

Win32 - SVN + Apache + Tortoise SVN + SVN Notify

How-To

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1. Introduction

The objective of this tutorial is to describe the installation of these four tools on Windows, with some details not covered by their own documentation. This procedure was tested on Windows XP and Windows 2003 Server. For the client installation, I think there's no problems with Windows 95 or 98 (See Tortoise SVN documentation). For the server, Windows 95 and 98 sounds crazy, huh?

2. Required Installation Packages

The following applications and versions were used in this procedure. It's possible that in new releases of these applications some details may change. I hope the installers don't change their locations.

- Server-side
 - Subversion 1.3.1 - <http://subversion.tigris.org/files/documents/15/31465/svn-1.3.1-setup.exe>
 - Apache 2.0.55 (the 2.2.x and 1.3.x aren't compatible with SVN 1.3.1) - <http://httpd.apache.org/download.cgi>
 - Active Perl 5.8.8-817 - <http://www.activestate.com/Products/ActivePerl>
 - Module::Build (required Perl module for SVN::Notify) - <http://search.cpan.org/dist/Module-Build/>
 - Authen::SASL (optional Perl module for SVN::Notify) - <http://search.cpan.org/dist/Authen-SASL/>
 - Net::SMTP_auth (optional Perl module for SVN::Notify) - http://search.cpan.org/dist/Net-SMTP_auth/
 - SVN::Notify (Perl module) - <http://search.cpan.org/dist/SVN-Notify/>
 - mod_auth_sspi 1.0.3 (apache module required for Active Directory Integration (optional)) - http://tortoisesvn.tigris.org/mod_auth_sspi.zip
 - Nmake 1.5 - <http://support.microsoft.com/default.aspx?scid=kb;en-us;Q132084>
- Client-side

- Tortoise SVN 1.3.3.6219 -
<http://prdownloads.sourceforge.net/tortoisesvn/TortoiseSVN-1.3.3.6219-svn-1.3.1.msi?download>

3. Subversion Installation

Run the install application, no secrets there. Next, Next and Finish. I recommend the default location for the installation ("C:\Program Files\Subversion").

After the installation and boot, let's create our test repository. This can be done in the console:

```
md c:\svn
svnadmin create C:\svn\teste
```

4. Apache Installation

Run the install application. I suggest the installation for All Users on port 80. One more time, I recommend the default location ("C:\Program Files\Apache Group").

If, when the service comes up, problems of this kind occur:

```
(OS 10048)Only one usage of each socket address (protocol/network
address/port)
is normally permitted. : make_sock: could not bind to address 0.0.0.0:80
no listening sockets available, shutting down
```

Don't be alarmed. It's only the server port conflicting with another server's port (probably IIS). We have two solutions here: Stop the IIS service or change apache's port. To change the port, we need to locate httpd.conf (apache's install directory Apache2\conf) and change the following line:

```
Listen 80
```

If the line was changed, you'll need to reboot. Test the apache service, opening a browser and accessing <http://localhost> or <http://localhost:port>, in the case you changed the port.

5. Configuring SVN Repository with Apache

We have 2 kinds of configuration here: authz (SVN's default) and Active Directory Integrated authentication. This section's tutorial is based (almost total) in this tutorial: http://tortoisetsvn.sourceforge.net/docs/release/TortoiseSVN_en/ch03.html

5.1. Default Authentication (authz)

- Copy the files `mod_authz_svn.so`, `mod_dav_svn.so` and `libdb43.dll` from subversion's install dir `\bin` to apache's install dir `\Apache2\modules`.
- Edit the file `\Apache2\conf\httpd.conf`:
 - Locate these lines

```
#LoadModule dav_module modules/mod_dav.so
#LoadModule dav_fs_module modules/mod_dav_fs.so
```
 - Remove the comment from them (`#`).

```
LoadModule dav_module modules/mod_dav.so
LoadModule dav_fs_module modules/mod_dav_fs.so
```
 - Add these lines after the `LoadModule` section.

```
LoadModule dav_svn_module modules/mod_dav_svn.so
LoadModule authz_svn_module modules/mod_authz_svn.so
```
 - Restart the service. If it doesn't come up, it's easy to locate the error in `Start | Program Files | Apache HTTP Server | Configure Apache Server | Test Configuration`
 - We're not finished yet. We need to add the following lines to the end of `httpd.conf` (change `c:\svn` if your repository lives in another directory):

```
<Location /svn>
DAV svn
SVNListParentPath on
SVNParentPath C:\SVN
AuthType Basic
AuthName "Subversion repositories"
AuthUserFile passwd
#AuthzSVNAccessFile svnaccessfile
Require valid-user
</Location>
```
 - Now we need to generate passwords for our apache users. We can do this going to the apache's install dir `\apache2` and typing for each user:

```
bin\htpasswd -c passwd <username>
```
 - The tool will ask for new password and confirmation.
 - **Warning:** the `passwd` generated file must live in the directory you typed in `AuthUsersFile`. If we don't put path there, the file must live in the `apache2` root (`\apache2`).
 - Restart apache server
 - Test the configuration, <http://localhost/svn>

- Apache will ask for user and password generated by htpasswd.

