



Step-by-Step Illustrated Guide to Secure the Path to Your **WEB HOST**

A Guide to Security for Internet
Marketer

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AUTHOR** section for information
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Recommended Resources

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NOTES from the AUTHOR

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The e-course covers all technical issues Internet Marketer should know about to work effectively and efficiently. Single person business can benefit most from this course and newsletters. The power of knowledge contained within is amazing that webmaster can view this book, e-course series and newsletters as a threat to their job! Internet marketers will be stumbled when they find out that I give their killer tips at a cost of an email subscription.

It must be made clear that you are not going to be a great webmaster or computer expert after learning the course, but it is all you need to be able to accomplish your daily task as an Internet Marketer.

The information in the newsletter is powerful if put into use by the readers, and was proven by many Internet Marketers. The author can not guarantee a certain amount of income **without involving work**.

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It is our motto to Build Financial Freedom the *right* way. Prosperity is one of the final goals, but the way to there is not supposed to be difficult. We serve to make your journey **as enjoyable as possible**.

This book endeavor to be an extension to the e-Course. It will cover parts of the course that need more explanation. You can follow the guide as a standalone lesson though.

Comments and suggestions are always welcomed. Please drop a note for the author at ebooks-secwebhost@buildfreedom.biz.

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Introduction

Web presence for Internet Business is getting more crucial everyday. Supported by inexpensive and feature web host, you can setup your own website in under an hour. How to choose the right web hosting is not covered in this book, but it is in the e-Course mentioned in the **NOTES from the AUTHOR** section.

Control Panel is created by web hosting provider to ease management and file uploading. For more advanced user, FTP (File Transfer Protocol) is available most of the time to upload files to server.

It is not widely known that great security risks are involved when using such tools. Most people are aware about credit card fraud on the Internet and take special care when shopping online and entering their credit card number. The same vigilance should be put into securing your password and sensitive information.

Transferring files with FTP and Control Panel access with plain HTTP (the Hypertext Transport Protocol, the protocol used for the World Wide Web, also known as web for short) are dangerous. The same person who spy for credit card information can sniff such important pair of authentication information any time they want to, because the information are passed in clear text! Imagine if you are using the same username and password for your merchant and electronic bank accounts.

Based on that awareness, I wish to share my experience with fellow Internet Marketers. With simple steps and free tools, more security can be achieved for life. Less risk means a better place to do business!

This e-book also presume that the reader already have registered for **a web hosting service following the e-course recommendation**. To summarize, the requirements are:

1. A web hosting with SSH remote login capability.

If you host your website under a Linux or UNIX server, it should have the feature. Some web hosting services require the customer to request for it separately, since this is the most powerful way to manage a host. Actually, one of the reason the web based control panel for hosting is created is to prevent users from logging in the server, besides the purpose of easy management, which it serve successfully well.

Properly used, you can achieve almost everything available by the control panel, and more. If it sounds too technical for you, just skip this. Ask your web hosting support/customer service for SSH remote login instead, and go to apply for your own copy of the freely available **Build Freedom Technical Knowledge for Internet Marketers e-course** to learn how to benefit from such feature!

Further, this feature can be used as a **secure file transfer protocol**. This topic will be covered later.

2. Credentials you obtain when you signed up with your web hosting.

User name, password and the hostname of your web host are absolute minimum information you have to know in hand.

3. A Windows based PC

The FREE software covered in this book is available for Windows 95, 98, ME, NT, 2000 and XP. If you run on a Macintosh based computer, you are on your own. Sorry for the inconvenience.

4. An Internet connection, of course!

A fast and reliable internet connection preferred for real-time experience. Saturated or slow connection can cause delay in information delivery. If you type a character and it takes a few seconds to appear on the screen, it is because data needs to be sent to the web host. A dial-up connection serves more than adequate bandwidth for SSH. In this case, delay is more of a matter than bandwidth.

5. Very basic Windows and Computer skill

Readers should know the concept of creating folders, viewing files, drag n drop, etc. If you downloaded this book from the Internet, chances are you have already mastered the skills mentioned above.

Getting the Software

Two wonderful pieces of software we use in this book are available at **no cost at all**. The first is **PuTTY**, and the second one is **WinSCP**. The purpose of PuTTY is as terminal for establishing a remote login session to the server. WinSCP serve as secure file transfer from PC to the server, meant to replace FTP.

