MySecureShell Documentation

Release 1.33

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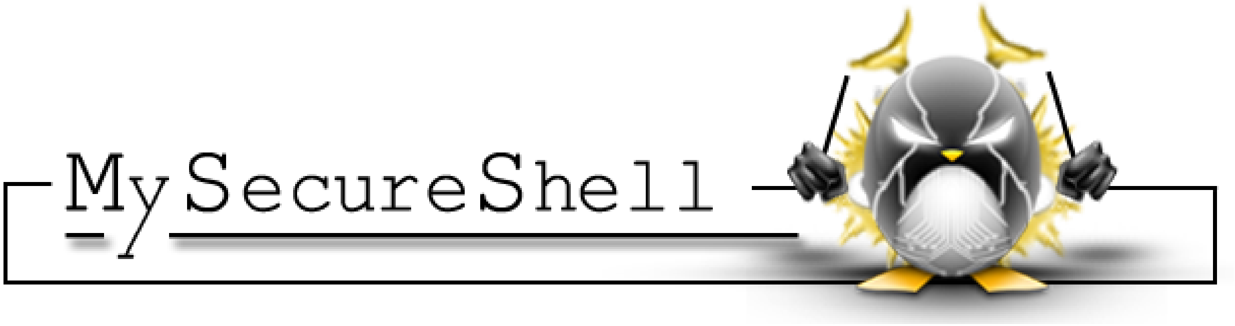
Jan 15, 2018

Contents


MySecureShell

CHAPTER 1

Introduction

1.1 What is MySecureShell?

MySecureShell is a solution which has been made to bring **more features to sftp/scp protocol** given by OpenSSH. By default, OpenSSH brings a lot of liberty to connected users which imply to trust in your users. The goal of MySecureShell is to **offer the power and security of OpenSSH, with enhanced features** (like ACL) to restrict connected users.

MySecureShell was created because of the lack of file transfer features in OpenSSH. OpenSSH was not designed as a file transfer solution, that's why we made MySecureShell.

MySecureShell is not a patch for OpenSSH, it's a shell for users. It has the advantage to:

- Avoid including security holes in OpenSSH
- No dependency on against an OpenSSH version
- No OpenSSH recompilation is required

So **MySecureShell remains easy to install, secure and easy to configure**.

1.2 Why SFTP and not FTP?

If you're wondering why you should take MySecureShell as an SFTP server instead of a classical FTP, there are several reasons:

1. You do not have to open some dedicated firewall ports for file transfers
2. You are using one of the most used and secure protocol (SSH)
3. You do not have to manage SSL certificates to guaranty the security
4. As easy to use as a classical FTP server
5. As many or more features that you can find on any classical FTP servers
6. Easy to install, configure, maintain and use

1.3 What are MySecureShell's SFTP new features to OpenSSH

Is MySecureShell really add enhanced features to OpenSSH sftp? Yes! Here is a sample of features of what MySecureShell is able to give:

- Bandwidth control
- Only authorized files and folders can be shown
- Advanced logging information
- ACL can be made with IP/Usernam/Groups/VirtualHost/...
- Confined environments (chroot, which is also available in the latests version of OpenSSH)
- Restrict users to have sftp only (shell access is disabled by default)
- And more...

1.4 Which Operating Systems are compatible with MySecureShell?

MySecureShell has been developed to work on several types of Operating Systems like Linux, Mac OS X, Solaris, BSD and Windows (with Cygwin).

We unfortunately do not package MySecureShell for all platforms but we do our best to bring binary packages to most used/common Operating System for production usage like:

- Linux (Debian/Ubuntu)
- Linux (RedHat/CentOS/Fedora)
- Mac OS X

If binary packages are not available for your system, we do our best to make them easily installable with scripts shell and Makefiles.

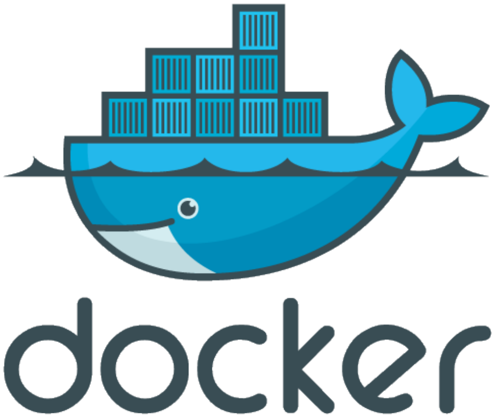
CHAPTER 2

Quick Try

Before installing in production, you may want to try MySecureShell. In nowdays the most known and easy tools to test new softwares are Vagrant and Docker.

We are providing both solutions, you can choose the easiest for you.

2.1 Docker



Topics

Docker is an open platform for developers and sysadmins to build, ship, and run distributed applications. It only works on Linux.

2.1.1 Install prequesites

How does it works? First of all, you need install Docker on your Linux host:

- Docker: easily create containers

2.1.2 Run Dockerfile

Once done, on your machine install the MySecureShell Dockerfile:

```
$ docker build -t mysecureshell \
https://raw.githubusercontent.com/mysecureshell/mysecureshell/master/deployment-tools/
↪docker/Dockerfile
```

Here is the content of the Dockerfile:

```
FROM debian:stable
MAINTAINER Pierre Mavro <deimos@deimos.fr>

##################
# User Quick Try #
##################

RUN echo 'deb http://mysecureshell.free.fr/repository/index.php/debian/7.1 testing␣
↪main' \
> /etc/apt/sources.list.d/mysecureshell.list
RUN echo 'deb-src http://mysecureshell.free.fr/repository/index.php/debian/7.1␣
↪testing main' \
>> /etc/apt/sources.list.d/mysecureshell.list
RUN gpg --keyserver hkp://pool.sks-keyservers.net --recv-keys E328F22B
RUN gpg --export E328F22B | apt-key add -
RUN apt-get update
RUN DEBIAN_FRONTEND=noninteractive apt-get -y -o Dpkg::Options::="--force-confdef" \
 -o Dpkg::Options::="--force-confold" install mysecureshell whois procps openssh-
↪server
RUN apt-get clean
RUN mkdir /var/run/sshd
RUN pass=$(mkpasswd -m sha-512 -s mssuser) && useradd -m -s /usr/bin/mysecureshell -p
↪$pass mssuser
RUN echo 'root:root' | chpasswd
RUN chmod 4755 /usr/bin/mysecureshell

# Start SSHd
EXPOSE 22
CMD ["/usr/sbin/sshd", "-D"]
```

2.1.3 Boot the container

You can now launch the Docker container:

```
$ docker run -d -p 22222:22 mysecureshell
```

2.1.4 Connect and test

MySecureShell is now ready to serve! From your host machine, you can connect with user *mssuser* and *mssuser* for the password:

```
$ sftp -P 22222 mssuser@127.0.0.1
mssuser@127.0.0.1's password:
Connected to 127.0.0.1.
sftp> ls
sftp> pwd
Remote working directory: /
```

In parallel, connect from your host machine to the Virtual Machine (root password is *root*):

```
$ ssh -p 22222 root@127.0.0.1
```

and see the current connected user with *sftp-who* command:

```
$ sftp-who
--- 1 / 10 clients ---
Global used bandwith : 0 bytes/s / 0 bytes/s
PID: 3389   Name: mssuser   IP:
    Home: /home/mssuser
    Status: idle    Path: /
    File:
    Connected: 2014/08/19 15:38:27 [since 10s]
    Speed: Download: 0 bytes/s [5.00 kbytes/s]  Upload: 0 bytes/s [unlimited]
    Total: Download: 1398 bytes   Upload: 141 bytes
```

You can see the connected user :-). You can try to upload files to see the result. Of course you can use graphical clients. And if you want to play with the server configuration, look at `/etc/ssh/sftp_config`.

2.2 Vagrant

Topics

Vagrant is a solution to create and configure lightweight, reproducible, and portable development environments. It uses a virtualization solution like VirtualBox. The advantage of this solution is it works on many Operating Systems (Linux, Mac OS and Windows).

2.2.1 Install prequesites

How does it works? First of all, you need install those elements:

1. VirtualBox: the virtualization tool
2. Vagrant: easily deploy a MySecureShell testing environment

2.2.2 Add Vagrantfile

Once done, on your machine create a folder and add get the Vagrantfile:

```
$ mkdir mysecureshell
$ cd mysecureshell
$ wget --no-check-certificate https://github.com/deimosfr/mysecureshell/master/
↪deployment-tools/vagrant/Vagrantfile
```

Here is the content of the Vagrantfile:

```
# -*- mode: ruby -*-
# vi: set ft=ruby :
# MySecureShell Team <https://github.com/mysecureshell/mysecureshell>

# Vagrantfile API/syntax version. Don't touch unless you know what you're doing!
VAGRANTFILE_API_VERSION = "2"

$install_mss = <<INSTALL
echo "deb http://mysecureshell.free.fr/repository/index.php/debian/7.1 testing main
deb-src http://mysecureshell.free.fr/repository/index.php/debian/7.1 testing main
" > /etc/apt/sources.list.d/mysecureshell.list
gpg --keyserver hkp://pool.sks-keyservers.net --recv-keys E328F22B
gpg --export E328F22B | apt-key add -
apt-get update
apt-get -y install mysecureshell
pass=$(mkpasswd -m sha-512 -s mssuser)
useradd -m -s /usr/bin/mysecureshell -p $pass mssuser
chmod 4755 /usr/bin/mysecureshell
INSTALL

$install_mss_dev = <<INSTALL
apt-get update
#install git
apt-get -y install git
#get the sources
if [ -f /vagrant/id_rsa ] ; then
    git clone git@github.com:mysecureshell/mysecureshell.git
else
    git clone https://github.com/mysecureshell/mysecureshell.git
```

```
fi
chown -Rf vagrant. mysecureshell
#install C dependencies
apt-get -y install libacl1-dev libgnutls-dev gcc make
#install packaging dependencies
apt-get -i install build-essential fakeroot lintian devscripts debhelper ubuntu-dev-
↪tools cowbuilder
#install Sphinxdoc dependencies
apt-get -y install sphinx-doc sphinx-common python3-sphinx libjs-sphinxdoc python-pip␣
↪\
texlive-latex-base texlive-latex-recommended texlive-latex-extra texlive-fonts-
↪recommended
#install sphinxdoc theme
pip install sphinx_rtd_theme
INSTALL

Vagrant.configure(VAGRANTFILE_API_VERSION) do |config|
  config.vm.box = "deimosfr/debian-wheezy"
  config.vm.network "forwarded_port", guest: 22, host: 22222
  config.vm.network "private_network", ip: "192.168.33.10"
  config.vm.network "public_network"
  config.vm.provider "virtualbox" do |v|
        v.memory = 768
        v.cpus = 2
  end
  config.vm.provision "shell", inline: $install_mss
  # Uncomment if you want to install all dev dependancies (to contribute for example)
  #config.vm.provision "shell", inline: $install_mss_dev
end
```

