_id"
```

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. At the time of this writing this particular version was not available for the Windows™ operating system.

Important

Using a web browser (Internet Explorer, Firefox, ...) or wget version 1.10 and earlier will most probably result into an error message concerning the maximum redirections limit being exceeded. This is *not* a bug. Most network software will stop dealing with a web site after it has redirected the request more than 20 times. This is a safety feature to avoid consuming network resources on misconfigured web sites which have entered an infinite redirection loop. JoomlaPack uses redirections creatively, to force the continuation of the backup process without the need for client-side scripting. It is possible, depending on site size, JoomlaPack configuration and server setup, that it will exceed the limit of 20 redirections while performing a backup operation.

A PHP alternative to wget

As user DrChalta pointed out in this support forum post [<http://forum.joomlapack.net/viewtopic.php?f=9&t=833>], there is an alternative to **wget**, as long as your PHP installation has the cURL extension installed and enabled. For starters, you need to save the following PHP script as `bacup.php` somewhere your **cron** daemon can find it. Please note that this is a command-line script and needn't be located in your site's root; it should be preferably located above your site's root, in a non-web-accessible directory.

The script below is a modification over DrChalta's original script, taking into account changes made in JoomlaPack 2.x series. In order to configure it for your server, you only have to change the first three lines. Please note that users of the Free Edition should ignore the `PROFILE` parameter, as this edition only has one profile, given an ID of 1.

```
<?php
define('SITEURL', 'http://www.example.com'); // Base URL of your site
define('SECRETKEY', 'MySecretKey');         // Your secret key
define('PROFILE', 1);                       // The profile's ID

// ===== DO NOT MODIFY BELOW THIS LINE =====
$curl_handle=curl_init();
curl_setopt($curl_handle,CURLOPT_URL,
```

```
SITEURL.'/index2.php?option=com_joomlapack&view=backup&key='.
SECRETKEY.'&format=raw&profile='.PROFILE.'&format=raw');
curl_setopt($curl_handle,CURLOPT_FOLLOWLOCATION,TRUE);
curl_setopt($curl_handle,CURLOPT_MAXREDIRS,10000); # Fix by Nicholas
curl_setopt($curl_handle,CURLOPT_RETURNTRANSFER,1);
$buffer = curl_exec($curl_handle);
curl_close($curl_handle);
if (empty($buffer))
    echo "Sorry, the backup didn't work.";
else
    echo $buffer;
?>
```

Where *www.yoursite.com* and *YourSecretKey* should be set up as discussed in the previous section.

In order to call this script with a schedule, you need to put something like this to your crontab:

```
0 3 * * 6 /usr/local/bin/php /home/USER/backups/backup.php
```

Where */usr/local/bin/php* is the absolute path to your PHP command-line executable and */home/USER/backups/backup.php* is the absolute path to the script above.

If you set up your **cron** schedule with a visual tool (for example, a web interface), the command to execute part is *"/usr/local/bin/php /home/USER/backups/backup.php"*.

Thank you DrChalta for this wonderful tip!

CRON jobs

As one of our users pointed out in the support forum [<http://forum.joomlapack.net/viewtopic.php?f=26&t=1439&p=10095#p10095>], finding the correct command to issue for the CRON job is tricky. What he writes applies not only to his host, SiteGround, but many other commercial hosts as well. We'll simply quote our user, bzcoder.

In the CPanel for SiteGround there is a cronjob option, you create a cronjob using that and use:

```
curl -b /tmp/cookies.txt -c /tmp/cookies.txt -L --max-redirs 1000 -v "<url>"
```

as your command.

Replace *<url>* with your backup URL. Make sure to use the initial url displayed on the backend NOT the final URL when you run the backup manually (been there, done that) - when you do that you end up with a url that doesn't work because of the extra parameter used in continuing the backup process.

The front-end "Light Mode" backup

In contrast to the classic front-end backup which is meant primarily for backup automation, the "Light Mode" is meant for performing site backups from a browser, without even having to log in to the administrator backend. It goes further than that, enabling you to backup your site from any web-capable device, including Pocket PC's, netbooks, or even your cell phone!

Note

The "Light Mode" requires that your browser has at least rudimentary support for Javascript. Most recent web-capable devices, including low end cellphones, fulfill this requirement. This feature

has been tested on Pocket Internet Explorer running on a Mio P560 and a HTC Touch, as well as on a Sony Ericsson K510i mobile phone.

The "light mode" performs user authentication using the front-end backup's secret word and allows you to select the backup profile. It does not give you, however, the option to download your backup. If you want to do so, you'll either have to log in to the administrator back-end of your site, or use other means - e.g. FTP client software.

In order to access the "Light Mode" you have to visit the URL:

`http:// www.example.com/index.php?option=com_joomlapack&view=light`

Just replace `www.example.com` with the actual domain name and path to your site!

Important

The front-end backup feature option **must** be enabled in JoomlaPack's configuration. If it's not, you'll get an "Access Denied" message.

In the first page you get upon accessing this URL just select the backup profile from the drop down list and enter your secret word in the text box, then click on the Backup Now button. The backup process will proceed automatically, giving you a cut-down version of the backup progress information you would get from the backend backup mode. JoomlaPack advances through the pages automatically, using Javascript.

Skip Directory Contents

Important

This feature is only available in the JoomlaPack Plus builds.

Using the files or directory exclusion filters is good if you can put up with two inherent restrictions: you have to know the names of the files or directories to exclude before the backup starts and you have to accept that the excluded directories do not appear at all in the archive. The first condition is next to impossible to meet with log, cache and temporary directories, as the names of the contained files and directories are not known beforehand and change over time. The second restriction is simply inconvenient if you are migrating your site to a different server: you might want to have this directory created, even if it's empty, because otherwise some component - which looks for this particular directory - might fail! Well, now you have the **Skip Directory Contents** filters, which is actually two filters in one!

How do these filters work?

The **Skip Files** filter works in a straightforward manner. Choose a directory and rest assured that all of its files - and its files only - will not appear in the backup. You don't have to know the file names beforehand; JoomlaPack will simply not try to list this directory's files *at all* when performing the backup. However, some special files *will* be included if they exist in the directory at the time of the backup:

- `.htaccess`
- `index.htm`
- `index.html`
- `robots.txt`

These special files are commonly used by webmasters and web developers to protect files and directories from unauthorized access. We wouldn't like JoomlaPack to compromise your site's security when you migrate it to a different host or, generally, restore it to an empty host; therefore we chose to not skip these special files.

Tip

Skip Files should be used on log, cache and temporary directories to avoid backing up useless files, or - most importantly - risking backup failure on extremely slow hosts. JoomlaPack automatically does that for you for the log, cache and temporary directories of Joomla! itself. If you have any extensions with directories of this nature, you'll have to enable this filter on them manually.

The **Skip Directories** filter is much simpler in operation. Choose a directory and rest assured that no subdirectories of it will be included *at all* in the backup set. There are no exceptions and you can not force some of the subdirectories to be immune to this filter. It's all or nothing.

The great thing about those two filters is that they can work in parallel. Activating each of them does not affect the area where the other would operate. For example, if you apply only the Skip Files filter on a directory, its files will not be backed up but its subdirectories will be backed up. On the other hand, if you select only the Skip Directories filter, its subdirectories will be excluded from the backup while its files will be backed up normally.

Tip

Skip Directories should be used on log, cache and temporary directories to avoid backing up useless files, or - most importantly - risking backup failure on extremely slow hosts. JoomlaPack automatically does that for you for the log, cache and temporary directories of Joomla! itself. If you have any extensions with directories of this nature, you'll have to enable this filter on them manually.

The best way to fully grasp the power and function of these filters is to perform a few trial backups playing with them and comparing the results.

Using the filter manipulation page

Note

The settings on this page are defined *per profile*. Make sure you have selected the desired profile in the Control Panel page.

The page operates in an explorer like interface. Just below the page's title you can see the path to the current directory, relative to the site's root, in bold letters. Below it, there is a table displaying the subdirectories of the active directory. Each row displays two links entitled " Toggle Files " and " Toggle Directories " respectively and finally the subdirectory's name.

Clicking on " Toggle Files " toggles the exclusion status of the contained files of this subdirectory. If nothing is filtered, it appears on blue type and clicking it enables the filter. If the filter is active, it appears in green type and clicking it disables the filter. If this particular subdirectory is already excluded by the Directory Exclusion Filters, it appears in gray italicized type and clicking on it has no effect whatsoever.

Clicking on " Toggle Directories " toggles the exclusion status of the contained subdirectories of this subdirectory. If nothing is filtered, it appears on blue type and clicking it enables the filter. If the filter is active, it appears in green type and clicking it disables the filter. If this particular subdirectory is already

excluded by the Directory Exclusion Filters, it appears in gray italicized type and clicking on it has no effect whatsoever.

Clicking on the directory name will make that directory current. If the subdirectory exclusion filter or the regular directory exclusion filter is active, then the affected directories have their names appear in red bold type.

You may have noticed that there is a button entitled Tabular View in the toolbar of this page. Clicking on this icon changes the view to a Joomla!-standard tabular view. Its purpose is to provide a convenient interface for getting an overview of all applied filters, no matter how deep they are in the file system hierarchy and - possibly - delete some of them.

Note

The tabular view does not discriminate between Skip Files and Skip Directories filters, neither does it indicate which filter is of what type.

All of the set filters are shown in a table, one filter per row. Clicking the check box on the left of the filter selects it. The Delete button on the toolbar removes the selected filters. The Normal View button returns you to the default view (non-tabular) of this filter.

The DirectFTP backup engine

Important

This feature is not meant for everyday users. It is designed for web professionals. If you don't understand the rest of this section, please do not use it. JoomlaPack is equally useful as a site migration tool without using DirectFTP.

The DirectFTP feature of JoomlaPack allows power users to directly export a website from one server to another, without the need to download the backup file to their PC and upload it and extract it on the other server. In order to do so, instead of backing up to an archive, it directly writes the backed up files to the remote server using FTP, hence the name.

Tip

In order to activate this feature you have to select the DirectFTP file packing engine from JoomlaPack's configuration.

In a nutshell, when this option is activated, JoomlaPack operates as usual, backing up your database and files. Instead of putting the site files, installer files and database dump inside a backup archive, it simply writes them to a remote server using FTP. You can then visit the installation URL on the remote server to complete the site transfer progress.

Warning

This is considered an advanced feature. Since there are many things which might go wrong in the process and due to the fact that the success of the operation depends on the server configuration of both the originating and target servers, you are advised not to use it unless you know what you're doing.

Moreover, bear in mind that the target server *must not* contain any files! If it does, it may not be possible to overwrite them, leading to an incomplete site transfer.

Requirements

Your originating server must support PHP's FTP extensions and not have its FTP functions blocked. Your originating server must not block FTP communication to the remote (target) server. Some hosts apply a firewall policy which requires you to specify to which hosts your server can connect. In such a case you might need to allow communication to your remote host.

Normally, remote FTP connections consume a lot of time, therefore DirectFTP is very prone to time-outs. Theoretically, JoomlaPack can automatically estimate the time required for transferring each file and avoid timing out. However, this is not always technically possible. In such a case you might want to lower the maximum execution time allowance and bias in the Advanced pane of the JoomlaPack Configuration and/or tweak the maximum number of files per fragment to something very low, e.g. 10.

Note

DirectFTP does not compress the files sent to the remote server. Therefore, tweaking any compression-related Magic Numbers in the JoomlaPack Configuration will have no effect.

Configuration options

The available configuration options are:

- **FTP Host.** The hostname of your remote (target) server, e.g. `ftp.example.com`.
- **Port.** The TCP/IP port of your remote host's FTP server. It's usually 21.
- **Username.** The username you have to use to connect to the remote FTP server.
- **Password.** The password you have to use to connect to the remote FTP server.
- **Initial directory.** The absolute FTP directory to your remote site's location where your site will be cloned to. This is provided by your hosting company. Do not ask us to tell you what you should put in here because we can't possibly know.
- **Enable FTP Passive Mode.** Normally you should enable it, as it is the most common and firewall-safe transfer mode supported by FTP servers. Sometimes, your remote server might require active FTP transfers. In such a case please select "No" here, but bear in mind that your originating server might not support active FTP transfers!
- **Use FTP over SSL.** If your remote server supports secure FTP connections over SSL, you can enable this feature. In such a case you will most probably *have* to change the port. Please ask your hosting company to provide you with more information on whether they support this feature and what port you should use. You must note that this feature must also be supported by your originating server as well.

CRON script manager

Important

This feature is only available in JoomlaPack Plus builds.

This JoomlaPack feature allows you to set up PHP scripts which can be used from the command-line executable of PHP to backup your site. You can schedule them for automatic execution using your host's

CRON or Scheduled Tasks feature (name varies by host). These advanced script allow you not only to perform a backup, but also email or upload by FTP the resulting backup file.

Warning

In order for this feature to work, the `administrator/components/com_joomlapack/assets/scripts` directory on your site must be writable by the user under which PHP runs. If this directory is not writable, you will be unable to create new CRON scripts or edit the existing ones.

Important

JoomlaPack can not set up the CRON job (actual scheduling) for you! You must do that manually. All it can do is to create the scripts for you, nothing more and nothing less.

On the top of the page there are the standard operation buttons. The Back button brings you back to the JoomlaPack Control Panel. The New button will get you to the editor page so as to create a new CRON helper script. The Copy button will copy the currently selected CRON script into a new entry, placed at the bottom of the table. Finally, the Delete button will permanently delete the selected CRON script files from your disk.

The main grid displays the available CRON scripts in a tabular format.

- The first column contains a check box. Clicking on the check box selects the CRON script of this row.
- The CRON script column displays the file name of the CRON script. Clicking on it will allow you to edit its configuration.
- Profile displays the description of the backup profile this CRON script will be using.
- Operation after backup displays what kind of operation will be performed by the CRON script after a successful backup, i.e. nothing, send to an email address or upload by FTP.
- Email or FTP server displays the email address or FTP server to which the backup file will be sent, depending on the "Operation after backup" column.

Editing a CRON script configuration

The editor page appears once you click on the New button in the main CRON Script Manager page, or when you click on the filename of an existing CRON script.

The parameters are presented in a regular tabular form format:

- Verbose output. Set to Yes to display very verbose output of the process while backing up. This is normally required for debugging purposes only.
- Your site's URL. The URL to the site you want to back up. It defaults to the current site's URL. If it has changed (i.e. after transferring your site to a different host) you can click on the Use default button on the right in order to reset it to the current site's URL.

Tip

Yes, this means that you can backup a remote site as well, as long as it has JoomlaPack 2.3 installed and set up. Do not, though, that the "Operation after backup" options will fail and the profile selection box will not correspond to the remote site's profile numbering scheme. You might have to edit the resulting CRON script yourself to change these settings.

- **Profile.** You can select which backup profile to use for performing the backup. The drop-down list is populated by the profile definitions of your JoomlaPack Installation.
- **Secret key.** You must supply the front-end backup secret key, as configured in the JoomlaPack Configuration page. Click on the Use Default button on the left to automatically use the correct secret key.
- **Operation after backup.** What to do after the backup is successfully completed.
 - **Nothing.** Does nothing. Leaves the backup file alone and quits.
 - **Upload to remote FTP server.** Uploads the backup archive to a remote FTP server for safe-keeping. The remote server must support the standard encrypted FTP connection and the passive transfer mode (99% of servers do).
 - **Send to email address below.** Sends the resulting backup file as an email attachment.

Warning

The maximum size of an attachment depends on several factors: the available memory to PHP, the maximum attachment size your site's server can handle and the maximum attachment size supported by the mail server hosting your email account. We recommend against using this feature in conjunction with full site backups. This feature works best with database-only backups.

In order for this feature to work, your site's PHP installation must be able to send emails. Not all servers support this, so you might want to check with your host.

- **Email address.** The email address to which the backup file will be sent.
- **FTP Host.** The FTP hostname, without the protocol prefix, e.g. *ftp.example.com*.
- **FTP Port.** The FTP TCP/IP port to use. If in doubt, use the standard port, which is 21.
- **FTP User.** The username of the remote FTP server's user.
- **FTP Password.** The password of the remote FTP server's user.
- **FTP Directory.** The remote FTP server's directory in which the backup files will be stored.
- The Test FTP connection button can be used to test the validity of the FTP settings.

How the CRON scripts work (and how they *don't*)

The CRON helper scripts (hereafter simply called "scripts") produced by the CRON Script Manager are nothing more than a glorified wrapper of the front-end backup feature of JoomlaPack. This means that you must enable the front-end backup feature and set a "secret word" before you can use the scripts.

Each time you change your secret word you must edit the script configuration and update the relevant field with the new secret word. This also holds true if the URL to your site changes. In such a case you'll have to update the site's URL in the CRON Script Manager editor page.

Tip

Use the Use default button in the CRON Script Manager editor page to automatically update the secret word with the currently configured one, without the need to type anything!

Another point not quite obvious is that the scripts must be run from the command line, i.e. they can not be accessed from the web, for example using a browser. Trying to access them through the web will result in an "Access Denied" message. Do not try to use them with wget or cURL, either, as it is technically accessing them through the web interface and will result in the aforementioned error message.

The reason for this is a result of the reason you need a CRON helper script, or even JoomlaPack itself, in the first place! PHP scripts accessed from the web have a very limited execution time allowance to get their work done. To work around this limitation, JoomlaPack runs the backup in small chunks, one chunk per each web page call. These page calls take place in the background while you're viewing the Backup Now page. The front-end backup employs the same principle, executing one chunk per page call. The script is simply "chaining" together subsequent calls to the front-end backup page, until the backup is over. As a result, it must run for quite a long time. If you were to access it from the web, it would inevitably time out and the backup would never be complete. Running it from the command line lifts the execution time limitation: command line PHP scripts can run forever, without the server complaining. That's why the scripts have to run from a command line; they need the unlimited execution time to be able to produce the backup and, optionally, send it to you.

Accessing it through your host's CRON is considered command-line access and works properly, as you're actually asking your host's server to execute a command line (or a shell command, if you want to be accurate with the Linux terminology) on a schedule. Yes, that's what CRON does: it executes a shell command on a schedule. Very simple and effective!

Warning

Using 3rd party (off-site) CRON solutions will not work with these scripts! Third party CRON schedulers try to use web access to run the scripts. As mentioned above, web access results in an error message.

The correct way to access a script is by using the command-line PHP binary. The actual method is outlined below.

Using the CRON scripts for scheduling your backups

Warning

The front-end backup feature **MUST BE ENABLED** in the JoomlaPack Configuration for the CRON scripts to work at all and you **MUST** configure the correct secret word and site URL in the CRON script configuration **BEFORE** using them.

Depending on your server's control panel software, you should be able to find a CRON job or scheduled tasks feature. This should allow you to create a scheduled task which runs a command at predefined intervals.

Important

As explained above, trying to use these scripts with third party, off-site "CRON" solutions will not work. These scripts **WILL NOT** work when accessed from the web. Read the previous section for more information.

In order to use the generated CRON scripts with your host's CRON feature, you must know the path to the command-line PHP executable and the path to the CRON script file. The latter is displayed in the green box below the CRON scripts grid.

Let's say that the green box tells you that the command should look similar to this:

**/path/to/php /home/myuser/htdocs/administrator/components/com_joomlapack/assets/scripts/
cron1.php**

Let's say that the path to your PHP command-line is /usr/local/bin/php and that you want to use the CRON script by the name of cron3.php. The command line to use in your host's CRON job editor would be:

**/usr/local/bin/php /home/myuser/htdocs/administrator/components/com_joomlapack/as-
sets/scripts/cron3.php**

Chapter 3. Restoring backups and migrating your site to a new host

Getting the backup files on the server

Despite the new integrated backup restoration option which allow restoring on the same location the backup was taken from, in order to migrate your site to a different host / location you'll have to use a similar procedure to the one you use for installing a fresh copy of Joomla!. The first thing you have to do is to get the backup files extracted on the target server. There are several way to accomplish this, some of these outlined in this section. The next step, the actual restoration process, is covered in the following section by installer version.

Tip

A full site backup produced by JoomlaPack contains all of your site's files, a copy (dump) of your database and an installer. *You do not need to take a database only backup in order to restore or migrate your site* . This is a common misconception among novice users.

Warning

Some people install a fresh copy of Joomla! before restoring their site. This is not necessary, *in fact it is discouraged* ! The point of having an automated backup utility is that it is able to produce a self-restoring backup set. This is exactly what JoomlaPack does. Please, do not waste your time installing Joomla! before restoring the backup. Even if you are migrating to a completely new (as in empty) host, the contents of the backup archive are sufficient.

Important

If you use anything other than Kickstart to get the backup files on the server, please rename the `.htaccess` file on your site's root to something else, for example `htaccess.txt` before using the installer script. 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) there is a high chance of server 500 errors and restoration failure. Remeber to rename the file back to `.htaccess` after the restpration is over!

Extracting using your domain control panel

Many hosting sites use CPanel or a similar domain administration 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.

Warning

Some control panels will refuse to overwrite existing files. If you have an existing installation of Joomla! its files will not be overwritten. Please check with your host about the behaviour of your domain control panel software.

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 should preferably use the open-source 7-Zip archiver) in some

directory. Following, you'll have to transfer all of the extracted files to your web host, for example by means of FTP.

Tip

If you are having error messages from your archiver that the ZIP archive is corrupt, or that some files have a CRC32 error, or you want to extract a JPA file, please use JoomlaPack eXtract, part of the JoomlaPack Native Tools 2009 and later versions.

Please note that the original alpha release of JoomlaPack eXtract and JoomlaPack Native Tools 2008 wouldn't work as intended.

Using Kickstart

JoomlaPack authors have created a nifty web-based backup extraction utility called Kickstart. It is able to extract your backup archive directly on your server, using normal PHP file writing functions or FTP mode. For more information, please refer to the Kickstart chapter in this User Guide.

Performing the restoration process

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 no value at all!

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 behaviour in `configuration.php` will be lost!

The instructions below assume that you have extracted the backup archive locally and that you have uploaded the resulting set of files to the server where they will be restored to. If you use Kickstart the process is similar, but you only have to upload the Kickstart file and the archive; extraction will take place on your server and the link to the installation script will appear in the second to last Kickstart page.

JoomlaPack Installer 2

Warning

JPI2 is obsoleted since JoomlaPack 2.4. This means that restoration using this installer is no longer supported by the JoomlaPack team.

The JoomlaPack Installer 2 (or JPI2 for short) is an installer written from scratch quite a while ago. It tried to be compatible with both Joomla! flavours in circulation at the time, the Mambo-derived Joomla! 1.0.x

(released since 2005 up to early 2008) and the recent, overhauled Joomla! 1.5.x (released since January 2008). The whole process is AJAX powered to speed things up. This has one inherent drawback, that it won't work with free hosts forcing pop-up ads to appear. Anyway, such an environment is not very suitable for a Joomla! website.

Important

Some browser extensions might get in the way of the restoration procedure. We are aware that Firebug doesn't work correctly with JPI2.

Tip

You can have a "safe haven", a clean (no extensions) dedicated browser installation in order to perform restoration of your sites. Portable Firefox from PortableApps.com and Iron Portable work wonders for this task!

Assuming that your site's domain is `www.example.com`, point your browser to `http://www.example.com/installation/index.php`. You will see the JPI2 introductory page.

The screenshot shows the JoomlaPack Installer 2.0 Requirements Check screen. On the left is a sidebar with buttons: Requirements Check (highlighted), Licence, Database Restoration, Configuration, and Finish. The main area has a title 'Requirements Check' with a 'Next' button. Below the title is a 'Required Settings Check' section. It contains a list of requirements: PHP version >= 4.1.0 (Yes), - zlib compression support (Available), - XML support (Available), - MySQL support (Available), configuration.php (Writable), Session save path (Writable), and Default configuration source (Original configuration.php). Below this is a 'Recommended Settings Check' section. It contains a table with columns: Directive, Recommended, and Actual. The table lists settings like Safe Mode, Display Errors, File Uploads, Magic Quotes GPC, Magic Quotes Runtime, Register Globals, and Output Buffering, with their recommended and actual values.

Directive	Recommended	Actual
Safe Mode	OFF	OFF
Display Errors	ON	ON
File Uploads	ON	ON
Magic Quotes GPC	ON	OFF
Magic Quotes Runtime	OFF	OFF
Register Globals	OFF	OFF
Output Buffering	OFF	OFF

Make sure that none of the Required Settings are marked in red. Also, make sure that the directories under Directory and File Permissions Check are writeable. These won't interfere with restoration per se, but may cause operating problems later on.

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.

Important

If any of the Required Settings is marked in red, JPI2 will not let you proceed with backup. This doesn't happen with the Session save path, because it is not necessary for Joomla! 1.5.x.

Then, click the Next button. The license page will show up.



Displaying this is a legal requirement, since you are actually installing software. Just click on the Next button to accept the GNU GPL and proceed to the MySQL database configuration . The settings on this screen are populated from your original site's `configuration.php` values. If you are restoring over the original site, no changes are required. If you are restoring to a new location on the same or a different host, please edit them accordingly.

Note

The term "prefix" is standard Joomla! jargon and refers to the table name prefix, not the database name prefix. Some hosts - usually CPanel-powered - add a prefix to the database name, e.g. `myuser_joomla`, where `myuser` is your account's login name. In this case, you must use the full database name, in this case `myuser_joomla`. The *tables* in this database are prepended with the "Prefix" option in this page. For example, if you use the prefix `"foo_"`, the content table holding your articles' text will be named `foo_content`.

JoomlaPack Installer 2.0

Requirements Check
Licence
Database Restoration
Configuration
Finish

Database Restoration
Connection parameters to 'joomla15' database

Please supply the parameters to be used for connecting to the database server and restoring the database backup.

Database Server (usu. localhost)
Database Name
User Name
Password
Prefix (e.g. 'jos_')

Database restoration options

Select the optional operations to be applied during database restoration

☒ Drop tables if they exist
☐ Backup old tables
☐ Skip non-Joomla! tables

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A few notes are necessary for the check boxes:

Drop tables if they exist

It will issue **DROP TABLE** statements for all restored tables prior to restoring them. Use it if you are installing over a previous Joomla! Installation with the same prefix.

Backup old tables

Old tables will be renamed with their prefix changed to bak_. Even though you can select both this and the drop tables options, choosing only one is recommended.

Skip non-Joomla! tables

Clicking this will not restore tables whose names don't start with the #__ prefix. This is an architecturally wrong way to deal with non-Joomla! tables. The preferred way is to not back them up in the first place, by using the tables exclusion filter. However, this option is provided in case you forgot to apply the filters.

As of JoomlaPack 2.2, JPI2 is compatible with database tables which make use of foreign keys. Since re-ordering the table restoration order is not possible, this is achieved by forcing the MySQL database server to ignore foreign key checks while restoring the database. After the restoration is over, foreign key functionality is restored to its normal state, e.g. you can't violate a foreign key constraint.

Clicking the Start Restoring button will start the database restoration process. If you had multiple databases defined in JoomlaPack configuration, the same page will appear as many times as the number of databases you chose to back up. You can recognize which database each page refers to from the header (Connection parameters to ' *DATABASE NAME* ' database).

Note

Even when non-Joomla! databases are being restored, JPI2 insists on providing a prefix. Obviously, this prefix has no effect on databases other than the one powering your Joomla! site.

After all databases have been restored, click on the Next button to proceed to the Configuration page.

JoomlaPack Installer 2.0

Requirements Check
Licence
Database Restoration
Configuration
Finish

Configuration **Next**

Basic Configuration

The necessary configuration to get your Joomla! site working.

Site name
Testing 1-2-3

Administrator E-mail
nikosdion@gmail.com

Administrator Password
Leave blank to use the password you had on the backed up site
Random password

Directory & File Permissions

Select the permissions you want to set to your site's directories and folders. Please note that this operation may not work at all, depending on server's configuration

		User	Group	Others
<input type="checkbox"/> Change directory permissions	Readable	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	Writable	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
	Browsable	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/> Change file permissions				

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 JPI 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 pages.

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.

The FTP layer parameters are not being tested upon, so if you do enable the FTP layer you'd better be 100% sure that the settings are correct!

Now, make sure everything is correct and click on the Next button. Your `configuration.php` is written to disk and the site restoration is complete. Finally, using your FTP client or any other preferred means, remove the installation folder. You are ready!

Important

Sometimes, after the restoration is over, you get a site front page which looks as if all images and CSS files are not loading. This is normal if your live site had a non-empty `$live_site` parameter in its `configuration.php` file and you are restoring your backup to a different domain name or a different subdirectory of the original domain name, you have to manually edit `configuration.php` and change the `$live_site` to reflect the new site's location.

For example, if the new site is located in `http://www.example.com/mysite/`, you have to edit the `configuration.php` file, locate the line starting with `var $live_site` and change it to become:

```
var $live_site = 'http://www.example.com/mysite';
```

JoomlaPack Installer 3

Warning

JPI3 is deprecated since JoomlaPack 2.4. This means that support for JPI3 will be removed in future versions of JoomlaPack.

The JoomlaPack Installer 3 (JPI3 for short) is a member of the JPI series of installers. This one is based on the original Joomla! 1.5.x installer, extended to cater for huge database dumps and multiple databases having been backed up. There is also special care taken to keep settings from the original site's `configuration.php`.

Tip

You can have a "safe haven", a clean (no extensions) dedicated browser installation in order to perform restoration of your sites. Portable Firefox from PortableApps.com and Iron Portable work wonders for this task!


All of the pages have a Next and a Previous button, taking you to the next or previous restoration step, respectively.

Assuming that your site's domain is `www.example.com`, point your browser to `http://www.example.com/installation/index.php`. You will see the JPI3 language selection page.




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The only option for now is United Kingdom English. If you are kind enough to translate it to your mother language, send the translation file to us and we will include it in future versions of the software. So, select the language and click on Next.




 **JoomlaPack Installer 3** Version 3

Steps

- 1 : Language
- 2 : Pre-restoration Check**
- 3 : License
- 4 : Database
- 5 : FTP Configuration
- 6 : Configuration
- 7 : Finish



Pre-restoration Check

Check Again   Previous  Next

Pre-restoration check for Joomla! 1.5.4 Production/Stable [Naiki]

6-July-2008 22:00 GMT:
If any of these items is not supported (marked as **No**) your system does not match the minimum requirements necessary. Please take the appropriate actions to correct the errors. Failure to do so could lead to your Joomla! installation not functioning correctly.

PHP Version >= 4.3.10	Yes
- Zlib Compression Support	Yes
- XML Support	Yes
- MySQL Support	Yes
MB Language is Default	Yes
MB String Overload Off	Yes
configuration.php Writable	Yes

Recommended Settings:

These settings are recommended for PHP in order to ensure full compatibility with Joomla!
However, Joomla! will still operate if your settings do not quite match the recommended.

Directive	Recommended	Actual
Safe Mode:	Off	Off
Display Errors:	Off	On
File Uploads:	On	On
Magic Quotes Runtime:	Off	Off
Register Globals:	Off	Off
Output Buffering:	Off	Off
Session Auto Start:	Off	Off

The Pre-restoration Check page shows some vital information about your server. The first group of options should be all green. If any of them is marked in red, you won't be able to continue the restoration process. These are required settings for Joomla! to work. Clicking on Check Again will reload the page. Click on Next to proceed.

Restoring backups and migrating your site to a new host



The screenshot shows the Joomla! Pack Installer 3 interface, Version 3. On the left, a 'Steps' sidebar lists: 1: Language, 2: Pre-restoration Check, 3: License (highlighted), 4: Database, 5: FTP Configuration, 6: Configuration, and 7: Finish. Below the list is a yellow box with a downward arrow. The main area is titled 'License' and contains the 'GNU General Public License' text. It includes a 'Table of Contents' with links to the license, preamble, terms, and application instructions. The license text itself starts with 'Version 2, June 1991' and 'Copyright (C) 1989, 1991 Free Software Foundation, Inc.'. At the top right of the main area are 'Previous' and 'Next' buttons.

Steps

- 1 : Language
- 2 : Pre-restoration Check
- 3 : License
- 4 : Database
- 5 : FTP Configuration
- 6 : Configuration
- 7 : Finish

License Previous Next

GNU General Public License:

Table of Contents

- GNU GENERAL PUBLIC LICENSE
 - Preamble
 - TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION
 - How to Apply These Terms to Your New Programs

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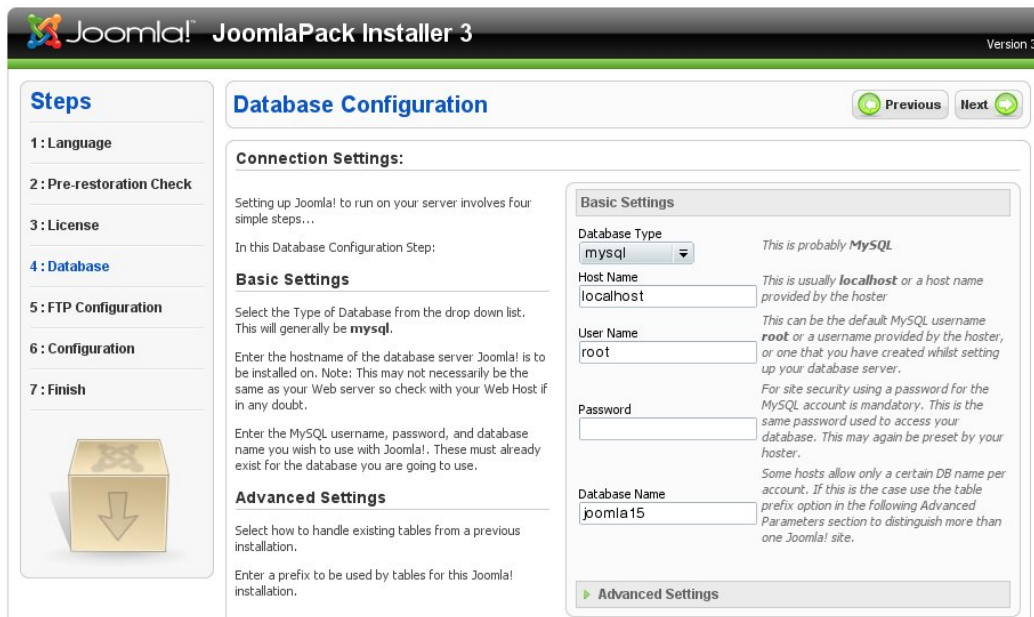
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Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Library General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free

Displaying the license is a legal requirement, since you are actually installing software. Just click on the Next button to accept the GNU GPL and proceed to the Database Configuration.



The screenshot shows the Joomla! Pack Installer 3 interface, Version 3, at the 'Database Configuration' step. The 'Steps' sidebar on the left highlights '4: Database'. The main area is titled 'Database Configuration' and includes 'Previous' and 'Next' buttons. It contains 'Connection Settings' instructions, 'Basic Settings' (with fields for Database Type, Host Name, User Name, Password, and Database Name), and 'Advanced Settings'. The 'Basic Settings' section has explanatory text for each field. At the bottom of the 'Basic Settings' section is an 'Advanced Settings' link.

Steps

- 1 : Language
- 2 : Pre-restoration Check
- 3 : License
- 4 : Database
- 5 : FTP Configuration
- 6 : Configuration
- 7 : Finish

Database Configuration Previous Next

Connection Settings:

Setting up Joomla! to run on your server involves four simple steps...

In this Database Configuration Step:

Basic Settings

Select the Type of Database from the drop down list. This will generally be **mysql**.

Select the Type of Database from the drop down list. This will generally be **mysql**.

Enter the hostname of the database server Joomla! is to be installed on. Note: This may not necessarily be the same as your Web server so check with your Web Host if in any doubt.

Enter the MySQL username, password, and database name you wish to use with Joomla!. These must already exist for the database you are going to use.

Advanced Settings

Select how to handle existing tables from a previous installation.

Enter a prefix to be used by tables for this Joomla! installation.

Basic Settings

Database Type: **mysql** *This is probably MySQL*

Host Name: **localhost** *This is usually localhost or a host name provided by the hoster*

User Name: **root** *This can be the default MySQL username root or a username provided by the hoster, or one that you have created whilst setting up your database server.*

Password: *For site security using a password for the MySQL account is mandatory. This is the same password used to access your database. This may again be preset by your hoster.*

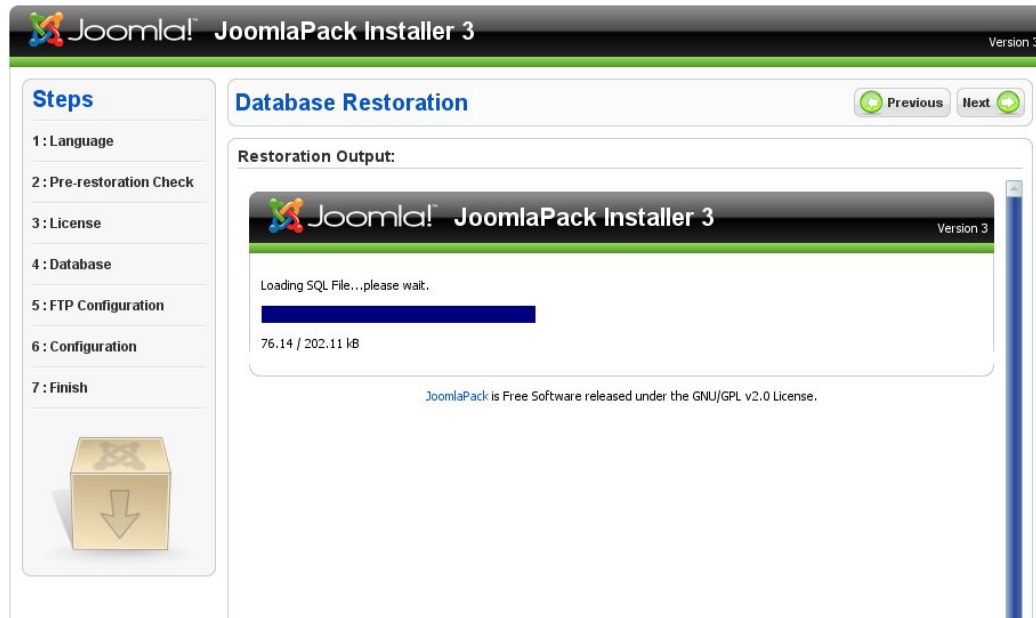
Database Name: **joomla15** *Some hosts allow only a certain DB name per account. If this is the case use the table prefix option in the following Advanced Parameters section to distinguish more than one Joomla! site.*

Advanced Settings

This step allows you to set up the connection parameters for your core Joomla! database (the one powering your site). Make sure everything is correct - the defaults are read from the original site's `configuration.php` - and click on Next to continue restoring.

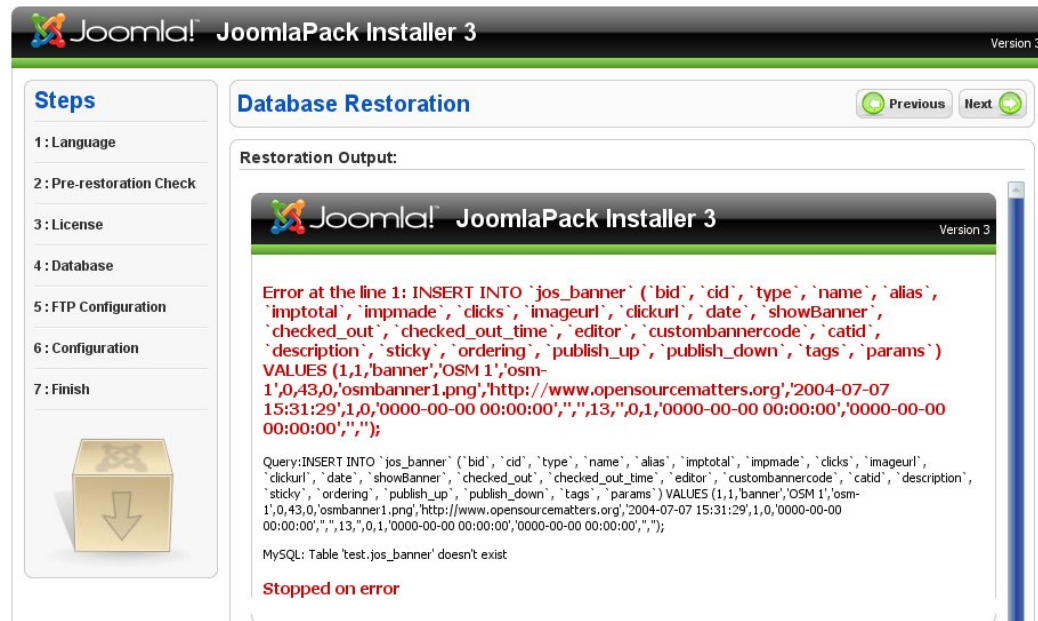
Note

The term "prefix" is standard Joomla! jargon and refers to the table name prefix, not the database name prefix. Some hosts - usually CPanel-powered - add a prefix to the database name, e.g. myuser_joomla, where myuser is your account's login name. In this case, you must use the full database name, in this case myuser_joomla. The *tables* in this database are prepended with the "Prefix" option in this page. For example, if you use the prefix "foo_", the content table holding your articles' text will be named foo_content.



As of JoomlaPack 2.2, JPI2 is compatible with database tables which make use of foreign keys. Since re-ordering the table restoration order is not possible, this is achieved by forcing the MySQL database server to ignore foreign key checks while restoring the database. After the restoration is over, foreign key functionality is restored to its normal state, e.g. you can't violate a foreign key constraint.

On the page displayed, you can see the progress of the restoration. The blue bar fills in as the database backup file is read and the text below shows how much of it has been read and restored. If an error occurs during the database restoration process, a page similar to the one below will appear:



Of course, the error portrayed above was a simulated error, but the important thing to keep is that the exact error will appear on the page on red text (as reported by the Joomla! database library), along with the query which JPI3 attempted to execute and the MySQL error message. Finally, the label Stopped on error will be displayed. You can click on the Previous button to return to the parameters page to rectify a connection parameters related error.

If the process completes successfully, a completion page will appear:



Just click on the Next button.

Important

If you received neither a completion nor an error page, it's an indication that you experienced a server timeout. In such a case, **your database is not restored** and you'll have to manually make

some adjustments. Edit the file `installation/includes/bigdump.php` replacing this line:

```
define('LINESPERSESSION', 1000);
```

with this line

```
define('LINESPERSESSION', 100);
```

effectively instructing JPI to parse fewer SQL commands in one go. This will make database restoration slower but more reliable. Then, retry the restoration by revisiting the installation URL. If you are using Kickstart, **do not run Kickstart again, as this will overwrite the changes you've made!**

Now, depending on whether you had extra databases configured during backup time, you will see the following page for each of these databases:

The screenshot shows the Joomla! JoomlaPack Installer 3 interface. On the left is a 'Steps' sidebar with 7 steps: 1: Language, 2: Pre-restoration Check, 3: License, 4: Database (highlighted), 5: FTP Configuration, 6: Configuration, and 7: Finish. Below the steps is a yellow box with a downward arrow. The main area is titled 'Extra Database Configuration for 3-sledge81.sql' and has 'Previous' and 'Next' buttons. It contains 'Connection Settings: 3-sledge81.sql' and instructions for the 'Extra Database Configuration Step'. The 'Basic Settings' section includes: 'Database Type' (mysql), 'Host Name' (localhost), 'User Name' (root), 'Password' (empty), and 'Database Name' (test2). Each field has a descriptive note. An 'Advanced Settings' section is partially visible at the bottom.

You can see the database name to be restored on the top of the page. The page parameters are similar to those in the Joomla! database configuration page and the restoration process works exactly in the same way.

After you have restored all of your databases, the FTP configuration page appears:

Steps

- 1: Language
- 2: Pre-restoration Check
- 3: License
- 4: Database
- 5: FTP Configuration**
- 6: Configuration
- 7: Finish

FTP Configuration

FTP Configuration:

Due to file system permission restrictions, within Linux and other Unix systems, and PHP Safe Mode restrictions in order that all users can utilize the Joomla! installers an FTP Layer exists to handle file system manipulation. Enter an FTP Username and Password with access to the Joomla! root directory, this will be the FTP Account that handles all file system operations when Joomla! requires FTP access to complete a task. For security reasons, it is best if a separate FTP User Account is created with access only to the Joomla! installation, and not the whole Web server if this option is available to you.

Note: If the installation is on a Windows Operating System the FTP Layer is **not** required

Basic Settings

☐ Yes ☒ No Enable FTP File system Layer

FTP User

FTP Password

FTP Root Path

Autofind FTP Path Verify FTP Settings

[Advanced Settings](#)

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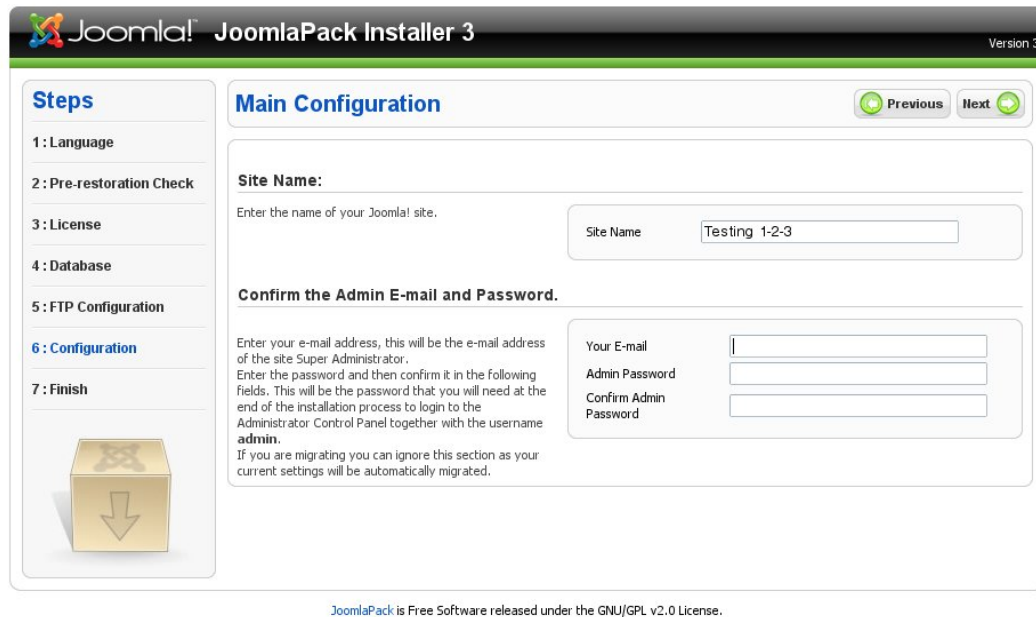
You have to fill in your FTP settings, if so required, just like you'd do with a normal Joomla! 1.5.x installation. If you successfully set up the FTP settings, they will be honoured when trying to write the `configuration.php` at the end of the restoration process. Clicking on the Next button will take you to the Main Configuration page. The settings are populated with your original site's `configuration.php` settings.

Warning

The paths for the temporary and cache directories are reset to the default. This means that any customized settings in `configuration.php` will be overridden by the default values which are, respectively, the directories `tmp` and `cache` under the Joomla! installation root.

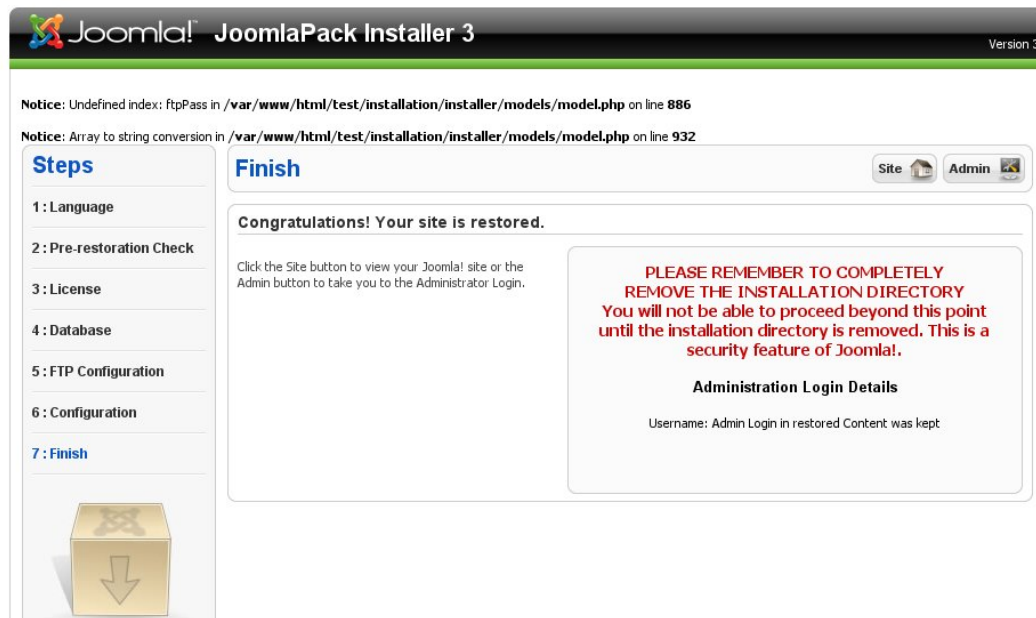
The password field has a peculiar behavior. If you supply a password it will be used to change the login password of the user named "admin" if and only if his user ID is 62 (the default Super Administrator settings on Joomla!). If you have changed the username or if you had deleted the default Super Administrator user, the password will have no effect whatsoever. Finally, leaving the password fields blank will not modify your Super Administrator's login password.

Restoring backups and migrating your site to a new host



The screenshot shows the Joomla! Pack Installer 3 interface. On the left is a 'Steps' sidebar with seven items: 1: Language, 2: Pre-restoration Check, 3: License, 4: Database, 5: FTP Configuration, 6: Configuration (highlighted), and 7: Finish. Below the steps is a cardboard box icon with a downward arrow. The main area is titled 'Main Configuration' and has 'Previous' and 'Next' buttons. It contains a 'Site Name' field with the value 'Testing 1-2-3'. Below that is a section for 'Confirm the Admin E-mail and Password' with fields for 'Your E-mail', 'Admin Password', and 'Confirm Admin Password'. A note explains that the e-mail address will be for the Super Administrator and that the password will be needed for the Administrator Control Panel. A warning states that if migrating, the current settings will be automatically migrated. At the bottom, a small text line reads: 'JoomlaPack is Free Software released under the GNU/GPL v2.0 License.'

Clicking on Next will write your `configuration.php` to disk and present the final page.



The screenshot shows the Joomla! Pack Installer 3 'Finish' screen. The 'Steps' sidebar on the left now has '7: Finish' highlighted. The main area is titled 'Finish' and has 'Site' and 'Admin' buttons. It displays a 'Congratulations! Your site is restored.' message. Below this is a warning in red text: 'PLEASE REMEMBER TO COMPLETELY REMOVE THE INSTALLATION DIRECTORY. You will not be able to proceed beyond this point until the installation directory is removed. This is a security feature of Joomla!.' Below the warning is a section for 'Administration Login Details' showing the 'Username: Admin Login in restored Content was kept'. At the top of the main area, two notices are displayed: 'Notice: Undefined index: ftpPass in /var/www/html/test/installation/installer/models/model.php on line 886' and 'Notice: Array to string conversion in /var/www/html/test/installation/installer/models/model.php on line 932'. The cardboard box icon is still present in the sidebar.

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

Important

Sometimes, after the restoration is over, you get a site front page which looks as if all images and CSS files are not loading. This is normal if your live site had a non-empty `$live_site` parameter in its `configuration.php` file and you are restoring your backup to a different domain name or a different subdirectory of the original domain name, you have to manually edit `configuration.php` and change the `$live_site` to reflect the new site's location.

For example, if the new site is located in `http://www.example.com/mysite/`, you have to edit the `configuration.php` file, locate the line starting with `var $live_site` and change it to become:

```
var $live_site = 'http://www.example.com/mysite';
```

JoomlaPack Installer 4


The JoomlaPack Installer 4 (JPI4 for short) is the latest member of the JPI series of installers. This one is not based on the original Joomla! installer, but written entirely from scratch. It's based on jQuery for its interface. It is more streamlined and - hopefully! - more stable than the original installers. It is loaded with all the standard JPI-series features, like multiple database restoration, automatic handling of `configuration.php` and some new features, like the ability to restore database tables with foreign keys and changing the password of a specific Super Administrator account, should you have multiple Super Administrators on a single site.

Tip

You can have a "safe haven", a clean (no extensions) dedicated browser installation in order to perform restoration of your sites. Portable Firefox from PortableApps.com and Iron Portable work wonders for this task!

All of the pages have a Next and a Previous button, taking you to the next or previous restoration step, respectively. All pages are divided in panes, denoted by clickable headers. Upon clicking each header, the relevant pane's contents come into view. The first pane - opened by default - contains the most basic information for the current page, whereas the other panes contain more advanced information and options.

Assuming that your site's domain is `www.example.com`, point your browser to `http://www.example.com/installation/index.php`. You will see the JPI4 "Check" page.



JoomlaPack Installer 4.0 Next

Check DB Restore Site Info Finish

Server Setup Check

▼ Required Settings

Item	Current Setting
PHP Version >= 4.3.10	Yes
- ZLib Compression Support	Yes
- XML support	Yes
- MySQL Support	Yes
MB language is default	Yes
MB string overload off	Yes
configuration.php Writable	Yes

► Optional Settings

► Directories

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The first pane contains the required settings. If any of these items is in red type, you can not proceed with the restoration at all.

JoomlaPack Installer 4.0 [Next]

Check DB Restore Site Info Finish

Server Setup Check

Required Settings

Optional Settings

Item	Recommended Setting	Current Setting
Safe Mode	No	No
Display Errors	No	Yes
File Uploads	Yes	Yes
Magic Quotes Runtime	No	No
Register Globals	No	No
Output Buffering	No	No
Session auto start	No	No

Directories

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The next pane contains the Optional Settings, which are suggested for optimal operation of the restoration process and the restored site, but not a pre-requisite. Do note, however, that if the Display Errors setting is set to On, it is possible that the database restoration might fail.

JoomlaPack Installer 4.0 [Next]

Check DB Restore Site Info Finish

Server Setup Check

Required Settings

Optional Settings

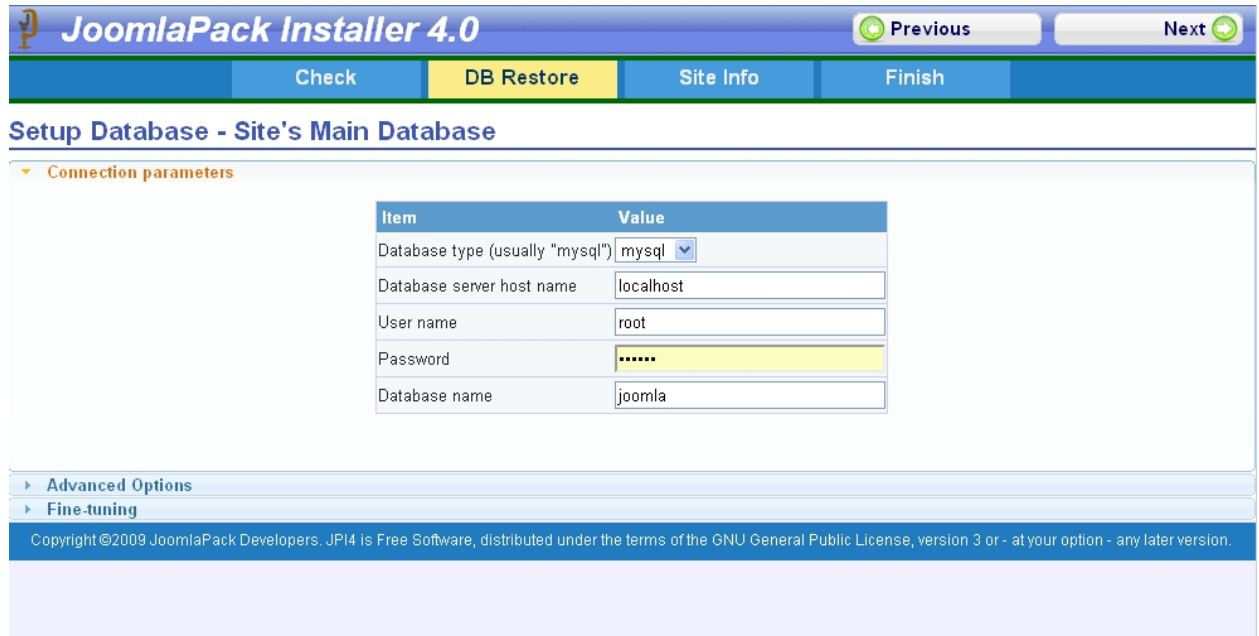
Directories

Item	Current Setting
Temporary Directory C:\xampp\htdocs\joomla\tmp	Yes
Logs Directory C:\xampp\htdocs\joomla\logs	Yes
Cache Directories C:\xampp\htdocs\test\cache	Yes

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The last pane displays the default location (as read from the existing configuration.php file) of three Joomla! core directories and if they are writable. You will have the chance to change them later on, but if you decide to leave them at their pre-defined locations it's a good idea to make them writable by changing their permissions, e.g. using your favorite FTP client program.

Just click on Next to go to the next page.



The screenshot shows the JoomlaPack Installer 4.0 interface. At the top, there's a title bar with the Joomla logo and the text 'JoomlaPack Installer 4.0'. Below the title bar, there are navigation buttons: 'Previous' (disabled), 'Next' (disabled), 'Check', 'DB Restore' (active), 'Site Info', and 'Finish'. The main content area is titled 'Setup Database - Site's Main Database'. Under this title, there's a section 'Connection parameters' which contains a table with the following data:

Item	Value
Database type (usually "mysql")	mysql
Database server host name	localhost
User name	root
Password
Database name	joomla

Below the table, there are two expandable sections: 'Advanced Options' and 'Fine-tuning'. At the bottom of the installer window, there is a copyright notice: 'Copyright ©2009 JoomlaPack Developers. JPI4 is Free Software, distributed under the terms of the GNU General Public License, version 3 or - at your option - any later version.'

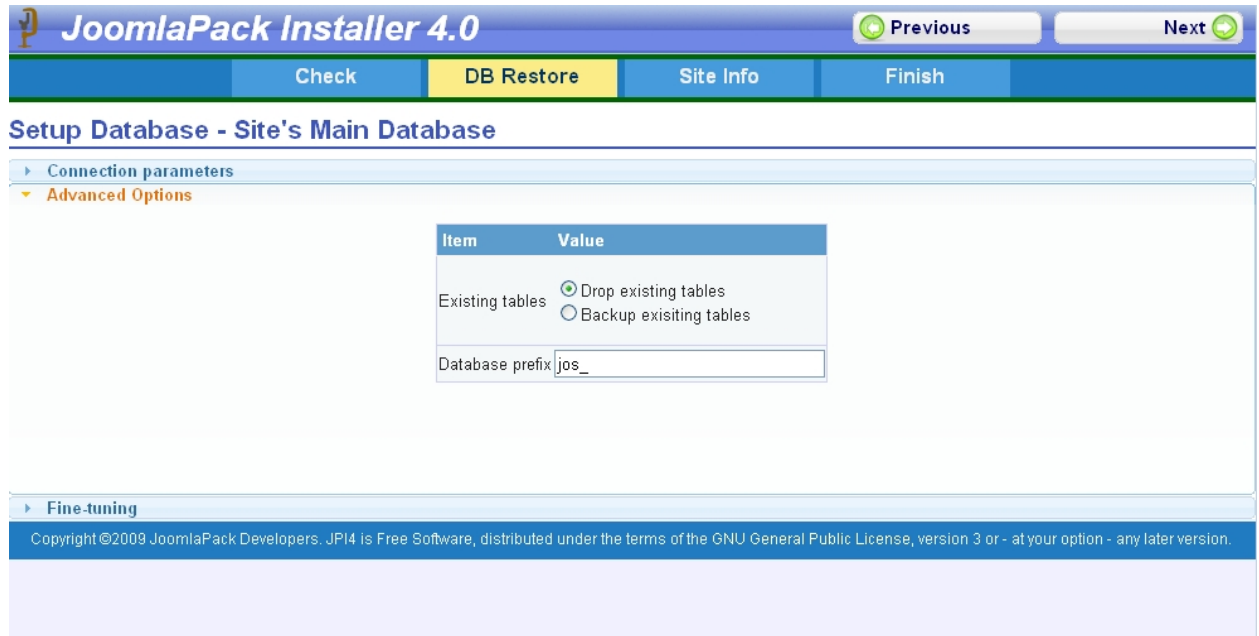
The Database Restoration page allows you to configure the connection information to your database so that you can restore your database. The first pane, Connection parameters, contains the most basic connection information. Initially, the fields are populated with the settings which were used on the site you backed up.

Warning

If you are transferring your site to a new server it is **imperative** that you change these settings! Failure to do so can result in restoration failure and/or malfunction of the restored site. You have been warned!

The available settings are:

- Database type. This can either be mysql or mysqli. Generally, mysqli is a more rigid interface to the MySQL database, but it's not supported by all hosts. If unsure, use mysql, unless you are sure it doesn't work on your server. Choosing the wrong type is not catastrophic, it will just report a connection error.
- Database server host name. The MySQL server host name. Usually it's localhost, but you must ask your host for this setting, or consult your hosting account control panel, as this setting is usually displayed there.
- Username. The username of the database server user. Again, consult your host.
- Password. The password of the database server user. Again, consult your host.
- Database name. The actual name of the MySQL database you want to restore to. If you choose an existing database, existing tables will be overwritten by default. You may want to ask your host for the correct value of this setting.



The screenshot shows the JoomlaPack Installer 4.0 interface. At the top, there's a title bar with the Joomla logo and the text 'JoomlaPack Installer 4.0'. Below the title bar is a navigation bar with buttons: 'Check', 'DB Restore' (highlighted in yellow), 'Site Info', 'Finish', 'Previous', and 'Next'. The main content area is titled 'Setup Database - Site's Main Database'. It has a left sidebar with 'Connection parameters' and 'Advanced Options' (expanded). The 'Advanced Options' section contains a table with two columns: 'Item' and 'Value'. The table has two rows: 'Existing tables' with two radio button options, 'Drop existing tables' (selected) and 'Backup existing tables'; and 'Database prefix' with a text input field containing 'jos_'. Below the table is a 'Fine-tuning' section. At the bottom, there's a copyright notice: 'Copyright ©2009 JoomlaPack Developers. JPI4 is Free Software, distributed under the terms of the GNU General Public License, version 3 or - at your option - any later version.'

Item	Value
Existing tables	<input checked="" type="radio"/> Drop existing tables <input type="radio"/> Backup existing tables
Database prefix	<input type="text" value="jos_"/>

The Advanced Options pane contains some more advanced settings regarding your database restoration process. The options are:

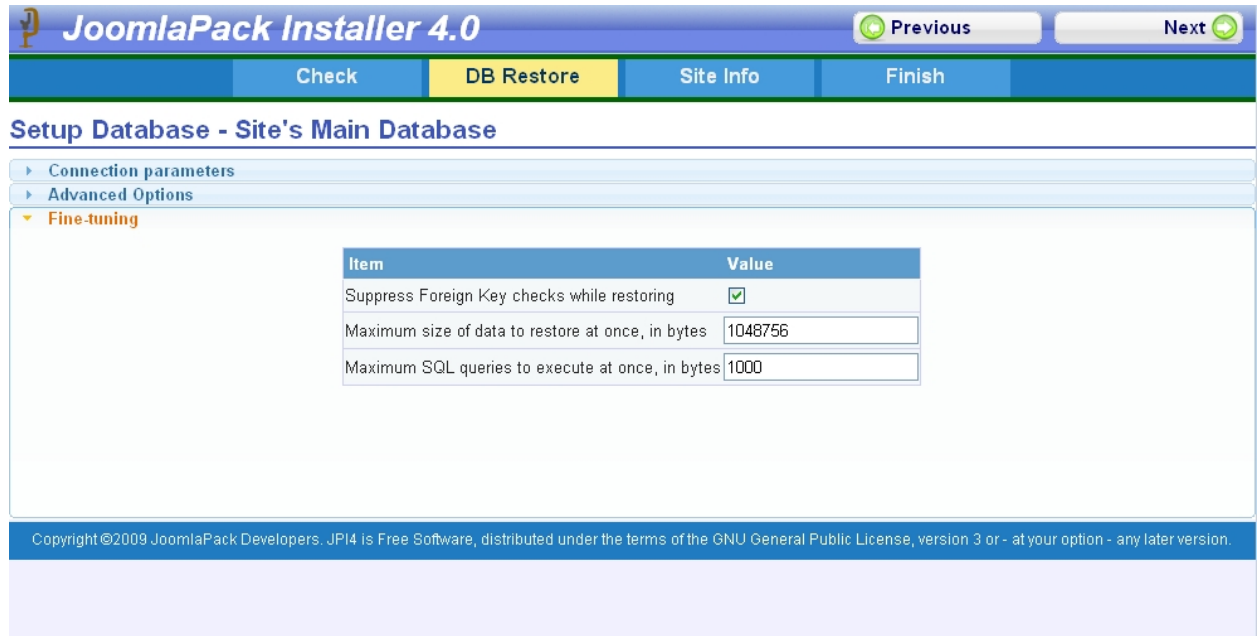
- Existing tables. The first option will delete any existing database tables with the same name. This is the standard behaviour. The second option will rename existing database tables by changing their prefix to 'bak_' (these are usually called backup tables). Any existing backup tables will be removed.
- Database prefix. JPI4 picks up the database prefix used on your original site. If you want to change it for the restored site, you have the option to do it here.

Note

The term "prefix" is standard Joomla! jargon and refers to the table name prefix, not the name prefix of the database itself. Some hosts - usually CPanel-powered - add a prefix to the database name, e.g. myuser_joomla, where myuser is your account's login name. In this case, you must use the full database name, in this case myuser_joomla. The *tables* in this database are prepended with the "Database prefix" option in this page. For example, if you use the prefix "foo_", the content table holding your articles' text will be named foo_content.

Warning

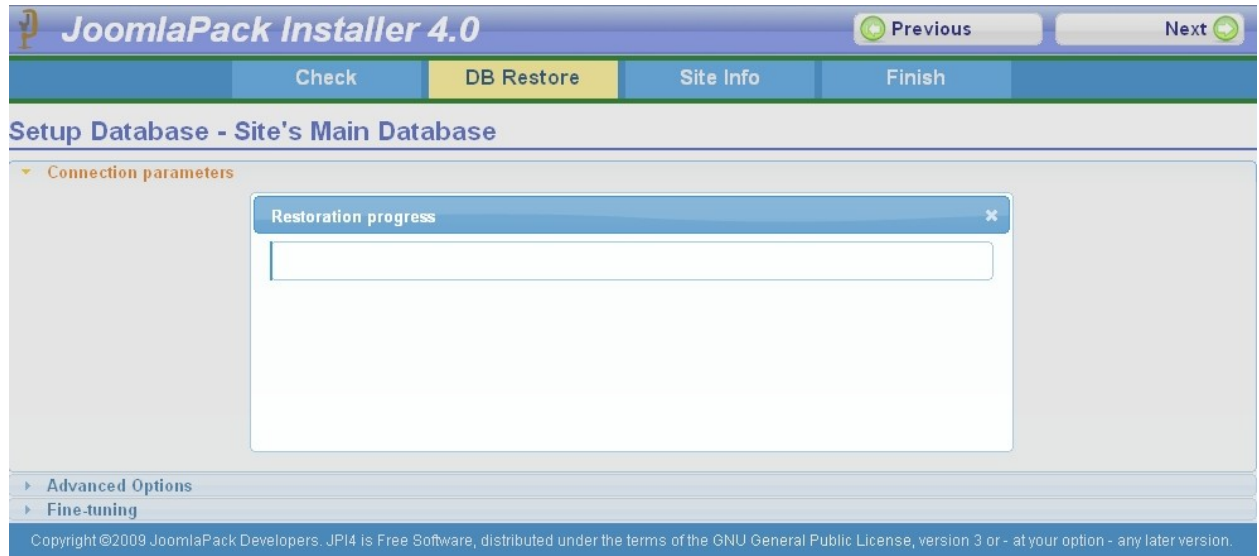
If you are creating a copy of your site on the same hosting account, using the same database, you must change the prefix. Failure to do so will overwrite your original site's contents with the modifications you make on the copy. Usually, this is catastrophic for the original site!



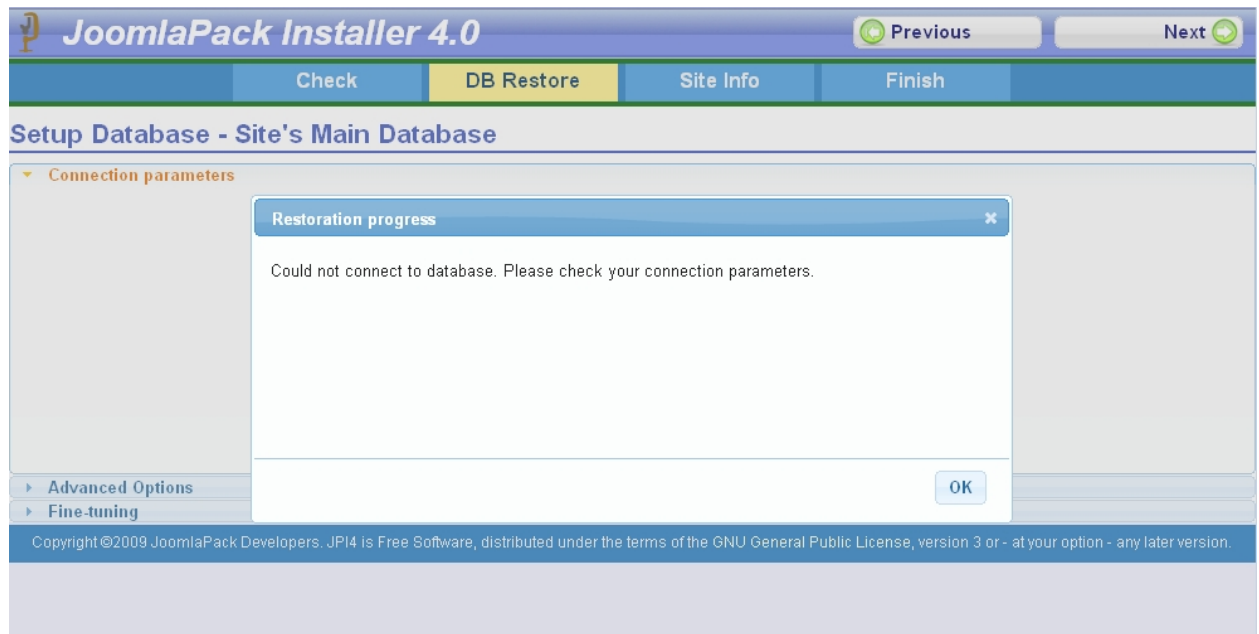
Finally, the Fine Tuning pane allows you to tweak the restoration process in ways not previously possible. The options are:

- Suppress foreign keys while restoring. Leave this checked if restoring database tables with foreign keys. This option will instruct MySQL to stop complaining about foreign key restrictions during the restoration. If you don't use it and you have tables with foreign keys, the restoration will halt with a MySQL error mentioning foreign key constraints.
- Maximum size of data to restore at once, in bytes. JPI4 will read at most this amount of data from the database dump in one go while restoring. This is useful if the restoration times out. In this case, lower this value to 500000 or even 128000.
- Maximum SQL queries to execute at once, in bytes. This is the maximum number of SQL queries JPI4 will execute in a single go while restoring your database. This is useful if the restoration times out. In this case, please lower this to 500 or even 100. Some incredibly slow servers might require an even lower value, e.g. 100, but restoration will be extra slow then.

When you're done, click on Next to begin the restoration process. Doing so, will pop up a sort of window in the middle of the page with the status of the restoration progress:



If there was an error during this process, a message will describe what happened and give you the option to go back to the previous page in order to rectify any options which caused the problem to happen. In the screenshot below, you can see what happens if you enter the wrong connection information to your database server:



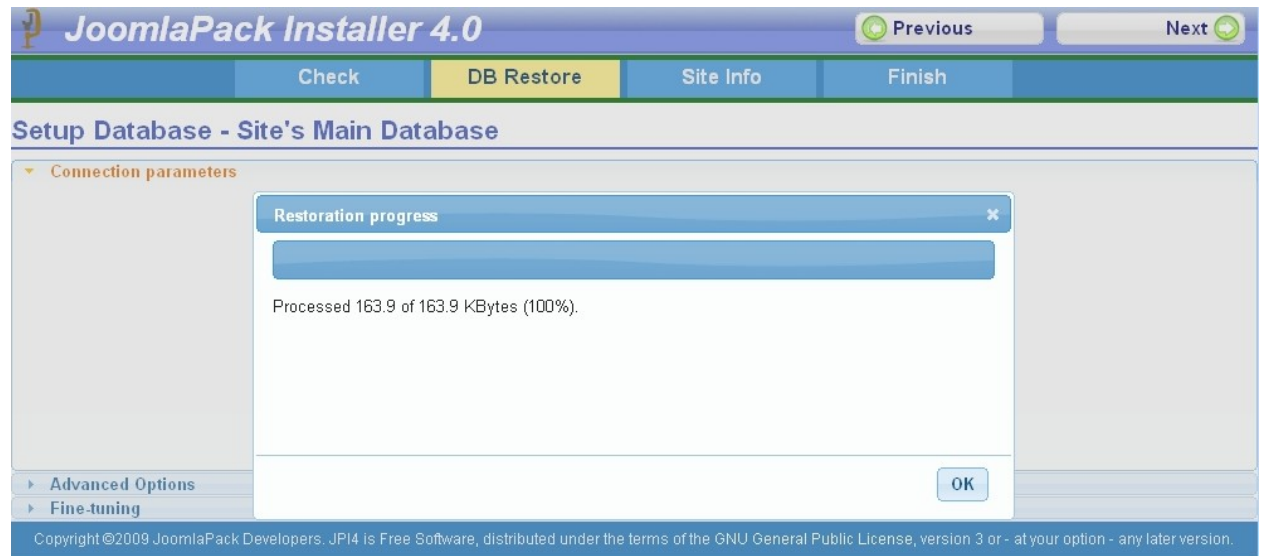
Warning

If you are always getting a "Could not connect to MySQL server" error on Windows despite entering your database credentials, or if this occurs in mid-process, you have to use the "mysql" driver, NOT the "mysqli" one. Below is the technical, lengthy description.

Windows has a small pool of temporary ports for use by applications and services, including Apache, MySQL and PHP. Every time a PHP script tries to connect to the MySQL server through TCP/IP (the default behavior in most consumer-grade WAMP packages, such as WAMPServer, XAMPP and Uniform Server) it uses up a few of them. When the PHP script ends its execution, Windows - quite stupidly - leaves

the port open for another 2 minutes. As a result, mid-way in the restoration process Windows runs out of spare ports and the restoration script can no longer connect to MySQL! In order to work around this, the "mysql" driver uses a feature called "persistent connections". This means that the connection to the MySQL server never closes, so we don't have to use a new TCP port. On the other hand, the mysqli driver started supporting this feature since PHP 5.3. Unfortunately, at the time of this writing, no pre-packaged WAMP package has this PHP version. As an alternative, you can enable the so-called **named pipe connection** feature of MySQL. This is what Linux and production-grade Windows servers use (and why they DO NOT display this problem), but it requires configuration tweaking beyond the scope of this manual.

As the restoration goes on, the progress bar will start to fill up. When the restoration is over, the progress bar will be full and the OK button will appear:



Just click on the OK button to proceed to the database restoration page of other databases you have backed up, if any. When JPI4 has cycled through restoration of all of the databases, clicking on the OK button will bring you to the Site Setup page:



In the first pane, FTP Options, you are given the chance to set up your Joomla! site's FTP layer. The parameters you have to setup are just like what Joomla! itself needs:

- Enable the FTP layer. Check this box to enable the FTP layer. If you leave it unchecked, providing the following parameters will have no effect to your site's operation.
- Host name. The host name of the FTP server of your site. Usually it's something like ftp.example.com, but you may want to ask your host.
- Port. The port where the FTP server listens to. Usually, this is port 21. If unsure either leave the default, or ask your host.
- Username. The username you use to login to the FTP server.
- Password. The password you use to login to the FTP server.
- Directory. The absolute FTP directory where your Joomla! installation is in. If you have provided all the information above, you may use the Auto find directory button to attempt to automatically determine this directory.

Note

This feature is not fail-safe. There is a high chance that JPI4 will not be able to automatically detect the directory. In this case, you can use your favourite FTP client (we use FileZilla, which is free and rocks) to browse to the root of your Joomla! installation and copy the absolute directory displayed there to the Directory text box of JPI4.

You can use the Test connection button to let JPI4 validate your settings.

The next pane is the Site Parameters pane:



The screenshot shows the JoomlaPack Installer 4.0 interface. At the top, there's a title bar with the Joomla logo and the text "JoomlaPack Installer 4.0". Below the title bar, there are navigation buttons: "Previous" (disabled), "Next" (disabled), "Check", "DB Restore", "Site Info" (active), and "Finish". The main content area is titled "Site Setup" and contains a tree view on the left with "FTP Options" and "Site Parameters" (expanded). The "Site Parameters" section contains a table with the following data:

Item	Value
Site Name	Nicholas' playground
Site e-mail address	test@example.com
Site e-mail sender name	Nicholas' playground email system

Below the table, there are links for "Super Administrator settings" and "Fine-tuning". At the bottom, there is a copyright notice: "Copyright ©2009 JoomlaPack Developers. JPI4 is Free Software, distributed under the terms of the GNU General Public License, version 3 or - at your option - any later version."

This is the basic information which describes your Joomla! site. It is populated with the settings of the backed up site's configuration.php file. The settings are:

- Site name. The name of your site.
- Site e-mail address. The e-mail address which will appear to be sending your site-wide e-mail messages.
- Site e-mail sender name. The person name (sender name) which will appear to be sending your site-wide e-mail messages.

Next up, it's the Super Administrator pane, allowing you to modify your site's Super Administrator settings:

The screenshot shows the JoomlaPack Installer 4.0 interface. At the top, there's a navigation bar with buttons: Check, DB Restore, Site Info (highlighted), and Finish. Above these are Previous and Next buttons. The main section is titled 'Site Setup' and contains a sidebar with 'FTP Options', 'Site Parameters', and 'Super Administrator settings' (expanded). The 'Super Administrator settings' section contains a table with the following data:


Item	Value
User name	admin
New password (leave blank to keep current)	
Re-type password	
E-Mail address	nicholas@example.com

Below the table is a 'Fine-tuning' section. At the bottom, a copyright notice reads: 'Copyright ©2009 JoomlaPack Developers. JPI4 is Free Software, distributed under the terms of the GNU General Public License, version 3 or - at your option - any later version.'

This pane is optional. It allows you to change the parameters of one and only one Super Administrator account on your site. The parameters are:

- User name. You can select one of the Super Administrator accounts of your site from the drop down list. The settings below will be applied only to this user account.
- New password. Enter (and re-type below) the new password for this user account, or leave these fields blank to retain your old password.
- E-mail address. The e-mail address of this user. Do note that it's supposed to be unique (Joomla! restriction) but JPI4 will not test for uniqueness.

Finally, there is the Fine-tuning pane, with the most advanced (optional) parameters:



JoomlaPack Installer 4.0 Previous Next

Check DB Restore **Site Info** Finish

Site Setup

- FTP Options
- Site Parameters
- Super Administrator settings
- Fine-tuning**

Item	Value
Absolute path to site's root	C:\xampp\htdocs\test
Temporary Directory	C:\xampp\htdocs\joomla\tmp
Logs Directory	C:\xampp\htdocs\joomla\logs

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Here you can fine-tune the absolute path to some of your site's system directories.

Important

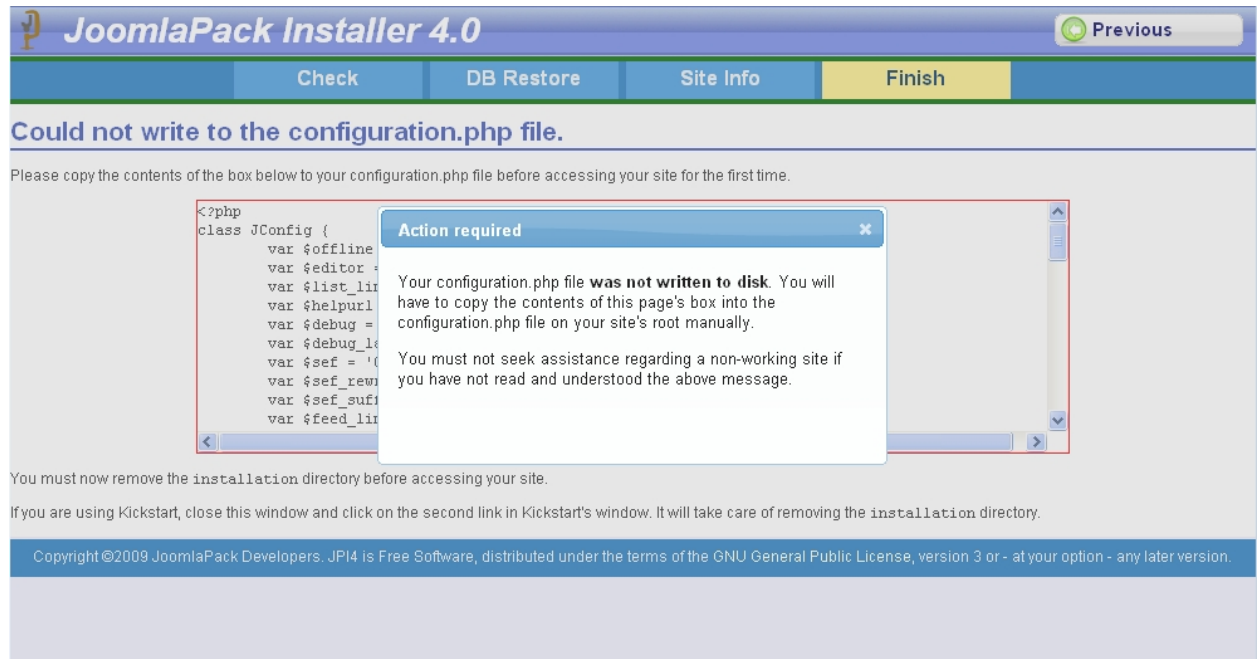
JPI4 will test at the beginning of the restoration process if your old site's temporary and logs directories already exist and are writable. In this case, it will keep them (useful if you have customized them and you are restoring to the same site you backed up from). If they don't, it'll calculate and provide the Joomla! default paths.

If you are restoring on the same server / user account as your original site, **you must manually change them**, in order to avoid one site messing up with the other site. If you don't, nothing could happen, or all hell could break loose. Anyway, it's a good idea to inspect these settings nonetheless.

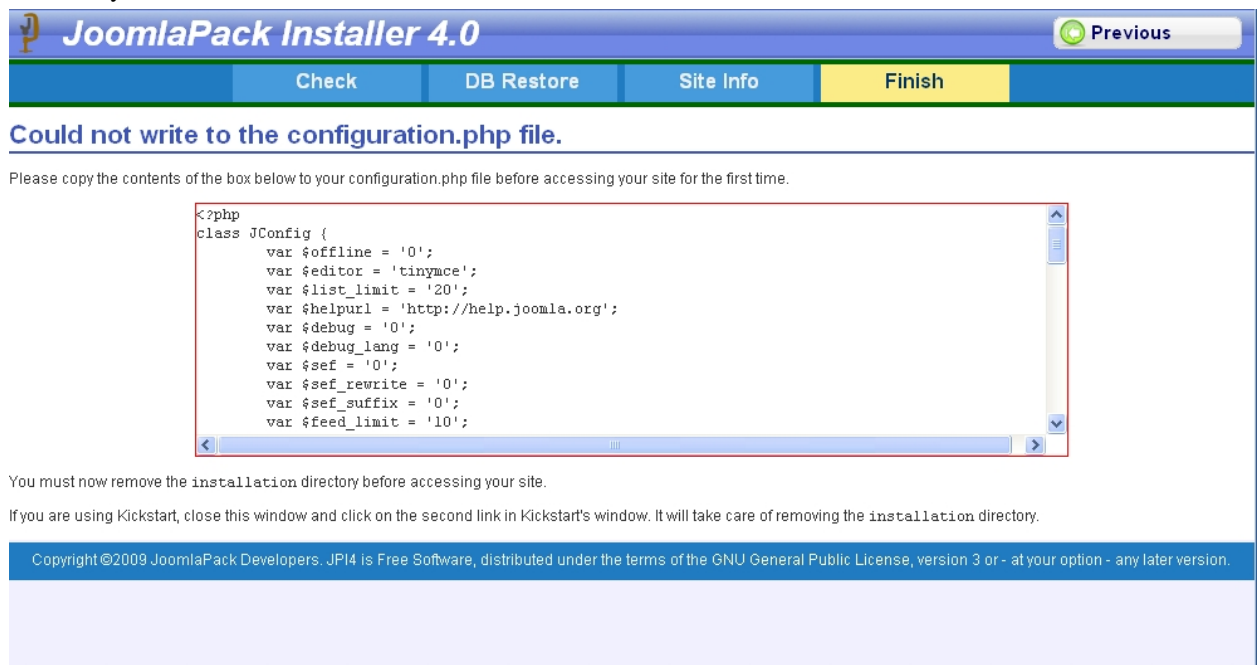
- Absolute path to site's root. This is automatically determined and you can't change it (Joomla! has no such feature). It is provided as reference only.
- Temporary Directory. The absolute path to the temporary directory. Normally, it's the tmp folder on your site's root.
- Logs Directory. The absolute path to the logs directory. Normally, it's the logs folder on your site's root.

When you're ready, click the Next button to have JPI4 write your `configuration.php` file and go to the final page.

If JPI4 could not write to the `configuration.php` file, it will present you with a dialog box informing you of this fact:



You can close the message by clicking on the "X" button on its top right corner. You can then copy the contents of the text area and paste it into your configuration.php file - replacing any and all existing content - manually:



This is only required if your configuration.php file was not writable in the first place. Under most circumstances this won't happen.

Warning

If you get this message and you do not copy the text box's contents to the configuration.php file, your site will not work. You have been warned! YOU MUST ABSOLUTELY AND WITHOUT QUESTION COPY THE TEXT BOX CONTENT INTO YOUR CONFIGURATION.PHP FILE.

After the restoration is over remember to remove the installation directory or, if you're using Kickstart, close the JPI4 window and click the second "here" link in the Kickstart window. That's all, folks!

Important

Sometimes, after the restoration is over, you get a site front page which looks as if all images and CSS files are not loading. This is normal if your live site had a non-empty `$live_site` parameter in its `configuration.php` file and you are restoring your backup to a different domain name or a different subdirectory of the original domain name, you have to manually edit `configuration.php` and change the `$live_site` to reflect the new site's location.

For example, if the new site is located in `http://www.example.com/mysite/`, you have to edit the `configuration.php` file, locate the line starting with `var $live_site` and change it to become:

```
var $live_site = 'http://www.example.com/mysite';
```

Advanced: Partial restoration using Joomla! 1.5.x migration feature

Sometimes restoring a full site is not what you want to do. For example, you may have created a site with a wealth of components, modules, plug ins and other bells and whistles but, for whatever reason, you've decided that all you want is to keep the content and start over. Uninstalling all of those extras might be totally cumbersome and time wasting. Or, perhaps, you installed some unofficial patch to the core files and you are afraid to overwrite your installation with the Joomla! Team provided package contents. Maybe you just want to seed a new site with large amounts of your site's content.

Whatever the reason, let's assume you want to keep only part of your data and start over.

Assuming that all you want to keep is database data of a few select tables, JoomlaPack can help you achieve this, when used in conjunction with a misunderstood - and partially misleadingly named - feature called Migration.

The first step is to backup only those database tables whose content you want to transfer to the new site. This can be performed though JoomlaPack. Start by using the table exclusion filter to exclude all database tables except the ones you want to keep. If all you need is the content, good candidates is the content and categories tables. Next up, perform a database only backup. The resulting SQL file is your migration data.

Next up, start a Joomla! 1.5.x installation like normal. At the main configuration page, do not install sample content. Instead, choose to migrate and upload the SQL file JoomlaPack produced. After some fanfare, Joomla! installer will restore your file and you're done.

Of course, using JoomlaPack is not necessary; you could do that with phpMyAdmin, but we find it easier to do everything from within Joomla! itself.

Unorthodox: the emergency manual restoration

Note

These instructions are meant to be first read before disaster strikes. Therefore, a fair amount of humour has been used throughout. If you try to read it after disaster struck you will naturally find the humorous parts inappropriate, or even offensive. Rest assured that this is because you are under a huge amount of stress. As soon as you'll have finished following the instructions herein, you will be able to re-read this document with a light heart and enjoy the humorous puns as they were intended.

Inevitably, some people will end up with a backup file, a ruined site and a problem in the restoration procedure they can't work out. Almost always, the recipe includes a pressing deadline which requires that the site is on-line... yesterday. If you are in a situation like the one we just described, breathe. Do not panic. We've got you covered, with this concise manual site restoration guide. So, here it goes... it's manual Joomla! Site restoration In 7 steps or even less.

Step 1. Making sure it won't get worse.

Assuming such a situation, it's only human to be in panic and despair. Panic is a bad counsellor. It will give you wrong advice. Despair will only make you careless. So, people, get it together! Make a backup of the only thing separating you from complete disaster: the backup file. Burn it on a CD. Write it on your USB key. Put it on a couple of locations on your file server. Just make sure you'll have an extra copy in case you screw up.

This exercise has been proven to lower the probability of anything going wrong. Furthermore, it's good for your psychology. It gives you a sense of security you didn't have five minutes ago.

Step 2. Extracting the archive.

Now, we have to extract the archive somewhere on your local hard drive.

If the archive is of the JPA type, you'll have to use the JoomlaPack UnJPA command line utility from the JPA utilities (jpa_utils) package.

If you have a ZIP package, there are a couple of gotchas. If you are working on a Linux machine, unzip will work just fine. If you're on Windows and under certain configuration circumstances on the server you took the backup on, you might not be able to extract it with WinZIP, WinRAR, 7-Zip or other archiver software. So you'll have to use JoomlaPack UnZIP from the JPA utilities (jpa_utils) package.

Another possibility for extracting both JPA and ZIP backup archives on your local PC is to use eXtract. This is a GUI utility, part of our Native Tools distribution, which allows direct extraction of backup archives on your Windows™ PC. It is possible to run it under other operating systems, such as Mac OS X™ and Linux™, using DarWINE and WINE respectively. Please refer to the eXtract documentation, available on-line on our site, for more information on using it.

Step 3. Editing your database backup.

Take a look at the directory where you extracted your backup archive. Inside it there is a directory named `installation`. Inside this, there is a subdirectory named `sql`. Inside this there is a file, `joomla.sql`,

containing your database data. *COPY THIS TO ANOTHER LOCATION NOW!* We'll have to edit it, so please, don't tamper with the original, will you?

Open the copy of `joomla.sql`. Use a text editor (we recommend gedit and Kate on Linux™, Notepad++ on Windows™; do not use Wordpad or Word!). If you were ever familiar with SQL, you'll recognize that each line consists of a single SQL command. But they have a problem: table names are mangled. You'll see that tables are in a form similar to `#__banner` instead of `jos_banner`. Ah, nice! We'll have to fix that.

Using your text editors Replace command, do the following changes:

- search for **CREATE TABLE `#__`** replace with **CREATE TABLE `jos_`**
- search for **DROP TABLE IF EXISTS `#__`** replace with **DROP TABLE IF EXISTS `jos_`**
- search for **INSERT INTO `#__`** replace with **INSERT INTO `jos_`**
- search for **CREATE VIEW `#__`** replace with **CREATE VIEW `jos_`**
- search for **CREATE PROCEDURE `#__`** replace with **CREATE PROCEDURE `jos_`**
- search for **CREATE FUNCTION `#__`** replace with **CREATE FUNCTION `jos_`**
- search for **CREATE TRIGGER `#__`** replace with **CREATE TRIGGER `jos_`**

The idea is to replace all instances of `#__` (note that there are two underscores after the hash sign) with `jos_` in the MySQL command part (not the data part). Easy, wasn't it? *NOW SAVE THAT FILE!*

Step 4. Restoring the database.

In order to restore the database on the server you'll have to use some appropriate tool. For small to moderately sized database dumps (up to 2Mb), we find that phpMyAdmin [<http://www.phpmyadmin.net>] does the trick pretty well, plus it's installed on virtually all PHP enabled commercial hosts. For larger dumps, we found that bigdump.php from Alexey Ozerov [<http://www.ozerov.de/bigdump.php>] works wonders. Use either of those tools - or any other of your liking - to restore your database.

If the restoration gets stuck with SQL errors on some CREATE TABLE command, it seems that you are restoring to a server with an older MySQL version than the one you took the backup from. In this case, if you have still access to the original site, you can perform a new JoomlaPack backup with the database compatibility mode set to MySQL 4 and start over. You did read the User Guide section on configuration options, right?

If you don't have access to the original site... Oh, this is gonna be such a long night. In a nutshell, you have two options: a) Edit all of the CREATE TABLE commands, eliminating everything between the last parenthesis and the semi-colon of each command. b) Set up a MySQL 5 enabled local server (for example, XAMPP, WAMP, LAMPP, MAMP, depending on your operating system), restore the site in there, take a backup with the database compatibility mode set to MySQL 4 and start over.

Step 5. Upload your site's files.

First of all, delete the installation subdirectory from the directory you extracted the backup archive to. We won't be needing this any more. Then, using FTP - or any method you please - upload all of the files to the target server.

If you want to be thorough remember to set the directory and file permissions accordingly. If you just want to get the damn thing on-line ASAP, just skip this permissions thing; it will remind you of itself as soon as you try to do some website administration (like uploading a picture) after the site's back on-line.

Step 6. Edit configuration.php, if necessary.

If you were restoring to the same server location you took the backup on, nothing else is necessary. Your site should be back on-line now. If not, you'll have to edit the `configuration.php`.

You have Joomla! 1.5.x. Good news! Joomla! 1.5.x doesn't require you to specify some of the hard-to-obtain parameters. Your `configuration.php` consists of several lines. Each one is in the following form:

```
var $key = "value";
```

The key is the name of the configuration variable and value (inside double quotes!) is the value of the variable. Below we provide a list of the configuration variables which have to be modified to get up on-line.

dbtype	is the database driver Joomla! will use. It can be either mysql or mysqli (notice the extra i in the end). If unsure, your best bet is mysql.
host	is the database host name, usually localhost
user	is the database user name, assigned from your host company
password	is - obviously - the database password, assigned from your host company
db	is the database's name, assigned from your host company
dbprefix	is the database prefix; if you followed our instructions, it is jos_
live_site	Normally this is an empty string. If, however, your Joomla! site's front page looks as if all images and CSS files are not loading, you have to modify it and enter your site's base URL. For example, if the new site is located in <code>http://www.example.com/mysite/</code> , you have to locate the line starting with <code>var \$live_site</code> and change it to become:

```
var $live_site = "http://www.example.com/mysite";
```

That's all! You're good to go.

Step 7. Enjoy success.

Your mission is accomplished. You are exhausted. Go drink whatever is your favourite drink and enjoy sweet success!

Chapter 4. Miscellaneous information

Frequently asked questions

Please note that this simplified F.A.Q. list may not be always up-to-date.

1.1. Will this component work with my Joomla! 1.0.x site?

JoomlaPack version 2 onwards *is not compatible* with Joomla! 1.0.x anymore. In order to use JoomlaPack on those sites you'll have to install the earlier JoomlaPack versions in the 1.2.x range. At the time of this writing the latest published version was 1.2.3.

As long as the Joomla! team continues to officially support Joomla! 1.0.x so will we for JoomlaPack 1.2.x. Do not expect any new features being implemented on that version, though. The JoomlaPack 1.2.x branch is now in maintenance mode and only severe bugs and security issues will be resolved and rolled out as new versions.

Update - July 2009: Joomla! 1.0.x is no longer officially supported by the Joomla! team. Therefore, we cease active support (bug fixing) on JoomlaPack 1.2.x. You are welcome to report any issues you may have, but a solution is not guaranteed.

1.2. As soon as I start a backup, the display is frozen and no step changes color forever. No archive is produced, no log is produced. What am I supposed to do?

By default, JoomlaPack uses AJAX to process the backup steps. There are some instances, though, where AJAX doesn't work as intended. Such cases might be:

- 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).
- Free hosts which force pop-up ads on the pages do that on AJAX responses, too. In a nutshell, they ruin the AJAX output and JoomlaPack's AJAX library chokes on those ads.
- Your browser does not support (or only partially supports) AJAX. Confirmed working browsers are Internet Explorer 6+, Konqueror 3.5.9+, Firefox 1.5+, Google Chrome. If you use older versions of Konqueror, Safari or any other WebKit-powered browser, you will get errors (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.

In order to resolve this, you should try using the JavaScript Redirects mode.

If you are sure this is not one of the aforementioned cases, first check out the support forums at <http://forum.joomlapack.net>. 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).

1.3. Whenever I try to modify the filters' settings (for example, excluding a directory) nothing happens.

This is, again, a matter of AJAX compatibility. Take a look at the previous question.

Tip

The JavaScript Redirects mode is not only applied to the backup process. If you select it, the filters pages will also work in the (slower but compatible) JavaScript redirects mode.

1.4. I am getting an HTTP 500 Internal Server Error message

This error masks a system or PHP-level error. We can't be certain what it is, but there are a few ideas you can try:

- Try using the Balanced settings mode (you have to enable the Easy Mode first, then go to Configuration in order to select this option).
- Try using our split ZIP/JPA archive feature. Some hosts impose a maximum file size limit, usually in the order of 10Mb or so. Go to JoomlaPack's Configuration, expand the Advanced pane and set Part size for archive splitting to 5242880 (that is 5Mb expressed in bytes). Make sure you have set up JoomlaPack to produce ZIP or JPA files, this feature does not work with the other archiver engines. This should create a backup spanning several archive files.

If this doesn't work for you, ask your host for access to your server's *error log*. Do note that most hosts give you access to the access log, which is a completely different and - for our purpose - not useful thing. Please start a new thread on our support forum and a. copy & paste the last ten lines of the host's error log b. put in a ZIP file and attach JoomlaPack's log (downloadable from the View Log page, see the flashing link on the top of it) c. write a clear and concise descriptions of what you've done so far and what the problem is exactly. If you have to attach screenshots to help us understand, by all means do so.

1.5. During the database restoration step, I get a message about not being able to connect to the database.

There are two possible causes:

- The user name or password that you provided are not correct.
- You have given an inexistent database name and JoomlaPack was unable to create a new database. **On most commercial hosts, 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 to supply to the JoomlaPack Installer you use.

Important

If the database doesn't exist, JPI tries to create it. This will only work if the database user whose credentials you've given has the privilege to create new databases. This is usually restricted to the "root" user. If JoomlaPack fails to create the database, it will ultimately reply that it can't connect to the database.

1.6. There are files missing from the backup!

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, because Joomla! works fine but JoomlaPack doesn't. As a general rule of thumb, the minimum permissions to be on the safe side are:

- **Directories:** Readable by user, group and other, executable (browsable) by user, group and other (0755)
- **Files:** Readable by user, group and other (0666)

There will also be missing file when the backup fails.

Sometimes, your archive may appear to be missing files but in fact all files are in there. Read the next entry for details.

- 1.7.** I downloaded the ZIP archive but my archiver software says it's broken. What's this all about? Can't JoomlaPack produce valid ZIP archives?

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 anything over 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.

If you really want to extract your ZIP archive you can use our `unzip.php` command-line script, or the desktop application JoomlaPack eXtract, available for Windows only.

- 1.8.** The downloaded backup archive is corrupt! I can not restore my site! What is going on?!

If you used the Download button / links in the component's backend to download your file, it is possible that your browser corrupted the file. For example, all versions of Internet Explorer up to and including 6.0 (before SP1) corrupt the downloads, against all web standards and best practices. If you used FTP to download your backup archive, it is possible that your FTP client was set up to download files in ASCII or AUTO file transfer modes, eventually corrupting your backup archive.

You can overcome this problem by downloading your backup archives using your favorite FTP client, set up to forcibly download files in BINARY mode. If you are looking for a decent FTP

client, give FileZilla a try. It's our favored, cross-platform, Free Software FTP client. You can select the transfer mode either in the server connection settings or from the menu just before downloading a file.

- 1.9.** I am on GoDaddy hosting (or other server cluster hosts) and this component keeps failing during the Creating Archive step. What's wrong?

There is a compatibility issue with GoDaddy hosting and JoomlaPack, causing dropped database connections. You can enable the "Force database keep-alive during long operations" option to circumvent this behavior. You may also switch to creating JPA archives from the JoomlaPack Options page to further limit the strain put on the server and decrease the probability of failed backups.

Some hosts also proactively halt script execution if they suspect a DoS (Denial of Service) attack. The pattern of normal JoomlaPack operation "too many and frequent hits on the same webpage" is similar to that of a typical DoS attack. Combined with the long time of the script execution, it might lead some hosts to believe that they are under attack and start blocking the script execution after a while. We have no solution to this problem, because it happens outside the realm of PHP where this software exists.

- 1.10.** I get a MySQL error stating that I have exceeded my queries quota! Now what? My site is down.

Your site is not down, it will come back online at most within an hour.

What happens is that most hosts expect you to run a lightweight CMS which performs a few queries per request and that your site is not too popular. Therefore, they impose a maximum number of SQL queries your site can execute within the hour. JoomlaPack needs to read and dump all of your database. If you are on a fast server, this will happen with a very small number of steps and queries. If you are on a dead slow host, however, this has to be done with more queries to the database server, eventually reaching your queries limit.

You can try to "fix" this by doing all of the following:

- Set Maximum database rows dumped per step to 300
- Increase Maximum operations per step to 100 or 1000. JoomlaPack 2.2 and later is smart enough to figure out if this value is too high to be usable under most server configurations.
- You may want to exclude database tables holding log or other information which can be dynamically re-calculated (like banner tracking, site access statistics, SEO URL caches, etc). This requires the JoomlaPack Plus version, as you will need to make use of the Database Table Exclusion Filter feature.

- 1.11.** I think I have found a bug. The documentation was of no help to me. What should I do next?

Before asking this question, have you really tried all of the troubleshooting steps in the documentation of the Backup Now page? 9 out 10 times these are sufficient to resolve your problems. A certain degree of self-help is mandatory, otherwise you will be just wasting your time, as you might be eventually instructed to follow these steps.

First, check out the support forums at <http://forum.joomlapack.net>. If you do not find a relevant entry in the forum, start a new thread. Do not forget to attach a copy of the **plain text** JoomlaPack log (downloaded from the View Log page, clicking on the link - **do not copy and paste from the text area in this page!**). Please zip this file before attaching it to the forum. Support requests without a debug log will waste your time; if it comes down to needing developer's assistance I will ask you to attach it anyway and you'll have just lost a day's worth of response time. Also tell us the exact version of Joomla!, MySQL and PHP you are using. Yes, these are important values, I will have to ask you to provide them eventually.

We will get back 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). Again, please make sure you have read the troubleshooting instructions given in the "Backup Now" page's documentation on this User's Guide and the support request submission notes posted as sticky notes in the forums pages. We do not want to seem picky about this, but following these simple rules helps us help you better and faster. Thank you!

1.12. I want to contribute to this project. What are my options?

If you want to contribute to the project, you have many different options, depending on your skills:

- You can contribute financially by donating a small amount. A secure donation link exists on the bottom of JoomlaPack's Control Panel page and on our site's frontpage. Donations are handled by PayPal, the leading on-line payment gateway. We do not get any sensitive information (like your CC number), just the money you send us.
- If you've got an idea about a feature which could be helpful to the community, share your thoughts with us. Our forum has dedicated areas for feature requests. Try asking something crazy. I might be a bit negative at first, but if it's worth the trouble it will get implemented eventually.
- You can translate JoomlaPack in your native language. Check out the forum to find out if nobody has translated JoomlaPack in your language yet and seek translation advice from the Translation Team Leader, Nikolaos (under the user alias *jamfx*). Depending on the amount of spare time you have, you could translate the component and / or the documentation.
- If you are a skilled PHP coder and would like to contribute by developing new features or have found a bug and want to submit a patch, contact user *nicholas* at the support forum.
- If you have some spare time and you are willing to regularly test development versions of JoomlaPack on your sites, you can apply for the JATS team. Just send a PM to user *nicholas* at the support forum.
- Spread the word! Do your co-workers, friends and family know about JoomlaPack? Have they tried JoomlaPack Native Tools to automate their sites' backup? If not, tell them about this exciting software.

Security concerns

Access rights

As with every software which can access your site as a whole, JoomlaPack needs to control who's got access to its backup functionality. Due to the lack of a thorough ACL mechanism in Joomla! 1.0 and 1.5, we have decided to make the administrator (back end) of this component available by default to the Super Administrators only. This group of people already has infinite access to the access, making them the ideal candidate for backup operators. You can change this default behavior in the component's Configuration page.

The front end backup feature is a different story. Since it has to be available to unattended scripts, a different approach was taken. Instead of requiring the user to have logged in with Joomla! it uses a simple "secret word" authentication model. Because this "secret word" is transmitted in clear text we strongly advise against using it over anything else than a local network (for example, an automated tool running on the same host as the web server). If you have to use it over the Internet we strongly advise using a secure protocol connection (HTTPS) with a valid commercially acquired certificate.

Securing access to the backup output and temporary directories

About the temporary directory

JoomlaPack 2.0 onwards is using the same temporary directory as Joomla!. This is normally a directory named "tmp" on your site's root. The temporary files are short-lived, unless a fatal PHP error or a loss of connection abruptly halts JoomlaPack's operation. In this case, the temporary file will not be deleted before a new backup is attempted, or you visit the JoomlaPack Control Panel page.

Important

The only temporary files JoomlaPack uses are database dumps and internal state information data. Unauthorised access to them can lead to leakage of sensitive information or could be used to facilitate compromising your site's integrity.

To this end, it is sane to restrict the access to the temporary directory. If you can't use an off-site temporary directory, we strongly advise disabling direct web access to this directory. This can be done by creating an .htaccess file on the directory with the following contents:

```
deny from all
```

Securing the backup output directory

By default JoomlaPack uses a non secure location to store its backup files, within your site's file system hierarchy, namely `administrator/components/com_joomlapack/backup`. This location is well known and can be - theoretically - accessed directly from a web browser. Since the backup output directory stores the results of your backup attempts, that is SQL files containing database backups and archive files containing all of your site, a malicious person with access to this location could steal sensitive information or compromise your site's integrity.

The first line of defense, employed by JoomlaPack 1.2.1 onwards, is to use mangled, hard to guess, names for the SQL backup. However, in the era of multi-Mbps xDSL Internet connections and scripting, it wouldn't take an attacker that long to figure out the filename. Remember: security through obscurity is no security at all!

As a second line of defense, JoomlaPack includes a secure .htaccess on the default backup output directory to disable direct web access. However, this is only possible on Apache-powered web servers which allow the use of .htaccess files. You should check with your host to ensure that this kind of protection is possible on your site.

However, this is not enough. Security experts argue that storing backups within the potentially vulnerable system itself might be a security risk. It is possible that a malicious person could gain access via other means. Think of a simple scenario. You have an Administrator with a weak password a hacker eventually guesses. Now the hacker can log in to your site, but doesn't have access to JoomlaPack. Despite that, you have installed a file administration component which allows administrators to browse the site's file system and download files. How long would it take before your site got compromised? Right. Not very long indeed!

The best approach is to use a directory which is outside your web server's root. By definition, this is not directly exposed to the web and is usually unavailable to file administration utilities.

If you are really paranoid about securing your site's backup files - like we are for our own sites! - you can use JoomlaPack Remote (part of our JoomlaPack Native Tools package). Remote is a desktop application for

Microsoft Windows™ which allows backing up your site from your desktop, with options to automatically downloading the backup archive and remove the server's copy of this file.

Securing backup file transfers

Whenever you download your backup files you can fall prey to a malicious user. Backup files are transferred unencrypted (unless you access your site's administrator section through the HTTPS protocol). It is possible for a resourceful hacker to launch a man-in-the-middle attack. In such a case, whatever you download from your site will be directed to the hacker's computer before reaching yours.

To avoid such insecure scenarios, we advise against using the Download button in the backup administration page, unless you are using the secure HTTPS protocol with a signed certificate. We suggest that you use Secure FTP (SFTP) instead. Avoid using the plain old FTP, because your password and data are transmitted in clear text (unencrypted) over the Internet. Sometimes, your host will allow secure access to a web based control panel which has a file download feature. You could use this, it's as safe as it gets.

There is also another reason why not to use the Download button in the backup administration page. Your host neither discriminates the back end and front end pages of your Joomla! site, nor your IP from the rest of the world. As a result, every time you use the Joomla! back end, the data transferred counts towards your monthly bandwidth quota. Backup archives are large, sometimes in the hundreds of megabytes. Transferring them through the Download feature will incur a huge loss on your monthly bandwidth quota. Using secure FTP or your host's control panel does not count through the bandwidth quota and should be used instead. Finally, the Download feature doesn't work with all possible configurations and has objective problems with handling of very large archives; this is a technical limitation which can not be overcome in the PHP level JoomlaPack operates.

Important

The preferred and suggested method for downloading your backup files - for several reasons - is using FTP in BINARY mode, preferably over an encrypted connection. Alternatively, you can use JoomlaPack Remote (part of our Native Tools package) which uses this approach when downloading backup archives.

Part II. JoomlaPack Utilities

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Chapter 5. JoomlaPack Backup Notification Module

Since JoomlaPack 2.2, the component automatically installs and activates a handy Joomla! Control Panel icon module. This module displays a JoomlaPack icon in your Joomla! Control Panel. Clicking on this icon brings you to the Backup Now page, in order to quickly perform a backup without going through the JoomlaPack's own Control Panel page. Furthermore, this icon is "smart", in the sense that it can warn you if the last backup has failed or if your backup is out-of-date. This behaviour is fully customizable.

Customizing the icon's behaviour

From your Joomla! administrator menu, go to Extensions , Module Manager . Underneath the page title, click on the Administrator link to display the administration section modules. Then, click on the item titled JoomlaPack Backup Notification Module .

On the right hand side of the page you can find the module parameters. These are:

- **Enable warning icon** . When enabled, the JoomlaPack icon will have a warning sign if you should make a new backup. The conditions under which this will happen are defined in the following parameters.
- **Warn on failed backups** . If enabled, the warning sign is displayed on the JoomlaPack icon if the last backup has failed or is reported as still running.
- **Stale backup time, in hours** . If set to a non-zero number, the backup is considered "stale" after this many hours and a warning sign is displayed on the JoomlaPack icon. The default value is 24, which indicates that if a successful backup was made more than a full day (24 hours) ago it should be considered stale.

The warning sign is displayed if any of the configured conditions is triggered. For example, if you have enabled both warning conditions and the backup is stale but not failed a warning icon will be produced anyway.

Enabling / disabling the icon

From your Joomla! administrator menu, go to Extensions , Module Manager . Underneath the page title, click on the Administrator link to display the administration section modules. You can now publish or unpublish the JoomlaPack Backup Notification Module .

We strongly suggest that you keep this icon enabled, as it allows you to backup your site very conveniently, as well as automatically notify you when you should really make a new backup.

Since JoomlaPack 2.4, the module only displays to authorized users, i.e. all users which have enough privileges to use the JoomlaPack component. You can change this setting from JoomlaPack's configuration. The factory default is to allow access to Super Administrators only.

Uninstalling the module

The module is automatically uninstalled when you uninstall the component. If you do need to uninstall the module without uninstalling the component, you can do so very easily. From your Joomla! administrator menu, go to Extensions , Install / Uninstall . You can now uninstall the module JoomlaPack Backup Notification Module (it's the module named mod_jpadmin).

Chapter 6. JoomlaPack Kickstart

Kickstart is a PHP executable file (*script*) use to partially automate the steps required before and after the restoration of site backed up with JoomlaPack. It can be used either standalone or in conjunction with the JoomlaPack component. In fact, the component uses Kickstart for the restoration feature of full site backups.

Kickstart streamlines the archive extraction - uploading - restoration - post-restoration workflow by allowing you to omit unnecessary steps. As a matter of fact, you only need to upload Kickstart and the backup archive on the server you want to restore your site to. Kickstart will extract (i.e. "unzip") the archive *right on the server*, rename your .htaccess and give you a link to start the restoration script (for example, JoomlaPack Installer 3). When you're done with the restoration script, you click on the second link Kickstart provides and it will rename back your .htaccess file, remove the installation directory, delete the backup archive and finally remove itself as well. Housekeeping is taken care of itself!

Kickstart is agnostic of the contents of the archive. This means that you can use Kickstart to extract anything: full or upgrade Joomla! packages, phpBB or Wordpress installation ZIPs, an archive with your gallery's images, etc. The only difference in the process is that you skip clicking on the first link which would normally start the JPI3. And, yes, we have used it to deploy Joomla! upgrades and non-Joomla PHP software ourselves!

Kickstart is also localisable, meaning that it can display itself in your own language. All you have to do is to upload your language's translation INI file in the same directory as `kickstart.php`.

Introduction

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 your 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 truly required is for the restoration process part. Moreover, FTP'ing all those 3000+ files of a default Joomla! installation 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, almost. 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. Alternatively, you can supply FTP connection information and Kickstart will use the - much slower - FTP mode to write the extracted files to your site. To top that all, Kickstart can work in either the very fast AJAX mode or the much slower but widely compatible JavaScript redirects mode, using the same PHP file!

All an all, Kickstart is a very versatile web-based archive extraction utility. It can even be used to update (patch) your Joomla! site [<http://joomlapack.blogspot.com/2008/09/updating-joomla-websites-with.html>] to the latest Joomla! version.

What Kickstart is and what it's not

Kickstart is an interactive archive extraction script and a clean-up tool. Counter-intuitively, it is *not* a site restoration utility per se. Kickstart performs the steps required before and after site restoration, whereas the site restoration procedure itself is carried out by the JoomlaPack Installer scripts. To make it crystal clear, here is the flow of a Kickstart-powered site restoration procedure:

- **Uploading files.** This is done manually. You upload `kickstart.php` and the backup archive (ZIP or JPA format) to the intended site's root.
- **Archive extraction.** This is done by Kickstart. The backup archive is extracted. At this point your site is not yet ready to work.
- **Restoration process.** This is done by JoomlaPack Installer. You are asked some questions, the database dump data is restored to the new database and the new Joomla `configuration.php` is written on the disk. At this point, your site may or not be ready to work, depending on the reliance upon a `.htaccess` file.
- **Restoration of `.htaccess`.** This is done by Kickstart. The automatically renamed copy of your original `.htaccess` file is renamed to `.htaccess` to allow correct site operation.
- **Cleanup of unnecessary files.** This is done by Kickstart. The backup archive and `kickstart.php` are no longer needed and therefore deleted.

As you can see, Kickstart is a very generic tool, not strictly limited to restoring JoomlaPack backup archives. As a matter of fact, we have used it to easily upgrade our sites to newer Joomla! versions without the hassle of uploading tons of PHP files!

Tip

The correct way to see Kickstart is as a generic, interactive, web-based archive extraction script which can also clean up after itself.

About the name

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 boot loader, 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.

Before using Kickstart

Note

If you are using Kickstart as part of the JoomlaPack component's integrated restoration feature, you can safely skip this section. All of this is taken care for you already.

Kickstart is part of the release system and is distributed under the package name `kickstart_VERSION.zip`, where `VERSION` is the release version of Kickstart (usually the same as the release version of the JoomlaPack component itself). You can get it the same way you can get the JoomlaPack component.

Tip

From time to time we may release Kickstart updates inbetween official releases of the Joomla-Pack component. In such a case we will post a release announcement on our website. Release announcements can be read right from the JoomlaPack component. Just look for the "JoomlaPack news" pane in the Control Panel!

Requirements

JoomlaPack's Kickstart requirements generally match those of Joomla! 1.5.x :

- PHP 4.3.10 or greater
- Apache 1.3 or above (should now work with IIS, but it hasn't been tested)
- PHP mod_zlib available
- PHP Safe Mode disabled, or correct directory ownerships, or FTP connection parameters must be entered

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 fail in this case. Alternatively, if you supply the FTP connection information, Kickstart will try to use FTP to connect to your site and write the extracted files.

Important

Even with the FTP mode, Kickstart still requires your site's root to be writable. Kickstart extracts each file from the archive as a temporary file in your site's root first, then stores it by means of FTP to its final location and finally removes the temporary file. If the temporary file can't be written to, Kickstart will fail.

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.

Password-protecting Kickstart

If you intend to use Kickstart on a live site, we recommend using the password protection feature. This will keep unpleasant surprises to a minimum while you restore or update your site.

In order to enable the password protection feature, you will have to edit the `kickstart.php` file. Find the line reading:

```
//define('PASSWORD', '1234'); // Password to access the main page
```

and replace it with:

```
define('PASSWORD', 'yourpassword');
```

Of course, you have to replace *yourpassword* with a password of your own. Kickstart will detect this upon launching and prompt you for this password before proceeding.

Warning

The password protection only prevents unauthorised access to Kickstart's first page (the settings page). If an attacker knows the name of a valid archive file in your site he will be able to bypass

this protection by supplying data directly to Kickstart. In other words, **the password feature offers a minimal degree of protection** .

Kickstart's "Automatic Mode" for JoomlaPack Installer 3

Note

The "Automatic Mode" is only usable with backup archives which include the JPI3 embedded installer. If you have the newer, JPI4 embedded installer, please see the next section.

Since JoomlaPack 2.0.b1, Kickstart is equipped with the optional "Automatic mode" which allows for single-click site restoration or migration. The concept is simple: after you click the Start button the backup archive is extracted, JPI3 is fired up, it automatically goes through the restoration pages and - finally - control is returned to Kickstart which cleans up. In other words, you click the Start button and everything takes care of itself! This feature can be used for automated restoration on the same host (backup restoration) or on a different host (site migration).

Tip

The "Automatic mode" is very handy for web developers who want to regularly test their in-progress sites on a live host. As a matter of fact, it has been developed with close cooperation with a professional web developer to ensure it would live up to your expectations.

Note

The "Automatic mode" can optionally be used together with the password protection feature for an increased level of security,

In order for JPI3 to know what are the valid database connection details for the target host, Kickstart has to provide them. For this to happen, you'll have to edit `kickstart.php` to suit your needs.

To enable the "Automatic mode", edit `kickstart.php` and locate this block of lines:

```
define('AUTOMODE', 0);
define('DBhostname', '');
define('DBname', '');
define('DBPrefix', '');
define('DBuserName', '');
define('DBpassword', '');
```

Important

Make sure your backup archive was created with JoomlaPack 2.0.b1 or later and that the JoomlaPack Installer 3 was the selected installer to be embedded. In any other case you'll get an error message as soon as JPI is launched and you'll have to manually enter the installation directory's URL in your browser's address bar to effectively perform a manual (normal) site restoration.

These settings should be changed accordingly. Each one has a specific meaning:

- **AUTOMODE** must be set to 1 for the "Automatic mode" to be effective
- **DBhostname** is your database server's host name (usually it's localhost)
- **DBname** is the name of your database

- **DBPrefix** is the prefix you'd like to use for your site. Most Joomla! sites would opt for the default value of `jos_`.
- **DBUserName** is the database user's name
- **DBpassword** is the database user's password

Kickstart automation for use with JPI4

Since Kickstart 2.4, there is the possibility of zero-click site restoration. The only pre-requisite is that your backup archive must be created using the "JoomlaPack Installer 4" (a.k.a. JPI4) embedded installer.

The automation procedure covers the entirety of the extraction/restoration process. Once you start Kickstart, it will extract the archive, call the JPI4 installer, it will automatically proceed through all of its pages and then call the final Kickstart step which removes `kickstart.php`, the archive file and the installation directory.

Everything is controlled by the contents of a single file which must be named `jpi4automation.ini` and located in the same directory as `kickstart.php`. So, you only need to upload three files: `kickstart.php`, the archive and `jpi4automation.ini`. If you do that, accessing `kickstart.php` from your browser will result in a fully restored site, without any user intervention (unless an error happens; in this case the process will halt for you to review and correct the error).

The INI file is comprised of different sections, described below.

The [kickstart] section

The first section controls Kickstart and looks like this:

```
[kickstart]
zipselect=backupfile.jpa
method=ajax
extract=ftp
ftphost=ftp.example.com
ftpport=21
ftpuser=myuser
ftppass=mypass
ftpdir=/public_html
restoreperms=on
stealth=on
stealthurl=http://www.example.com/stealth.html
```

All those variables correspond to the options you are presented with when running Kickstart. All must be present in the INI file, even if to be left blank.

- **zipselect**. The name of the backup archive (ZIP or JPA) to extract.
- **method**. It can be `ajax` for Ajax mode or `js` for Javascript Redirects mode.
- **extract**. It can be `direct` for direct file writes or `ftp` for the FTP extraction mode.

Tip

You may want to edit `kickstart.php` and set a different `TEMPDIR`. By default, Kickstart tries to use the directory it is located for extracting files before uploading them through FTP to their

final destination. Modifying `TEMPDIR` to point to a subdirectory with 0777 permissions can help you get around some server setups where the site's root is not writable.

- **ftphost.** The hostname of the FTP server, without the `ftp://` protocol prefix, e.g. `ftp.example.com`. Like all other options starting with "ftp" they are only relevant if `extract` is set to `ftp`. Otherwise, you can leave it blank.
- **ftpport.** The FTP port to use. Normally, it is port 21.

Important

Kickstart doesn't support FTPS, SFTP or any other FTP variant. It only supports the "plain" FTP protocol. Do not seek assistance if you have such an FTP host.

- **ftpuser.** The username to connect to your FTP server.
- **ftppass.** The password to connect to your FTP server
- **ftpdnir.** The FTP directory where your site is to be restored. You can find this out by launching a graphical FTP client, for example FileZilla, finding where `kickstart.php` is stored and noting down the FTP path shown. This is the path you have to use in this variable.
- **restoreperms.** Should Kickstart attempt to restore permissions? It can be `on` or `off`. This is only available with JPA archives.

Important

This may not work as expected! Kickstart is only able to restore permissions, not ownership. This can lead to an unusable site. If unsure, set to `off`.

- **stealth.** Should Kickstart redirect visitors to another page while the restoration is in progress? It can be `on` or `off`.
- **stealthurl.** The URL to redirect visitors if `stealth` is `on`.

The [jpi4] section

The next section, titled `jpi4`, contains the basic site setup information to be passed to the JPI4 restoration script. It looks like this:

```
[jpi4]
ftp_enable=off
ftp_host=ftp.example.com
ftp_port=21
ftp_user=myuser
ftp_pass=mypass
ftp_root=/public_html
sitename=The Site Name
mailfrom=someone@example.com
fromname=Site Name Email Notification System
sauser=62
sapass1=secret_password
saemail=sa@example.com
tmp_path="$SITEROOT/tmp"
log_path="$SITEROOT/log"
```

All parameters are saved on the `configuration.php` file of the restored site, or directly stored in the database.

Tip

If PHP throws a warning about parsing `jpi4automation.ini` and the JPI4 restoration process doesn't proceed automatically, you will have to include all parameters' values in double quotes, like this:

```
myparameter="my_value"
```

The available parameters are:

- **ftp_enable.** Should the Joomla! FTP layer be enabled for the new site? It can be `on` or `off`. The other `ftp_*` parameters are only required if this is on. Otherwise, they can be left blank. However, the `ftp_enable` must be defined in the `jpi4automation.ini`.
- **ftp_host.** The FTP host name, without the `ftp://` protocol prefix, e.g. `ftp.example.com`.
- **ftp_port.** The FTP port to connect to, normally it's 21.
- **ftp_user.** The username to use when connecting to the FTP server.
- **ftp_pass.** The password to use when connecting to the FTP server.
- **ftp_root.** The FTP directory where your site has been restored. You can find this out by launching a graphical FTP client, for example FileZilla, finding where `kickstart.php` is stored and noting down the FTP path shown. This is the path you have to use in this variable.
- **sitename.** The name of the restored Joomla! site. If you don't include it, the old site's parameter will be used.
- **mailfrom.** The email which will appear as the sender of all of the site's emails. If not included, the old site's parameter will be used.
- **fromname.** The sender name for all of the site's emails. If not included, the old site's parameter will be used.
- **sauser.** The numerical Super Administrator user ID for who you want to change his password and/or email. If not defined, no change to the Super Administrator credentials will occur (the old site's login credentials will be still in effect). You can find the numerical ID of the Super Administrator user from Joomla!'s backend, in the User Management page.
- **sapass1.** The Super Administrator password for the new site. If not included, the old site's Super Administrator password will be used.
- **saemail.** The Super Administrator email for the new site. If not included, the old site's Super Administrator email will be used.
- **tmp_path.** The absolute path to the temporary files directory of the restored site. If not included, JPI4 will automatically determine the correct path. If the old site's temporary files path exists and is writable, it will be used in the new site as well. If not, the `tmp` directory inside the restored site's root will be used.

You can start the path with `$SITEROOT`, just like in the example above. The `$SITEROOT` will be automatically replaced with the absolute path to the restored site's root directory.
- **log_path.** The absolute path to the log files directory of the restored site. The same as above holds true, with the exception that the default value is the `log` directory inside the restored site's root.

In order for the JPI4 restoration to work, only the **ftp_host** parameter has to exist. Everything else is optional.

The database sections

Except the two necessary sections above, you can have one section per backed up database. The names of the sections must be the same as those listed in the `installation/sql/databases.ini` file inside the backup file. The section regarding the site's main database is always named `[joomla.sql]`. A database section looks like this:

```
[joomla.sql]
dbtype=mysql
dbhost=localhost
dbuser=myuser
dbpass=mypass
dbname=joomladb
prefix=jos_
existing=backup
suppressfk=on
maxchunk=1048756
maxqueries=1000
```

The available parameters are divided into two groups: Obligatory and optional. The obligatory ones must appear for each database which is to be restored and are:

- **dbtype**. The database connection type, it can be `mysql` or `mysqli`. If unsure, please use `mysql`.
- **dbhost**. The database server host name.
- **dbuser**. The database server user name.
- **dbpass**. The database server password.
- **dbname**. The name of the actual MySQL database to be used for restoration, for example `joomla` or `myaccount_joomla`, etc.
- **prefix**. The prefix of the restored database. This is required only for the `[joomla.sql]` section and can't be left blank. For the other sections it is simply ignored and can be either left blank or not be present at all.

The optional parameters are the fine-tuning options of JPI4:

- **existing**. What to do with any tables already existing in the database. This can be `drop` to delete the old tables, or `backup` to create backup copies of the existing tables.
- **suppressfk**. It can either be `on` or `off`. When set to `on`, JPI4 will suppress foreign key checks, so that databases having tables with foreign keys can be restored. It is a good idea to always set to `on`.
- **maxchunk**. JPI4 will read at most this amount of data from the database dump in one go while restoring. This is useful if the restoration times out. The default value, if this option is omitted, is 1048756 (this 1Mb expressed in bytes). Use a lower value if you get timeouts, or a higher value to speed things up.
- **maxqueries**. This is the maximum number of SQL queries JPI4 will execute in a single go while restoring your database. The default value is 1000. If the restoration times out, please lower this to 500 or even 100. Some incredibly slow servers might require an even lower value, e.g. 100, but restoration will be extra slow then.

Uploading the necessary files and launching Kickstart

In order to use Kickstart, you need to upload two files on your site: 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.

In order to launch the Kickstart wizard, you simply visit the `http:// www.example.com /mysitefolder /kickstart.php`, replacing `www.example.com` with your server's host name and `mysitefolder` with whatever folder you uploaded your files into. If you have uploaded to your server's root, you should omit both `mysitefolder` and its trailing slash.

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`.

Operating JoomlaPack Kickstart

Supplying the password

If you had used the password protection feature, or if you used the "Restore" option from the backup files administration page of JoomlaPack, you will be initially prompted for the password before you can continue with the process. The password is case-sensitive, meaning that "test", "Test" and "TEST" are considered different passwords. Once you have typed - or pasted - your password in the box, click the button to continue. If you mistyped the password, the same password page will appear again.

Configuring the extraction process

The initial page of Kickstart consists of the basic configuration parameters it will use during the archive extraction process. On the top of the page there is a drop down list (combo box) containing all the JPA and ZIP archives it has found in the same directory as the script during the script's start up. You must choose the correct one. Conveniently, it pre-selects the first archive found, since most users will only have one archive present anyway.

The second configuration group, labelled " Operation Mode ", allows you to choose how Kickstart will process the transition between the multiple steps required to fully extract the backup archive:

- **AJAX (refreshless)** uses AJAX mode. This is the fastest method but requires a compatible browser (Internet Explorer 6+, Mozilla Firefox 1.5+, Konqueror 3.5.9+, Google Chrome, Safari or Opera 9+). Furthermore, it is possible that on certain server configuration it will fail. Specifically, it will fail on servers which tamper with the script output, by forcing pop-up advertisements for example, or whose PHP verbosity is set too high.
- **JavaScript Redirects** is a fall-back method which should work on virtually any server setup. It is slower, because after each step the whole page is reloaded and a small piece of JavaScript code makes sure that the browser advances to the next step of the extraction process.

Warning

Kickstart requires JavaScript to be activated. Some software, such as firewalls, Internet security suites and browser plug-ins, might deactivate JavaScript. If Kickstart appears to be absolutely unresponsive, please double check that JavaScript is enabled when accessing Kickstart.

You can also choose to **Restore file permissions** if you use a JPA archive. This option, naturally, only works if **both** the server on which you backed up your site and the server on which you restore your site run on Linux. Do note that there are some limitations to this feature. For example, you may have assigned a directory as unwritable by the owning user. Kickstart will have to assign it as user-writable in order for the extraction to work at all. Also, if you had been mixing FTP uploads and PHP direct file writes on your site, restoring permissions might be a recipe for disaster. Finally, if your original site used the Joomla! FTP layer but your clone does not, or vice versa, trying to restore file permissions might have adverse effects to the operation of the restored site.

As a rule of thumb, only use this feature if you are restoring to the same server as the one you backed up from and it's using suPHP. In all other cases you may end up with "permissions hell" or even fail to restore your site.

Important

Remember that setting correct and secure permissions on files and folders is ultimately *your* responsibility as a web master! Do not expect software to substitute your better judgement. Always check permissions after Kickstart and JPI are over restoring your site and make sure everything meets your security standards. You know your server environment and your site better than we do!

The next configuration group, labelled "**Extraction Method**", allows you to specify how the extracted files are going to be written to their final location.

- The "**Write directly to files**" option uses the quickest and most conservative approach of writing the files directly from within the PHP code. However, it might impossible to use if there are insufficient permissions, PHP Safe Mode is activated or there are other server-specific restrictions. Kickstart will attempt to detect this kind of errors and warn you just before the extraction process begins.
- The "**Use FTP**" option will attempt to use FTP access to write the extracted files to disk, using the FTP options you can configure on the text box below.

Important

FTP mode requires normal write access to the directory where `kickstart.php` resides in. This is because each file gets extracted as a temporary file in this folder first and is then "uploaded" using FTP. This is a limitation of PHP not (widely) supporting appending file writes using FTP.

The configured FTP "initial directory" must point to the same directory as the one `kickstart.php` resides in. Kickstart will test for this and abort with an error message if it can't detect itself in the "initial directory".

Some restrictions apply to the FTP mode. You can only use plain FTP servers, but not any of the FTP variants such as SFTP, FTPS, etc. If you try to do something like that, Kickstart will not be able to connect to the FTP server.

The FTP host must be given as a domain or IP address, with a protocol prefix. Valid examples are "localhost", "ftp.example.com", "example.com", "192.168.0.1". However, using something like "ftp://lo-

calhost", "ftp://example.com/var/www", "ftp://user@pass:example.com/var/www" **will not work**. The FTP connection parameters (username and password) are to be typed in in the respective fields below the FTP host.

A note on what the initial directory is and how to set it up. It is the absolute FTP path where kickstart.php resides in and where your site's root will be located after the restoration is over. In order to find it, you can use FileZilla or any other FTP software. Just connect to your site, navigate to the directory where kickstart.php and your archive are and copy the FTP path. In FileZilla's default theme this is located above the right-hand directories pane (showing the directories on your FTP server). It usually looks something like /public_html or /httpdocs or /www, but this basically depends on your host so my guess is as good as any. Just copy this whole string (including the leading slash, if any!) and copy it to the initial directory field of Kickstart.

Next up, you have the "**Stealth Mode**" group. This optional feature allows you to safely restore your JoomlaPack backup on a live site without your users being able to inadvertently access the installer - and your secret database settings! - while you are at it. It does this by forwarding all requests not originating from your IP address to a dummy page or an off-site URL.

Warning

This feature only works on Apache, Lighttpd and other servers which support .htaccess and mod_rewrite directives. It will not work on IIS servers. If your site already has an .htaccess file on its root, it has to be overwritten. If its permissions are not adequate, Kickstart will *not* warn you about this!

You can enable this feature by ticking the "Stealth mode (restrict access only to your IP while restoring)" check box. You can then enter the absolute URL of a dummy page or an external URL in the "Stealth Mode redirection URL" text box. For example, you may enter something like "http://www.example.com/migration.html" to forward all visitors to this URL while you are restoring your site. If you do not specify a URL, your web server will report a user-unfriendly 403 Forbidden error message to your site's visitors.

If the URL is pointing to a page in the same domain as the one you are restoring in, you should be aware that it must be a static page (having a .html or .htm extension), but not a PHP page. Kickstart's Stealth Mode feature allows you to link to CSS, JavaScript and common media types (JPEG, JPG, GIF, PNG) files from that page. This allows you to construct a beautiful, up-to-the-point page notifying users that your site is temporarily off-line due to maintenance and will be back shortly. This is what we use whenever we have to roll updates to JoomlaPack.net itself.

The final settings group is the "**Fine Tuning**". Here you can define various parameters which influence the way Kickstart operates:

- **Maximum archive chunk to process per step (Bytes)**. Kickstart splits the extraction process in smaller chunks, in order to avoid server timeouts. There are two conditions which define a chunk: the minimum amount of data extracted and the maximum number of files extracted. This option controls the former condition and is expressed in bytes. The default value, 1024768, means that Kickstart will try to extract at least 1Mb of data before concluding the chunk.

Setting this to higher values will speed up the process, because it creates less chunks and, therefore, less time has to be spent rendering the extraction process and wasted on network operations to and from the browser. On the downside, on slower hosts it might cause a timeout.

- **Maximum number of files to process at once**. Kickstart splits the extraction process in smaller chunks, in order to avoid server timeouts. There are two conditions which define a chunk: the minimum amount of data extracted and the maximum number of files extracted. This option controls the latter condition

and is expressed in number of files. The default values, 40, means that at most 40 files will be extracted, even if their total size is less than MAXBATCHSIZE bytes.

Setting this to higher values will speed up the process, because it creates less chunks and, therefore, less time has to be spent rendering the extraction process and wasted on network operations to and from the browser. On the downside, on slower hosts it might cause a timeout.

- **Minimum execution time per step (milliseconds).** Kickstart 2.4 onwards uses the same anti-DoS solution compatibility scheme as the JoomlaPack component. This means that it tries to make each page load last *at least* as many milliseconds as this setting. This allows Kickstart to avoid failing with 403 Forbidden error messages if it runs too fast on your server. The default value, 2000, means that Kickstart's page loads will last at least 2 seconds (2000 milliseconds divided by 1000 milliseconds per second equals 2 seconds). While this is a sane value for very sensitive hosts, it will slow Kickstart down considerably on faster hosts. In such a case, you may try lowering this value to 1000, 500 or even lower. Setting it to 0 will result in Kickstart running at full speed. This is no exact science, so you may want to experiment with it a bit. According to my experience values around 600 yield a perfect balance between speed and avoiding 403 Forbidden error messages.
- **Temporary directory.** Kickstart needs a writable temporary directory for its normal operation. By default, it is set to be the same directory as the one Kickstart is located in. If for any reason this directory is not writable (for example, FTP mode is required to write to that directory) you can manually override the temporary directory location using this setting. For instance, if you want to set the temporary directory location to /tmp (a common writable temporary directory in Linux systems) change this setting to /tmp.

Another useful tip, especially if neither the Direct File Writes nor the FTP modes are working, is to create a directory named kicktemp inside your site's root directory with your favorite FTP client and set its permissions to 0777 (read, write and execute to user, group and "others"). Then, change this setting by appending kicktemp to it. For instance, on Windows hosts this setting might read something like C:\wamp\www\test; modify it to read C:\wamp\www\test\kicktemp. On Linux, Solaris, Mac OS X, FreeBSD and other UNIX variants hosts it will read something like /home/myuser/httpdocs; modify it to read /home/myuser/httpdocs/kicktemp.

This trick only works if PHP Safe Mode is not enabled on your account. If the PHP Safe Mode is enabled, there is no known way to use Kickstart, except than begging your host to change the owner of your site's root to be the same as the user the web server runs under. Do keep in mind that this approach is not very secure and the ownership should be reverted after the restoration process is over.

- **Pass-through chunk size while extracting large files (bytes) .** When Kickstart is extracting files stored uncompressed in the archive (large files), it does so by reading a chunk of the uncompressed data to memory, then writing it to disk. It repeats this procedure until all file data has been processed.

The most time consuming part of this process is writing to the disk. Increasing the chunk's size results in fewer write operations and less time is consumed, at a risk of running out of memory. This setting is expressed in bytes and the default value, 1024768, represents 1Mb of information. You can usually set it to 6200000, or even higher depending on your PHP configuration settings, without any side effects, greatly increasing Kickstart's performance, especially if you have a large number of big files in your backup archive.

When you are done setting the options, please click the large, green " Start " button. The extraction process should now start. There is some flickering between steps using the AJAX mode; this is due to the way the browsers handle partial updates of the page source code.

Note

Some steps involving large files might take a while to finish. If you the page appears to be frozen give it a couple of minutes before concluding that it is stuck.

Initiating restoration and finishing up

During the extraction process, if Kickstart encounters a .htaccess file it will extract it as htaccess.bak in order to avoid potential server configuration conflicts during the restoration process. This change will be reverted in the final step of Kickstart. Just read on!

Now, as soon as the extraction process is over, you will be presented with Kickstart's final page. Clicking on the first link on this page will attempt to open a new window or tab in your browser, pointing to the JoomlaPack Installer screen. At this point, *do not close the Kickstart tab or window* ! Just switch to the new tab/window and go through the restoration process.

As soon as the restoration process is over and it tells you that you should remove the installation directory, close the JPI tab/window and return to the Kickstart window. Clicking on the second link of the page will "fix" the name of the .htaccess file - if your original site had one - and remove kickstart.php and the backup archive. After that, you can use the restored site.

Advanced Kickstart topics

This section covers some specialized uses of JoomlaPack. Normal users shouldn't need them, but they can save you a lot of time. Remember that, due to the infinitely varying server setups, the key to success is trial and error. All of the solutions described below have been attempted by yours truly, with successful result, on live sites. However, you needn't share the author's optimism; on the contrary, we strongly suggest you to test these ideas on a local testing server before applying to a functional, live site.

Fine-tuning Kickstart

Most of the previously well-hidden Kickstart fine-tuning parameters are now available in its starting page. However, a few more esoteric fine-tuning features are only available

Kickstart is a fine and fast solution on its own right, but people usually want to squirt every last drop of performance out of software. Kickstart offers some advanced tweaking options which might increase its performance or, conversely, sacrifice performance to better compatibility. Applying these tweaks requires editing the `kickstart.php` file. All the tweaking settings are set with "define" statements at the top of the file.

Warning

Changing these settings might cause the extraction process to fail, depending on your server's set-up. You are strongly advised to test these settings in staging sites or running them with DRYRUN first.

The available settings are:

- **DRYRUN** . When set to 1, Kickstart will not write any files to disk. This can be used to run Kickstart in simulation mode in order to evaluate the influence of other tweaking options, without risking overwriting useful files should the process fail.

Upgrading your Joomla! site the easy way

As stated in the first section of the Kickstart documentation, Kickstart is a very versatile utility whose primary objective is to extract archives directly on the server. It is not restricted to JoomlaPack backup archives; it just happens that this is the most common use. One of the most uncommon - yet, very conve-

nient - uses is upgrading your Joomla! site every time the Joomla! team issues a new security or stability release.

The classic approach to Joomla! upgrade is to download the patch archive from JoomlaCode.org, extract it on your local PC, put the site off-line and upload all files through FTP. The problem lies with uploading. FTP is inherently slow, because a lot of overhead data has to be transferred back and forth the server for each file operation. These add a whooping 1 second (on average) for every file! Multiplying this with the number of files in the upgrade package tells us that most of the time we are FTP'ing files is spent in overhead.

Using Kickstart, you avoid this overhead because only two files are uploaded: `kickstart.php` itself and the upgrade patch ZIP archive. The extraction process takes place in the server, minimizing the amount of overhead and leading in faster upgrades. The procedure outlined below should be carried out with Kickstart 2.0.a1 or later. Remember to unzip Kickstart's ZIP package before uploading! You'll have to upload the `kickstart.php` file from this archive, not the archive itself!

First, you'll need the ZIP version of the Joomla! patch, which you can download from the Joomla! project's file repository site. Depending on which Joomla! version you've already installed, download the appropriate ZIP file. The tar.gz file will not do! For example, if you've got Joomla! 1.5.6 and want to update to 1.5.7 you must download the `Joomla_1.5.6_to_1.5.7-Stable-Patch_Package.zip`. Upload the Joomla! ZIP file and `kickstart.php` to your site's root. If you used FTP, make sure both files' permissions are 0777.

Important

Make sure you have a working backup of your site before you proceed! In the unlikely event you run into a problem we want to be sure you can roll back. There are many ways to take a backup of your site, but we obviously suggest you to use our open source JoomlaPack backup component.

Now visit the `kickstart.php` URL, which is something like `http://www.example.com/kickstart.php`, substituting `www.example.com` with the full URL to your Joomla! site. In the page presented to you, make sure the update ZIP is selected in the topmost combo box. For the operation method we suggest using the "JavaScript Redirects" method, unless you know what you're doing. Depending on your site configuration you can either use "Write directly to files" or "Use FTP", supplying your FTP connection information as well. Most users will need the second (FTP) option.

After you're done setting up Kickstart, hit the big green "Start" button. You will see your browser reloading the page many times; this is normal, it's how Kickstart works. On the final page, click the second link titled "here". As the page reads, you're (almost) done! If you had an `.htaccess` file on your site, it is now renamed to `htaccess.bak`. Using an FTP client, rename it back to `.htaccess` and you're really done, in - virtually - no more than a few seconds!

Try it! The first time I did it I managed to upgrade two sites in 3 minutes flat (including upload times!).

Installing web applications, the effortless way

Having read so far, it is probably quite obvious to you that Kickstart can effortlessly deploy any kind of web application on your server, as long as it comes in ZIP format. The whole process is very easy and can be summarized in a couple of bullet-points:

- Grab your favorite web application's ZIP package. We have used Kickstart with Joomla! itself, custom-made scripts written using CodeIgniter, phpBB, a few galleries and the list goes on.
- Upload this ZIP and `kickstart.php` to the location on your site you'd like the application to be installed to.

- Visit the Kickstart URL, which looks something like `http://www.example.com/my_location/kickstart.php` .
- Make sure the ZIP file you just uploaded is selected in the combo box. Select any necessary options. If unsure, use the Javascript Redirects mode and FTP.
- Hit the big green button labeled Start .
- When the process is over ignore the misleading text and click on the second "here" link. You get a page informing you that you're done. The ZIP file and kickstart.php are removed from your server and you're ready to rock'n'roll.

Important

If your web application has a directory named "installation" it is removed upon clicking the second "here" link. For example, if you are installing Joomla! - which uses the installation directory for its... well... installation - with this process, make sure you click the first "here" link, go through all the Joomla! installation steps and only then you should click on the second "here" link.

Of course your web application might need some configuration files editing or you may have to access some web setup interface. However, the bulk of the installation process - uploading hundreds of files - has been already taken care for you.

Chapter 7. JoomlaPack DataRestore

DataRestore is a PHP executable file (*script*) used to easily restore the contents of the core Joomla! Database or any extra databases you have defined in the JoomlaPack component. It is not meant to be used on its own; it is only used by the component to realise the restoration feature on database dump files.

Introduction

DataRestore is largely based on BigDump [http://www.ozeroov.de/bigdump.php] by Alexey Ozerov, so it is a staggered MySQL dump importer with a twist. Instead of requiring you to manually locate the database SQL dump files and enter the database server connection information it relies on JoomlaPack's technology to retrieve this information. The restoration script is created on the fly, at restoration time, having the connection information stored encrypted using a simple block cipher. This adds an extra level of security should the file become compromised. After finishing the restoration process the dump files and the restoration script are automatically removed from the server to avoid exposure to potential attackers.

The restoration procedure

JoomlaPack DataRestore

Welcome to JoomlaPack DataRestore!

This script will restore your database(s) automatically, using the same connection information which was used at backup time. If you have changed your mind, click [on this link](#) to remove this script and cancel the procedure.

In order to continue, you will have to enter your restoration password, presented to you when you clicked the "Restore" button. This is a security feature which prevents unauthorized access to the restoration script. Please supply your restoration password in the box below and click on the "Proceed" button.

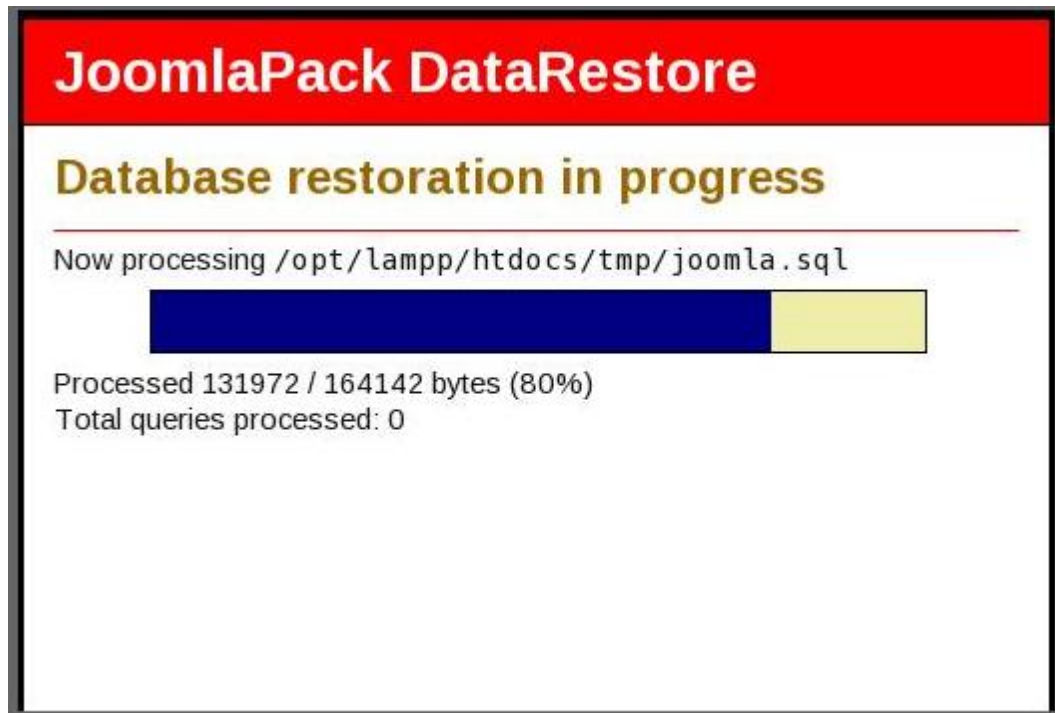
JoomlaPack DataRestore - The database restoration script of JoomlaPack
Copyright ©2008 JoomlaPack Developers.

JoomlaPack DataRestore is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

The first page displayed prompts you for the restoration password. Just enter this on the text box and click on the Proceed button to start the database restoration process. Upon entering an incorrect password, this page will show up again.

If you failed to note down the restoration password, or if you have changed your mind, click on the provided link to remove the restoration script and the SQL dump files from the server as a security precaution. You should also follow the same procedure in the unlikely event of an error during the database restoration procedure.

Upon entering a correct password, the restoration process begins and its progress will be displayed on the browser.



During the extraction DataRestore informs you about the SQL dump file being processed and the percentage of the file which has already been processed. When the bar fills up, restoration has completed. This step may be repeated several times if you had more than one database dumps in your backup file.



Finally, DataRestore informs you about the completion of the operation and asks you to click on the finalization link which removes the restoration script and SQL dump files from your server, for security reasons.

Chapter 8. JoomlaPack Archive Utilities

JoomlaPack Archive Utilities are a set of PHP executable files (*scripts*) used from the command line in order to extract or create archives in different JoomlaPack supported archive formats (ZIP and JPA).

Introduction

The JoomlaPack Utilities is a set of command-line PHP scripts used to extract backup archives created by JoomlaPack as well as creating new JPA archives.

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.

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 ZIP archive generated by JoomlaPack under some special server configurations. 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.

Warning

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.

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.

Warning

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.

JPA archive creator

The latest command utility of the set is the JPA archive creator, `jpa.php`. Its purpose is to provide a command-line utility for creating JPA archives out of entire directory structures. It lacks any option for filtering out directories, so whatever is under the directory being compressed will also be included in the archive.

The calling convention for `jpa.php` is:

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

Substitute `/path/to/php` with the absolute path to your PHP executable. `myarchive.jpa` should be replaced with the required archive name, plus its `jpa` extension. The *filepattern* is any file and directory specification, for example `"*.php"`. If you want to compress everything, use `"*"`.

Path names are stored truncated inside the archive, meaning that all stored paths are relative to the current directory. This works just like the command line `zip` utility, available on most Linux distributions.

Why should I 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 seldom 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.

Another reason to use JPA for migrating a site between hosts is that JPA does not have a "Central Directory", therefore it's more compact. It is also designed in such a way as to make staggered extraction not only feasible, but also low on resource utilization.

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

Part III. Introduction to web site administration

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Chapter 9. Introduction

The reason of existence