Download the software into local directory:

PuTTY

<http://www.chiark.greenend.org.uk/~sgtatham/putty/download.html>

Binaries

The latest release version (0.54). This will generally be a version I think is reasonably likely to work worth trying out the latest development snapshot (below) to see if I've already fixed the bug, before repo

For Windows 95, 98, ME, NT, 2000 and XP on Intel x86

PuTTY:	putty.exe	(or by FTP)	(RSA sig)	(DSA sig)
PuTTYtel:	puttytel.exe	(or by FTP)	(RSA sig)	(DSA sig)

Figure 1 – PuTTY download page

WinSCP

<http://winscp.sourceforge.net/eng/download.php>

File	Size	MD5
WinSCP 3.6.1 installation package (English only)	1.378.673	6824553fe96bd209f5df35f42fd85580
WinSCP 3.6.1 multilanguage installation package * (Czech, English, Finnish, French, German, Hungarian, Japanese, Polish, Spanish, Swedish, get more)	1.583.922	13859eab1afc865db0b4fbeb862aa5d3

Figure 2 – WinSCP download page

Select the appropriate package for you. Don't be overwhelmed by the amount of links and terms. They are there for a reason, but it is not important to understand them to use the software themselves.

Installation

PuTTY does not require an installation for it to run properly. In order to put your files into order, we will create a directory under *C:\Program Files* named *PuTTY* and put the *PuTTY.exe* binary file in it.

Drag the *PuTTY.exe* file onto the **Start menu**. A shortcut will be created for easy access to the program. Alternatively, with similar method, you can create a shortcut on your desktop too.

WinSCP installation is straightforward. Click on the file you just downloaded to install it. Click on next, read the license agreement, and proceed with **I Agree**.

When prompted with **Select Components** dialog box, make sure **Full installation (recommended)** is selected. Click on **Next** button once and then once again to proceed.



Figure 3 – *Select Components dialog box in WinSCP installation*

The **Select Additional Tasks** dialog box is there to choose installation features. We won't need it later, but a quick explanation is below:

Select the additional tasks you would like Setup to perform while installing WinSCP3, then click Next.

- Create a desktop icon
 - For the current user only
 - For all users
- Create a Quick Launch icon
- Add upload shortcut to Explorer's 'Send to' context menu
- Register to handle scp:// and sftp:// addresses

Figure 4 - Select Additional Tasks in WinSCP3 Installation

Add upload shortcut to Explorer's "Sent to" context menu will add a menu item on **Windows Explorer** right click pop menu. It is neat for people who copy files between hosts often. **Register to handle scp:// and sftp:// addresses** is for user convenience of accessing a protocol by its name. Again, we won't use that feature. We will use WinSCP the *normal* way. But the feature is there; consult the documentation if you are willing to learn more advanced features. For my installation, I leave all of the checkbox blank.

Next dialog box allow you to select an interface most convenience for you. I prefer **Norton Commander interface** for the installation because of the clean interface and ability to use keyboard to select and copy files quickly. You can change this later though. For this book, please select Norton Commander interface. Leave Show advanced login options unchecked.