2.2.3 Boot the Virtual Machine

As you can see, several network interfaces are available for your tests and an installation part will install MySecureShell with a dedicated user. You can now boot the Virtual Machine:

```
$ vagrant up
==> default: Forcing shutdown of VM...
==> default: Destroying VM and associated drives...
==> default: Running cleanup tasks for 'shell' provisioner...
Bringing machine 'default' up with 'virtualbox' provider...
==> default: Importing base box 'deimosfr/debian-wheezy'...
==> default: Matching MAC address for NAT networking...
...
==> default: Server is now online.
==> default: Starting SFTP Server:
==> default: MySecureShell is now online
```

2.2.4 Connect and test

MySecureShell is now ready to serve! From your host machine, you can connect with user *mssuser* and *mssuser* for the password:

```
$ sftp mssuser@192.168.33.10
mssuser@192.168.33.10's password:
```

```
Connected to 192.168.33.10.
sftp> ls
sftp> pwd
Remote working directory: /
```

In parallel, connect from your host machine to the Virtual Machine and see the current connected user with *sftp-who* command:

```
$ vagrant ssh
$ sudo sftp-who
--- 1 / 10 clients ---
Global used bandwith : 0 bytes/s / 0 bytes/s
PID: 3389   Name: mssuser   IP:
    Home: /home/mssuser
    Status: idle    Path: /
    File:
    Connected: 2014/08/19 15:38:27 [since 10s]
    Speed: Download: 0 bytes/s [5.00 kbytes/s]  Upload: 0 bytes/s [unlimited]
    Total: Download: 1398 bytes   Upload: 141 bytes
```

You can see the connected user :-). You can try to upload files to see the result. Of course you can use graphical clients. And if you want to play with the server configuration, look at `/etc/ssh/sftp_config`.

2.2.5 Update configuration file

First we recommend you to read the *configuration* part of the documentation. When you're ready, you can connect on the Virtual Machine:

```
$ vagrant ssh
```

Then you're able to edit the configuration file (*/etc/ssh/sftp_config*).

CHAPTER 3

Installation

There are several ways to install MySecureShell. The simplest solution is to use binary packaged version. However if MySecureShell is not packaged for your Operating System or distribution, you can compile the source and use a shell script installer.

Choose your operating system or select from sources if not listed:

3.1 CentOS/RedHat installation

Topics

3.1.1 Dedicated MySecureShell repository

If you want to use the latest version of MySecureShell, the simplest way is to use the official dedicated repository.

CentOS 6

First, add the repository lines in */etc/yum.repos.d/mysecureshell.repo*:

```
> echo "[mysecureshell]
name=MySecureShell
baseurl=http://mysecureshell.free.fr/repository/index.php/centos/6.4/
enabled=1
gpgcheck=0" > /etc/yum.repos.d/mysecureshell.repo
```

You're now ready to install MySecureShell:

```
> yum install mysecureshell
```

CentOS 5

First, add the repository lines in */etc/yum.repos.d/mysecureshell.repo*:

```
> echo "[mysecureshell]
name=MySecureShell
baseurl=http://mysecureshell.free.fr/repository/index.php/centos/5.5/
enabled=1
gpgcheck=0" > /etc/yum.repos.d/mysecureshell.repo
```

You're now ready to install MySecureShell:

```
> yum install mysecureshell
```

3.2 Debian installation

Topics

3.2.1 Dedicated MySecureShell repository

If you want to use the latest version of MySecureShell, the simplest way is to use the official dedicated repository.

Debian 8 (Jessie)

MySecureShell is available by default in Debian Jessie. To install it:

```
> apt-get update
> apt-get install mysecureshell
```

To enable all features, you'll have to set a setuid on the `mysecureshell` binary:

```
> chmod 4755 /usr/bin/mysecureshell
```

Debian 7 (Wheezy)

First, add the repository lines in */etc/apt/sources.list.d/mysecureshell.list*:

```
> echo "deb http://mysecureshell.free.fr/repository/index.php/debian/7.1 testing main
deb-src http://mysecureshell.free.fr/repository/index.php/debian/7.1 testing main" > /
↪etc/apt/sources.list.d/mysecureshell.list
```

Then import the GPG repository key:

```
> gpg --keyserver hkp://pool.sks-keyservers.net --recv-keys E328F22B
> gpg --export E328F22B | apt-key add -
```

You're now ready to install MySecureShell:

```
> apt-get update
> apt-get install mysecureshell
```

Debian 6 (Squeeze)

First, add the repository lines in */etc/apt/sources.list.d/mysecureshell.list*:

```
> echo "deb http://mysecureshell.free.fr/repository/index.php/debian/6.0 testing main
deb-src http://mysecureshell.free.fr/repository/index.php/debian/6.0 testing main" > /
↪etc/apt/sources.list.d/mysecureshell.list
```

Then import the GPG repository key:

```
> gpg --keyserver hkp://pool.sks-keyservers.net --recv-keys E328F22B
> gpg --export E328F22B | apt-key add -
```

You're now ready to install MySecureShell:

```
> apt-get update
> apt-get install mysecureshell
```

3.3 Fedora installation

Topics

3.3.1 Dedicated MySecureShell repository

If you want to use the latest version of MySecureShell, the simplest way is to use the official dedicated repository.

Fedora 19

First, add the repository lines in */etc/yum.repos.d/mysecureshell.repo*:

```
> echo "[mysecureshell]
name=MySecureShell
baseurl=http://mysecureshell.free.fr/repository/index.php/fedora/19/
enabled=1
gpgcheck=0" > /etc/yum.repos.d/mysecureshell.repo
```

You're now ready to install MySecureShell:

```
> yum install mysecureshell
```

Fedora 17

First, add the repository lines in */etc/yum.repos.d/mysecureshell.repo*:

```
> echo "[mysecureshell]
name=MySecureShell
baseurl=http://mysecureshell.free.fr/repository/index.php/fedora/17/
enabled=1
gpgcheck=0" > /etc/yum.repos.d/mysecureshell.repo
```

You're now ready to install MySecureShell:

```
> yum install mysecureshell
```

3.4 Mac OS X installation

Topics

3.4.1 Dedicated MySecureShell repository

If you want to use the latest version of MySecureShell, the simplest way is to use brew tool.

First, install brew:

```
> ruby -e "$(curl -fsSL https://raw.github.com/Homebrew/homebrew/go/install)"
```

You're now ready to install MySecureShell:

```
> brew install mysecureshell
```

3.5 Ubuntu installation

Topics

3.5.1 Dedicated MySecureShell repository

If you want to use the latest version of MySecureShell, the simplest way is to use the official dedicated repository.

Ubuntu 12.04

First import the GPG repository key:

```
> apt-key adv --keyserver pool.sks-keyservers.net --recv-keys E328F22B
```

Then, add the MySecureShell repository lines:

```
> add-apt-repository 'deb http://mysecureshell.free.fr/repository/index.php/ubuntu/12.
↪04 testing main'
```

You're now ready to install MySecureShell:

```
> apt-get update
> apt-get install mysecureshell
```

Ubuntu 10.10

First import the GPG repository key:

```
> apt-key adv --keyserver pool.sks-keyservers.net --recv-keys E328F22B
```

Then, add the MySecureShell repository lines:

```
> add-apt-repository 'deb http://mysecureshell.free.fr/repository/index.php/ubuntu/10.
↪10 testing main'
```

You're now ready to install MySecureShell:

```
> apt-get update
> apt-get install mysecureshell
```

3.6 From sources installation

This method is generally used because you need need to build the latest version from VCS repository, need to make pull request for patching purpose or because it is not packaged on your Operating System.

The first thing to do is to get the sources and you will need git for that:

```
$ git clone https://github.com/mysecureshell/mysecureshell
$ cd mysecureshell
```

Then prepare the sources with the configure command:

```
$ ./configure --with-logcolor=yes
```

If everyhtings went fine, you should have something like this:

```
MySecureShell has been configured with the following options:
Log file: /var/log/sftp-server.log (color: yes)
User binaries: /usr/bin
Shutdown file: /etc/sftp.shut
Configuration file: /etc/ssh/sftp_config

Supported:
Remote Admin : yes
UTF-8 Encoding : yes
```

You can now launch the compilation:

```
$ make all
```

And finally install it (with root user):

```
> make install
```

CHAPTER 4

Configuration

To configure MySecureShell, you need to edit the */etc/ssh/sftp_config* file. By default MySecureShell comes with a commented example configuration. This may not match all your needs and you will need to modify it to get it working as expected.

Here are documentations to help you to quickly have an overview of the configuration files and a complete list with examples:

4.1 Overview

Topics

To configure MySecureShell, you need to edit the */etc/ssh/sftp_config* file. By default MySecureShell comes with a commented example configuration. This may not match all your needs and you will need to modify it to get it working as expected.

The configuration is made with 2 importants kinds of tags:

- Parent tags (level 1): defining a global context
- Child tags (level 2): defining a specific option for the parent tag

Configuration files should looks like this:

```
<ParentTag [parameter]>
    ChildTag    value
</Parent>
```

4.1.1 Parent tags

Tags	Values	Summary
Default	None	Default values will be applyed for all other parents tags
FileSpec	filter name	Allow to create filter on files
Group	group name	Allow a group
IpRange	IP/CIDR	Allow a set of range IP address
User	user name	Allow a user
VirtualHost	FQDN	Allow a VirtualHost

4.1.2 Child tags

Tags	Values	Summary
ByPassGlobalDownload	false/true	Bypassing GlobalDownload value
ByPassGlobalUpload	false/true	Bypassing GlobalUpload value
CanChangeRights	false/true	Allow to change rights on files and directories
CanChangeTime	false/true	Allow to change access and creation time on files and directories
Charset	<charset>	Enable special charset compatibility
ConnectionMaxLife	<unix rights>	Limit maximum connection time in seconds
CreateHome	false/true	Create home user’s directory if it doesn’t exist
DefaultRights	<unix rights>	Set default rights on new files and folders created
DirFakeGroup	false/true	Substitute shown group owner name of files and directories, by the name of the conn
DirFakeMode	xxxx	Substitute shown rights of files and directories, by those ones
DirFakeUser	false/true	Substitute shown user owner name of files and directories, by the name of the connec
DisableAccount	false/true	Quickly disable an account
DisableMakeDir	false/true	Disable new directories creation
DisableOverwrite	false/true	Disable file’s overwriting
DisableReadDir	false/true	Disable reading directories
DisableReadFile	false/true	Disable reading files
DisableRemoveDir	false/true	Disable removing directories
DisableRemoveFile	false/true	Disable removing files
DisableRename	false/true	Disable renaming files and directories
DisableSetAttribute	false/true	Disable changing attributes on files and directories
DisableSymLink	false/true	Disable creating symbolic link
DisableWriteFile	false/true	Disable writing files
Download	<integer><units>	Download bandwidth by connected user
ExpireDate	<date>	Expiration date
ForceGroup	<groupname>	Force group assignment for connected user
ForceRights	<unix rights>	Force rights assignment for connected user
ForceUser	user	Force user assignment for connected user
GlobalDownload	<integer><units>	Maximum allowed bandwidth in download for the server
GlobalUpload	<integer><units>	Maximum allowed bandwidth in upload for the server
HideNoAccess	false/true	Hide not allowed permissions files and directories

