

**wpLINKLOCK**

**a WordPress Plugin  
to Protect Your Download Links and Files**

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# wpLinkLock

## Introduction

### *The Problem*

You've just finished the WordPress installation for a membership site and are about to start uploading videos to provide to your subscribers when you stop dead in your tracks.

1. Do you have enough storage on your web server to handle all of the videos?]
2. Does your account have enough monthly bandwidth allowance to stream potentially thousands of views each month?
3. Can your server/ISP handle that kind of bandwidth?
4. How do you back up all of this data so that you can recover quickly if your server goes down?

These are all valid questions and concerns when you're running membership sites or selling products using large files like video, audio, and multi-media content.

### *The Solution*

The solution? Amazon Simple Storage Services (S3).

Amazon S3 File Storage provides a simple web services interface that can be used to store, retrieve and delete any amount of data, at any time, from anywhere on the web. This is the same service that Amazon uses to run its own global network of web sites. Many commercial sites, like Smugmug, the photo sharing site, also use Amazon to handle its storage requirements.

With such massive bandwidth you will never have a problem with people viewing your videos. Plus, Amazon S3 provides the backup and failover support, so that you never have to worry about losing files or data.

What makes it even better is that Amazon S3 is cheap. For someone just getting started, there are no setup charges and no monthly fees - you pay only for the storage and bandwidth you use - often just pennies (literally) each month.

But, now that you've got a safe, inexpensive way to deliver your content, you discover another "concern".

For the content you place on Amazon S3 there's a serious problem... once someone got the link, they could easily access the video or file. Anyone with adequate technical skills could actually DOWNLOAD the videos to their own machines.

You need a product that let's you lock down those links - to keep malicious users from stealing your valuable content.

# wpLinkLock - What It Is/Does

The wpLinkLock is a simple plugin that does exactly what its name implies. It creates URLs that are much more secure than the standard URLs you're using in your current links.

It does this in 5 ways:

1. **Ugly URLs** - For non-Amazon S3 links, the wpLinkLocks that this plugin generates are UGLY! All of the standard link information is replaced with encrypted, obfuscated data. For example, a standard link might look like:

<http://www.mywebsite.com/mydirectory/download/goodfile.php>

Whereas a wpLinkLock link looks like:

[http://www.mywebsite.com/lnk10ck?seclnk=Q1FSOWtGbj1DWkRKQ2xJR1ZWLy8%3D\\_NTS--A\\_1260393471\\_NTS--A\\_FZ7MEqrY05WitIa7rquenWStAwFY%3D\\_NTS--A\\_b2tWV1ZxVi8%3D](http://www.mywebsite.com/lnk10ck?seclnk=Q1FSOWtGbj1DWkRKQ2xJR1ZWLy8%3D_NTS--A_1260393471_NTS--A_FZ7MEqrY05WitIa7rquenWStAwFY%3D_NTS--A_b2tWV1ZxVi8%3D)

This alone will frighten away at least half of the people who might consider abusing your link.

2. **Authenticated URLs** - Malicious users can't fake these URLs because there is secret information embedded in each link that is authenticated before the link can be executed. This is true for both Amazon S3 and non-S3 URLs.
3. **Expiring URLs** - You can create links that won't work anymore after a given time period. So, if someone copies your link and tries to use it after the designated active period - they'll be in for a surprise.
4. **Referrer Checks** - Check to make sure the user is clicking from YOUR WordPress website. There are 2 levels of protection: a "Moderate" level which will catch most abusers and an "Aggressive" check that has even stricter criteria. The wpLinkLock's referrer check is configurable with both a global setting and a setting that can be applied to individual links.
5. **Hidden Download Area** - For downloads that you host on your own server, your download location is NEVER revealed to the user. So, even if they get past the Ugly, Authenticated, Expiring URLs, they still have no idea where your download files are!

## wpLinkLock - How it Works

Amazon S3 supports reasonably sophisticated security. You can create Access Control Lists (ACLs) that dictate who can and cannot access an asset.

Most documentation instructs S3 users to setup the asset ACLs so that All Users can read the file. This works great for retrieving your videos, but also makes the assets available to anyone on the internet.

A more secure way to use S3 is to give NO access to “All Users”. Access should only be granted to “Authenticated” users so that only users with the proper credentials will be able to access the file.

So, how exactly does a user present the “proper credentials”? S3 allows you to attach additional information to the link that holds all the information Amazon needs to validate a user.

But, if the link includes the credentials, then won't anyone with the link still have access to the files? Yep. That's why S3 also gives you the ability to create expiring links so that the link, even with the proper credentials, is only valid for a limited period of time.

So...

- instead of hiding or masking a link, you'll simply create a link that is only good for a short period of time.
- And, instead of having all of these security feature just for Amazon S3, you can have them for ALL of your valuable content.
- instead of you figuring out how to create the link, the credentials, and the expiration information yourself, the wpLinkLock does all of that for you.

# WpLinkLock - Installation

## *WordPress Installation*

wpLinkLock is extremely easy to install and setup. The plugin is installed like any other standard WordPress plugin.

