

Joomla Multi Sites

User's Manual

August 2008

<i>Project:: Joomla Multi Sites</i>	<i>Customer: Edwin2Win</i>
<i>Written by: Edwin CHERONT</i>	<i>Reviewed by:</i>
<i>Starting Date: 11-May-2008 11:15</i>	<i>Review Date:</i>
<i>Last Update date: 20-Aug-2008 10:10</i>	
<i>Version: V1.0.5</i>	
<i>File name: UsersManual_V105.doc</i>	

2Win is a trademark of Edwin2Win sprl Belgium.

Copyright 2008 Edwin2Win sprl

All right reserved.

Table of Contents

1.	INTRODUCTION	4
2.	INSTALLATION.....	5
3.	ADMINISTRATION OF THE MULTIPLE SITES.....	7
3.1.	CHECK PATCHES	8
3.1.1.	<i>Install the patches</i>	9
3.1.2.	<i>Uninstall the patches.....</i>	9
3.2.	MANAGE SITES	10
3.2.1.	<i>Multi sites architecture</i>	10
3.2.2.	<i>Create a new ‘Slave’ site</i>	11
3.2.3.	<i>Configure the ‘Slave’ site.....</i>	12
3.2.4.	<i>Install an extension.....</i>	14
3.2.5.	<i>Uninstall an extension.....</i>	15
3.3.	USER’S MANUAL.....	15
3.4.	CHECK FOR UPDATE	15
3.5.	ABOUT US AND REGISTRATION	15
4.	LANGUAGE AND INTERNATIONALISATION.....	17
5.	SYSTEM REQUIREMENTS	18
6.	JOOMLA UPGRADE, EXTENSION UPGRADE,	19
6.1.	CORE JOOMLA UPGRADE	19
6.2.	EXTENSION UPGRADE	19
6.3.	JOOMLA MULTI SITES UPGRADE	19
7.	TROUBLE SHOOTING	20
7.1.	UNABLE TO WRITE ENTRY	20
8.	LICENSE & COPYRIGHTS.....	21

Change Control

Version	Date	Description
1.0	11-july-2008	Initial version
1.0.3	4-aug-2008	Add a trouble shooting section
1.0.5	19-aug-2008	Add a section to describe the possible installation architecture. (Use a single database, or one database for the master and another one for the slave sites, or use as many databases than there are websites). Add also a section concerning the upgrade of Joomla and extensions

1. Introduction

Welcome to Joomla Multi Sites world.

This user manual describes the “Joomla Multi Sites” native 1.5 Joomla component.

“Joomla Multi Sites” is a component that extends Joomla 1.5 with the feature to manage multiple configuration and share the same Joomla installation.

With benefit of Joomla multiple configuration, you can share the Joomla installation to manage multiple database or the same database with multiple table prefix (other than jos_).

Each Joomla configuration file can be mapped to one or more domain name.

When Joomla Multi Sites receive a query for a special host (ie. www.domain1.com), it search if it corresponds a special Multi Sites configuration file. When the site is described, it uses the specific configuration file to connect the database.

Otherwise, it uses the default original configuration file.

The install/uninstall of component is also possible within a ‘slave’ site.

A slave site can only re-install an extension previously installed on the master site and that have exactly the same version number.

With the new Object Oriented Joomla 1.5 architecture, it is possible to reduce the number of places where the core Joomla files have to be patched.

A special menu is provided to let you supervise the files that are patched and check if the patches are correctly installed.

2. Installation

Joomla 1.5 provides a very simple installation interface.

The installation consists in setting the “Joomla Multi Sites” Zip file into the package field (as shown below).