Continued on n

Table 4.1 – continued from previous page

Tags	Values	Summary
Home	<path>	Change home of users.
IdleTimeOut	<integer>	Inactivity timeout before deconnection in seconds
IgnoreHidden	false/true	Show hidden files and directories (starting with a dot)
Include	<path>	Include another configuration file
IsAdmin	false/true	Allow to be administrator
IsSimpleAdmin	false/true	Allow to be administrator (less righs than IsAdmin tag)
LimitConnection	<integer>	Limit the number of simultaneous connections
LimitConnectionByIp	<integer>	Limit the number of simultaneous connections by IP
LimitConnectionByUser	<integer>	Limit the number of simultaneous connections by user
LogFile	<path>	Allows to change the file of log
LogSyslog	false/true	Write log to syslog
MaxOpenFilesForUser	<integer>	Limit maximum opening files simultaneously
MaxReadFilesForUser	<integer>	Limit maximum reading files simultaneously
MaxWriteFilesForUser	<integer>	Limit maximum writing files simultaneously
MaximumRights	<unix rights>	Set a maximum rights on new files and folders created (unix rights format)
MinimumRights	<unix rights>	Force minimum rights for new files and new directories (unix rights format)
ResolveIP	false/true	Resolve IP address from DNS
SftpProtocol	<integer>	Force the SFTP protocol version
Shell	<path>	Specify a Shell path to allow users to have a real shell
ShowLinksAsLinks	false/true	See symbolic links as true files or folders
StayAtHome	false/true	Restrict user to stay in its home directory and subdirectories
Upload	x(units)	Upload bandwidth by connected user
VirtualChroot	false/true	Chroot users in their Home directory
CallbackDownload	<shell command>	Call a command when download completes
CallbackUpload	<shell command>	Call a command when upload completes

4.1.3 Deprecated tags

Those tags are deprecated and don't work anymore!

Tags	Values	Summary
CanRemoveDir	false/true	Allow to remove directories
CanRemoveFile	false/true	Allow to remove files
GMTTime	<+/-><integer>	Adjusts the clock of the log
HideFiles	<regex>	Hide files / directories that you want using a regular expression (regex)
PathAllowFilter	<regex>	Restricted access to files / directories using regular expression (regex)
PathDenyFilter	<path>	Do not authorize files/directories which match with the regular expression

4.2 Detailed description

4.2.1 Parent tags

Default

Synopsis

Default tag is mandatory to apply a default configuration to all others parents' tags and. It is also used if you want to apply a configuration for all of your users, even if you do not declare other parent tags.

Options

Name	Default	Values	Since version	Context
Default	null	null	0.4	Mandatory

Examples

Here is a Default tag defined with an Upload limit set to 100k:

```
<Default>
    Upload 100k
</Default>
```

FileSpec

Synopsis

FileSpec is made to create filters on files and directories. You need to create a parent rule with a dedicated and unique name and apply it as a child tag in any other parent tag.

Options

Name	Default	Values	Since version	Context
FileSpec	null	name	1.30	Filters for any parent tags

Examples

In this example, we created a FileSpec called AllowedExtensions which deny accessing to files with *.exe* or *.sh* extensions:

```
<FileSpec AllowedExtensions>
    # Only check against filenames/folder names only
    UseFullPath false

    # we can use multiple deny/allow directives for clarity
    Order DenyAllow
    Deny ".*.exe$"
    Deny ".*.sh$"
    Allow all
</FileSpec>
```

As the second example, we want to force users to only have access to data and home directories. For that we're using regex:

```
<FileSpec OnlyDataAndHome>
    # Here, we check against the full absolute path
    # instead of just the filename or foldername
    UseFullPath true

    # We define the order in which paths are evaluated
    Order AllowDeny

    # Allow any full path that starts with /data or /home
    Allow "^/(data|home)"
    Deny all
</FileSpec>
```

To finish, we want to apply those filters in the default configuration:

```
<Default>
    ApplyFileSpec OnlyDataAndHome,AllowedExtensions
</Default>
```

As you seen, you can add with a separated comma multiple *FileSpec* filters at once.

Group

Synopsis

Group tag is made to add restrictions to a complet set of users defined by a UNIX group. This group has (like users) to be available from your server (PAM, LDAP. . .).

Options

Name	Default	Values	Since version	Context
Group	null	name	0.1	Override default settings

Examples

For example, you can have limited the download speed for all of your users. However, you need your administratorusers in the admins group, to have a better download bandwidth:

```
<Default>
    home /home
    # max download speed for the server
    GlobalDownload  200M
    # max download speed for all parent tags
    Download        5M
</Default>

<Group admins>
    Download        10M
</Group>
```

Here all users, will have a maximum of 5M bandwidth and administrators in the admins groups will have up to 10M bandwidth.

IpRange

Synopsis

With IpRange, you can define limitations to an IP address or a range of IP adresses.

Options

Name	Default	Values	Since version	Context
IpRange	null	IP/CIDR-IP/CIDR	0.4	Override default settings
		IP/CIDR		

Examples

In the first example, you may want to change download speed if users are coming from your local network, so you're adding your range of IPs:

```
<Default>
    GlobalDownload  500M
    Download        100M
</Default>

<IpRange 192.168.0.100/24-192.168.0.200/24>
    Download        300M
</IpRange>
```

Here, my external users have 100M maximum download bandwith and my local users are limited to 300M. If you now want to have a super user with unrestricted speed, you do it like that:

```
<IpRange 192.168.0.1/24>
    Download        0
</IpRange>
```

This IP address won't be limited and will have the maximum bandwidth.

User

Synopsis

User's tag can only affects one user.

Options

Name	Default	Values	Since version	Context
User	null	name	0.1	Override default settings

Examples

In this example, you will see how to give to a user specific rights:

```
<Default>
    Home /home/$USER
</Default>

<User admin>
    Home /home/
</User>
```

You can see here all users will have their home in `/home/$USER` while admin user will have his home directory in `/home`.

VirtualHost

Synopsis

Like web servers, you can define limitations depending on the virtualhost name you're targetting.

Options

Name	Default	Values	Since version	Context
VirtualHost	null	name:port	0.6	Override default settings

Examples

In this example you will see how to change a home directory depending on the used VirtualHost:

```
<Default>
    home /home
</Default>

<VirtualHost en.mysite.com:22>
    home /home/en.mysite.com
</VirtualHost>

<VirtualHost fr.mysite.com:22>
    home /home/fr.mysite.com
</VirtualHost>
```

If you try to connect on fr.mysite.com, you will be redirected to `/home/fr.mysite.com` folder.

4.2.2 Child tags

ByPassGlobalDownload

Synopsis

This tag is made to override the GlobalDownload tag.

Options

Name	Default	Values	Since version	Context
ByPassGlobalDownload	false	false	0.5	Default,Group,IpRange,User,VirtualHost
		true		

Examples

In this example, the user admin won't be limited by the GlobalDownload limitation set on the default tag:

```
<Default>
    home /home
    GlobalDownload 100k
</Default>

<User admin>
    ByPassGlobalDownload true
</User>
```

Admin user will have full download speed here.

ByPassGlobalUpload

Synopsis

This tag is made to override the GlobalUpload tag.

Options

Name	Default	Values	Since version	Context
ByPassGlobalUpload	false	false	0.5	Default,Group,IpRange,User,VirtualHost
		true		

Examples

In this example, the user admin won't be limited by the GlobalUpload limitation set on the default tag:

```
<Default>
    home /home
    GlobalUpload 100k
</Default>

<User admin>
    ByPassGlobalUpload true
</User>
```

Admin user will have full upload speed.

CallbackDownload

Synopsis

This tag allows calling custom shell command on the server when user succesfully downloads a file. Working directory is not changed. Usual environment variables can be used from the command, such as USER, HOME, SSH_CONNECTION; path of the file is kept in LAST_FILE_PATH. Shell command result is written to log.

Options

Name	Default	Values	Since version	Context
CallbackDownload	null	shell cmd	2.1	Default,Group,IpRange,User,VirtualHost

Examples

Here, we use "env" system call to output environment variables in the log::

<Default> CallbackDownload "env"

</Default>

And this would call custom script::

<Default> CallbackDownload "/bin/my-script.sh $LAST_FILE_PATH"

</Default>

CallbackUpload

Synopsis

This tag allows calling custom shell command on the server when user succesfully uploads a file. Working directory is not changed. Usual environment variables can be used from the command, such as USER, HOME, SSH_CONNECTION; path of the file is kept in LAST_FILE_PATH. Shell command result is written to log.

Options

Name	Default	Values	Since version	Context
CallbackUpload	null	shell cmd	2.1	Default,Group,IpRange,User,VirtualHost

Examples

Here, we use “env” system call to output environment variables in the log::

> **<Default>** CallbackUpload “env”
>
> </Default>

And this would call custom script::

> **<Default>** CallbackUpload “/bin/my-script.sh $LAST_FILE_PATH”
>
> </Default>

CanChangeRights

Synopsis

If enabled, a user or set of users, won’t be able to change permissions on files and directories.

Options

Name	Default	Values	Since version	Context
CanChangeRights	true	false	1.1	Default,Group,IpRange,User,VirtualHost
		true		

Examples

Here, only users in the admins group are able to make changes on files and directories:

```
<Default>
    CanChangeRights false
</Default>

<Group admins>
    CanChangeRights true
</Group>
```

CanChangeTime

Synopsis

If enabled, a user or set of users, won’t be able to change timestamps on files and directories.

Options

Name	Default	Values	Since version	Context
CanChangeTime	true	false	1.1	Default,Group,IpRange,User,VirtualHost
		true		

Examples

Here, only users in the admins group are able to make changes on files and directories:

```
<Default>
    CanChangeTime false
</Default>

<Group admins>
    CanChangeTime true
</Group>
```

Charset

Synopsis

To enable special characters with accents or non latin characters, you have to define this tag.

Options

Name	Default	Values	Since version	Context
Charset	null	United States	0.8	Default
		ISO-8859-1		
		ISO-8859-2		
		ISO-8859-3		
		ISO-8859-4		
		ISO-8859-5		
		ISO-8859-6		
		ISO-8859-7		
		ISO-8859-9		
		ISO-8859-13		
		ISO-8859-15		
		KOI8-R		
		KOI8-U/RU		
		UTF8		

Examples

Here we’re going to change the charset to a common one:

```
<Default>
    Charset "UTF8"
</Default>
```

Here, we’re using UTF8 charset.

