

Project Library/AMUG2005.01.20

AMUG Presentation 2005.01.20: Wiki's and rsync

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 - **Play the Greeting:** – [HelloAMUG.wav](#)

1. Wikis: This presentation presents an overview of Wiki's and rsync.
2. Rsync: The rsync discussion provides one example of how to use rsync as part of a backup solution. It is not a general tutorial on backups.

Wiki's

What is a Wiki?

- *A collaborative web site comprised of the perpetual collective work of many authors.*
- Where does the name Wiki come from?
 - Link to definition: <http://dictionary.reference.com/search?q=wiki>
 - Wiki wiki means "quick" in Hawaiian
- This is NOT a Wiki Tutorial, just an overview.
- I have been using various Wiki's for about 5 years
 - Used primarily to support collaborative projects with distributed team members
- Examples:
 - Wiki's I curenly use here at Aerospace: <http://npoess.aero.org/>
 - CEOS Grid Wiki (password required): <http://grid-tech.ceos.org/gridwiki>
 - Used on NASA Grid Project (project complete; wiki not active)
- They are everywhere on the web!

Why use it?

- Every team member can access and edit the content
- *On-line* lab network
 - Centralized location for all project documentation
- Give online presentations (such as this one)
 - All participants require is a web browser!
- Document Repository
 - You can upload documents and provide links so others can download them
- **Easy to setup, learn and use**
 - You should be up and running in less than 1 hour from download, setup and creating your first wiki page
- Emphasis is on content not on presentation (although I find the presentation adequate for 90% of my daily needs)
- 99% Fat Free, 0-Carbs and less filling!

How do you use a Wiki?

- Let me show you... ([WikiSandbox](#))
 - Don't forget to mention Wiki Words.
- Things you can use:
 - Plain text
 - List: bullets and enumerated
 - Multimedia: pictures, graphics, audio, etc. (as links, assuming your browser supports them)
 - Links to documents
 - Create Tables
 - Formatting for code (nice Python features)
- You can track page history and view differences
- Preview a page while editing
- You can also customize the Wiki formatting and style sheets (assuming you have the proper privileges)
- View *raw* page source
- Format for Printing
- Set User Preferences

- Search your Wiki

How do I use Wikis

- Give presentations!
- My online (**shared**) project notes
- Project workgroup shared resource and notes
- General place to keep notes and other material I want easy access to and might want to share

Help that comes with the Moin Wiki

- [WikiInfo](#) - introduction and help files that come with the Moin Wiki
- [WikiCourse](#) - a Slide Show that comes with the wiki!

How do Wiki's Work?

- Or should it be WikisWork 😊
- Basically the web pages are generated using CGI tools (python, perl, etc.)
- Underlying content is plain text with little or not traditional HTML
- The pages displayed in your browser are built *on-the-fly* when you request them

Installing and Configuring the Wiki

- I use the MoinMoin Wiki (Version 1.2 and 1.3.1):
 - <http://moinmoin.wikiwikiweb.de/>
 - Latest Version is 1.3.1
- Really easy to install!
 - Took me about 20 minutes for the actual initial installation and less when adding additional Wikis the first time I did it
 - Good instructions come with the Wiki download: http://npoess.aero.org/~sgasster/wiki_install.html

- As always, read the instructions several times before installing to make sure you have everything setup correctly
 - Always backup before installing software!

- Configuration of my wiki:
 - I have Wikis running on:
 - Intel box, with the Debian/Linux Testing OS
 - Apple/Mac OS X (10.2.8) on a PM G3 (400 MHz)
 - Python: 2.3 or 2.4
 - Apache: 1.3

- You probably should be familiar with:
 - Using the terminal and command line interface
 - What's in a typical web server config file (Apache httpd.conf for example)
 - Know how to use a simple Editor (e.g., vi; but BBEEdit might be good enough)

- Can install on Mac OS X since it comes with Python and Apache!
 - See Wiki Install Instructions.

- On the Mac OS X box here's what I did (its a slow system!)
 - Download python 2.4, read docs, configure, build, test and install (62 min)
 - Download moin-1.3.1 and unpack
 - Read install docs, build, install, test, configure (10 min)

NPOESS Wiki Install

- Installed in `/usr/local/share/moin`
 - Base install with two other wikis

```
cgi-bin/ - the wiki is driven by CGIs written in python found here
for the most part
data/    - initial data directory that will be copied to your wiki
instance
htdocs/  - start page, style sheets and images used by the CGIs to
build the actual pages

--- my wiki instances ---
```

```
dbmswiki/  
npoesswiki/  
rtmwiki/
```

Backups

- Do you feel lucky?
- Listen to your disk drive: [DoYouFeelLucky.wav](#)
 - The sound you will hear is your disk drive exploding!
- So we all do periodic backups because we want to preserve our data and it is so easy to do, right!