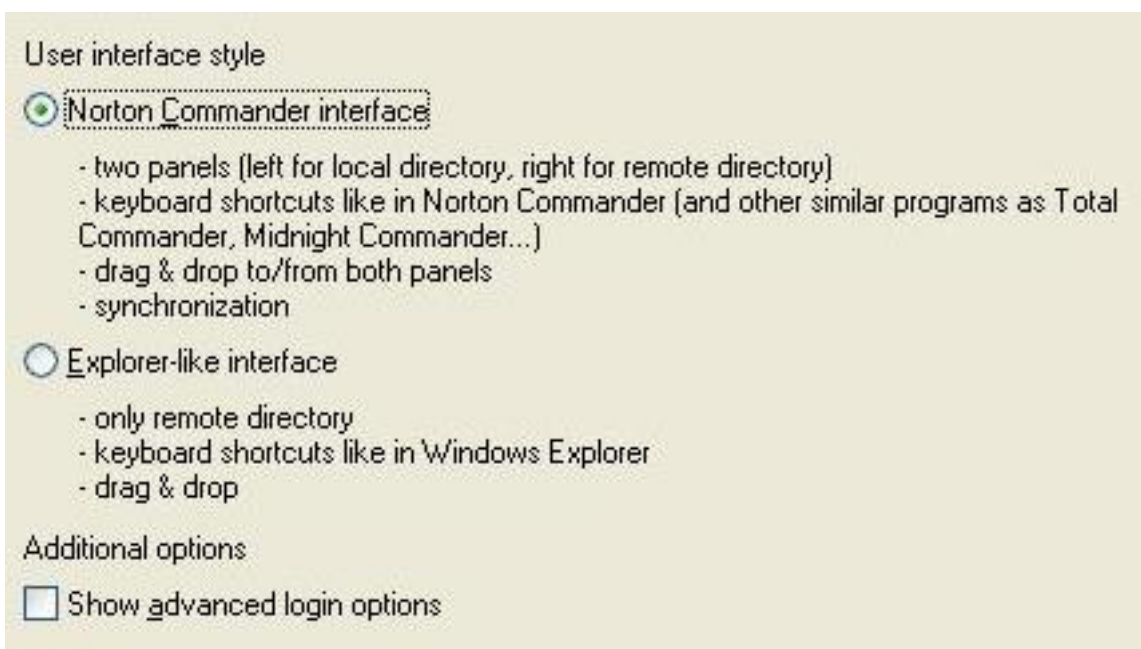


Figure 5 – User Interface selection in WinSCP3 installation

The screen after this will display a summary of what you have chosen. Just click on Install, and the installation process will start. Wait for it to finish, it may takes minutes, depends on the speed of your PC.

When finished, you will be prompted with the last setup screen. Select **Launch WinSCP** if you want to see what WinSCP look like, and click **Finish**.

You can create a shortcut in the **Start menu** the same way as for PuTTY.

At present, you have two FREE utilities that utilize one of the most powerful and secure cryptographic system available on the 21st century.

Basic Usage, Powerful Results

Security is a habit. Before we delve into the details, note should be taken that once you use this tools, please change any password you have ever used via an unencrypted connection. Better still, use different password for different purposes. Do not underestimate the importance of it. Be safe rather than sorry.

Also emphasize that once you are starting to utilize these tools, do not ever again use the other insecure tool, since you will defeat the purpose of these tools whatsoever. The principle is to minimize the risk of password stolen. After all, no unencrypted packets mean only that, nothing to steal.

The next point is: in order to achieve maximum security, please also follow others security practices. They complement each other that the more practices you apply, the more security you get. Please consult the e-course for things you can improve easily. It is a fact of life that you sacrifice some convenience for security. It is analogized as this: you install a lock on the doors of your house with the same purpose: security. You have to unlock it every time you want to get out or in, the same inconvenience.

With this said, the interesting part begins.