1. Unzip contents of the download file to your local hard drive.
2. Use the Add New WordPress feature (Plugins | Add new) to upload the plugin file:  
`kswp_link_lock.zip`.
3. Activate the plugin

# wpLinkLock - Setup

The wpLinkLock plugin is wonderfully simple to use and extremely easy to setup. The plugin is installed like any other standard WordPress plugin.

The Settings page is simple and includes 6 fields.

Amazon S3 Key

Amazon S3 Secret

General Key

General Secret

Expire (In seconds)

Directory

Hot-link Protection

Redirect "Directory"

Save Changes

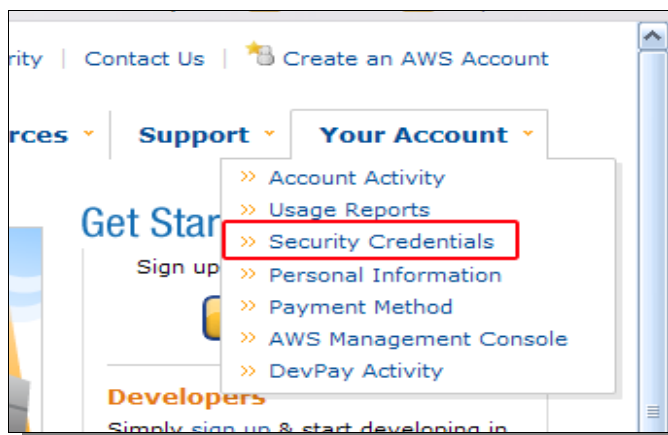
To get the information for the first two items, you'll have to go to your Amazon S3 account.

If you don't yet have an account, you can sign up for one at the site. If you already have an Amazon account that you use for purchasing on the site, you can add S3 to that account.

The S3 site is at: <http://s3.amazonaws.com>

Once you've got your account setup, go to the Security Credentials area.

The link to Security Credentials is under the "Your Account" tab in the upper right hand corner of the screen





Once you've reached the Security Credentials screen, scroll down to the Access Credentials area of the screen.

**Access Credentials**

There are three types of access credentials used to authenticate your requests to AWS services: (a) access keys, (b) X.509 certificates, and (c) key pairs. Each access credential type is explained below.

**Access Keys** | X.509 Certificates | Key Pairs

Use access keys to make secure REST or Query protocol requests to any AWS service API. We create one for you when your account is created — see your access key below.

**Your Access Keys**

Created	Access Key ID	Secret Access Key	Status
September 10, 2009	AKIAI44QH8D8DF31022903	Show	Active (Make Inactive)

[Create a new Access Key](#)

For your protection, you should never share your secret access keys with anyone. In addition, industry best practice recommends frequent key rotation.

[Learn more about Access Keys](#)

You'll need to create a new Access Key. This key is what S3 uses to add the proper security credentials to your links.

If you have your key generated, return to WordPress and your wpLinkLock settings window. Now, place the value in the Access Key Id field on Amazon in the Amazon S3 Key field of the wpLinkLock.

Next, press the “Show” link to display the Amazon “Secret Access Key” and copy and paste that value into the WordPress plugin's Amazon S3 Secret field.

http://www.life-insurance-geek.com/epptest/wp-admin/options-general.php?page=kswp\_link

**Your Access Keys**

Created	Access Key ID	Secret Access Key	Status
September 10, 2009	AKIAI44QH8D8DF31022903	Show	Active (Make Inactive)

[Create a new Access Key](#)

For your protection, you should never share your secret acc recommends frequent key rotation.

**Secret Access Key**

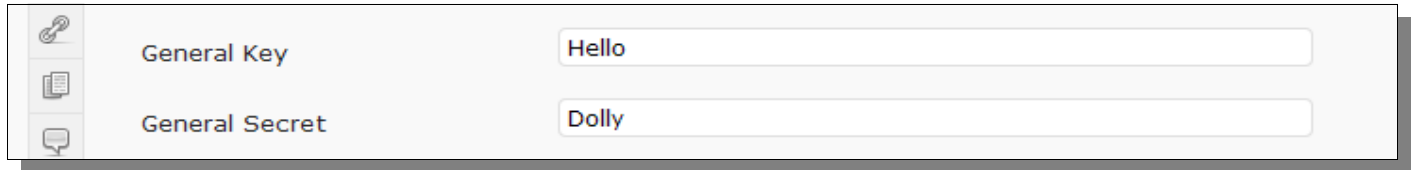
September 10, 2009:WQVH9VAPGHEUR8G8989p

Amazon S3 Key

Amazon S3 Secret

General Key

The next two entries, General Key and General Secret are entries that will be used to protect non-Amazon S3 assets. You can use any text you'd like.



The next entry, the “Expire (In seconds)” field, simply tells the plugin how long the link should remain active. The value you put here depends on what you're linking to.

For a video that auto loads, 60 seconds should be more than enough. As soon as your WordPress page or post loads, the link will be activated and your video should begin loading.

If the link is on a page where you expect the visitor to read a few paragraphs of text before clicking the download link, you may want to go as high as 600 seconds (10 minutes) to allow the user time.

The plugin supports a “seconds” tag attribute that will override this global settings. The tag and its attributes are covered in a later section.