Rsync

Using rsync on Mac and Linux

What is rsync?

- rsync is an open source utility that provides fast incremental file transfer. rsync is freely available under the GNU General Public License version 2
- Try `man rsync`

```
rsync(1)  
rsync(1)  
  
NAME  
    rsync - faster, flexible replacement for rcp  
  
SYNOPSIS  
    rsync [OPTION]... SRC [SRC]... [USER@]HOST:DEST  
  
    rsync [OPTION]... [USER@]HOST:SRC DEST
```

```
rsync [OPTION]... SRC [SRC]... DEST
```

```
rsync [OPTION]... [USER@]HOST::SRC [DEST]
```

```
rsync [OPTION]... SRC [SRC]... [USER@]HOST::DEST
```

```
rsync [OPTION]... rsync://[USER@]HOST[:PORT]/SRC [DEST]
```

```
rsync [OPTION]... SRC [SRC]...
```

```
rsync://[USER@]HOST[:PORT]/DEST
```

DESCRIPTION

rsync is a program that behaves in much the same way that rcp does, but

has many more options and uses the rsync remote-update protocol to

greatly speed up file transfers when the destination file already exists.

The rsync remote-update protocol allows rsync to transfer just the dif-

ferences between two sets of files across the network link, using an

efficient checksum-search algorithm described in the technical report

that accompanies this package.

Some of the additional features of rsync are:

- o support for copying links, devices, owners, groups and permissions
- o exclude and exclude-from options similar to GNU tar
- o a CVS exclude mode for ignoring the same files that CVS would ignore
- o can use any transparent remote shell, including rsh or ssh

- o does not require root privileges
 - o pipelining of file transfers to minimize latency costs
 - o support for anonymous or authenticated rsync servers
(ideal for mirroring)
- ...etc...

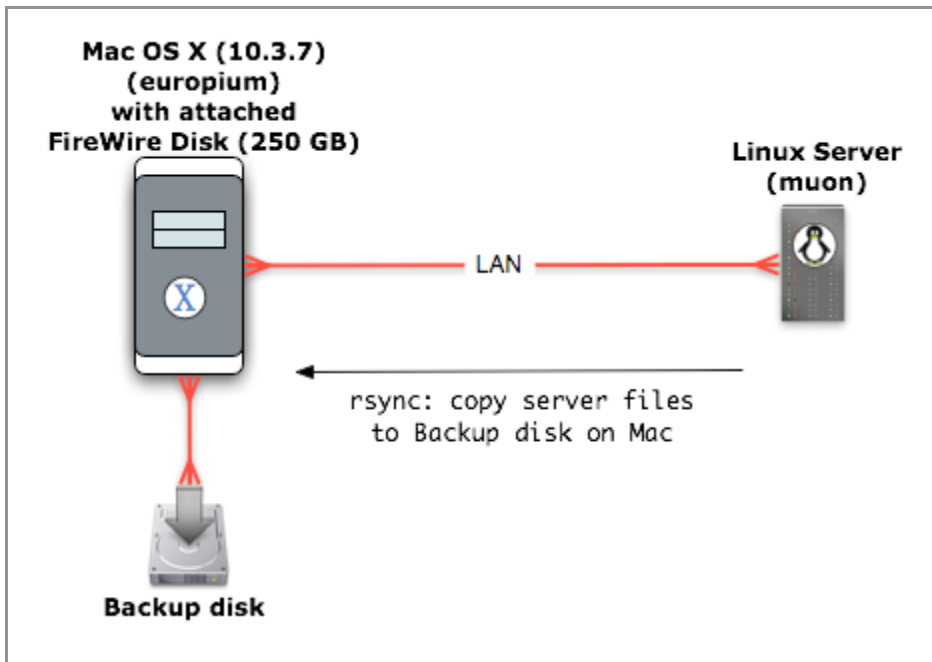
- What version?

```
thorium:~ sgasster$ rsync --version
rsync version 2.6.2 protocol version 28
Copyright (C) 1996-2004 by Andrew Tridgell and others
<http://rsync.samba.org/>
Capabilities: 64-bit files, socketpairs, hard links, symlinks,
batchfiles,
                IPv6, 32-bit system inums, 64-bit internal inums

rsync comes with ABSOLUTELY NO WARRANTY. This is free software, and
you
are welcome to redistribute it under certain conditions. See the
GNU
General Public Licence for details.
thorium:~ sgasster$
```

How To Use rsync: An Example

- Simple Backup
 - o Copy files (backup) from my Linux server to a Mac Backup disk
 - o Could also have been Mac-to-Mac



