

admin adventure

the ongoing struggle: man vs machine

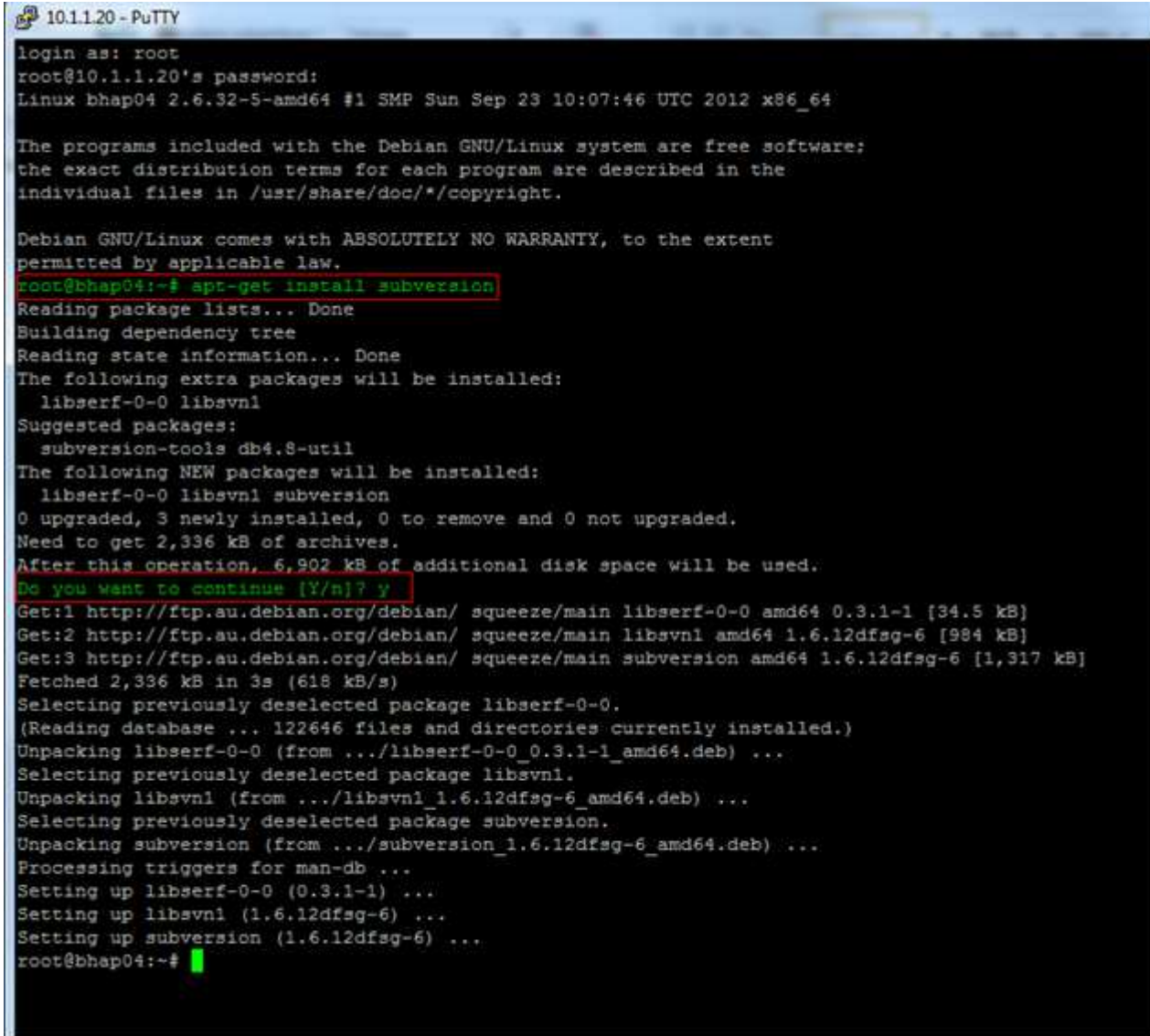
Installing Subversion on Debian Squeeze for HTTP and HTTPS

This tutorial will lead you through installing the source control and versioning software, Subversion. It assumes that you already have a server running Debian squeeze with network access.

The Debian system I use in this tutorial is called bhap04 and has an ip address of 10.1.1.20.