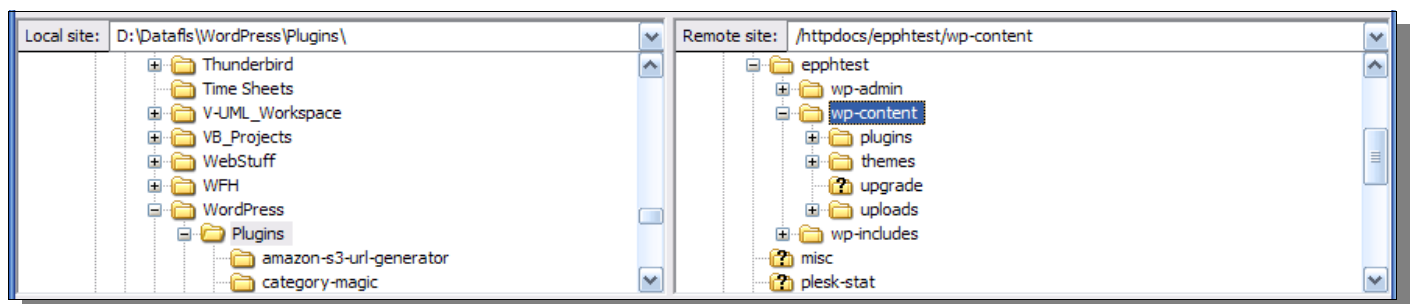
Finally, there's the field to specify the download Directory. The plugin will not create the directory, so that we'll cover that in the next section.

### ***Creating a Download Directory***

wpLinkLock uses a separate directory to hold the files and other content to be downloaded. Unfortunately, **the wpLinkLock plugin does not create the directory** so, you'll either have to use an existing directory or you'll need to create a new directory using some other tool.

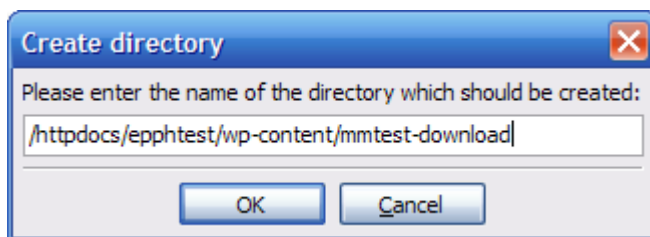
If you're going the new directory route, the easiest tool to use is your FTP tool. Again, we'll use FileZilla to create a directory.

The wpLinkLock download directory must be in the “wp-content” folder of your WordPress website. This is the same folder that WordPress creates an “upload” directory - if you've configured your site to handle uploads.



I've navigated to the “wp-content” directory and now I'll right click to get the context menu and choose “Create Directory”. I'm naming my download directory “mmtest-download”.

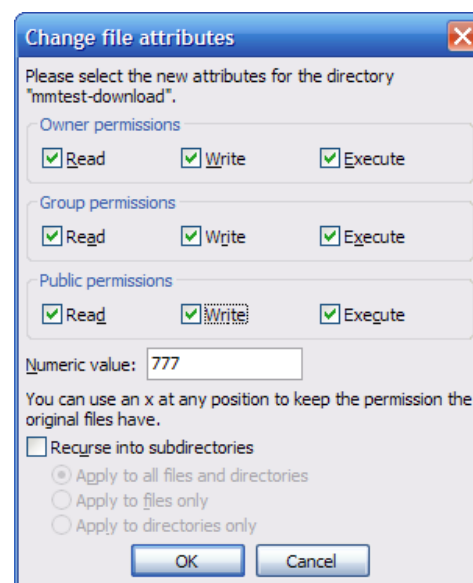
You should choose a name that is less than obvious.



of contents

Once the directory has been created, right click and choose “File Permissions”. Set both the **Group** and **Public** Permissions so that both have read and write access to the directory. Normally, this would be a problem but in this case:

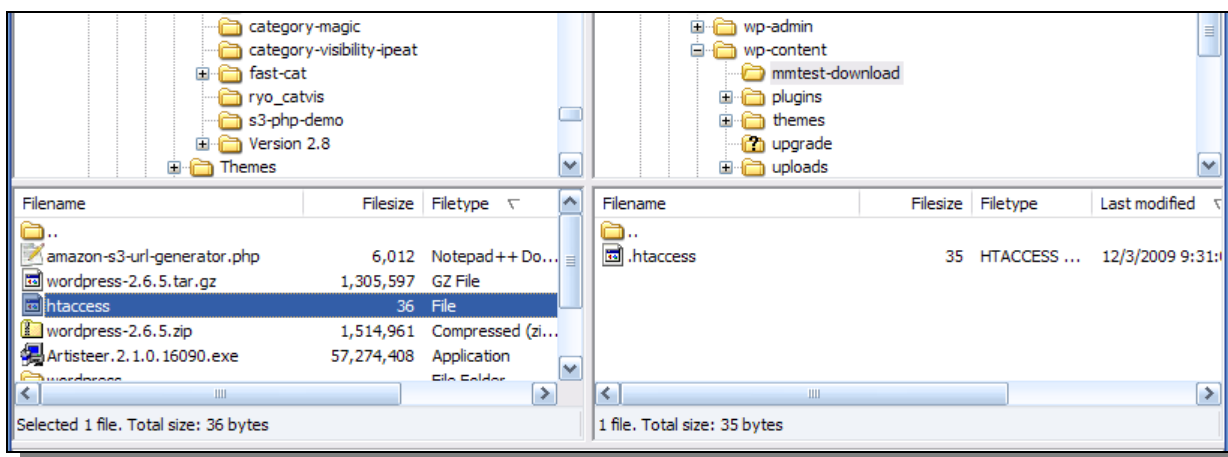
1. **the name of this directory is never revealed to the public** (the reason for choosing a name other than “download”), so it's unlikely that anyone will ever look for it.
2. You'll **use an .htaccess file** to make sure your service denies browser access to this directory. We'll create the .htaccess file in the next section.