The screenshot shows the Joomla! Extension Manager interface. At the top, there is a navigation bar with links for Site, Menus, Content, Components, Extensions, Tools, and Help. On the right side of the header, there are icons for Legacy: 1.0, Preview, notifications (0), user count (1), and Logout. Below the header, the title "Joomla!® Joomla Multi Sites / Multiple joomla configuration" and the version "Version 1.5.3" are displayed. The main content area is titled "Extension Manager". A sub-menu bar below it includes Install, Components, Modules, Plugins, Languages, and Templates. The "Install" tab is selected. Under the "Install" tab, there are three sections: "Upload Package File", "Install from Directory", and "Install from URL". In the "Upload Package File" section, there is a "Package File:" input field containing the path "C:\Joomla\multisites\multisites_V1.0.0.zip", a "Browse..." button, and an "Upload File & Install" button. The "Install from Directory" section has an "Install Directory:" input field and an "Install" button. The "Install from URL" section has an "Install URL:" input field containing "http://", and an "Install" button. At the bottom of the page, a footer note states "Joomla is Free Software released under the GNU/GPL License."

When the installation is completed, you are informed that a backup of some core joomla files is performed in case where you decide to uninstall the component. You are also invited to register the application. It is not mandatory. If you reject the registration, the application will work perfectly and you will receive ads in the administration of the multi sites.

The screenshot shows the 'Install' component of the Joomla administrator interface. A blue header bar indicates 'Install Component Success'. Below it, a message states: 'Joomla Multi Sites. Single Joomla installation using multiple configurations. With benefit of multiple configuration files, it is possible to connect on multiple databases or use the same database with different table prefix.' It also notes: 'It is strongly recommended to never use 'jos_.' as table prefix. Event for the master site. We have noticed that standard Joomla installation process can delete the users present in jos_users table.' A note about a backup directory is provided, followed by instructions for registration. A large orange 'Register' button is visible. At the bottom, there is a section for uploading packages with a 'Browse...' button and an 'Upload File & Install' button.

When the registration is completed, you are redirected to the administration of the multiple sites.

The screenshot shows the 'Site Manager' component of the Joomla administrator interface. The top navigation bar includes links for 'Manage sites', 'Check patches', 'User's Manual', and 'About us'. A success message says: 'Thank you for the registration. It is completed SUCESSFULLY.' A warning message in a yellow box says: 'Some patches are not installed. Please check patches and proceed with patch installation to allow multisites working properly.' Below these messages is a table for managing sites. The table has columns: #, ID, Site name, domains, db server, DB, Prefix, and User. One row is shown: '# 1', 'ID test01', 'Site name Slave site Test 01', 'domains test_01', 'db server localhost', 'DB dbmaster', 'Prefix test01_', 'User joomla'. There are dropdown menus for 'Select server' and 'Select db'. A 'Display #' dropdown is set to 20.

3. Administration of the multiple sites

The administration is mainly divided into two parts:

- **Manage Sites:** The administration of the 'Slave' sites
This part consists in giving a 'symbolic' name to a slave site and in giving the list of domain name associated to this site.
- **Check patches:** The administration of the 'Master' site.
This part consists in the checking the patches installations and uninstallation.

[Manage sites](#) | [Check patches](#) | [User's Manual](#) | [Check for Updates](#) | [About us](#) |

The other options gives access to the lastest version of this manual, some patches definition update and information about the component.

3.1. Check patches

When the component is installed, the first operation to perform consist in the installation of the patches.

Each time you acces the management of the site, a verification is performed and a potential warning message is displayed to informs on a possible issue.

Check patches scan several files and directory to verify if the patches are installed. For each files or directory, a diagnosis with a short description of the corrective action is reported. The permission of the files and directory is also checked to report the users on potential problem during the patches installation. This should help the user to know where he has to update the rights before installing the patches.