Install Subversion

1. Log into Debian console as root.
2. Install Subversion using `apt-get install subversion`. Answer `Y` at the prompt.



```
10.1.1.20 - PuTTY
login as: root
root@10.1.1.20's password:
Linux bhap04 2.6.32-5-amd64 #1 SMP Sun Sep 23 10:07:46 UTC 2012 x86_64

The programs included with the Debian GNU/Linux system are free software;
the exact distribution terms for each program are described in the
individual files in /usr/share/doc/*/copyright.

Debian GNU/Linux comes with ABSOLUTELY NO WARRANTY, to the extent
permitted by applicable law.
root@bhap04:~# apt-get install subversion
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following extra packages will be installed:
  libserf-0-0 libsvn1
Suggested packages:
  subversion-tools db4.8-util
The following NEW packages will be installed:
  libserf-0-0 libsvn1 subversion
0 upgraded, 3 newly installed, 0 to remove and 0 not upgraded.
Need to get 2,336 kB of archives.
After this operation, 6,902 kB of additional disk space will be used.
Do you want to continue [Y/n]? y
Get:1 http://ftp.au.debian.org/debian/ squeeze/main libserf-0-0 amd64 0.3.1-1 [34.5 kB]
Get:2 http://ftp.au.debian.org/debian/ squeeze/main libsvn1 amd64 1.6.12dfsg-6 [984 kB]
Get:3 http://ftp.au.debian.org/debian/ squeeze/main subversion amd64 1.6.12dfsg-6 [1,317 kB]
Fetched 2,336 kB in 3s (618 kB/s)
Selecting previously deselected package libserf-0-0.
(Reading database ... 122646 files and directories currently installed.)
Unpacking libserf-0-0 (from ../libserf-0-0_0.3.1-1_amd64.deb) ...
Selecting previously deselected package libsvn1.
Unpacking libsvn1 (from ../libsvn1_1.6.12dfsg-6_amd64.deb) ...
Selecting previously deselected package subversion.
Unpacking subversion (from ../subversion_1.6.12dfsg-6_amd64.deb) ...
Processing triggers for man-db ...
Setting up libserf-0-0 (0.3.1-1) ...
Setting up libsvn1 (1.6.12dfsg-6) ...
Setting up subversion (1.6.12dfsg-6) ...
root@bhap04:~#
```

Follow

3. Next, create a directory that will hold our repositories. `mkdir -p /var/lib/svn`

```
root@bhap04:~# mkdir -p /var/lib/svn
root@bhap04:~# █
```

4. Now I will create a repository for my software development project called myproject inside /var/lib/svn. You can create other repositories now for other projects you have. The repository will be empty until you import a project into it.

`svnadmin create /var/lib/svn/myproject`

```
root@bhap04:~# svnadmin create /var/lib/svn/myproject
root@bhap04:~# █
```

Subversion is now installed, but can only be used locally, which does not suit our purpose. We need to install apache and configure it to host Subversion.

Enabling HTTP

For HTTP:// we need to configure WebDAV on an Apache2 server. Thus we will install apache2 and apache2 SVN module now.