PuTTY

1. Click on the *PuTTY* program you have just installed.

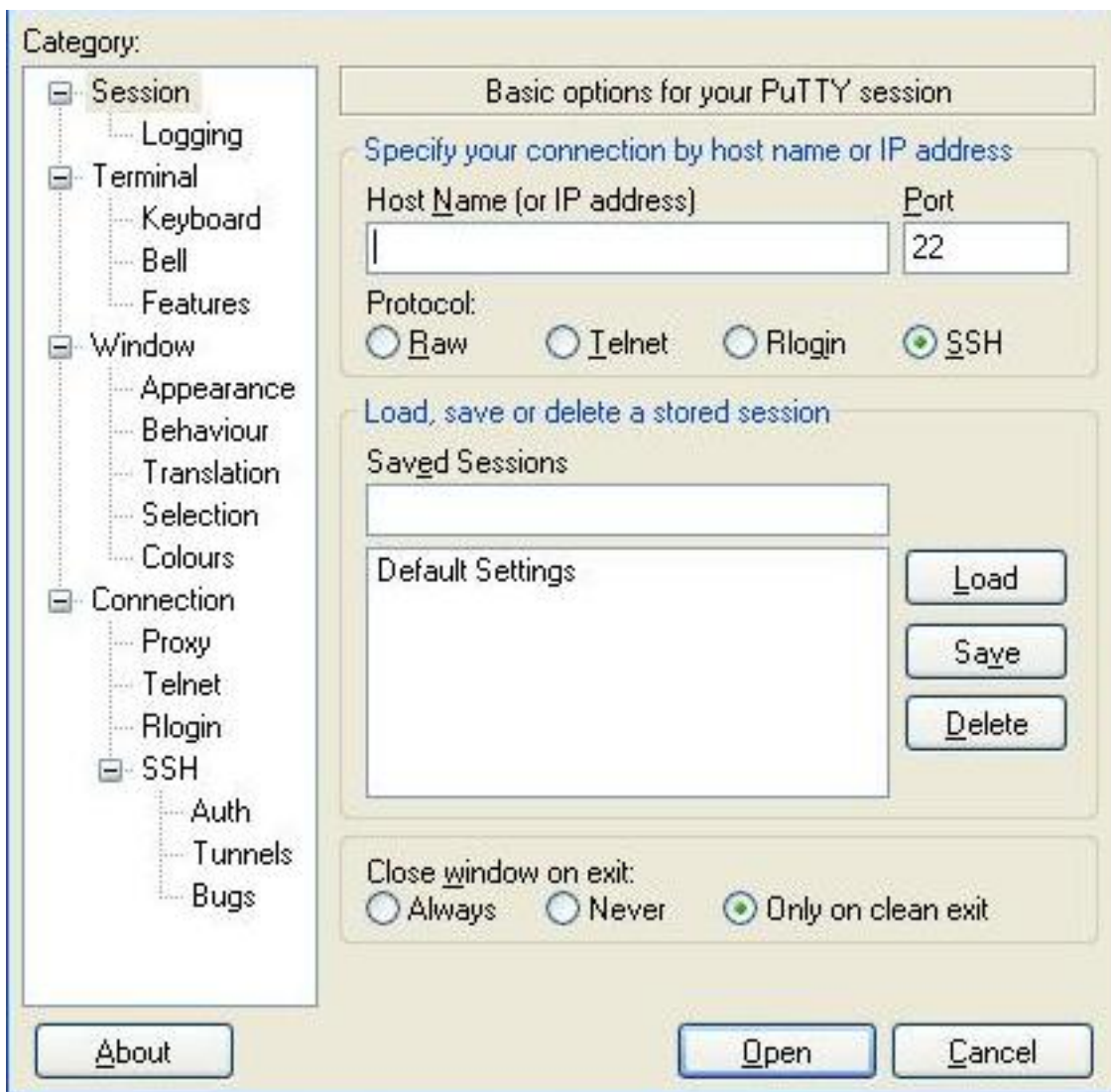


Figure 6 – PuTTY Configuration

As you can see on the left tree menu of Category, there are tons of PuTTY features and options you can tweak. On the connection category, the two most important options is **Proxy** and **SSH**. If you are using a kind of PROXY, be it from your local network to the Internet or from your ISP, please set it here. Usually an ISP will hand out such information when you signed up. You can still proceed without it and come back later when your connection does not work. Troubleshooting section, in the end of the e-book, is there for further help.

We won't explore all the nifty gritty, and we proceed to use the software right away. Most can be leaved as is.

2. Back to session category. Type in the web host you are going to connect to.

You can input this as a name or IP address. Let's say in this example we will use *webhost.example.com*. Yours must be different, like *www.example.com*, substitute when appropriate.

Make further attempt to ensure that the Protocol selected is **SSH**. Fill in the **Saved Session** field with **My Web Host** for example, and click on **Save**. It will save you some time the next you want to establish another connection to your web host.