## .htaccess

.htaccess was created to allow per-directory access control, hence the name. Nowadays .htaccess can override many other configuration settings, mostly related to content control. That's what we'll be using .htaccess for with wpLinkLock.

A blank (essentially) htaccess file is provided as part of this package. Use your FTP package to upload the file to the directory you just created. In the example, the htaccess file is placed in the *mptest-download* directory.



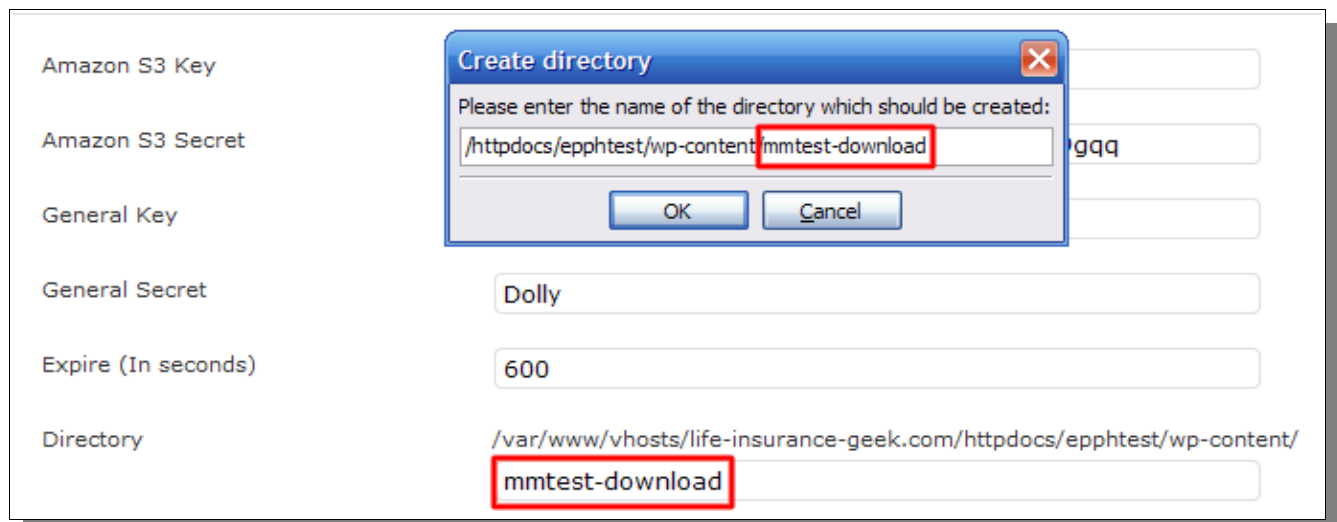
Now, rename the file to .htaccess. The “.” lets your web server know that the file is a

special, hidden, system file.

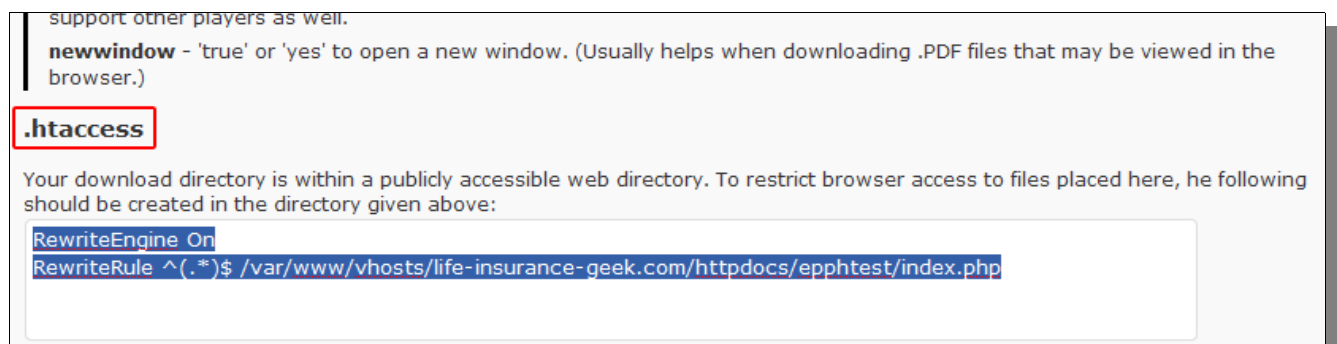
Ok, let's head back to WordPress and bring up the wpLinkLock configuration page ( Settings | wpLinkLock) and take note of the Directory field.