- Software Tools Required:
 - rsync
 - cron
 - ssh
- Files I want to move:

```
The files I want to backup are in /home/backups/muon
www_2005-01-17_00-16-16.tar.gz
etc_2005-01-17_00-16-02.tar.gz
vml_2005-01-17_00-14-33.tar.gz
cvs_2005-01-17_00-14-31.tar.gz
sdg_2005-01-17_00-00-02.tar.gz
```

- Commands:

```
cd /home/backups/muon

rsync --delete -ave ssh .
sgasster@europium:/Volumes/BackupDisk/Backups/muon
```

- Options:
 - `--delete`: delete files on the receiving side that don't exist on the sending side
 - `-a`: archive mode equivalent to several flags (recurse into directories, etc)
 - `-v`: verbose (probably don't need this in the cron file since I send output to `/dev/null`, good for testing!)
 - `-e`: specify the remote shell to use (SSH in this case)
- I used `ssh` to login and authenticate myself (helps with automation)
- The `rsync` command will copy over all new files from *muon* to the Mac backup disk and delete all old files on the Mac Backup disk (thus keeping the server backup directory in sync with the Mac backup directory)
- I automated this with `cron` and SSH so that it runs on the first and 15th day of every month while I sleep!
 - Setup SSH between system A (local) and B (remote) using public key and `.ssh/authorized_keys` file
 - run `ssh-keygen` on local system to generate a key pair (public/private)
 - move public key to remote system and add to `.ssh/authorized_keys` file
 - Create crontab
 - You're ready to go!

Cron is your friend!

- What is cron?
 - A program to automate program execution
 - Try: `man cron`, `man 5 crontab`, `man 1 crontab`
 - Format for crontab entries: `A B C D E <command>`
 - A = minute (0-59)
 - B = hour (0-23)
 - C = day of month (1-31)
 - D = month (1-12 or names)
 - E = day of week (0-7; 0 or 7 is Sun, or use names)
 - A field may be an asterisk (*), which always stands for *first-last*
- Learn how to use cron! It is easy and powerful once you get the hang of it!

- Example crontab entry:

```
# rsync the backups with remote disk
0 1 1,15 * * cd /home/backups/muon ; rsync --delete -ave ssh . \
sgasster@europium:/Volumes/BackupDisk/Backups/muon >/dev/null 2>&1
```

- This example syncs up my Linux backups with a remote backup disk connected to a Mac G4 running OS X
- It rsync's on the 1st and 15th of each month, deleting old files
- You can also try Cronnix: CronniX is a Aqua frontend to the powerful Unix tool "cron".
 - <http://h5197.serverkompetenz.net/cronnix/>
- If anyone is interested in the backup scripts I can provide them.
 - They are for linux but could be easily modified for Mac OS X

Try it!

- Setup a test first using test files and make sure the commands work
- Watch out for `--delete`

Other things you can do with rsync

- Create your own mirror server: <http://mirror.aero.org/>
- Keep shared directories up-to-date; rsync multiple users

Links

- Sam's (internal) Aerospace web page has various Mac related links and information
 - <http://arachnid.aero.org/~gasster/>

Wikis

- MoinMoinWiki: [🌐](#)
- SourceForge Project Page: [🌐 http://sourceforge.net/projects/moin/](http://sourceforge.net/projects/moin/)
- Python Home Page: [🌐 http://python.org/](http://python.org/)
- Apache Home Page: [🌐 http://www.apache.org/](http://www.apache.org/)

rsync

- Rsync Home Page: [🌐 http://samba.anu.edu.au/rsync/](http://samba.anu.edu.au/rsync/)
- Rsync Tutorial: [🌐 http://everythinglinux.org/rsync/](http://everythinglinux.org/rsync/)
- Using rsync on Mac OS X: [🌐 http://www.bombich.com/mactips/rsync.html](http://www.bombich.com/mactips/rsync.html)
- Cronnix: [🌐 http://h5197.serverkompetenz.net/cronnix/](http://h5197.serverkompetenz.net/cronnix/)
- O'Reilly MacDevCenter Articles on SSH:
 - [🌐 http://www.macdevcenter.com/pub/a/mac/2004/07/09/inside_ssh_pt1.html](http://www.macdevcenter.com/pub/a/mac/2004/07/09/inside_ssh_pt1.html)
 - [🌐 http://www.macdevcenter.com/pub/a/mac/2004/07/13/inside_ssh_pt2.html](http://www.macdevcenter.com/pub/a/mac/2004/07/13/inside_ssh_pt2.html)
 - [🌐 http://www.macdevcenter.com/pub/a/mac/2004/07/20/inside_ssh_pt3.html](http://www.macdevcenter.com/pub/a/mac/2004/07/20/inside_ssh_pt3.html)

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