Check patches installation

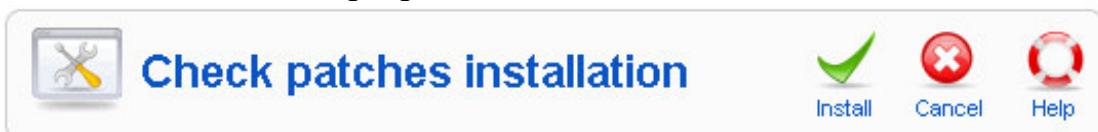
Files	Status
administrator/index.php	Not OK <ul style="list-style-type: none">Multisites definition not presentConfiguration redefinition not possibleInstallation redefinition not possible <p>Actions:</p> <ul style="list-style-type: none">Add 1 lineUpdate 2 lines
includes/index.php	Not OK <ul style="list-style-type: none">Multisites definition not presentConfiguration redefinition not possibleInstallation redefinition not possible <p>Actions:</p> <ul style="list-style-type: none">Add 1 lineUpdate 2 lines
includes/defines_multisites.php	Not OK <ul style="list-style-type: none">File Not Found <p>Actions:</p> <ul style="list-style-type: none">Add the file
installation	Not OK <ul style="list-style-type: none">[NOK]Directory Not Found <p>Actions:</p> <ul style="list-style-type: none">Rename / Restore the directory
installation/index.php	Not OK <ul style="list-style-type: none">File Not Found
xmlrpc/index.php	Not OK <ul style="list-style-type: none">Multisites definition not presentConfiguration redefinition not possibleInstallation redefinition not possible <p>Actions:</p> <ul style="list-style-type: none">Add 1 lineUpdate 2 lines

Notes:
Some files needs to be patched.
Press the 'install' button to update your system.

As you can see, a very limited number of patches are required to extend Joomla with multiple sites functionality. With benefit of the new Joomla Object Oriented architecture, it is now possible to have the control of some part of Joomla and in particular to perform some pre-processing without changing Joomla itself.

3.1.1. Install the patches

When the checking of the patches detect that some patches are not installed, the "Install" button is proposed.



The installation will execute all the actions reported by the "Check patches". When the patches are installed, it is possible you need to re-login the administration.

Return to the "Check Patches" to verify the installation.

Files	Status
administrator/includes/.....php	OK
includes/.....php	OK
includes/defines_multisites.php	OK
installation	OK
installation/includes/.....php	OK
xmlrpc/includes/.....php	OK
configuration.php	OK
administrator/components/.....n.php	OK

Congratulation, all the patches are successfully installed.

3.1.2. Uninstall the patches

When at least one patch is installed, the "Uninstall" button is available. This button allows to restore all files that were saved during the installation of the patches.

3.2. Manage Sites

The management of the sites is very simple and consist in the declaration of the domain name or sub-domain you want that share the master joomla installation.

Before describing the creation of 'slave' sites, we present possible architecture and organisation.

3.2.1. Multi sites architecture

Joomla multi sites mainly consist in using separate configuration files for each individual websites.

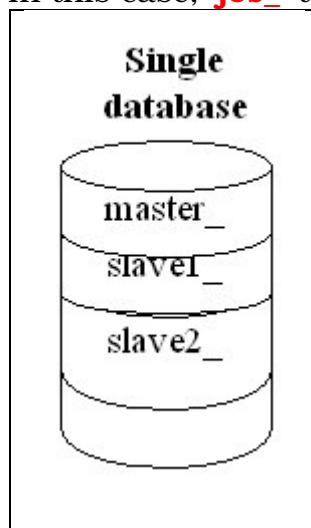
To separate the content of each websites, it is important to use different database or the same database with different table prefix.

A limitation discovered in the standard joomla installation concern the 'jos_users' table that have all its records deleted during the standard joomla installation whatever the table prefix the user has decided during this installation.

To prevent the deletion of the 'jos_users' records created by another website, it is mandatory to never user the 'jos_' table prefix as soon the database is shared by multiple sites.

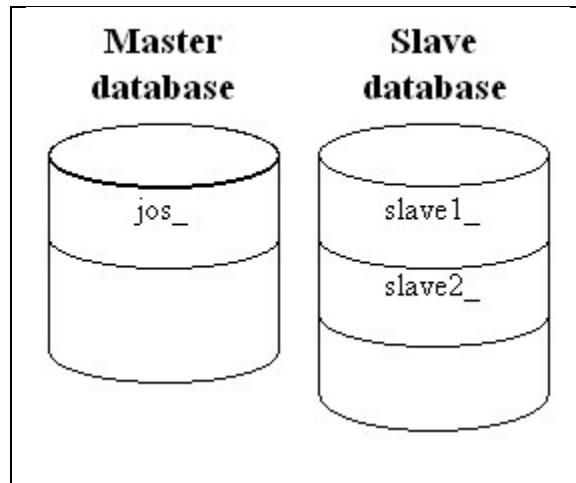
This lead to the following possible architecture:

- **Single database** to store the information of all the websites (master and slave sites); In this case, '**jos_**' table prefix is **forbidden**.