ConnectionMaxLife

Synopsis

Limit the sessions' connection time. By default the value is 0 which means unlimited, there is no deconnection at all, but you can force users to be disconnected. The default unit value is second, but you can change it by adding a suffix to the value (s: seconds, m: minutes, etc…).

Options

Name	Default	Values	Since version	Context
ConnectionMaxLife	0	integer	0.61	Default,Group,IpRange,User,VirtualHost

Examples

Here is a basic example where the maximum connection time is 24h, the group admin is unlimited and managers groups inherits of the default settings

```
<Default>
    Home /home
    ConnectionMaxLife 24h
</Default>

<Group admins>
    ConnectionMaxLife 0
</User>

<Group managers>
    Home /home/managers
</User>
```

CreateHome

Synopsis

Create user's home directory if it doesn't exists.

Options

Name	Default	Values	Since version	Context
CreateHome	false	false	1.20	Default,Group,IpRange,User,VirtualHost
		true		

Examples

In this example, we want home directory to be created for each users:

```
<Default>
    Home /home
    CreateHome true
</Default>
```

DefaultRights

Synopsis

Set default rights on new created (or uploaded) files and folders. You have to set UNIX numeric notation permissions for files and folders.

Options

Name	Default	Values	Since version	Context
DefaultRights	file and folder rights	XXXX YYYY	0.3	Default,Group,IpRange,User,VirtualHost

- XXXX: numeric files rights
- YYYY: numeric folders rights

Examples

In this example, default options are set to give full rights to any new files and folders (0777). But we want to be sure that secret groups keeps their files and folders owned by themselfs:

```
<Default>
    Home /home
    DefaultRights 0777 0777
</Default>

<Group secret>
    Home /home/secret
    DefaultRights 0700 0700
</User>
```

DirFakeGroup

Synopsis

This tag fakes the group owner by visually changing the real group name of files and folders by the group of the connected user. This can be used for security reasons when you don't want connected users to see real permissions.

Options

Name	Default	Values	Since version	Context
DirFakeGroup	false	false	0.1	Default,Group,IpRange,User,VirtualHost
		true		

Examples

Here we want to hide all users the files and folders real groups, but not for the admin user:

```
<Default>
    Home /home
    DirFakeGroup true
</Default>

<User admin>
    DirFakeGroup false
</User>
```

DirFakeMode

Synopsis

This tag fakes the global permissions by visually changing the real rights of files and folders by the defined ones. This can be used for security reasons when you don't want connected users to see real permissions.

Options

Name	Default	Values	Since version	Context
DirFakeMode	false	false	0.1	Default,Group,IpRange,User,VirtualHost
		true		

Examples

Here we want to hide all public users (by using the public group) the files and folders:

```
<Default>
    Home /home
</Default>

<Group public>
    DirFakeMode 0777
</Group>
```

DirFakeUser

Synopsis

This tag fakes the user owner by visually changing the real user name of files and folders by the user name of the connected user. This can be used for security reasons when you don't want connected users to see real permissions.

Options

Name	Default	Values	Since version	Context
DirFakeUser	false	false	0.1	Default,Group,IpRange,User,VirtualHost
		true		

Examples

Here we want to hide to all users, the files and folders real owner name, but not for the admin user:

```
<Default>
    Home /home
    DirFakeUser true
</Default>

<User admin>
    DirFakeUser false
</User>
```

DisableAccount

Synopsis

Here is an easy way to disable accounts for a user or a set of users. This can be useful if you need to disable accounts quickly. **Only new connections will be deny, current open ones won't be automatically closed**.

Options

Name	Default	Values	Since version	Context
DisableAccount	false	false	0.7	Default,Group,IpRange,User,VirtualHost
		true		

Examples

In this example, we disable a set of users by disabling the group accounts:

```
<Default>
    Home /home
</Default>
```

```
<Group users>
    DisableAccount false
</User>
```

DisableMakeDir

Synopsis

This tag, deny to the connected user to create folders.

Options

Name	Default	Values	Since version	Context
DisableMakeDir	false	false	1.20	Default,Group,IpRange,User,VirtualHost
		true		

Examples

In this example, we deny to users in the users group to create directories:

```
<Default>
    Home /home
</Default>

<Group users>
    DisableMakeDir true
</User>
```

DisableOverwrite

Synopsis

This tag, deny to the connected user to overwrite onto an existing file.

Options

Name	Default	Values	Since version	Context
DisableOverwrite	false	false	1.20	Default,Group,IpRange,User,VirtualHost
		true		

Examples

In this example, we deny to users in the users group to overwrite existing files:

```
<Default>
    Home /home
</Default>

<Group users>
    DisableOverwrite true
</User>
```

DisableReadDir

Synopsis

This tag, deny to the connected user to read folders content.

Options

Name	Default	Values	Since version	Context
DisableReadDir	false	false	1.20	Default,Group,IpRange,User,VirtualHost
		true		

Examples

In this example, we deny to users in the users group to read directories content:

```
<Default>
    Home /home
</Default>

<Group users>
    DisableReadDir true
</User>
```

DisableReadFile

Synopsis

This tag, deny to the connected user to read files content.

Options

Name	Default	Values	Since version	Context
DisableReadFile	false	false	1.20	Default,Group,IpRange,User,VirtualHost
		true		

Examples

In this example, we deny to users in the users group to read files content:

```
<Default>
    Home /home
</Default>

<Group users>
    DisableReadFile true
</User>
```

DisableRemoveDir

Synopsis

This tag, deny to the connected user to remove directories.

Options

Name	Default	Values	Since version	Context
DisableRemoveDir	false	false	1.20	Default,Group,IpRange,User,VirtualHost
		true		

Examples

In this example, we deny to users in the users group to remove directories:

```
<Default>
    Home /home
</Default>

<Group users>
    DisableRemoveDir true
</User>
```

DisableRemoveFile

Synopsis

This tag, deny to the connected user to remove files.

Options

Name	Default	Values	Since version	Context
DisableRemoveFile	false	false	1.20	Default,Group,IpRange,User,VirtualHost
		true		

Examples

In this example, we deny to users in the users group to remove files:

```
<Default>
    Home /home
</Default>

<Group users>
    DisableRemoveFile true
</User>
```

DisableRename

Synopsis

This tag, deny to the connected user to rename files or folders.

Options

Name	Default	Values	Since version	Context
DisableRename	false	false	1.20	Default,Group,IpRange,User,VirtualHost
		true		

Examples

In this example, we deny to users in the users group to rename files and folders:

```
<Default>
    Home /home
</Default>

<Group users>
    DisableRename true
</User>
```

DisableSetAttribute

Synopsis

This tag, deny to the connected user to change the current files or folders attributes.

Options

Name	Default	Values	Since version	Context
DisableSetAttribute	false	false	1.20	Default,Group,IpRange,User,VirtualHost
	true			

Examples

In this example, we deny to users in the users group to modify files and folders attributes:

```
<Default>
    Home /home
</Default>

<Group users>
    DisableSetAttribute true
</User>
```

DisableSymLink

Synopsis

This tag, deny to the connected user to create symbolic links from files or folders.

Options

Name	Default	Values	Since version	Context
DisableSymLink	false	false	1.20	Default,Group,IpRange,User,VirtualHost
		true		

Examples

In this example, we deny to users in the users group to create symlinks:

```
<Default>
    Home /home
</Default>

<Group users>
    DisableSymLink true
</User>
```

DisableWriteFile

Synopsis

This tag, deny to the connected user to write files.

Options

Name	Default	Values	Since version	Context
DisableWriteFile	false	false	1.20	Default,Group,IpRange,User,VirtualHost
		true		

Examples

In this example, we deny to users in the users group to write files:

```
<Default>
    Home /home
</Default>

<Group users>
    DisableWriteFile true
</User>
```

Download

Synopsis

Download tag allows to limit the maximum download bandwidth per connected users.

Options

Name	Default	Values	Since version	Context
Download	0 (unlimited)	integer	0.1	Default,Group,IpRange,User,VirtualHost

Examples

In this example, all users will be able to download up to a 100k maximum bandwith, while admin users will have 900k at maximum:

```
<Default>
    Home /home
    Download 100k
</Default>

<User admin>
    Home /home
    Download 900k
</User>
```

ExpireDate

Synopsis

This tag permit to set an expiration date time on a parent tag, which means users won't be allowed to connecte after the defined date and time. The date and time should be in strftime format (man 3 strftime). You can test date format using date command:

```
$ echo $(date '+%Y-%m-%d %H:%M:%S')
2014-08-15 15:21:19
```

Options

Name	Default	Values	Since version	Context
ExpireDate	null (unlimited)	%Y-%m-%d %H:%M:%S	1.0	Default,Group,IpRange,User,VirtualHost

Examples

In this example, we want to set a group of users expiration:

```
<Default>
    Home /home
</Default>

<Group users>
    ExpireDate "2015-12-25 00:00:00"
</User>
```

The users group will expire on 25 december 2015 at midnight.

ForceGroup

Synopsis

You can force the group of the connected user. That mean when a user will connect, even if his group is not the desired one, it will force this group to be used when a file or folder are created.

Options

Name	Default	Values	Since version	Context
ForceGroup	null	group name	1.20	Default,Group,IpRange,User,VirtualHost

Examples

In this example, we want to force the group sftp to be used by a *user*:

```
<Default>
    Home /home
</Default>

<User username>
    ForceGroup sftp
</User>
```

The *sftp* group will be used when the user *username* will create a file or a folder.

ForceRights

Synopsis

You can force the default permissions when a connected user create files and folders. That mean when a user will connect, when files or folders are created, the default specified rights will be applyed.

Options

Name	Default	Values	Since version	Context
ForceRights	null	XXXX YYYY	1.20	Default,Group,IpRange,User,VirtualHost

- XXXX: numeric files rights
- YYYY: numeric folders rights

Examples

You can force files and folders permissions like this:

```
<Default>
    Home /home
</Default>

<User username>
    ForceRights 0640 0750
</User>
```

Here the user *username* will be forced to create 0640 files rights and 0750 folders rights.

ForceUser

Synopsis

You can force the usage of a username for the connected user. That mean when a user will connect, even if his username is not the desired one, it will force this group to be used when a file or folder are created. This allows multiple accounts to access the same account but each one with its own password.

Options

Name	Default	Values	Since version	Context
ForceUser	null	group name	1.20	Default,Group,IpRange,User,VirtualHost

Examples

In this example, we want to force the user *sftp_user* to be used by a *username* user:

```
<Default>
    Home /home
</Default>

<User username>
    ForceUser sftp_user
</User>
```

The *sftp_user* user will be used when the user *username* will create a file or a folder.