1. `apt-get install apache2 libapache2-svn`

```

root@bhapp04:~# apt-get install apache2 libapache2-svn
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following extra packages will be installed:
  apache2-mpm-worker apache2-utils apache2.2-common
Suggested packages:
  apache2-doc apache2-suexec apache2-suexec-custom db4.8-util
The following NEW packages will be installed:
  apache2 apache2-mpm-worker apache2-utils apache2.2-common libapache2-svn
0 upgraded, 5 newly installed, 0 to remove and 0 not upgraded.
Need to get 647 kB of archives.
After this operation, 3,092 kB of additional disk space will be used.
Do you want to continue [Y/n]? y
Get:1 http://ftp.au.debian.org/debian/ squeeze/main apache2-utils amd64 2.2.16-6+squeeze8 [16
Get:2 http://ftp.au.debian.org/debian/ squeeze/main apache2.2-common amd64 2.2.16-6+squeeze8
Get:3 http://ftp.au.debian.org/debian/ squeeze/main apache2-mpm-worker amd64 2.2.16-6+squeeze
Get:4 http://ftp.au.debian.org/debian/ squeeze/main apache2 amd64 2.2.16-6+squeeze8 [1,394 B]
Get:5 http://ftp.au.debian.org/debian/ squeeze/main libapache2-svn amd64 1.6.12dfsg-6 [170 kB]
Fetched 647 kB in 1s (509 kB/s)
Selecting previously deselected package apache2-utils.
(Reading database ... 122743 files and directories currently installed.)
Unpacking apache2-utils (from ../apache2-utils_2.2.16-6+squeeze8_amd64.deb) ...
Selecting previously deselected package apache2.2-common.
Unpacking apache2.2-common (from ../apache2.2-common_2.2.16-6+squeeze8_amd64.deb) ...
Selecting previously deselected package apache2-mpm-worker.
Unpacking apache2-mpm-worker (from ../apache2-mpm-worker_2.2.16-6+squeeze8_amd64.deb) ...
Selecting previously deselected package apache2.
Unpacking apache2 (from ../apache2_2.2.16-6+squeeze8_amd64.deb) ...
Selecting previously deselected package libapache2-svn.
Unpacking libapache2-svn (from ../libapache2-svn_1.6.12dfsg-6_amd64.deb) ...
Processing triggers for man-db ...
Setting up apache2-utils (2.2.16-6+squeeze8) ...
Setting up apache2.2-common (2.2.16-6+squeeze8) ...
Enabling site default.
Enabling module alias.
Enabling module autoindex.
Enabling module dir.
Enabling module env.
Enabling module mime.
Enabling module negotiation.
Enabling module setenvif.
Enabling module status.
Enabling module auth_basic.
Enabling module deflate.
Enabling module authz_default.
Enabling module authz_user.
Enabling module authz_groupfile.
Enabling module authn_file.
Enabling module authz_host.
Enabling module reqtimeout.
Setting up apache2-mpm-worker (2.2.16-6+squeeze8) ...
Starting web server: apache2.
Setting up apache2 (2.2.16-6+squeeze8) ...
Setting up libapache2-svn (1.6.12dfsg-6) ...
Considering dependency dav for dav_svn:
Enabling module dav.
Enabling module dav_svn.
Run '/etc/init.d/apache2 restart' to activate new configuration!
root@bhapp04:~#

```

2. Next, we configure apache2 SVN module by editing the file /etc/apache2/mods-available/dav_svn.conf

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`nano /etc/apache2/mods-available/dav_svn.conf`

```
root@bhap04:~# nano /etc/apache2/mods-available/dav_
```

The text editor nano will launch and display the file as below.


```
10.1.1.20 - PuTTY
GNU nano 2.2.4 File: /etc/apache2/mods-
dav_svn.conf - Example Subversion/Apache configuration
#
# For details and further options see the Apache user manual and
# the Subversion book.
#
# NOTE: for a setup with multiple vhosts, you will want to do this
# configuration in /etc/apache2/sites-available/*, not here.
#
# <Location URL> ... </Location>
# URL controls how the repository appears to the outside world.
# In this example clients access the repository as http://hostname/svn/
# Note, a literal /svn should NOT exist in your document root.
#<Location /svn>
#
# Uncomment this to enable the repository
#DAV svn
#
# Set this to the path to your repository
#SVNPath /var/lib/svn
# Alternatively, use SVNParentPath if you have multiple repositories unde
# under a single directory (/var/lib/svn/rep01, /var/lib/svn/rep02, ...).
# You need either SVNPath and SVNParentPath, but not both.
#SVNParentPath /var/lib/svn
#
# Access control is done at 3 levels: (1) Apache authentication, via
# any of several methods. A "Basic Auth" section is commented out
# below. (2) Apache <Limit> and <LimitExcept>, also commented out
# below. (3) mod_authz_svn is a svn-specific authorization module
# which offers fine-grained read/write access control for paths
# within a repository. (The first two layers are coarse-grained; you
# can only enable/disable access to an entire repository.) Note that
# mod_authz_svn is noticeably slower than the other two layers, so if
# you don't need the fine-grained control, don't configure it.
#
# Basic Authentication is repository-wide. It is not secure unless
# you are using https. See the 'htpasswd' command to create and
# manage the password file - and the documentation for the
# 'auth_basic' and 'authn_file' modules, which you will need for this
# (enable them with 'a2enmod').
#AuthType Basic
#AuthName "Subversion Repository"
#AuthUserFile /etc/apache2/dav_svn.passwd
#
# To enable authorization via mod_authz_svn
#AuthzSVNAccessFile /etc/apache2/dav_svn.authz
#
# The following three lines allow anonymous read, but make
# committers authenticate themselves. It requires the 'authz_user'
# module (enable it with 'a2enmod').
#<LimitExcept GET PROPFIND OPTIONS REPORT>
#Require valid-user
#</LimitExcept>
```