To simplify then installation process, wpLinkLock expects the download directory to be placed in the “wp-content” directory. The “wp-content” directory is not only where WordPress keep its downloaded themes and plugins, but it's also the default directory for the “upload” directory - the place where WordPress stored images and other files that you upload to your posts and pages. Consequently, it's a natural repository for the directory that will hold your download files.

Of course, the Directory entry in the wpLinkLock configuration page will be the path for the directory you created earlier in this chapter.

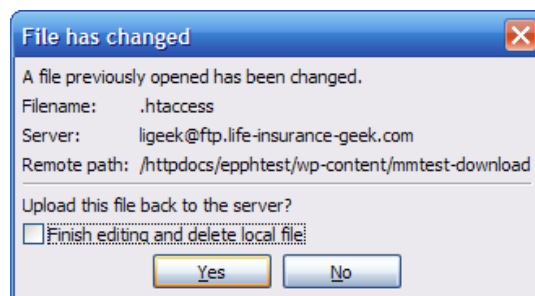


Scroll to the bottom of the wpLinkLock configuration page to the message concerning the .htaccess file. To complete your .htaccess protection for your download directory:



1. select the supplied text (see above)
2. copy the text to the clipboard
3. return to your FTP program
4. select the .htaccess file that you placed in your directory
5. right click on the file and select “View/Edit” (FileZilla)

6. select the entire contents of the file (Ctrl-A) then paste the text from the clipboard, effectively replacing the original file contents with the information from the wpLinkLock settings window.
7. Save and close the file
8. Return to FileZilla to upload the changes back to your server. Simply click the “Yes” button in the supplied dialog box.



# WpLinkLock - Usage

## Tags

The wpLinkLock plugin uses a very simple tag to trigger the link generation. The basic tag is

```
[LINKLOCK attribute=value ...attribute="attribute value"]resource/filename[/LINKLOCK]
```

All of attributes are optional and can be entered in any order. Each attribute should be used only if you require the feature or features that it controls. Values can be entered with or without quotes (both single and double quotes are supported).

The resource (in **red**) **MUST** be present. This describes the name (filename) and location (path or URL) of the asset.

## Attributes:

**bucket** - the name of your Amazon S3 bucket

**seconds** - (optional) the time in seconds that the link will remain active. A value entered here will override the global value entered on the plugin's Settings page.

**flowplayer** - (optional) should be "true" or "yes" if the link needs to be conditioned to work with a FlowPlayer V2 or V3 flash player

**newwindow** - (optional) should be "true" or "yes" if the if you'd like your link to open up in a new window. This is very useful when the link is to a PDF file that the user may want to open up in the browser.

**hotlink** - (optional) should be 0 or 1. Hot link protection checks the "Referrer" to make sure the link request came from within your site.

**0-Moderate** - permits access when the "Referrer" is missing. This can occur with legitimate users who have browsers that do not pass the "Referrer" information, have turned the "Referrer" feature turned off in their browser, or are behind a proxy that doesn't pass "Referrer" information. Unfortunately, this also permits potentially unauthorized access when link text is placed in browser address bar.

**1-Aggressive** - blocks all access where the "Referrer" is not from your site including scenarios where the "Referrer" information is missing. NOTE: This cannot be used with most flash/video players as their internal URL handling will not pass "Referrer" information.

**s3url** - (optional) should be "true" or "yes" if the if you'd like to generate standard, Amazon S3 expiring links without the additional wpLinkLock protection. This is only valid when the **bucket** attribute is used.

**access** - (optional) a comma or '|' delimited list of WordPress roles or Micro-Membership subscription levels that can access the link. Ex. Subscriber|Gold|Executive

**text** - (optional) the anchor text for your link. If omitted, the link is generated without anchor text

**redirect** - (optional) should be "true" or "yes" if the information supplied as the "resource" is the ID for a redirected link (see Redirection)

## Syntax Rules:

1. Attributes can be in any order
2. Attribute values can be entered with or without quotes.
3. If quotes are used for attribute values, single and double quotes are both acceptable
4. The values for the *seconds*, and *hotlink* attributes must be numeric
5. The plugin will remove the "/" from the front of the resource name if it is included

Here are a couple of examples of using the tags:

1. Link with anchor text:

```
[LINKLOCK bucket=example.com text=Download this file]/pdfs/resource.pdf[/LINKLOCK]
```

Displays linked anchor text as:

[Download this file](#)

2. Link to a video that overrides the expiration time - setting it to 10 seconds:

```
[LINKLOCK bucket=example.com seconds=10]/folder/vids/vid-1.flv[/LINKLOCK]
```

## ***Using the Download Area***

The download area you created in a prior step is a secure storage area that exists on your own site.

Although I like placing my large videos and download files on Amazon S3, there are many smaller files (PDFs, ZIPs, etc.) that I'd just as soon host on my own server.

If you upload those files to your download area, you can access the files with wpLinkLock security by using tags like this:

```
[LINKLOCK text="Local File"]filename.pdf[/LINKLOCK]
```

Notice that there is no "http://..." in the resource area. Resource specifications without the "http://" are assumed to be stored in the wpLinkLock download directory or in sub-directories of the download directory.