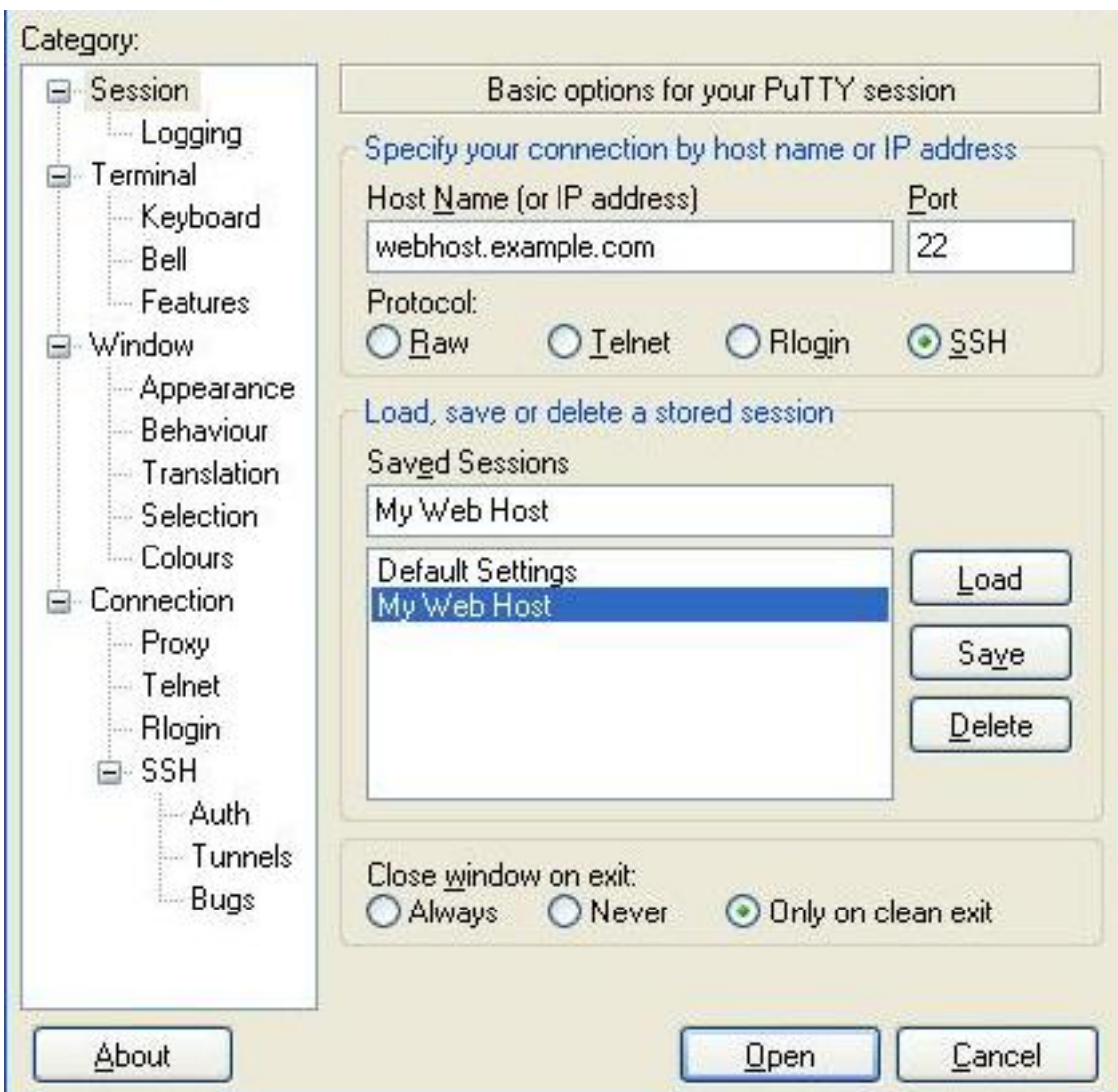


Figure 7 – PuTTY Configuration with Your Webhost Information saved

3. Click on Open. PuTTY will try to establish a connection to your web host.

Depend on the speed of your connection and web host; the following dialog box should appear:

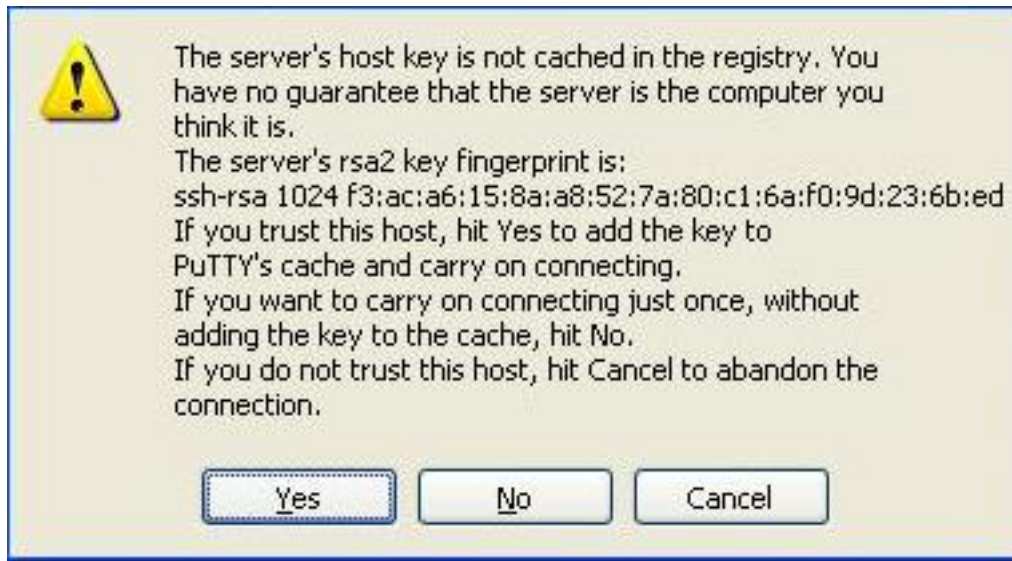


Figure 7 – PuTTY Security Alert dialog box

NOTES

If you can not duplicate what I showed here, please go back and try to follow the instructions to the letter. If problem persists, consult the Troubleshooting section.