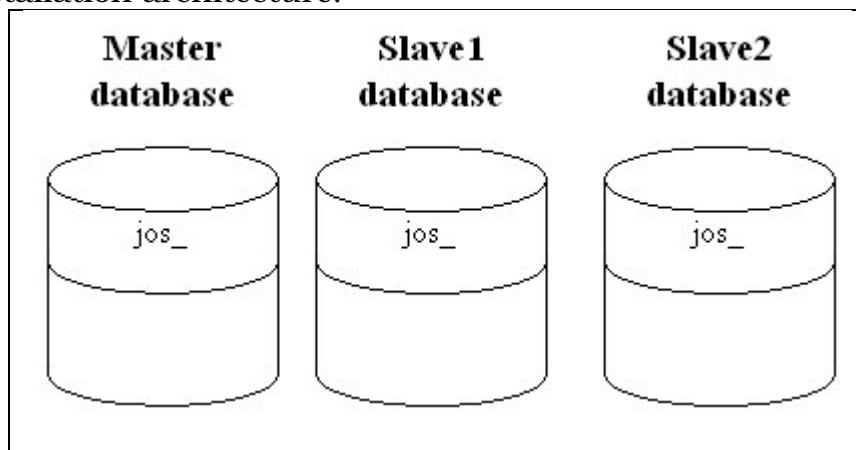
- Use **one** database for the **master** site and **one** database for the **slave** sites. In this case, '**jos_**' table prefix is **allowed** for the **master database** and is **forbidden** for the **slave database**.

This architecture is interesting when you install Joomla Multi Site on an existing website and that you have a limitation on the number of database you can create.



- Use **as many databases** than there are **websites**.

In this case the "**jos_**" table prefix is **allowed** for all the websites. When your hosting provider does not limit the number of databases you can use this architecture to work with the joomla default installation architecture.



3.2.2. Create a new 'Slave' site

When you want to create a new website, you just have to give:

- an **identifier**: The identifier is used as directory name where joomla will store the new configuration.php file created by the joomla standard installation.;
- a **List of domain name**: This is the list of domain name that must be routed to the specific joomla configuration file.

The screenshot shows the 'Site Details' configuration window. At the top, there is a toolbar with icons for Save, Cancel, and Help. The main area has a title 'Site Details: [New]' and a sub-section titled 'Parameters that come from standard Joomla configuration'. The 'List of domain names' section contains three entries: 'www.domain_01.com', 'www.domain_02.com', and 'www.domain_nn.com'. Below this, there are fields for 'DB host name', 'DB', 'DB prefix', 'DB user', and 'DB password'. A note at the bottom of the form states: 'Remark: Save operation will create a new directory and will redirect you to Joomla installation to let you setup this site'.

The other parameters are retrieved from the joomla configuration files once you have proceed with the standard Joomla installation. They are provided to have an overview of the database connection and table prefix.

3.2.3. Configure the 'Slave' site

The configuration of a new site is very simple as it consists in using the standard Joomla installation. If you have the intention to use the same database for multiple web sites, we recommend you perform a backup before installing the new website.

We assume that you have declared all the domains on your server and that you have routed them to the same joomla installation.

In apache, you can configure the "httpd.conf" file to declare multiple virtualhost entry pointing to the same directory.

```
<VirtualHost *>
    ServerName domain_01.com
    ServerAlias *.domain_01.com
    DocumentRoot /var/www/html/php/MultiSites
    User apache
    Group apache
</VirtualHost>
<VirtualHost *>
    ServerName domain_02.com
    ServerAlias *.domain_02.com
    DocumentRoot /var/www/html/php/MultiSites
    User apache
    Group apache
</VirtualHost>
```

When the new domain name are correctly routed to your Joomla directory, the rest is performed by Joomla Multi Sites. It uses the domain name to retrieve the Multi Sites identifier and check if the Joomla configuration is present. If this is the first time you access the domain, it redirect you to the standard Joomla installation that allows you to describe the new configuration.