For example, if a tag like this is used on the example site:

```
[LINKLOCK text="Subfolder file"]thisFolder/subexample.zip[/LINKLOCK]
```

wpLinkLock would expect to find the "subexample.zip" file in the mmtest-download/thisFolder directory.

### **\*\*\*IMPORTANT FEATURE\*\*\***

#### ***Accessing Files NOT in the Download Area***

You can store your files anywhere on your website's domain. They don't have to be stored in the wpLinkLock download directory.

To access files stored elsewhere on your domain, you'll enter the full URL to the files location as in:

```
[LINKLOCK text="Roaming File">http://www.yoursite.com/directory/subdir/file.dat[/LINKLOCK]
```

## Amazon S3 Resource Setup

The last thing that's needed is to setup the access control on your Amazon S3 asset(s).

Unfortunately, you can't communicate with S3 using your file explorer or an FTP client. You must use a program that works with S3's unique interface.

Fortunately, there are two free products that work well. Both tools allow you to upload files to Amazon S3 and to maintain files and permissions. Both work very much like a standard file explorer (Windows Explorer, etc.).

The first is S3 Firefox Organizer (S3Fox) - a plugin for the Firefox browser. The tool can be downloaded here:

<https://addons.mozilla.org/en-US/firefox/addon/3247>

In my experience, however, the better tool is from CloudBerry Lab and is called the CloudBerry S3 Explorer. There is a Pro version of this tool, but the freeware version does everything I need it to do. This is the tool I'll use in my examples.

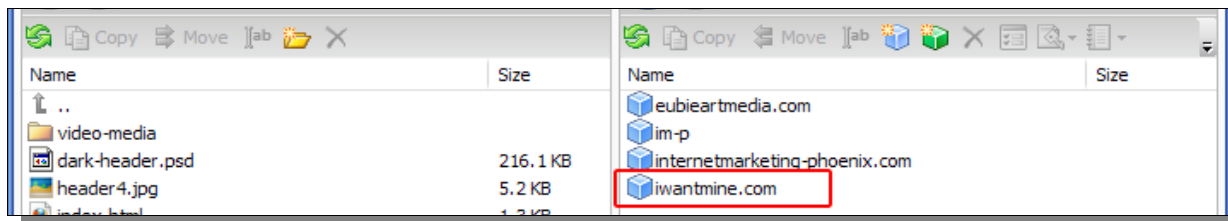
The CloudBerry S3 Explorer can be downloaded here:

<http://cloudberrylab.com/?page=cloudberry-explorer-amazon-s3>

This manual is not a tutorial on using CloudBerry or Amazon S3, so I won't cover this in detail.

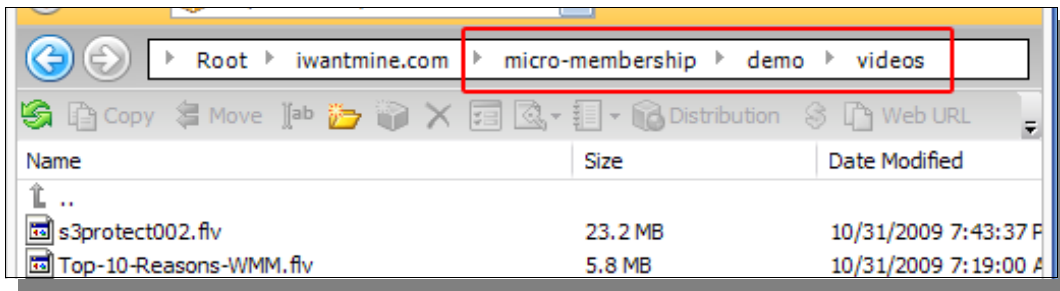
However, I will discuss briefly the naming convention that I use for Amazon S3 assets that seems to be working well for me. I do basically two things:

1. **bucket names** - my bucket names are domain names. This way, I know what assets belong to different websites. I also like this because the domain name shows up in the generated link to the asset, which makes it look less "suspicious" to viewers who care about such things.



2. **Resource names** - the resource name includes what looks like folders or directories in CloudBerry. In reality, Amazon S3 doesn't have folders but uses the naming convention to "organize" the stored resources. Consequently, I create "folders" that help organize and categorize my files on S3 - much the same as I would on my home computer.

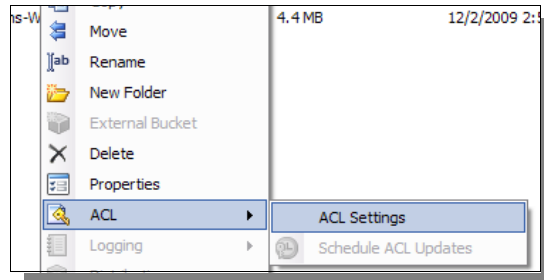




If I were to use the illustrations above to create an wpLinkLock tag, it would look like this:

```
[LINKLOCK bucket=mybucket.com]/micro-membership/demo/videos/s3protect002.flv[/LINKLOCK]
```

Now, lets look at the access control list for one of the files. I'll right click on a file and choose ACL | ACL Settings from the context menu.