Since you have chosen JoomlaPack for backing your site up, it is obvious that you are using Joomla!™ as your web-based Content Management System. By using Joomla!™ you have embarked on the joyful adventure of managing a PHP powered website. Usually, this last part is gone unnoticed. The fact that you are using a PHP application is often taken for granted, but when it comes down to security and problem solving, this is the key concept of which you should have a strong grasp.

This part of the JoomlaPack documentation deals with the basic concepts of PHP website management. In this part, we will see the intricacies of access permissions, web site users and the impact of various PHP settings on your site's operability and security. This is not meant to be a concise manual on website administration, hence the characterisation of "Introduction" in the title. There are plenty of web and off-line resources with more in-depth information on the subject, but this introduction will quickly get you up to speed.

This document is no light reading; it is purposely sprinkled with a lot of tech-talk, albeit explained in layman's terms. Our objective was not to write a document which can be read and understood in a single reading. Some things you will understand by the first time you'll have read it. Most of it you will only get it after reading it again. A few shady areas will only become clear reading over again and referring to it every time you get stuck managing your site.

Assumptions made in this document

Most information regarding website management is useless without appropriate examples. In order to be able to provide relevant examples, we will assume that we have a live site, `http://www.example.com`. The imaginary host company is called *MyHost*. They are running Apache 2 on Linux™-based private virtual host and have set up a user for us, called *example* with a user ID of 500. Our user belongs in the group *users*, with group ID 500. Our designated password will be *1234*, just to keep it simple. The web server runs under the user *www*, with a user ID of 999. This user belongs to the group *www-data*, with a group ID of 999.

The database server host is located at `mysql.example.com`, the database name is *exampledb* and the login credentials for the database are user name *exampledb* and password *ex1234*. We can access our site's files through FTP from `ftp.example.com`.

The hard part is the directory layout. We are on a virtual host, whose root is `/vhosts/example`. This is also the FTP root directory, meaning that when we log in through FTP we get the listing of that directory. Under this directory there are several subdirectories, most of them inaccessible by us (system directories). The directory which we can access is `httpdocs`, which serves as our web server root. This means that any file we place in there will be accessible from our live site's URL. There is also another user-writable directory, called *myfiles*, which can contain any file we wish without it being accessible from the web server.

Keep this information in the back of your mind. They will be required to understand the examples.

Chapter 10. The basic concepts

Users and groups

The concept of users is the fundamental block of ownership separation on multiuser operating systems. All Windows™ versions based on the NT kernel are such; Windows™ NT, 2000, XP, Vista are all multiuser operating systems. Other UNIX variants are also inherently multiuser, including Linux™, BSD™ flavours, MacOSX™, etc. Since most web servers capable of running Joomla!™ are based on Linux™, we will talk about the Linux™ user system, which is in fact the same as the UNIX user system; after all, GNU/Linux is nothing but an open-source UNIX variant which became very popular among geeks and recently among other people, too.

Users

As we mentioned, the fundamental block of ownership separation is a *user*. Each user has an entry in the system's password database and consists of a *user name* and a numeric *user ID*. A user is not necessarily linked to a physical person; in fact, most utilities and services create and operate under a user of their own.

The numeric user ID is an unsigned integer, therefore it can take a value between 0 and 65534. The user name and the numeric user ID are usually linked with an one to one relationship, meaning that if you know either one you can find the other one. The exception to this is most ISPs. In this case, because there are more users than the available number of user IDs, some numeric IDs will be reused, breaking the one to one relationship. However, on most - if not all - hosts, the one to one relationship exists.

Some user IDs are special. By convention, user IDs below 500 are reserved for system users. These are special users which are not assigned to some physical person. One of them, zero (0), has a very special meaning; it is assigned to the *super user*, commonly called *root*. This user is the God of the system. He has unlimited powers. He can override all access restrictions and make any kind of modification. For this reason, no sane system administrator logs in under that user. They will always log in under a normal user and only temporarily log in as root whenever they need to change system-wide settings.

Groups

Defining permissions per user is tiresome on systems which have more than a few users. In order to combat this inconvenience, all UNIX systems have the notion of *groups*. A group is nothing but a collection of users. The relationship to users is a many-to-many relationship, meaning that one user can belong to many groups and one group can contain many users. To keep things dead simple, groups have the same format as users. Each group has a *group name* and a numeric *group ID*. Again, not all groups are linked to a physical person; in fact there are a number of de facto group names used to control access to crucial system resources.

The numeric group ID is an unsigned integer, therefore it can take a value between 0 and 65534. The group name and group ID are linked with an one to one relationship, meaning that if you know either one you can find the other one. I am not aware of exceptions to this rule and I can't think a reason, either.

There are some special group ID's. By convention, zero (0), is assigned to the root's group. Its sole member should be root, or other users with a user ID of 0. It empowers its members to do anything they please on the system, almost like the user ID 0 does. Noticed the "almost" part? Belonging to the root group alone, without having a user ID of 0, does not give you infinite powers but it *does* grant you very broad access indeed!

Every user can belong to many different groups. To simplify things a little bit, every user has a so-called default group. This means that one of the groups he is a member of will be his effective group, unless otherwise specified, in all operations.

How users and groups are understood by UNIX-derived systems

This section is a bit ahead of the rest of this chapter, I know that. The information contained here, though, clarify a lot of what will follow, so it seemed only appropriate to include it here.

Every time the system has to store the owning user and group of a system item, it does so by storing the numeric user and group IDs, not the names! The names are only used as a convenience; you can't remember that John's user ID is 637, but it's easy to remember that his user name is john. Likewise, remembering that group ID 22 controls access to the CD-ROM drive is improbable, while remembering that the group named `cdrom` does that is self-understood.

Important

User IDs for a user with the same user name on different systems can be different. A user named example on system A and system B might have one user ID on system A and a completely different on system B. However, all UNIX-derived systems really know about are IDs, not names!

This is very (read: extremely) important when you transfer files from one system to another. All archive types which store owner information (for example GNU `tar`) store nothing but the numeric ID's. Moving these to another system and extracting them will screw up ownership and permissions. Just because you have the user ID 567 on Host A doesn't mean that you won't end up with user ID 678 on Host B; extracting such an archive would make all your files owned by someone else, effectively screwing up your site.

Ownership

The term *ownership* implies that system items belong to someone. In the context of web site management the items we are interested in are files and *processes*. Everybody understands what files are, but the term *processes* is rarely understood amongst webmasters. So, let's explain it.

Process ownership

Every time you run a program, be it interactive or a system service, you create a process. A process is a piece of code being executed by the operating system. A process can *spawn* child processes which can spawn new *threads*. In layman's terms, a program can start other instances of itself or another program and they, in turn, can start small pieces of executable code which can run in parallel with the main program.

Programs do not start spontaneously. Someone has either got to start them, or instruct the system to start them when some criteria are met. This sentence is the acknowledgement of the simplicity behind a computer system; it can't think on its own, humans have to tell it what to do one way or the other. Based on how a program starts, its process will be owned by some user.

In the first and simplest case, when you start a program, the ownership is almost self-understood. You are logged in as some user, so the process of the program you have executed is owned by your user. It's simple as that. This also implies that the process has the same permissions as the owning user, that's why we say that the process runs *under* this user; its access level is at most as much as the owning user, so the process is *under* the user.

The other case, instructing the system to start a process, is somewhat different. Usually, the utilities which are used to start programs automatically are the system initialisation scripts, time-based execution programs (for example, `cron` and `at`), etc. All of these programs are in most cases owned by root and are executed under root privileges. On top of that, most programs started this way are system services, running as long as the system is up and running. But do you remember what we said before? Root is the God of the system. Normally, these programs would get root's privileges, posing a huge security hole. If there is a bug in the program and some malicious user exploits it, he could wreck havoc on the system; root is above all restrictions.

In order to combat this possibility, UNIX systems employ a feature which allows processes to *drop privileges* and run under a different user than the one which started them. In fact, they change their ownership! To prevent abuse of this feature, a process must run under root privileges to be able to switch to another user. This feature is extensively used by system services, including MySQL and Apache.

In the context of web site management, Apache is of special interest. Apache is the de facto web server for Linux systems and is being used by over 50% of Internet sites, according to NetCraft's August 2008 survey. Chances are you are using it on your site, too. Apache, like most UNIX services (affectionately called *daemons*) uses the feature to drop privileges. The user and group under which it runs are defined in its configuration files. These configuration files are usually out of the reach of regular users (like you!) on commercial hosts, for security reasons.

File ownership

Everybody knows what a file is, right? Well, we all know intuitively what a file *might* be, but we seldom know what *exactly* it is. A file is actually consisted of at least two parts. The first part is the file data, what we intuitively understand as the file contents. The second part is the file system entry, which makes the file data an identifiable entity. This is where the operating system stores all kinds of information, such as how the file is named, where it is located in the file system hierarchy, when it was modified, etc. It also contains information about who owns the files and what are the file's permissions. You might be surprised reading this, but only this latter, informative, part is required for a file. Really!

It seems absurd to have a file without file data, but it is anything but that. There are some special "files" (more correctly: file system entries) in the UNIX world. You have devices, whose "files" actually point to a serial input/output provided by this device, for example the serial port of your computer. There are directories, which obviously don't have any data contained; they are used for organising files only. There are soft links, which are pointers to other files in the file system, used to have standardised names and locations on files which might be moved around or have varying names. There are also these wired beasts called "hard links", some peculiar file system entries which point to the file data of another file, making virtually impossible to know which is the "original" file and which is its clone. Their usefulness is only apparent to the UNIX gurus, therefore out of the scope of this document. For the purpose of website management we are only concerned about regular files (hereby called "files"), directories and soft links (hereby called "links").

All files, directories and links are owned by a user and a group, be they files or links. In fact, they are owned by a user ID and a group ID. Normally, the ownership is inherited by the creating process's ownership. When you create a file directly from an interactive editor application the editor's process is owned by your user ID and your default group ID, therefore the file will be owned by your user ID and your default group ID.

Links are a special case on their own. They are not files, they are pointer to files. The ownership (and permissions) of links is irrelevant. Whenever a process tries to access a link, the underlying operating system "follows" the link, until it finds a regular file. Therefore, the ownership that matters is that of the file linked to, not the link itself. This feature of the operating system prevents unauthorised access to arbitrary files, normally accessible to specific users only, from users who just happen to know the path to those files.

What is especially interesting is the correlation between FTP, web server and file ownership. Whenever you access FTP, you log in as some user. This user is linked to a system user (often the same user assigned to you by host), so logging in FTP actually has the same effect as logging into the system as this user. Common sense implies that all file operations are performed under this user and all files created (read: uploaded) through FTP will be owned by this user.

Conversely, whenever you are using a web interface to perform file operations, you are using a web application - or any PHP script/application for that matter - running on the web server whose process is owned by a different user. Therefore, whenever you create files from a web application, they will be owned by the user the web server runs under.

The distinction of file ownership in these two cases is of paramount importance when you get stuck with files which are accessible to FTP but inaccessible to the web server, or vice versa. This minute distinction is the cause of a lot of grief to many webmasters, so beware!

Permissions

So far you have learned about users, groups and ownerships. But how do they all stick together? Why these are necessary to have in the first place? The reason is simple: security. In multiuser operating systems you normally don't like users snooping around other people's files, especially when those files contain sensitive information, such as passwords. The most common method for overcoming this problem is to assign *permissions* on each system item, controlling who can do what. This simple concept works wonderfully; it's like putting doors on a building and giving people only the keys for the doors to areas they should have access to.

The three types of permissions

We already learned that each system item is owned by a user ID and a group ID. Whenever a process tries to access a system item, the operating system checks the permissions and decides if it will proceed with the operation or deny access. It seems reasonable to have control over what a process with the same owning user ID can do with it, what a process with the same owning group ID can do with it and, finally, what the rest of the world can do with it. Indeed, this is the rationale behind the three types of permissions we can define on UNIX systems. In order of precedence they are:

User permissions	They are the access rights granted to the owning user of the item. Every process with the same owning user ID as the item's owning user ID has these access rights. These access rights have precedence over all other permissions.
Group permissions	These are the access rights granted to the owning group of the item. Every process with the same owning group ID as the item's owning group ID has these access rights. These access rights are applied only if the owning user ID's of the process and the item do not match, but their owning group ID's match.
Other permissions	These are the access rights granted to the rest of the world. If the owning user ID's of the process and the item do not match and the same happens for the owning group ID's as well, these access rights will be applied.

What permissions can control

We will be focused on permissions on files and directories, the building blocks of a web site. Permissions can control only three different actions:

Read	The ability to read a file, or get a directory listing.
------	---

Write	The ability to write to a file, or the ability to create, rename and delete files and subdirectories on a directory.
Execute (or Browse, for directories)	For files, it controls the ability to be directly executable from the command line. It is only meaningful for binary programs and executable scripts. For directories, it controls the ability to change to that directory. Note that if this is disabled you can't usually obtain a directory listing and file read operations might fail.

These three actions, combined with the three access request groups (owning user, owning group and the rest of the world) give us a total of nine distinct operations which can be controlled. Each action is an on/off switch. If a permission is set, it is turned on and the right to perform the action is granted. If the permission is not set, the switch is off and the right to perform the action is not granted.

Permissions notation

The two most common notations for permissions is the *textual notation* and the *octal notation*. Each one has its own virtues.

The textual notation

The textual notation is traditionally used in UNIX long directory listing format and in most FTP clients listings as well. It consists of ten characters. The first one displays the file type. It can be one of dash (regular file), "d" (a directory) or "l" (a link). The following nine characters display the permissions, consisting of three groups of three letters each. The groups are in order of appearance: owning user, owning group and others. The permissions on each group are in order of appearance: read (denoted with r), write (denoted with w) and execute/browse (denoted with x). If a permission is not set, a dash appears instead of the letter.

For example, the string `-rwxr-xr-x` means that it is a regular file, the owning user has read/write/execute permissions, the owning group has read and execute permissions and so does the rest of the world. On the other hand, the string `dr-x-----` indicates that we have a directory whose owning user has read and browse permissions and everybody else (owning group and the rest of the world) have no right to access it.

The octal notation

This is the de facto standard geeks use to communicate permissions. The benefit of this approach is that you only need four characters to fully define them and they're easier to read (to the trained eye, at least).

Permissions are in fact a bit field. Each permission is a bit which can be turned on or off. If you put bits together they form bytes (by grouping eight bits together). Many bytes one next to the other form a computer-readable representation of a whole number (an integer). If you write this down in base 8, you've got the octal representation. If you didn't understand this, it's OK. We'll explain it the easy way.

The octal notation consists of four numbers. In the context of web site management you can consider the first to be always zero and sometimes omitted. The next three numbers describe each one the permissions. The second number describes owning user permissions. The third number describes owning group's permissions. The fourth number describes the permissions for the rest of the world. Each number is 0 to 7. The meaning of each number is simple:

- 0 No access
- 1 Execute/browse access only
- 2 Write access only

- 3 Write and execute/browse access
- 4 Read access only
- 5 Read and execute/browse access
- 6 Read and write access
- 7 Full access

It is almost apparent that "1" stands for execute only, "2" stands for write only and "4" stands for read only. Adding these values together gives you the rest of the combinations. You can't add together the same value (1+1 is forbidden as it is meaningless), so each of the composite values can be broken down to its components very easily. You don't even have to memorise the whole table!

A permission of 0777 means that the owning user, owning group and the rest of the world can read, write and execute the file (full permissions for everyone). A 0764 permission means that the owning user has full access, the owning group has read and write access and the rest of the world have read only access.

Part IV. Appendices

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Appendix A. JoomlaPack Archive format, v.1.1

Design goals

The JoomlaPack Archive format (JPA from now on) strives to be a compressed archive format designed specifically for efficiency of creation by a PHP script. It is similar in design to the PKZIP format, with a few notable differences:

- CRC32 is not used; calculation of file checksums is time consuming and can lead to errors when attempted on large files from a script running under PHP4, or a script running on PHP5 without the hash extension.
- Only allowed compression methods are store and deflate.
- There is no Central Directory (simplifies management of the file).
- File permissions (UNIX style) are stored within the file.

Even though JPA is designed for use by PHP scripts, creating a command-line utility, a programming library or even a GUI program in any other language is still possible. JPA is not supposed to have high compression ratios, or be secure and error-tolerant as other archive formats. It merely an attempt to provide the best compromise for creating archives of very large directory trees using nothing but PHP code to do it.

This is an open format. You may use it in any commercial or non-commercial application royalty-free. Even though the PHP implementation is GPL-licensed, we can provide it under commercial-friendly licenses, e.g. LGPL v3. Please ask us if you want to use it on your own software.

Structure of an archive

An archive consists of exactly one Standard Header and one or more Entity Blocks . Each Entity Block consists of exactly one Entity Description Block and at most one File Data Block . All values are stored in little-endian byte order, unless otherwise specified.

All textual data, e.g. file names and symlink targets, must be written as little-endian UTF-8, non null terminated strings, for the widest compatibility possible.

Standard Header

The function of the Standard Header is to allow identification of the archive format and supply the client with general information regarding the archive at hand. It is a binary block appearing at the beginning of the archive file and there alone. It consists of the following data (in order of appearance):

Signature, 3 bytes

The bytes 0x4A 0x50 0x41 (uppercase ASCII string “JPA”) used for identification purposes.

Header length, 2 bytes

Unsigned short integer represented as two bytes, holding the size of the header in bytes. This is now fixed to 19 bytes, but this variable is here to allow for forward compatibility. When extra header fields are present, this value will be 19 + the length of all extra fields.

Major version, 1 byte	Unsigned integer represented as single byte, holding the archive format major version, e.g. 0X01 for version 1.1.
Minor version, 1 byte	Unsigned integer represented as single byte, holding the archive format minor version, e.g. 0X01 for version 1.1.
File count, 4 bytes	Unsigned long integer represented as four bytes, holding the number of files present in the archive.
Uncompressed size, 4 bytes	Unsigned long integer represented as four bytes, holding the total size of the archive's files when uncompressed.
Compressed size, 4 bytes	Unsigned long integer represented as four bytes, holding the total size of the archive's files in their stored (compressed) form

Extra Header Field - Spanned Archive Marker

This is an optional field, written after the Standard Header but before the first Entity Block, denoting that the current archive spans multiple files. Its structure is:

Signature, 4 bytes	The bytes 0x4A, 0x50, 0x01, 0x01
Extra Field Length, 2 bytes	The length of the extra field, without counting the signature length. It's value is fixed and equals 4.
Number of parts, 2 bytes	The total number of parts this archive consists of.

When creating spanned archives, the first file (part) of the archive set has an extension of .j01, the next part has an extension of .j02 and so on. The last file of the archive set has the extension .jpa.

When creating spanned archives you must ensure that the Entity Description Block is within the limits of a single part, i.e. the contents of the Entity Description Block must not cross part boundaries. The File Data Block data can cross one or multiple part blocks.

Entity Block

An Entity Block is merely the aggregation of an Entity Description Block and at most one File Data Block. An Entity can be at present either a File or a Directory. If the entity is a File of zero length or if it is a Directory the File Data Block is omitted. In any other case, the File Data Block must exist.

Entity Description Block

The function of the Entity Description Block is to provide the client information about an Entity included in the archive. The client can then use this information in order to reconstruct a copy of the Entity on the client's filesystem. It is a binary block consisting of the following data (in order of appearance):

Signature, 3 bytes	The bytes 0x4A, 0x50, 0x46 (uppercase ASCII string "JPF") used for identification purposes.
Block length, 2 bytes	Unsigned short integer, represented as 2 bytes, holding the total size of this Entity Description Block.
Length of entity path, 2 bytes.	Unsigned short integer, represented as 2 bytes, holding the size of the entity path data below.
Entity path data, variable length.	Holds the complete (relative) path of the Entity as a UTF16 encoded string, without trailing null. The path separator must be a forward

	slash (“/”), even on systems which use a different path separator, e.g. Windows.
Entity type, 1 byte.	<ul style="list-style-type: none">• 0x00 for directories (instructs the client to recursively create the directory specified in Entity path data).• 0x01 for files (instructs the client to reconstruct the file specified in Entity path data)• 0x02 for symbolic links (instructs the client to create a symbolic link whose target is stored, uncompressed, as the entity's File Data Block). When the type is 0x02 the Compression Type MUST be 0x00 as well.
Compression type, 1 byte.	<ul style="list-style-type: none">• 0x00 for no compression; the data contained in File Data Block should be written as-is to the file. Also used for directories, symbolic links and zero-sized files.• 0x01 for deflate (Gzip) compression; the data contained in File Data Block must be deflated using Gzip before written to the file.• 0x02 for Bzip2 compression; the data contained in File Data Block must be uncompressed using BZip2 before written to the file. This is generally discouraged, as both the archiving and unarchiving scripts must be ran in a PHP environment which supports the bzip2 library.
Compressed size, 4 bytes	An unsigned long integer representing the size of the File Data Block in bytes. For directories, symlinks and zero-sized files it is zero (0x00000000).
Uncompressed size, 4 bytes	An unsigned long integer representing the size of the resulting file in bytes. For directories, symlinks and zero-sized files it is zero (0x00000000).
Entity permissions, 4 bytes	UNIX-style permissions of the stored entity.

File Date Block

The File Data Block is only present if the Entity is a file with a non-zero file size. It can consist of one and only one of the following, depending on the Compression Type:

- Binary dump of file contents or textual representation of the symlink's target, for CT=0x00
- Gzip compression output, without the trailing Adler32 checksum, for CT=0x01
- Bzip2 compression output, for CT=0x02

Change Log

Revision History

June 2009

NKD, JoomlaPack Developers
<http://www.joomlapack.net>

Updated to format version 1.1, fixed incorrect descriptions of header signatures

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