The screenshot shows the Joomla! Installation process at the 'Choose Language' step. The sidebar on the left lists steps from 1: Language to 7: Finish. The main area is titled 'Select Language' and contains a list of language options. The 'en-GB - English (United Kingdom)' option is highlighted. At the bottom, a note states: 'Joomla! is Free Software released under the GNU/GPL v2.0 License.'

Continue the installation until you arrive to database configuration.

The screenshot shows the Joomla! Installation process at the 'Database Configuration' step. The 'Basic Settings' section is displayed, showing the 'Database Type' set to 'mysql'. The 'Advanced Settings' section is expanded, showing two options: 'Drop Existing Tables' and 'Backup Old Tables'. The 'Table Prefix' field is set to 'demo1_'. A red box highlights the 'Table Prefix' field.

The most **important** here is to correctly select the appropriate **database name** and the **table prefix**. See the possible architecture in previous section.

To avoid destroying another site, it is important to choose carefully the database name and prefix. In particular when you choose an existing database.

WARNING:

Our test show us that prefix "jos_" CAN NOT BE USED when multiple sites share the same database. This is due to a problem we noticed during the standard joomla installation procedure. In fact, Joomla always delete the jos_users records whatever the table prefix chosen that make the administration of the site using the "jos_" prefix impossible. If by error you have a table jos_users where all the records are deleted, you need to restore its content from a backup. Normally, the standard joomla installation perform a backup of the jos_users where you can retrieve the users.

Therefore, it is **strongly recommended** never use a database having table with "jos_" prefix.

Don't remove the installation directory:

At the end of the installation of the new site, Joomla ask you to delete the installation directory.

With joomla multisites, it is not required and strongly not recommended to remove the joomla installation directory. Joomla Multi Sites is able to detect if the installation is already completed and to give access to the administration or the front-end.

If you delete the installation directory, you will have to restore it each time you will want re-create a new 'slave' site. It is possible to restore the installation directory from the "Check Patches" menu. Joomla Multi Sites is delivered with a copy of this installation directory.

3.2.4. Install an extension

To maintain the consistency between all the websites sharing the same joomla installation, it is also required that each 'slave' websites share the same extensions coming from the 'master' website. The master website can be seen as a repository for all the slave sites.

As many extensions are available on internet and it is difficult to know exactly the database table and other parameters they use then we have decided to allow each 'slave' website to re-install the extensions previously installed by the 'master' site.

'Slave' site can only **re-install** an **extension** having exactly the **same name** and **same version number**.

A consequence of the re-installation is that all files present on the disk for this extension are overwritten and therefore a possible configuration file used by the extension.

When you re-install an extension (in particular components) it is therefore recommended to re-configure them exactly the same way for all websites.

This procedure only affect components, modules and plugins. Languages and templates are not concerned as they are automatically shared by all the websites. The re-installation of Languages and templates is disabled.

3.2.5. Uninstall an extension

It is possible to remove an extension from a ‘slave’ site.

In fact, the uninstall of an extension from a ‘slave’ site only consists in deleting the entries that describes the extension in the database.

This also call the “uninstall” queries present in the extension manifest.

The other specific uninstall processing defined by the extension are not called because it is not possible to know if some files will be destroyed on disk. Therefore this part of the uninstallation of an extension is disable.

This also could result in database ghost table.

Therefore, we do not recommend to uninstall an extension that could lead to ghost database tables.

3.3. User's manual

The user's manual is available online.

It gives a direct access to this document.

A special feature is implemented to always give access to the latest version of this manual that matches your Joomla Multi Sites version.

The help screen are also available online.

3.4. Check for Update

“Check for Update” is a functionality to allows to download update automatically the patches definitions.