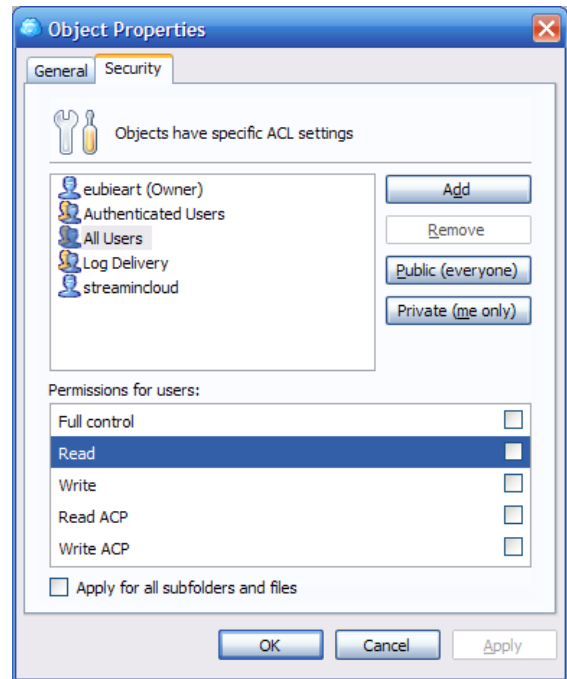


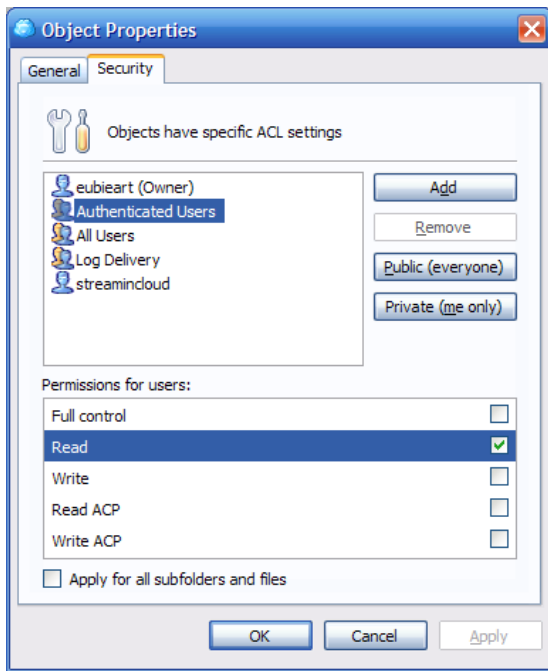
CloudBerry will then display the Object Properties Window. In the illustration to the right we see that "All Users" has been selected.

In most Amazon S3 tutorials, you'll be instructed to give "Read" access to "All Users". This makes it easy to link to your Amazon S3 assets from your web pages. Unfortunately, it also makes it easy for ANYONE to link to your Amazon S3 assets from your web page.

Malicious webmasters could link to YOUR S3 files, offer their visitors YOUR S3 content, and deliver it over the internet using YOUR S3 bandwidth! We'll fix that!

Make sure you have no permissions checked for "All Users".





Select “Authenticated Users” from the top selection box and check the “Read” check box in the “Permissions for users” selection box.

Now, a user can read (download) your file but must be authenticated first.

There is now no “willy-nilly” access to this file.

If you change the ACL for a folder or bucket, you can check the “Apply for all subfolders and files” check box to have the same settings applied to all of the assets (and any assets added in the future) in the folder or bucket.

Save the changes.

And you're done.

# WpLinkLock - Redirection

One of the biggest problems affiliate marketers have is that when many people see an affiliate link to shy away from clicking it or they strip away the affiliate portion of the link.

Estimates run as high as 30% of your affiliate commissions are being stolen right out of your wallet! The more your affiliate sales grow, the more you lose... which adds up to hundreds and maybe even thousands of dollars each and every month... gone, never to be recovered.

wpLinkLock is gives you an easy way shorten and hide affiliate links!

There are two simple steps you'll need to step through to use wpLinkLock's redirection feature.

## Set the Redirect "Directory"

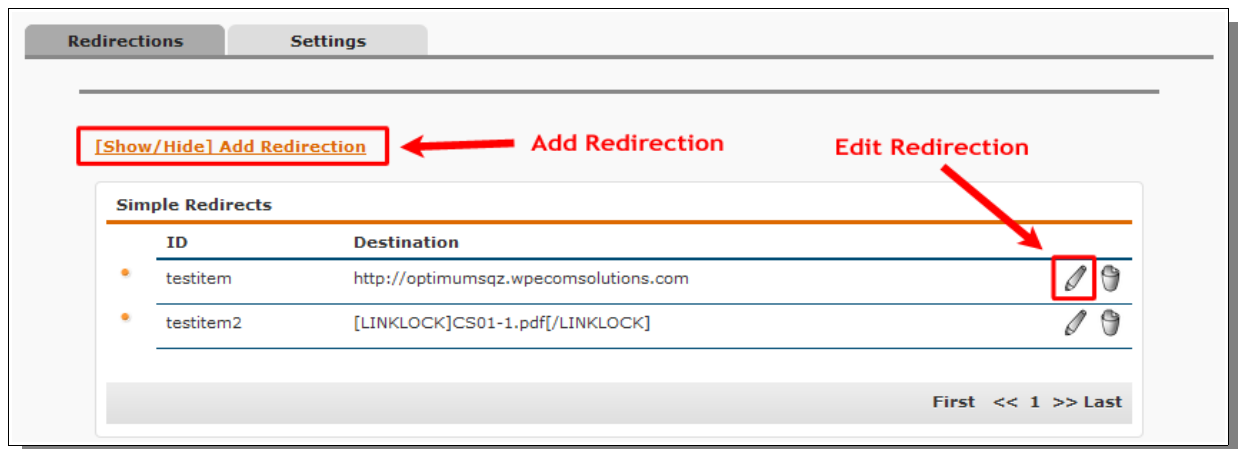
The Redirect "Directory" is set on the wpLinkLock "Settings" tab.