The dialog box prompts for your confirmation on your web host key. Since this is the first time you connect, you should click **Yes** and proceed. The host key serve as the identity key for that host only. No other host will have the same key. If the other time you connect the key changes, you should contact your web hosting support. This may be an indication their server have been exploited by cracker. Fresh reinstallation without backing up the key is another reason it change, but the latter case is fine.

4. The login prompt waits for your input.

Type the user name, and then the password. Some hosts enforce a certain time out value that will disconnect you if you don't input the credentials within a certain amount of time, say 60 seconds.



Figure 8 – The login prompt

```
login as: hdlee
hdlee@192.168.0.110's password: █
```

Figure 9 – The password prompt

5. You should log into the system.

\$ or % represents your prompt, much like the famous DOS C:\> prompt. Press return (Enter) to see the responsiveness of your connection. It might delay somewhat, and it is normal, because you are giving command right into remote host!

```
hdlee@192.168.0.110's password:
Last login: Sun May 30 11:13:49 2004 from 192.168.0.2
OpenBSD 3.3 (GENERIC) #44: Sat Mar 29 13:22:05 MST 2003

Welcome to OpenBSD: The proactively secure Unix-like operating system.

Please use the sendbug(1) utility to report bugs in the system.
Before reporting a bug, please try to reproduce it with the latest
version of the code. With bug reports, please try to ensure that
enough information to reproduce the problem is enclosed, and if a
known fix for it exists, include that as well.

$
```

Figure 10 – Logged in

6. Type w on the prompt to see who's logging in at the same time.

\$ w

```
$ w
11:47PM up 19:37, 2 users, load averages: 0.11, 0.10, 0.08
USER      TTY FROM          LOGIN@  IDLE WHAT
hdlee     p0 192.168.0.1   11:39PM  0 w
hdlee     p2 192.168.0.2   11:13AM  0 -ksh
$ █
```

Figure 11 – Result of the w command

You will be given the uptime, load, and which user, when and what they are doing on the server. Can you sense the power now? There are much more to explore! At this time, you can rest assured that every command you type and replies you receive will be encrypted in a secure connection, including password for sure.

NOTES

If you are curious about what you can do with after this, please register for an e-course and subscribe to the newsletter. Refer to the **NOTES from the Author** section, appeared in the beginning of this book for a summary of what offered and how to gain access, for FREE.

Proof of Security

These are packets sniffed from an FTP session:

```
0x0000 4510 0040 a8d8 4000 4006 93cd 7f00 0001 E..@...@.....
0x0010 7f00 0001 829a 0015 b5f9 9409 b668 f610 .....h..
0x0020 8018 7fff 73da 0000 0101 080a 00f1 3c99 ....s.....<.
0x0030 00f1 3b3c 5553 4552 2068 646c 6565 0d0a ..;<USER.hdlee..

0x0000 4500 0056 ceb5 4000 4006 6dea 7f00 0001 E..V..@.@m.....
0x0010 7f00 0001 0015 829a b668 f610 b5f9 9415 .....h.....
0x0020 8018 7fff 00e4 0000 0101 080a 00f1 3c99 .....<.
0x0030 00f1 3c99 3333 3120 5061 7373 776f 7264 ..<.331.Password
0x0040 2072 6571 7569 7265 6420 666f 7220 6864 .required.for.hd
0x0050 6c65 le

0x0000 4510 0047 a8da 4000 4006 93c4 7f00 0001 E..G..@.@.....
0x0010 7f00 0001 829a 0015 b5f9 9415 b668 f632 .....h..2
0x0020 8018 7fff 3071 0000 0101 080a 00f1 4261 ....0q.....Ba
0x0030 00f1 3c99 5041 5353 2068 616d 6275 7267 ..<.PASS.hamburg
0x0040 6572 3132 330d 0a er123..
```