This allow us to add patches definition for the extensions that could require a modification to be compatible with Joomla Multi Sites.

This “check for update” does not upgrade the Joomla Multi Sites kernel. Only the list of patches is updated.

If a user identify a problem with a specific extension he can report us and if we can provide a solution with a patch, this is the channel we will used to distribute the patch to the user community.

3.5. About us and registration

The about menu display the version of the extension and possibly shows you a registration button when you have not yet registered the component.

The registration is a mechanism that we use to determine if the user has pay a feed for the download of this product and if he can have access “check for update”.

[Manage sites](#) | [Check patches](#) | [User's Manual](#) | [About us](#) |

Multisites for Joomla! 1.5.x

Version 1.0.0

Copyright

Copyright 2008 Edwin2Win sprl
Rue des robiniers, 107
B-7024 Ciply
Belgium

All rights reserved.

www.jms2win.com

This component is not registered.

Please consider to register this component.

If you have purchased this component, it will be asked that you enter the registration code sent by email.

If you are a new user, it will be proposed to buy this component.

If you don't want to register this component now, ads will be displayed during the administration of this component

Go to the about menu if you want register this component later.

[Register](#)

4. Language and internationalisation

The current component uses the standard Joomla language mechanism to display most of the messages.

It is delivered english messages located in “/administrator/languages/en-GB/en-GB.com_multisites.ini”.

If you have installed this component in another language than “english”, you probably need to create another file for the appropriate language and a translate all entries.

5. System requirements

“Joomla Multi Sites” has been tested with “Joomla 1.5.3, 1.5.4, 1.5.5 and 1.5.6 stable”.

It has been developed on PHP 4.3.3 with MySQL 4.0.15.

We also tested the component on PHP 4.4.8 with MySQL 5.0.32.

6. Joomla upgrade, extension upgrade, ...

This section describes the elements to take into consideration when Joomla or an extension have an update that must be installed.

6.1. Core Joomla upgrade

Concerning Joomla itself, the upgrade can be performed only once. In general the upgrade concerns files that are not modified by Joomla Multi Sites.

If the Joomla upgrade restores a file that is patched by JMS, the installation of the patch will have to be re-applied.

Perhaps Joomla will restore a file that will require that the installation directory must be removed to access the administration. In this case, you will have to rename or delete the installation directory to get the administration login and be in a position to access Joomla Multi Sites.

If you want to know if Joomla upgrade can restore a file that is patched by Joomla Multi Sites, you can explore the Joomla upgrade distribution (zip, tar.gz, ...) and search if there are files in their distribution that will replace one or more files that are part of Joomla Multi Sites patch list.

6.2. Extension upgrade

The upgrade of a foreign extension depends on the kind of upgrade.

To know if the upgrade must be replicated on each web sites, the question you have to answer concerns the update of the database.

Does this extension update impact the database definition. If not, you can install the update on the master site and it will be automatically available for all the slave sites.

If the extension update impacts the database definition (ie. Add table, add fields, add values, ...) you will have to repeat the upgrade of the extension on each slave sites to apply this database upgrade.