GlobalDownload

Synopsis

Global Download tag allows to limit the maximum download bandwidth for the overall server.

Options

Name	Default	Values	Since version	Context
GlobalDownload	0 (unlimited)	integer	0.1	Default

Examples

In this example, all users will be able to download up to a 100k maximum bandwith and the total maximum bandwidth allowed for the server is 1M:

```
<Default>
    Home /home
    GlobalDownload 1M
    Download 100k
</Default>
```

GlobalUpload

Synopsis

Global Upload tag allows to limit the maximum upload bandwidth for the overall server.

Options

Name	Default	Values	Since version	Context
GlobalUpload	0 (unlimited)	integer	0.1	Default

Examples

In this example, all users will be able to upload up to a 100k maximum bandwith and the total maximum upload bandwidth allowed for the server is 1M:

```
<Default>
    Home /home
    GlobalUpload 1M
    Upload 100k
</Default>
```

HideNoAccess

Synopsis

This tags hides files and folders denied from the connected user.

Options

Name	Default	Values	Since version	Context
HideNoAccess	false	false	0.3	Default,Group,IpRange,User,VirtualHost
		true		

Examples

If you want to automatically hide unauthorized files and folders:

```
<Default>
    home /home
    HideNoAccess true
</Default>
```

Home

Synopsis

This directive force the home directory of a connected user.

Options

Name	Default	Values	Since version	Context
Home	$HOME	home directory	0.1	Default,Group,IpRange,User,VirtualHost

Examples

You can define the default home directory or make a specific home directory like this:

```
<Default>
    Home /home/$USER
</Default>

<Group secret>
    Home /mnt/nfs/secret/$USER
</Group>

<User admin>
    Home /
</User>
```

Here all users will have their home directory in `/home/<username>`, but members of the *secret* group will have their home directory in `/mnt/nfs/secret/<username>`. To finish, admin user have access to the root directory.

IdleTimeOut

Synopsis

This tag disconnects users when the maximum idle time has been reached. The default unit value is second, but you can change it by adding a suffix to the value (s: seconds, m: minutes, etc…).

Options

Name	Default	Values	Since version	Context
IdleTimeOut	0 (unlimited)	integer	0.1	Default,Group,IpRange,User,VirtualHost

Examples

If you want to free connections for idle users after a certain amount of time, you can set an idle timeout value like this:

```
<Default>
    Home /home
    IdleTimeOut 5m
</Default>
```

IgnoreHidden

Synopsis

Hide or not hidden files or folders (starting with a dot).

Options

Name	Default	Values	Since version	Context
IgnoreHidden	false	false	0.1	Default,Group,IpRange,User,VirtualHost
		true		

Examples

If you want to hide all files and folders starting with a dot file (eg: *.DsStore*):

```
<Default>
    Home /home
    IgnoreHidden true
</Default>
```

Include

Synopsis

With Include tag, you can have additional MySecureShell configuration files to help you to reorganize it if it's becomes to big.

Options

Name	Default	Values	Since version	Context
Include	null	path	0.3	Default,Group,IpRange,User,VirtualHost

Examples

To add a new file in the default configuration:

```
<Default>
    Home /home
    Include /etc/ssh/mysecureshell/my_sftp_config_file
</Default>
```

And then, in `/etc/ssh/mysecureshell/my_sftp_config_file` file, you can add configuration content.

IsAdmin

Synopsis

IsAdmin tag grants to a user or a set of users, admins permissions. That means they can administrate MySecureShell throught `sftp-admin` CLI or with MySecureShell GUI.

Options

Name	Default	Values	Since version	Context
IsAdmin	false	false	0.7	Default,Group,IpRange,User,VirtualHost
		true		

Examples

If you want to grant to *admins* group the administrative rights:

```
<Default>
    Home /home
</Default>

<Group admins>
    IsAdmin true
</Group>
```

IsSimpleAdmin

Synopsis

IsSimpleAdmin tag grants to a user or a set of users, restricted admins permissions. That means they can administrate MySecureShell throught `sftp-admin` CLI or with MySecureShell GUI. This tag is less permissive than *IsAdmin tag*. IsSimpleAdmin permissions are limited to:

- See online users
- Disconnect users
- Start / shutdown MySecureShell server
- See statistics

Options

Name	Default	Values	Since version	Context
IsSimpleAdmin	false	false	1.0	Default,Group,IpRange,User,VirtualHost
		true		

Examples

If you want to grant to *simpleadmins* group the administrative rights:

```
<Default>
    Home /home
</Default>

<Group simpleadmins>
```

```
    IsSimpleAdmin true
</Group>
```

LimitConnection

Synopsis

You can limit the number of maximum simultaneous connections.

Options

Name	Default	Values	Since version	Context
LimitConnection	0 (unlimited)	integer	0.1	Default,Group,IpRange,User,VirtualHost

Examples

Here we want to limit the total maximum connections to 8. However the users members of the *payment* group doesn't have permission to have more than 4 simultaneous connections:

```
<Default>
    Home /home
    LimitConnection 8
</Default>

<Group payment>
    LimitConnection 4
<Group>
```

LimitConnectionByIp

Synopsis

You can limit the number of maximum simultaneous connections per incoming IP address.

Options

Name	Default	Values	Since version	Context
LimitConnectionByIp	0 (unlimited)	integer	0.1	Default,Group,IpRange,User,VirtualHost

Examples

Here we want to limit the total maximum connections to 8. However per connections IP address, it is restricted to 1 connection:

```
<Default>
    Home                /home
    LimitConnection     8
    LimitConnectionByIp 1
</Default>
```

LimitConnectionByUser

Synopsis

You can limit the number of maximum simultaneous connections per username.

Options

Name	Default	Values	Since version	Context
LimitConnectionByUser	0 (unlimited)	integer	0.1	Default,Group,IpRange,User,VirtualHost

Examples

Here we want to limit the total maximum connections to 8. However per username connections, it is restricted to 1 connection:

```
<Default>
    Home                  /home
    LimitConnection       8
    LimitConnectionByUser 1
</Default>
```

LogFile

Synopsis

This tag allows you can separate log files per parent tags.

Options

Name	Default	Values	Since version	Context
LogFile	/var/log/sftp_server.log	path	0.95	Default,Group,IpRange,User,VirtualHost

Examples

In this example, we separate the default log location and a virtual host log location:

```
<Default>
    LogFile /var/log/sftp_server.log
</Default>

<VirtualHost www.example.com>
    LogFile /var/log/sftp/www.example.com.log
</User>
```

LogSyslog

Synopsis

Write logs to Syslog. If you want to know more on Syslog, you can follow the link.

Options

Name	Default	Values	Since version	Context
LogSyslog	false	false	1.33	Default,Group,IpRange,User,VirtualHost
		true		

Examples

If you want to enable syslog loging:

```
<Default>
    Home      /home
    LogSyslog true
</Default>
```

MinimumRights

Synopsis

Give the minimum allowed rights for new files and folders.

Options

Name	Default	Values	Since version	Context
MinimumRights	null	XXXX YYYY	1.0	Default,Group,IpRange,User,VirtualHost

- XXXX: numeric files rights
- YYYY: numeric folders rights

Examples

In this example, we do not want users to have more than `0644` persissions for files (they won't be able to set executable rights). And we want to restrict new created folders to the owner and the group only:

```
<Default>
    Home /home
    MinimumRights 0644 0770
</Default>
```

MaxOpenFilesForUser

Synopsis

You can limit the number of simultaneous opened files with that tag.

Options

Name	Default	Values	Since version	Context
MaxOpenFilesForUser	0 (unlimited)	integer	0.3	Default,Group,IpRange,User,VirtualHost

Examples

If you want to limit to 5, the number of simultaneous opened files for a user:

```
<Default>
    Home                /home
    MaxOpenFilesForUser 5
</Default>
```

MaxReadFilesForUser

Synopsis

You can limit the number of simultaneous read files with that tag.

Options

Name	Default	Values	Since version	Context
MaxReadFilesForUser	0 (unlimited)	integer	0.3	Default,Group,IpRange,User,VirtualHost

Examples

If you want to limit to 5, the number of simultaneous read files for a user:

```
<Default>
    Home                /home
    MaxReadFilesForUser 5
</Default>
```

MaxWriteFilesForUser

Synopsis

You can limit the number of simultaneous write files with that tag.

Options

Name	Default	Values	Since version	Context
MaxWriteFilesForUser	0 (unlimited)	integer	0.3	Default,Group,IpRange,User,VirtualHost

Examples

If you want to limit to 5, the number of simultaneous write files for a user:

```
<Default>
    Home                 /home
    MaxWriteFilesForUser 5
</Default>
```

MaximumRights

Synopsis

Give the maximum allowed rights for new files and folders.

Options

Name	Default	Values	Since version	Context
MaximumRights	null	XXXX YYYY	1.20	Default,Group,IpRange,User,VirtualHost

- XXXX: numeric files rights
- YYYY: numeric folders rights

Examples

In this example, we do not want users to be able to restrict too much access. So the minimum allowed permissions are `0640` for files. And we want to restrict at minimum to `0750` to new created folders to the owner and the group only:

```
<Default>
    Home /home
    MaximumRights 0640 0750
</Default>
```

ResolveIP

Synopsis

You can have DNS name in your logs instead of IP addresses if you enable ResolveIP tag.

Options

Name	Default	Values	Since version	Context
ResolveIP	false	false	0.3	Default,Group,IpRange,User,VirtualHost
		true		

Examples

Here I want to resolve IP addresses for all connections:

```
<Default>
    Home /home
    ResolveIP true
</Default>
```

SftpProtocol

Synopsis

You can force a specific version of the SFTP protocol to enable or disable some features. To know more about them you can consult those websites:

- http://www.greenend.org.uk/rjk/sftp/sftpversions.html
- http://tools.ietf.org/html/draft-ietf-secsh-filexfer-13

Options

Name	Default	Values	Since version	Context
SftpProtocol	4	integer	0.6	Default,Group,IpRange,User,VirtualHost

Examples

In this example, we want to force *oldclients* group to use SFTP protocol in version 3. All other users will be in version 4 of the protocol:

```
<Default>
    Home          /home
    SftpProtocol 4
</Default>

<Group oldclients>
    SftpProtocol 3
</Group>
```

Shell

Synopsis

By default MySecureShell doesn't allow Shell access on SSH connections. But you may want to give to some users Shell access.

Options

Name	Default	Values	Since version	Context
shell	null	path	0.2	Default,Group,IpRange,User,VirtualHost

Examples

To restrict a *bash* shell to the *admins* group:

```
<Default>
    Home /home
</Default>

<Group admins>
    Shell /bin/bash
</Group>
```

ShowLinksAsLinks

Synopsis

With ShowLinksAsLinks tag, users symbolic links are not seen as symlink but folders or files. If enabled, connected users simply doesn't know if a file or folders are in fact symbolic links or not.