On the other hand, these are the packets from SSH session:

```
0x0000 4500 006c 846e 4000 8006 f4c9 c0a8 0001 E..l.n@.....
0x0010 c0a8 0002 104a 0016 e73b 5331 bfd3 5e7c .....J...;S1..^|
0x0020 5018 fabc 7fc0 0000 60cd 26b7 9adc 9d4a P.....`.&...J
0x0030 7cdf 5d51 ca4b 95ab c55c b6e2 dfd6 c0ce |.]Q.K...\.....
0x0040 a643 62b9 3ce2 36b4 e9d1 2143 d4a1 9dc1 .Cb.<.6...!C....
0x0050 3149 1I

0x0000 4500 007c 2f52 4000 4006 89d6 c0a8 0002 E..|/R@.@.....
0x0010 c0a8 0001 0016 104a bfd3 5e7c e73b 5375 .....J..^|.;Su
0x0020 5018 1d50 0456 0000 d165 f240 a79c 4c18 P..P.V...e.@..L.
0x0030 700c e09a 00e5 20e7 0842 9a99 c57b 0e44 p.....B...{.D
0x0040 6089 e891 8e04 400c 2ffc 438d 1a7c 39e5 ^.....@./..C..|9.
0x0050 c6f8 ..
```

The load of packets will always be different at different times for SSH, while FTP and telnet and other insecure login method transfer information in clear text!

WinSCP

The second program to introduce into your toolset is *WinSCP*.

1. **Run it from the Start menu. After a while, the window should be displayed.**

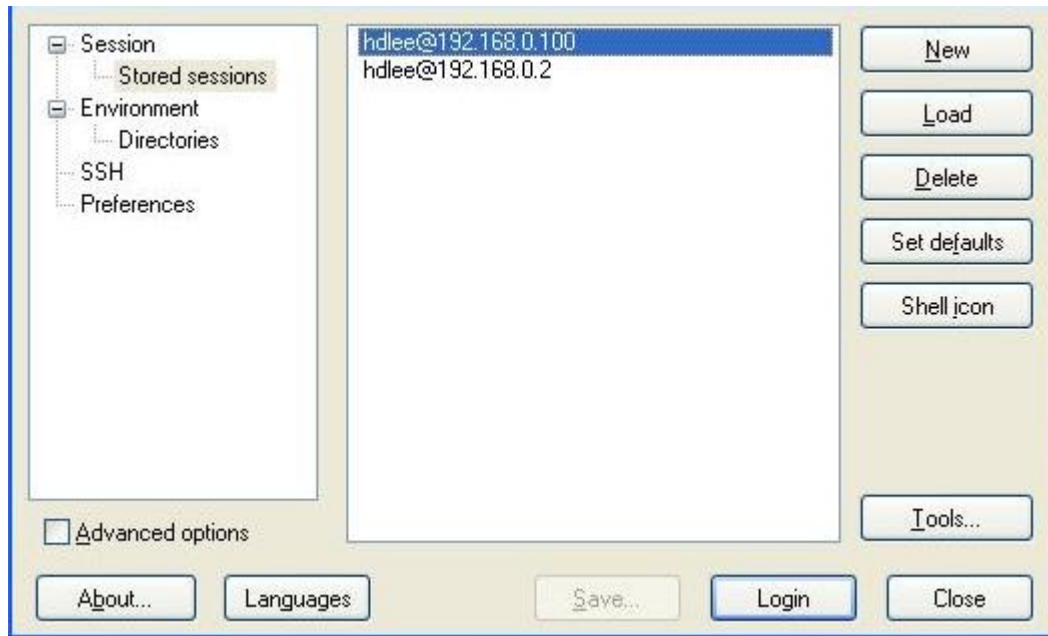


Figure 11 – WinSCP Login quick selection

In the screen above, you can see the existing connection I have to my local servers. Please don't be confused, yours possibly still blank.

2. **Click New to open a new dialog box.**

As in *PuTTY*, typed in your web host name or IP address into Hostname. We will use *webhost.example.com*. Change as necessary, as that host is for example only.