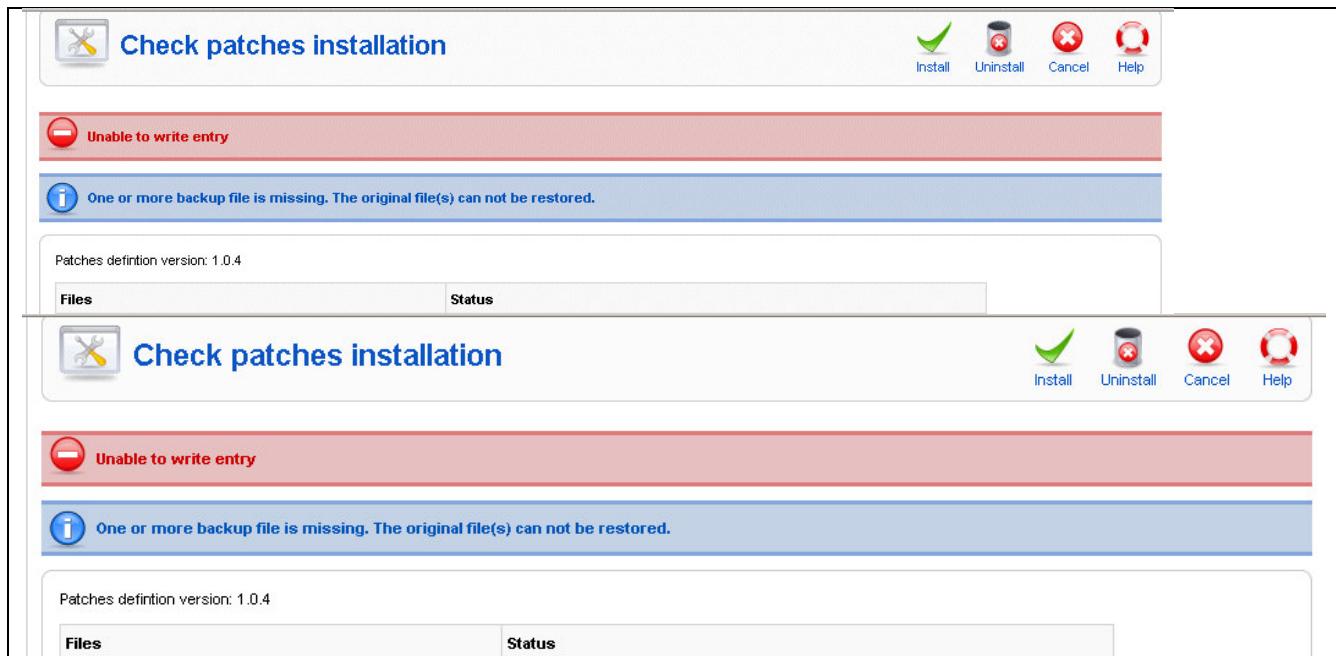
In general a bug fix does not concern the database and can therefore be applied only once on the master website.

6.3. Joomla Multi Sites upgrade

Concerning the upgrade of Joomla Multi Sites itself, as it does not save any information into the database, it is designed to overwrite the file of a previous installation. So there is no need to un-install a previous Joomla Multi Sites to upgrade or install a new Joomla Multi Sites.

7. Troubleshooting

7.1. Unable to write entry



When an error message “Unable to write entry” appears, this means that one or more files to patch are read only or the files pertain to another owner.

To help user identify the files that have potential permission problem, the “check patches” function give a report on each files and directory that could be problematic. It pertain to the user to correct the permission of the files and/or directories to allow patches deployment.

This can be done using a unix prompt or other tools.

In unix, the command chmod and chown can be used to change the permission and the owner of a files/directories.

8. License & copyrights

This component is delivered in respect with GNU/GPL License.
Here below we have reproduced this license text.

GNU GENERAL PUBLIC LICENSE Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc.,
51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA
Everyone is permitted to copy and distribute verbatim copies
of this license document, but changing it is not allowed.

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 Lesser 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 software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

**GNU GENERAL PUBLIC LICENSE
TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND
MODIFICATION**

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion

of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.
- b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.
- c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program.

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:

- a) Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections

1 and 2 above on a medium customarily used for software interchange; or,

- b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,
- c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions

of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING

OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

<one line to give the program's name and a brief idea of what it does.>
Copyright (C) <year> <name of author>

This program 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.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program; if not, write to the Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA.

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this when it starts in an interactive mode:

Gnomovision version 69, Copyright (C) year name of author

Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.

This is free software, and you are welcome to redistribute it

under certain conditions; type `show c' for details.

The hypothetical commands `show w' and `show c' should show the appropriate parts of the General Public License. Of course, the commands you use may be called something other than `show w' and `show c'; they could even be mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the program, if necessary. Here is a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright interest in the program
`Gnomovision' (which makes passes at compilers) written by James Hacker.

<signature of Ty Coon>, 1 April 1989
Ty Coon, President of Vice

This General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Lesser General Public License instead of this License.