Options

Name	Default	Values	Since version	Context
ShowLinksAsLinks	false	false	0.5	Default,Group,IpRange,User,VirtualHost
	true			

Examples

To avoid users to see if folders and files are symbolic links:

```
<Default>
    Home              /home
    ShowLinksAsLinks true
</Default>
```

StayAtHome

Synopsis

The StayAtHome tag force the user to stay in his home directory. He won't be able to move to a higher hierarchy level. For example, a user getting his home directory in */home/user* won't be able to got to */home* or */* for example.

Options

Name	Default	Values	Since version	Context
StayAtHome	false	false	0.4	Default,Group,IpRange,User,VirtualHost
		true		

Examples

In this example, we want to be sure all users will stay in their home directory with sub directories:

```
<Default>
    Home         /home
    StayAtHome   true
</Default>
```

Upload

Synopsis

Upload tag allows to limit the maximum upload bandwidth per connected users.

Options

Name	Default	Values	Since version	Context
Upload	0 (unlimited)	integer	0.1	Default,Group,IpRange,User,VirtualHost

Examples

In this example, all users will be able to upload up to a 100k maximum bandwith, while admin users will have 900k at maximum:

```
<Default>
    Home    /home
    Upload  100k
</Default>

<User admin>
    Home    /home
    Upload  900k
</User>
```

VirtualChroot

Synopsis

This tag permit to add security to *StayAtHome tag*. It chroot the user in his home directory. So the user won't be able to know on which folder his home directory is located on the server. His home directory will be shown as */*.

Options

Name	Default	Values	Since version	Context
VirtualChroot	false	false	0.1	Default,Group,IpRange,User,VirtualHost
		true		

Examples

In this example, we enabled the *VirtualChroot* for all users:

```
<Default>
    Home          /home
    VirtualChroot true
</Default>
```

4.2.3 Deprecated tags

CanRemoveDir

Note: This tag is no more valid since 1.25 version

Synopsis

To allow users to delete directories, you need to enable this tag. This tag doesn't bypass the default permissions. If you do not have write permissions, you won't be able to remove a directory even is this tag is enable.

Options

Name	Default	Values	Since version	Context
CanRemoveDir	false	false	0.9 -> 1.25	Default,Group,IpRange,User,VirtualHost
		true		

Examples

In this example, we allow admins group to remove folders:

```
<Default>
    CanRemoveDir false
</Default>

<Group admins>
    CanRemoveDir true
</Group>
```

CanRemoveFile

Note: This tag is no more valid since 1.25 version

Synopsis

To allow users to delete files, you need to enable this tag. This tag doesn't bypass the default permissions. If you do not have write permissions, you won't be able to remove a file even is this tag is enable.

Options

Name	Default	Values	Since version	Context
CanRemoveFile	false	false	0.9 -> 1.25	Default,Group,IpRange,User,VirtualHost
		true		

Examples

In this example, we allow admins group to remove files:

```
<Default>
    CanRemoveFile false
</Default>

<Group admins>
    CanRemoveFile true
</Group>
```

GMTTime

Note: This tag is no more valid since 1.25 version

Synopsis

Adjust the clock time in the log file

Options

Name	Default	Values	Since version	Context
Charset	null	x(+,-) y(-12,+12 hour GMT)	0.8 -> 1.25	Default

Examples

In this example, we're changing the GMTTime:

```
<Default>
    Home /home
    GMTTime +1
</Default>
```

HideFiles

Note: This tag is no more valid since 1.25 version

Synopsis

With HideFiles, you can hide files and directories using regular expressions.

Options

Name	Default	Values	Since version	Context
HideFiles	regex	null	1.0 -> 1.25	Default,Group,IpRange,User,VirtualHost

Examples

In this example we are hiding *lost+found* or *public_html* files and folders:

```
<Default>
    Home /home
    HideFiles "^(lost+found|public_html)$"
</Default>
```

PathAllowFilter

Note: This tag is no more valid since 1.25 version

Synopsis

With this tag, you can restrict files and folders by using a regular expression.

Options

Name	Default	Values	Since version	Context
PathAllowFilter	null	regex	1.20 -> 1.25	Default,Group,IpRange,User,VirtualHost

Examples

You can allow filetering only images extensions files like this:

```
<Default>
    Home            /home
    PathAllowFilter "^*.(jpg|png|gif)$"
</Default>
```

PathDenyFilter

Note: This tag is no more valid since 1.25 version

Synopsis

With this tag, you can restrict files and folders by using a regular expression.

Options

Name	Default	Values	Since version	Context
PathDenyFilter	null	regex	0.3 -> 1.25	Default,Group,IpRange,User,VirtualHost

Examples

You can deny filetering images extensions files like this:

```
<Default>
    Home            /home
    PathDenyFilter "^*.(jpg|png|gif)$"
</Default>
```

4.3 Use cases

Topics

To configure MySecureShell, you need to edit the `/etc/ssh/sftp_config` file. By default MySecureShell comes with a commented example configuration. This may not match all your needs and you will need to modify it to get it working as expected.

Note: Connect as root or use sudo to edit the configuration file.

To help you to understand and see what you can do with MySecureShell, we're covering here some use cases.

4.3.1 Basic usage

In most of basic situations, you generally want:

- A defined home directory for a user and a set of user (group)
- Limit the bandwidth for the group (users)
- Restrict group to it's home directory
- Have an admin user

Here is a configuration with commented examples:

```
<Default>
    # For all users, they will have access to their own home directory
    Home        /home/$USER
```

```
</Default>

<User admin>
    # This user can have advanced rights to manage MySecureShell from the CLI
    IsAdmin     true
</User>

<Group users>
    # Force users to stay in their home directory
    StayAtHome  true
    # Limit their download speed to 128k
    Download    128k
    # Limit their upload speed to 16k
    Upload      16k
</Group>
```

4.3.2 Administering multiple websites

For this use case, let's say you have multiple hosted clients and you have to manage their platforms. You want to:

- Give your clients full rights to manage their website content
- Limit the bandwidth
- Force rights creation
- Limit the number of connexions and idle time
- Restrict their rights on files and folders

Here is a typical configuration:

```
<Default>
    # For all users, they will have access to their own home directory
    Home                    /home/$USER
    # Force users to stay in their home directory
    VirtualChroot           true
    # Set global download for the server to 100m
    GlobalDownload          100m
    # Set global upload for the server to 100m
    GlobalUpload            100m
    # Limit user download speed to 1m
    Download                1m
    # Limit user upload speed to 1m
    Upload                  1m
    # Limit 6 users per IP
    LimitConnectionByIP     6
    # We limit a user up to 2 simultaneous connections
    LimitConnectionByUser   2
    # We do not want users to keep forever their idle connection
    IdleTimeOut             10m
    # Force user and group to apache daemon username
    # to avoid rights issues
    ForceUser               www-data
    ForceGroup              www-data
    # We do not want users to be able to set execution files
    MaximumRights           0640 0750
    # We do not want users to be able to change file attributes
    DisableSetAttribute     true
</Default>

<VirtualHost www.example.com>
    # Set home directory for this virtualhost
    Home                    /var/www/sites/www.example.com
    # Set dedicated log file
    LogFile                 /var/log/sftp/www.example.com
</VirtualHost>

<VirtualHost www.exemple.fr>
    # Set home directory for this virtualhost
    Home                    /var/www/sites/www.exemple.fr
    # Set dedicated log file
    LogFile                 /var/log/sftp/www.example.com
    # Override the maximum number of connection per user
    LimitConnectionByUser   4
</VirtualHost>
```

We can see here 2 different VirtualHost which have their own home directory and logs file. They both inherit their configuration from the `Default` parent tag. However *www.exemple.fr* virtual host has a different configuration for the maximum of simultaneous connected users.

4.3.3 High restriction access

In a very strict situations, you may want to:

- Restrict your user access to the minimum allowed files (images and pdf only)
- Deny any changes on those files (read only)
- Allow adding new files but in a specific folder (upload)
- Limit to 1 connection per user maximum
- Limit the bandwidth

Let's say the Home folder contents looks like this:

```
drwxr-xr-x  2 user group  40 Aug 21 07:14 Download
drwxrwxrwx  2 user group  40 Aug 21 07:14 Upload
```

In the Download folder, read only files and folders will be present while in the Upload folder, users will be able to upload anything. Here is what it should looks like:

```
<Default>
    # For all users, they will have access to their own home directory
    Home                    /home/sftp
    # Force users to stay in their home directory
    VirtualChroot           true
    # Set global download for the server to 100m
    GlobalDownload          100m
    # Set global upload for the server to 100m
    GlobalUpload            100m
    # Limit user download speed to 10m
    Download                10m
    # Limit user upload speed to 10m
    Upload                  10m
    # Deny user simultaneous connections
    LimitConnectionByUser   1
    # We do not want users to keep forever their idle connection
    IdleTimeOut             5m
    # We do not want users to be able to modify files once uploaded
    ForceRights             0440 0550
    # To be sure they do not have the permission to delete
    DisableRemoveFile       true
    DisableOverwrite        true
    # We do not want users to be able to change file attributes
    DisableSetAttribute     true
    # Apply filters
    ApplyFileSpec           AllowedExtensions
</Default>

<FileSpec AllowedExtensions>
    # Only check against filenames/folder names only
    UseFullPath false
    # we can use multiple deny/allow directives for clarity
    Order AllowDeny
    # Only allow images and pdf extensions
    Allow ".*.(jpg|jpeg|png|gif|raw|psd|pdf)$"
    # Deny anything else
    Deny all
</FileSpec>
```

CHAPTER 5

Usages

In this section, we will see how to use MySecureShell:

- **For administration tools to manage users:** you will have a look of the available tools to manage your MySecureShell servers, how to validate your configuration, kill connected users, etc. . .
- **For users utilization:** this will explain for a basic user, what tool he has to choose for his usage, what can he do, etc. . . this is a basic how to use sftp for low skilled users.

5.1 For Administrators

Topics

As an administrator, you have to tasks to know to manage your users and validate the configuration.

5.1.1 Configuration validator

Let's say you've made a complex MySecureShell configuration and you want to validate the configuration of some users. MySecureShell can natively perform those check for you and gives you the configuration related to a user:

```
$ MySecureShell --configtest
--- invite ---
Home = /home/invite
ByPassGlobalDownload = false
ByPassGlobalUpload = false
GlobalDownload = 5242880 bytes/s
GlobalUpload = 0 bytes/s
Download = 0 bytes/s
Upload = 0 bytes/s
StayAtHome = true
VirtualChroot = true
LimitConnection = 3
LimitConnectionByUser = 3
LimitConnectionByIP = 1
IdleTimeOut = 300s
ResolveIP = false
DirFakeUser = false
DirFakeGroup = true
DirFakeMode = 0000
HideFiles = {nothing to hide}
HideNoAccess = true
MaxOpenFilesForUser = 0
MaxReadFilesForUser = 0
MaxWriteFilesForUser = 0
PathDenyFilter = (null)
Shell = {no shell}
ShowLinksAsLinks = false
DefaultRights = 0000 0000
ConnectionMaxLife = 0s
DisableAccount = false
IsAdmin = false
Config is valid.
```

You can also enable verbose mode with `-v` argument. As you can see here, the message on the last line indicates the configuration is valid, with means there is no syntax errors.