5.2. Active Directory Integrated Authentication

- The integrated authentication depends on an apache module called mod_auth_sspi.
- Unpack the mod_auth_sspi.zip.
- The file mod_auth_sspi.so, must be copied from \bin to the apache's installation dir \apache2\modules
- Edit the httpd.conf (Lives in \apache2\conf).
- Add the following line, below the LoadModule section
`LoadModule sspi_auth_module modules/mod_auth_sspi.so`
- Check if the following line, uncommented lives before the sspi_auth_module line:
`LoadModule auth_module modules/mod_auth.so`
- Add the following lines to the end of the file (You'll need to change the c:\svn if you have your repository in another dir):

```
<Location /svn>
SSPIAuth On
SSPIAuthoritative On
SSPIDomain <domain name>
SSPIOfferBasic On
DAV svn
SVNListParentPath on
SVNParentPath C:\SVN
AuthType SSPI
AuthName "Subversion repositories"
AuthUserFile passwd
#AuthzSVNAccessFile svnaccessfile
Require valid-user
</Location>
```
- Restart the apache service and test the configuration (<http://localhost/svn>). In some browsers, it may be necessary use domainname\username when the browser asks for user name.

6. Installing TortoiseSVN

- Install TortoiseSVN. No secrets here, either. Next, Next and Finish.
- Create a new directory for your working copy.
- In this directory, right click then "SVN Checkout"

- In the repository URL, use <http://localhost/svn/teste> (you may need another hostname, port and path if you used different configurations). The other options may be the default.
- You'll see different icons for that dir.
- Create a file (it may be a text file) in this dir, with any content.
- Right click the file, then "TortoiseSVN", Add.
- Right click again then "Tortoise SVN", SVN Commit.
- Type any comment then click Ok.
- Congratulations, you put your first file in a subversion repository.

7. SVN Notify Configuration

- Install Active Perl.
- I tested with the default installation. I believe none of the Web components is necessary (for server I recommend you don't install them).
- Install nmake. Put it anywhere in the path (c:\windows\command).
- Unpack Module::Build.
- Enter in the unpacked dir using the console then type:


```
perl Build.PL
Build
Build test
Build install
```
- Unpack Authen::SASL
- Enter in the unpacked dir using the console then type:


```
perl Makefile.pl
nmake test
nmake install
```
- Unpack Net::SMTP_auth
- Enter in the unpacked dir using the console, then type:


```
perl Makefile.pl
nmake test
nmake install
```
- **Warning:** When doing "make", this module creates some dirs. In a make, he fails if this dir exists. I suggest you delete all the dir and unpack again if you need to reinstall.
- Unpack SVN::Notify
- Enter in the unpacked dir using the console, then type:


```
perl Build.pl
Build
Build test
```

Build install

- Test the svnnotify's installation, running from console (this example uses this tutorial's "teste" repository. You may need to change the --repos-path and the -r switch). The command must be typed in a single line:

```
svnnotify --repos-path c:\svn\teste -r 1 --to your-email@example.com --smtp your.smtp.server -H HTML::ColorDiff -d
```

- You may receive a beautifully colored e-mail. If not, check the following params:
 - --smtp-user, --smtp-pass: If your SMTP server needs authentication. There's--smtp-authtype too, but I think you'll not need this.
 - -V: svnnotify outputs debugging information. Specify it up to three times for more verbose output.
 - -I: Points to svnlook in another path (this utility comes with the subversion's installation. SVN::Notify depends it). By default, SVN::Notify looks in "C:\Program Files\Subversion\bin\svnlook.exe".
 - --from: changes the e-mail sender
 - --subject-cx, --subject-prefix [SVN-MyRepos]: Put your own subject prefix in e-mail
 - svnnotify's documentation or -help tells you about all possible parameters.
 - Perldoc SVN::Notify, SVN::Notify::HTML, and SVN::Notify::HTML::ColorDiff for the complete documentation.
- Soon as you receive the beautifully colored e-mail, it's time to create the hook for your repository. You can do so by creating a post-commit.bat file, inside the repository\hooks directory with the following content:

```
set REPOS=%1
```

```
set REV=%2
```

```
SET PATH=C:\PERL\BIN;
```

```
SET OS=Windows_NT
```

```
SET SystemRoot=C:\WINDOWS
```

```
svnnotify --repos-path %REPOS% -r %REV% --to your-email@address --smtp your.smtp.server -H HTML::ColorDiff -d
```

- Run the post-commit script from the console. Check if you receive another beautifully colored e-mail.

```
post-commit c:\svn\teste 1
```

- **Warning #1:** When subversion runs the post-commit hook, it cleans all the environment variables. Perl depends in some of them. You'll have crazy errors if some of them is missing. For example: If OS variable is missing, it returns "cannot fork". If SystemRoot is missing, it won't send the e-mail. These values may be different depending to your environment. To see the correct values, enter the console and type "set". The values must be *exactly* the same as those returned by Windows.

- **Warning #2:** Apache runs post-commit.bat as the user configured in the server (Control Panel | Administrative Tools | Services, Apache 2, Right Click, properties, "Log on", Local System Account). Usually, the system account cannot send data packets through the network (especially if the computer is a domain's member). For test purposes you can use the account used to test svnnotify.
- Now test to see if your beautifully colored e-mail is sent when you do another commit in the repository.

8. Managing Repository Access

- If you want to configure specific access for some users, we need to make some changes to the apache configuration.
- This line must exist Between `<Location /svn>` and `</Location>`:
`AuthzSVNAccessFile c:\SVN\AuthUsersFile.txt`
- Create `c:\SVN\AuthUsersFile.txt`, with the following content:
`[repositoryname:/path]`
`harry = rw`
`sally = r`
`windowsdomain\windowsuser = r`
- `repositoryname` must be the name of your repository (in our example "teste"). Path can be a specific directory into the repository (or just a "/" for the entire repository).
- **Warning:** For users authenticated through Directory Services, the user name is case sensitive. In this case, if in the `SVNAccessFile` the user has the name `windowsdomain\windowsuser` and in the authentication time, the user types `WINDOWSDOMAIN\WINDOWSUSER`, his access rights will not be applied.