wpLinkLock provides a default directory name of "recommends" but this can be changed at any time. (By the way, the Redirect "Directory" isn't an actual directory on your web server but will look like one in the URLs that use redirection.)

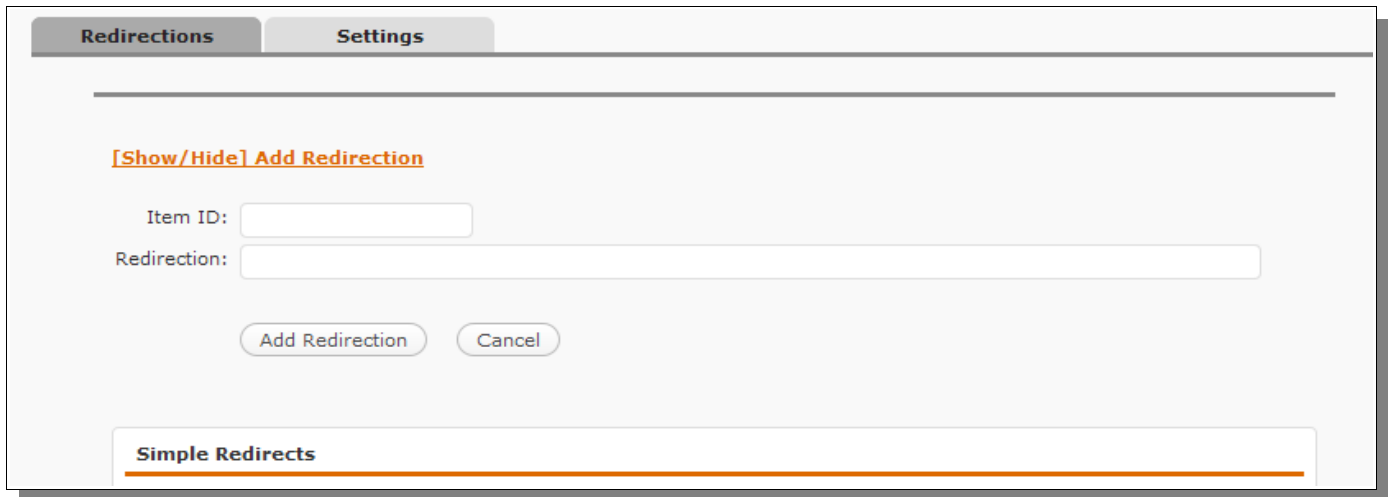
## Create the Redirection

Navigate to wpLinkLock's "Redirections" tab.



To add a new redirection, click the “[Show/Hide] Add Redirection” link. To edit an existing redirection, click the icon at the far right-hand side of the row in question.

wpLinkLock will display the a form to enter the required information.



On the form, you'll need to enter:

**Item ID** - up to 30 chars; letters, numbers, and underscores allowed - the string to be used to identify

**Redirection** - the destination URL. This can be a fully qualified URL (<http://...>) or it can be a dynamic link using the [LINKLOCK] syntax.

Here's how the redirection works. The new, clean URL is:

your site URL + / + the wpLinkLock Redirection Directory + / + the Item ID

That new, clean URL when executed (clicked as a link or copied into a browser's address bar) finds its ultimate destination in the “Redirection” URL associated with the Item ID. For example:

**Site URL:** <http://www.myaffiliatesite.com>  
**Redirect “Directory”:** recommends  
**Item ID:** SalesLetterMaker  
**Redirection:** <http://www.slslettermkr.com/cgi-bin?i=2333&a=myaffid>

Now, the URL <http://www.myaffiliatesite.com/recommends/SalesLetterMaker> will be automatically redirected to <http://www.slslettermkr.com/cgi-bin?i=2333&a=myaffid>.

If you ever need to insert the “clean” URL in pages of your WordPress site, you can use the wpLinkLock shorthand syntax:

```
[LINKLOCK redirect=true]Item ID[/LINKLOCK]
```

Using our example above, the syntax: `[LINKLOCK redirect=true]SalesLetterMaker[/LINKLOCK]` would create this link: <http://www.myaffiliatesite.com/recommends/SalesLetterMaker> in your WordPress page or post.