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3. There is a configuration already commented out. You can leave it commented out as a future guide, and add our configuration to the bottom of the file.

```
<Location /svn>
  DAV svn
  SVNParentPath /var/lib/svn
  AuthType Basic
  AuthName "Subversion Repository"
  AuthUserFile /etc/apache2/dav_svn.passwd
  <LimitExcept GET PROPFIND OPTIONS REPORT>
    Require valid-user
  </LimitExcept>
</Location>
```

Add the below lines to the file, then press ctrl-O to save, and ctrl-X to close.

4. Restart apache2 to enable the configuration.

```
/etc/init.d/apache2 restart
```

A terminal window showing the command `/etc/init.d/apache2 restart` being executed. The output is `Restarting web server: apache2 ... waiting .` followed by a prompt `root@bhap04:~#` with a green cursor.

5. Because we will be reading and writing to our repository folders as the Apache user, which is www-data, we must change the owner and group of /var/lib/svn and its children.

```
chown -R www-data:www-data /var/lib/svn
```

A terminal window showing the command `chown -R www-data:www-data /var/lib/svn` being executed. The output is `root@bhap04:~#` with a green cursor.

6. Now we must create the passwords file that will contain all users that will have access to SVN. I will make the user admin22

```
htpasswd -c /etc/apache2/dav_svn.passwd admin22
```

You will be prompted for a password for the new user.

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```

root@bhap04:~# htpasswd -c /etc/apache2/dav_svn.passwd
New password:
Re-type new password:
Adding password for user
root@bhap04:~#
root@bhap04:~#

```

7. You can continue to add additional users with the command `htpasswd /etc/apache2/dav_svn.passwd username`

Note the lack of the `-c` switch. This switch creates the password file. If you use it a second time, you will overwrite the existing password file with a new file, which is generally not desired.

You now have a working HTTP Subversion. We must now configure HTTPS. If you don't desire this option, you may stop here.

HTTPS

1. Enable Apache SSL Module

`a2enmod ssl`

```

root@bhap04:~# a2enmod ssl
Enabling module ssl.
See /usr/share/doc/apache2.2-common/README.Debian.gz on how to configure SSL and create self-signed certificates.
Run '/etc/init.d/apache2 restart' to activate new configuration!
root@bhap04:~#

```

2. Restart apache2

`/etc/init.d/apache2 restart`

3. Copy the default-ssl sites file to a new file and name it with the name of the site.

`cp /etc/apache2/sites-available/default-ssl /etc/apache2/sites-available/subversion.bhap04`

4. (Optional) If you are supplying your own certificate files from a trusted CA, copy them to `/etc/ssl/private/`. Then edit the site file with the below command, and make the following changes to the existing lines. Otherwise go to step 5.

`nano /etc/apache2/sites-available/subversion.bhap04`

Edit the lines to point to your supplied certificate files.

`SSLCertificateFile /etc/ssl/private/filename-cert.pem`

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SSLCertificateKeyFile /etc/ssl/private/filename-key.pem

SSLCertificateChainFile /etc/ssl/private/filename-cachain.pem

5. Run command `a2ensite subversion.bhap04` to enable the new site file.

```
root@bhap04:~# a2ensite subversion.bhap04
Enabling site subversion.bhap04.bhcc.local.
Run '/etc/init.d/apache2 reload' to activate new configuration!
```

6. Restart Apache to enable the site.

```
root@bhap04:~# /etc/init.d/apache2 restart
Restarting web server: apache2 ... waiting .
```

7. Open a web browser on a separate PC, and go to <http://subversion.bhap04/svn/myproject> and <https://subversion.bhap04/svn/myproject>

You should see the project folder with Revision 0 as below.

myproject - Revision 0: /

Powered by [Subversion](#) version 1.6.12 (r955767).

You are now done.

Notes:

1. You can disallow HTTP and require SSL by adding the line `SSLRequireSSL` to the `/etc/apache2/mods_available_dav_svn.conf` file.

2. Subversion supports other protocols besides HTTP and HTTPS. Do not use any of these other protocols because the ownership of the files will not be www-data user through these other methods.

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wow. This is the best tutorial I found. Thank you very much, you saved my day!
D.



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Brillant !



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