5.1.2 Updating configuration

With MySecureShell, **you do not need to reload the service when you make a new or update the configuration**. Simply add your new parameters and **once you write changes to disks, it will be applied**.

5.1.3 Service status

By default, MySecureShell doesn't require a daemon as the configuration is reread each time a user connects to the server. But you may want to temporary stop the service, start it or getting the status:

```
service mysecureshell stop
```

It will in fact add a lock file to the filesystem to inform MySecureShell to deny any new connections. This lock file is released once the service is started.

All available options are:

Options	Description
stop / shutdown	Deny new SFTP connections and keep current connected users
start / active	Allow new SFTP connections
fullstop	Deny new SFTP connexions and kill current running (clean memory as well)
restart / force-reload	Make a fullstop and start
status	Give the current status (up/down)

Note: The `service` command uses `sftp-state` binary. You can have a look at it if you do not want to use the `service` command.

5.1.4 Who is connected

You can know how many users are connect, who, the used global bandwidth, per user bandwidth usage, the status and other usefull information with the `sftp-who` command:

```
> sftp-who
--- 1 / 10 clients ---
Global used bandwith : 0 bytes/s / 0 bytes/s
PID: 3389   Name: mssuser   IP:
    Home: /home/mssuser
    Status: idle    Path: /
    File:
    Connected: 2014/08/19 15:38:27 [since 10s]
    Speed: Download: 0 bytes/s [5.00 kbytes/s]  Upload: 0 bytes/s [unlimited]
    Total: Download: 1398 bytes   Upload: 141 bytes
```

You also have `--while` option to automatically refresh the information with a desired time in seconds:

```
> sftp-who --while 2
```

This will force `sftp-who` to refresh every 2 seconds.

5.1.5 MySecureShell control remotely

You can remotely control MySecureShell and make actions on users, server state and more. Simply connect on SSH with an admin account and you will have those features:

```
> sftp-admin admin@sftp.example.com
admin@sftp.example.com's password:
> help
Usage:
     kill [0 or PID] : kill user with PID or 0 to kill all users
     list : list online users
     log [x bytes] : show last x bytes of log
     quit : quit program
     server [start or stop] : start or stop server
```

5.1.6 Check MySecureShell installation

You can check MySecureShell installation easily with `sftp-verif` tool. It will check if every needed binaries are present with correct rights and will check the configuration. You simply have to run it:

```
> sftp-verif

################################################################################
            MySecureShell Verification Tool
################################################################################

### Verifing file existance ###

/usr/bin/mysecureshell                                                   [ OK ]
/bin/sftp-who                                                            [ OK ]
/bin/sftp-kill                                                           [ OK ]
/bin/sftp-state                                                          [ OK ]
/bin/sftp-admin                                                          [ OK ]
/bin/sftp-verif                                                          [ OK ]
/bin/sftp-user                                                           [ OK ]


### Verifing /etc/shells ###

/etc/shells contains /usr/bin/mysecureshell                              [ OK ]


### Verifing rights ###

Verifing file rights of /etc/ssh/sftp_config                             [ OK ]
Verifing file rights of /bin/sftp-who                                    [ OK ]
Verifing file rights of /bin/sftp-verif                                  [ OK ]
Verifing file rights of /bin/sftp-user                                   [ OK ]
Verifing file rights of /bin/sftp-kill                                   [ OK ]
Verifing file rights of /bin/sftp-state                                  [ OK ]
Verifing file rights of /bin/sftp-admin                                  [ OK ]
Verifing file rights of /usr/bin/mysecureshell                           [ OK ]


### Verifing rotation logs ###

Rotation logs have been found                                            [ OK ]


### Verifing server status ###

Verifing server status (ONLINE)                                          [ OK ]


### Verifing server dependencies ###

Show only error(s) :


### Verifing server configuration ###

Show only error(s) :
Trying user: root
```

```
Checking user : mssuser


### All tests dones ###
```

5.1.7 Manager users for MySecureShell

You can easily add a new user to MySecureShell by using the `sftp-user` command:

```
> sftp-user create mssuser /home/mssuser
Enter password:
```

This will create the user and password, then add MySecureShell shell to this user.

Note: `sftp-user` uses the common binary tool to create users (useradd on Linux and niutil on Mac OS).

You can also delete a user or getting the list of avaialable users:

```
> sftp-user list
mssuser
```

Here is the list of available options:

```
> sftp-user --help
Usage 1: sftp-user create [user] [hide user]
Usage 2: sftp-user delete [user]
Usage 3: sftp-user list
Usage 4: sftp-user hide [user] [hide] (Mac OS X Only)


    Options     Choices     Descriptions
    user        Username    User Name
    hide user   1/0     hide user from login panel and user managements (Max OS X␣
↪Only)
    delete home 1/0     Remove user Home directory
    hide        1/0     Hide/Unhide (Mac OS X Only)
```

5.2 For Users

Topics

A lot of clients exists and you may be lost. We will see here which solution MySecureShell Team recommand.

5.2.1 Desktop clients

For the desktop clients solutions, here is what you can use as user:

Plateform	Free	Proprietary
Linux	FileZilla	
	gFTP	
Mac OS	Cyberduck	Transmit
Windows	WinSCP	WebDrive
	FileZilla	

All those solutions have been tested and works well. Of course a lot of others exists be we unfortunately didn't had the time to test them.

5.2.2 Mobile clients

For mobile clients solutions, you can use:

Plateform	Free	Proprietary
Android	AndFTP	TurboFTP

5.2.3 Command line

With command line, you can easily do it as whell with `sftp` command:

```
> sftp user@host
Connected to user@host.
sftp>
```

You can look at the man if you want additional commands.

CHAPTER 6

Frequently Asked Questions

Topics

6.1 What can I do if I have a problem?

1. Be sure it’s not a miss-configuration problem first.
2. Check out the FAQ to be sure the problem was not already listed.
3. If the problem still persist, you can look at the list of issues to see if the problem have not already corrected.

4. If not, create an issue on GitHub.

On issues, we'll do our best to reply as soon as possible.

6.2 Some features seem not working correctly

For some security reasons and for official packaging approval in several Linux distributions, the setuid right on the */usr/bin/mysecureshell* binary has been dropped by default.

Please check that you have the setuid with `sftp-verif` tool or directly set rights:

```
> chmod 4755 /usr/bin/mysecureshell
```

6.3 I can't open symbolic link folders

There are several reasons why it may not work. Check those bullet points:

- If VirtualChroot is enabled and the symbolic link is outside the chroot, it is not accessible and is this normal
- If StayAtHome is enabled, it may be the same reason.

If the problem still persist, you can use `--bind` option to `mount` command. For example if you need to access to an external folder (here */mnt/external*) from the Home value (here */var/sftp*):

```
> mkdir /var/sftp/external
> mount --bind /mnt/external /var/sftp/external
```

Then you'll be able to access to the external folder inside the Home folder.

6.4 Connection refused after connection

When you have *connection refused* message when you're trying to login, this is generally a problem of firewalling.

Check that you're not behind a firewall or your SSH port (default is 22) is correctly open:

```
> nc -v your_sftp_server 22
Connection to localhost 22 port [tcp/ssh] succeeded!
```

If it's still not ok, please check that your SSH service is properly running:

```
> service ssh status
```

6.5 Why do I got random errors on download or file access?

This is generally due to SFTP clients *cache*. Some clients like *FileZilla* have a cache enabled by default which can indicates wrong informations (connected even if you're not, showing files that do not exists anymore on the server, etc…).

The solution consist in disabling the cache on the client size.

6.6 Why uploaded files have 0 size on the server?

When this problem occurs, it's usually because of a disc full on the server side.

6.7 Clients do not see all folders or files on the server, why?

Check if the `HideNoAccess` child tag is enabled. This tag hides folders and files to your users with no access to them.

If you want your users to be able to see (but do not have access) to any files or folders without having rights, you should consider disabling `HideNoAccess` value.

6.8 Only allow MySecureShell users for SFTP connections

If you want to only allow MySecureShell users to use sftp connections on your server, you need to change/adapt this line (OpenSSH version > 4.5) in */etc/ssh/sshd_config*:

```
Subsystem sftp /usr/bin/mysecureshell -c sftp-server
```

Warning: Changing this parameters will block users who do not have MySecureShell as a shell!

6.9 How can I enforce security like blocking bruteforce attacks?

You can use a solution called Fail2ban which will check at the authentication logs in real time. If it detects a certain amount of failed login in a given time, it will block an IP address using iptables rules.

6.10 How coud I limit the number of simultaneous unauthenticated connections?

If you want to limit the number of simultaneous unauthenticated connections by changing the `MaxStartups` value in */etc/ssh/sshd_config* file:

```
MaxStartups 5
```

In this example, we do not allow more than 5 unauthenticated connections at the same time.

6.11 How can I make a passwordless connection?

To get a secure connection without credentials, you can use SSH key exchange. One of the advantage of that solution is the security enforcement. To make it work, be sure that your server allow it in its configuration file */etc/ssh/sshd_config*:

```
PubkeyAuthentication yes
```

If you only want to allow this user using SSH key, you can disable it's password account:

```
> passwd -d useraccount
```

Note: Note that it will also disable local password account

6.12 Can I use another authentication system?

Of course you can use another authentication system like:

- OpenLDAP
- Kerberos
- ...

You have to configure PAM (Pluggable Authentication Module) to be able to authenticate trought another backend. You can check that your backend connection is working fine like this:

```
$ getent passwd username
username:x:1000:1000:username,,,:/home/username:/usr/bin/zsh
```

We can see here a user called username, with id 1000. You now have to change his shell to make it work properly.

CHAPTER 7

Contribute

Topics

You may be interrested in contribute to MySecureShell project. We're going to see here how you can do this :-)

7.1 Which kind of contribution are accepted?

Any kind of contribution is welcome in fact :-).

- If it's a bug or feature related, do not hesitate to use GitHub issues to inform us.
- You created a patch for MySecureShell? Please use GitHub Pull Request to provide it.
- You made a plugin for a third party application? Please inform us! And if you want we host it, do not hesitate to inform us.
- The documentation is not good enough and you want to enhance it? Please make the changes from the sources by using a Pull Request
- The documentation is not translated into your language? You can have a look to Transifex website and we will integrate it.

- We did not make the package for your favorite distribution? Create your own and inform us how to install it, we will add it to the documentation!

As you can see, we're open to any kind of contribution and hope you'll enjoy contributing.

7.2 What is the easiest solution to contribute code or doc?

We are providing Docker and Vagrant files that will install everything you need to have (packages, sources, dependancies, documentation sources and so on. . .) to help you to contribute.

7.2.1 Docker

With Docker, here is the content file for development:

```
FROM debian:unstable
MAINTAINER Pierre Mavro <deimos@deimos.fr>

##################
# User Quick Try #
##################

RUN apt-get update
RUN DEBIAN_FRONTEND=noninteractive apt-get -y -o Dpkg::Options::="--force-confdef" \
 -o Dpkg::Options::="--force-confold" install whois procps openssh-server
RUN mkdir /var/run/sshd
RUN echo 'root:root' | chpasswd

#######
# DEV #
#######

RUN apt-get update
RUN apt-get -y install git
RUN git clone https://github.com/mysecureshell/mysecureshell.git
RUN apt-get -y install libacl1-dev libgnutls28-dev gcc make
RUN apt-get -y install build-essential fakeroot lintian devscripts debhelper ubuntu-
↪dev-tools \
 cowbuilder autotools-dev
RUN apt-get -y install sphinx-doc sphinx-common python3-sphinx libjs-sphinxdoc \
 python-pip texlive-latex-base texlive-latex-recommended texlive-latex-extra texlive-
↪fonts-recommended
RUN apt-get clean
RUN pip install sphinx_rtd_theme

# Start SSHd
EXPOSE 22
CMD ["/usr/sbin/sshd", "-D"]
```

To install this container, simply build docker with the Dockerfile:

```
$ docker build -t mysecureshelldev \
https://raw.githubusercontent.com/mysecureshell/mysecureshell/master/deployment-tools/
↪docker/dev/Dockerfile
```

Now you can run one:

```
$ docker run -d -p 22222:22 mysecureshelldev
```

If you need more explaination on how to use it, please look at the *Quick Try* section.

7.2.2 Vagrant

With Vagrant and the Vagrantfile:

```
# -*- mode: ruby -*-
# vi: set ft=ruby :
# MySecureShell Team <https://github.com/mysecureshell/mysecureshell>

# Vagrantfile API/syntax version. Don't touch unless you know what you're doing!
VAGRANTFILE_API_VERSION = "2"

$install_mss = <<INSTALL
echo "deb http://mysecureshell.free.fr/repository/index.php/debian/7.1 testing main
deb-src http://mysecureshell.free.fr/repository/index.php/debian/7.1 testing main
" > /etc/apt/sources.list.d/mysecureshell.list
gpg --keyserver hkp://pool.sks-keyservers.net --recv-keys E328F22B
gpg --export E328F22B | apt-key add -
apt-get update
apt-get -y install mysecureshell
pass=$(mkpasswd -m sha-512 -s mssuser)
useradd -m -s /usr/bin/mysecureshell -p $pass mssuser
chmod 4755 /usr/bin/mysecureshell
INSTALL

$install_mss_dev = <<INSTALL
apt-get update
#install git
apt-get -y install git
#get the sources
if [ -f /vagrant/id_rsa ] ; then
    git clone git@github.com:mysecureshell/mysecureshell.git
else
    git clone https://github.com/mysecureshell/mysecureshell.git
fi
chown -Rf vagrant. mysecureshell
#install C dependencies
apt-get -y install libacl1-dev libgnutls-dev gcc make
#install packaging dependencies
apt-get -i install build-essential fakeroot lintian devscripts debhelper ubuntu-dev-
↪tools cowbuilder
#install Sphinxdoc dependencies
apt-get -y install sphinx-doc sphinx-common python3-sphinx libjs-sphinxdoc python-pip␣
↪\
texlive-latex-base texlive-latex-recommended texlive-latex-extra texlive-fonts-
↪recommended
#install sphinxdoc theme
pip install sphinx_rtd_theme
INSTALL

Vagrant.configure(VAGRANTFILE_API_VERSION) do |config|
  config.vm.box = "deimosfr/debian-wheezy"
  config.vm.network "forwarded_port", guest: 22, host: 22222
  config.vm.network "private_network", ip: "192.168.33.10"
  config.vm.network "public_network"
  config.vm.provider "virtualbox" do |v|
        v.memory = 768
        v.cpus = 2
  end
  config.vm.provision "shell", inline: $install_mss
  # Uncomment if you want to install all dev dependancies (to contribute for example)
  #config.vm.provision "shell", inline: $install_mss_dev
end
```

you just need to uncomment this line to install all development dependencies:

```
#config.vm.provision "shell", inline: $install_mss_dev
```

Then launch it:

```
$ vagrant up
```

If you need more explaination on how to use it, please look at the *Quick Try* section.

7.3 How can I contribute to the documentation?

The simplest solution is to look at the *previous section* to create a development environment with all the prequesites to build the documentation.

All the documentation is based in the *doc* folder. The documentation has been made with Sphinx Doc, which is easy to use.

When you've got the development environment and made modifications in the documentation, you can try to generate a new one with this command inside the *doc* folder:

```
$ make html
sphinx-build -b html -d build/doctrees   source build/html
Running Sphinx v1.2.2
loading pickled environment... done
loading intersphinx inventory from http://docs.python.org/objects.inv...
building [html]: targets for 1 source files that are out of date
updating environment: 0 added, 1 changed, 0 removed
reading sources... [100%] contribute
looking for now-outdated files... 77 found
pickling environment... done
checking consistency... done
preparing documents... done
writing output... [100%] usages_user
writing additional files... genindex search
copying images... [100%] images/logo_ubuntu.png
copying static files... done
copying extra files... done
dumping search index... done
dumping object inventory... done
build succeeded, 1 warning.

Build finished. The HTML pages are in build/html.
```

This will generate an html documentation available in the *doc/build/html* folder. Once done, you can create a pull request for merging your modifications.

7.4 Share your MySecureShell usage and knowledge

If you like MySecureShell, do not hesitate to make blog posts, social sharing (Twitter, Google+, Facebook…) or participate with us to help users on GitHub issues.

Note: MySecureShell is available on Twitter with @MySecureShell username.

You can also help us on testing futures releases by participating to beta tests.

CHAPTER 8

Third Party and Others

Here are third party and other stuff related to MySecureShell:

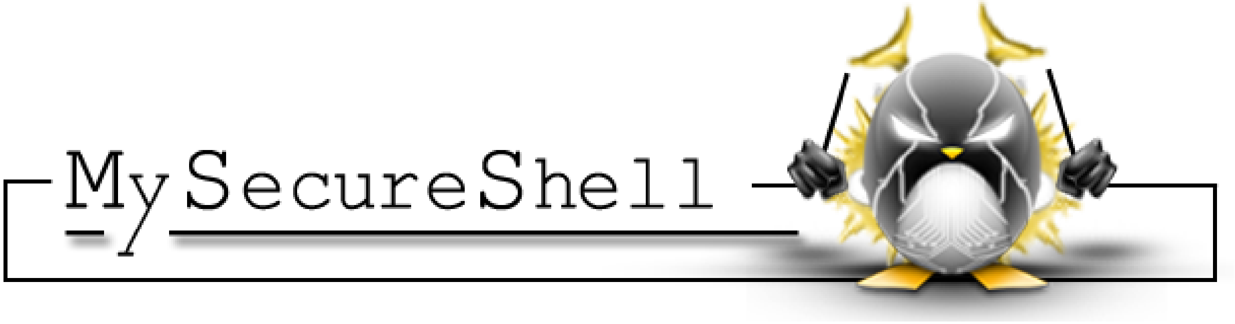
8.1 Advertising

Topics

You can find here logos for MySecureShell.

8.1.1 Logos

- Full size logo:



- Medium size logo:

MySecureShell

- Small size logo:

My
Secure
Shell

- Badge 1:

MYSECURE
SHELL

- Badge 2:

MYSECURE
SHELL

8.2 Munin

Topics

Munin is a networked resource monitoring tool that can help analyze resource trends and "what just happened to kill our performance?" problems. It is designed to be very plug and play. A default installation provides a lot of graphs with almost no work.

We created a set of scripts for Munin to graph connected users and bandwidth.

8.2.1 Presentation and usage

With Munin, you can graph the number of connected users:

You can graph the bandwidth usage:

And you can have the aggregation of both:

8.3 Nagios

Topics

Nagios is a powerful monitoring system that enables organizations to identify and resolve IT infrastructure problems before they affect critical business processes.

We are providing a set of Nagios scripts, compatible with most of the Monitoring tools (Shinken, Naemon, Sensu…).

8.3.1 Presentation and usage

If you want to monitor how many users are connected an be alerted if a number of connected users is reached:

```
Usage: check_mss_users -w [warning] -c [critical] -p [1|0]
    -h: show help (this message)
    -w: set maximum connected users before warning
    -c: set maximum connected users before critical
    -p: set maximum connected in percentage instead
```

So for example, if you want to be warned when you're raeching 80 users (warning) and receive a critical alert when you're reaching 100 users:

```
$ check_mss_users -w 80 -c 100
USERS OK - currently connected 0 / 10 |users=0;80;100
```

You can also decide to use pertencage instead:

```
$ check_mss_users -w 80 -c 90 -p 1
USERS OK - currently connected 0 / 10 |users=0;80;90
```

This will start alerting at 80% and be critical at 90%.

MySecureShell is a solution which has been made to bring **more features to sftp/scp protocol** given by OpenSSH. By default, OpenSSH brings a lot of liberty to connected users which imply to trust in your users. The goal of MySecureShell is to **offer the power and security of OpenSSH, with enhanced features** (like ACL) to restrict connected users.

MySecureShell was created because of the lack of file transfer features in OpenSSH. OpenSSH was not designed as a file transfer solution, that's why we made MySecureShell.

MySecureShell is not a patch for OpenSSH, it's a shell for users. It has the advantage to:

- Avoid including security holes in OpenSSH
- No dependency on against an OpenSSH version
- No OpenSSH recompilation is required

So **MySecureShell remains easy to install, secure and easy to configure**.

Regarding MySecureShell projects, here are usefull links you need to know:

- You can follow us on Twitter.
- The online documentation can be found on ReadTheDoc. You can **download the PDF,HTML or Epub** version directly from it.
- The source code is hosted on GitHub.
- If you encounter a bug or have any kind of issue related to MySecureShell:
  - first read the *Frequently Asked Questions*
  - If you do not have the answer, fell free to look at GitHub issues
  - Finally open an issue if you still do not have answers.
- For documentation translation, we're using Transifex, which is easilly usable if you want to produce a version in your language. When fully completed, it will be embedded in the documentation.