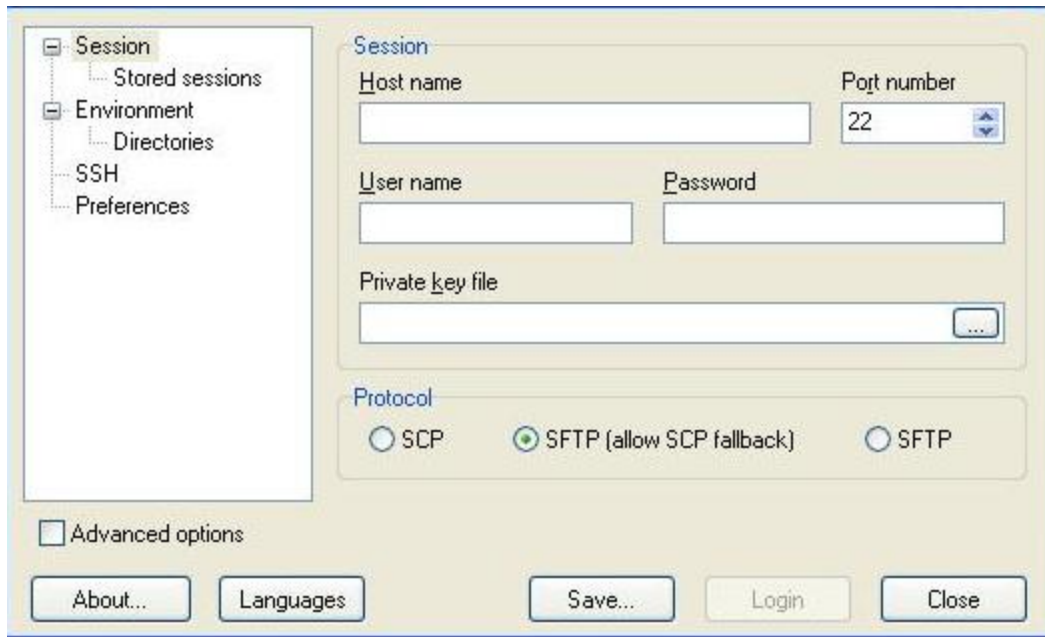


Figure 12 – WinSCP Login information

Leave the port as is; enter the username and password into the correct field. Notice that once you enter the User Name, the Login button should be enabled. The password can be entered later when prompted.

When you enter the password, the private key file should be disabled. It functions as a secret that identify your host alone. We won't utilize this and use common password instead.

Don't forget to save your connection, so that later you can save some time typing the credentials again and again. If your PC is shared among family members or friends, it is always a good idea to leave the password field blank.

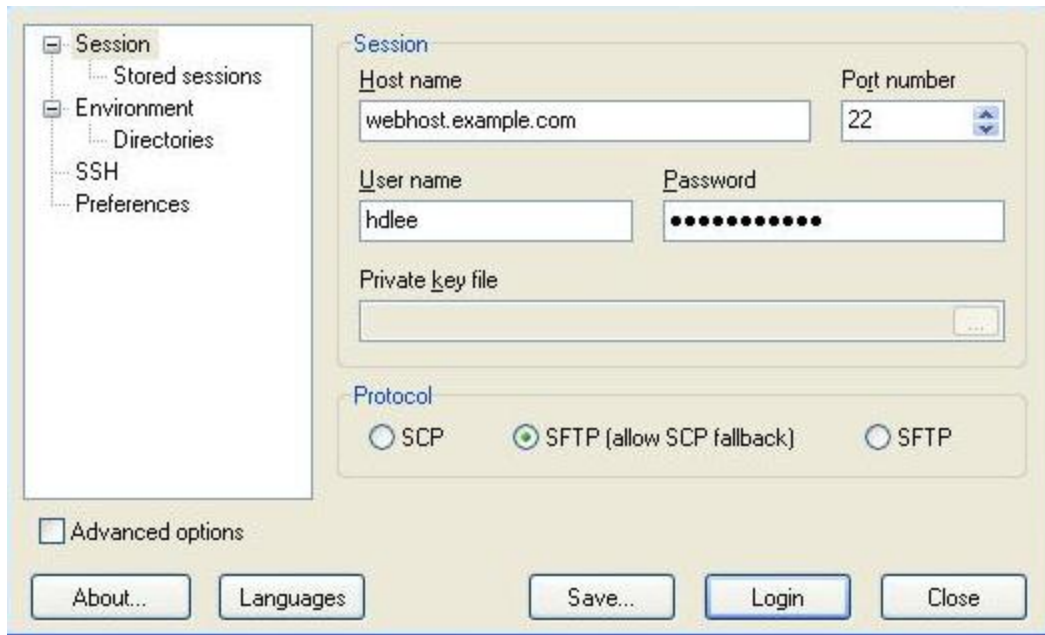


Figure 13 – WinSCP login information filled in

3. **Click login. It takes a while for your host and the server to negotiate before an action will happen.**

If this is your first time connection, you will be prompted for confirmation of the following key:



Figure 14 – WinSCP Warning

You should click **Yes** and proceed. The host key serve as the identity key for that host only. No other host will have the same key. If the other time you connect the key changes, you should contact your web hosting support. This may be an indication their server have been exploited by cracker. Fresh reinstallation without backing up the key is another reason it change, but the latter case is fine. Just contact your web hosting support for assistance.

PuTTY and *WinSCP* save their host information separately, so each software need to confirm the first time they are used to connect to a new host.

4. After successfully connected, the screen appear more or less like this:

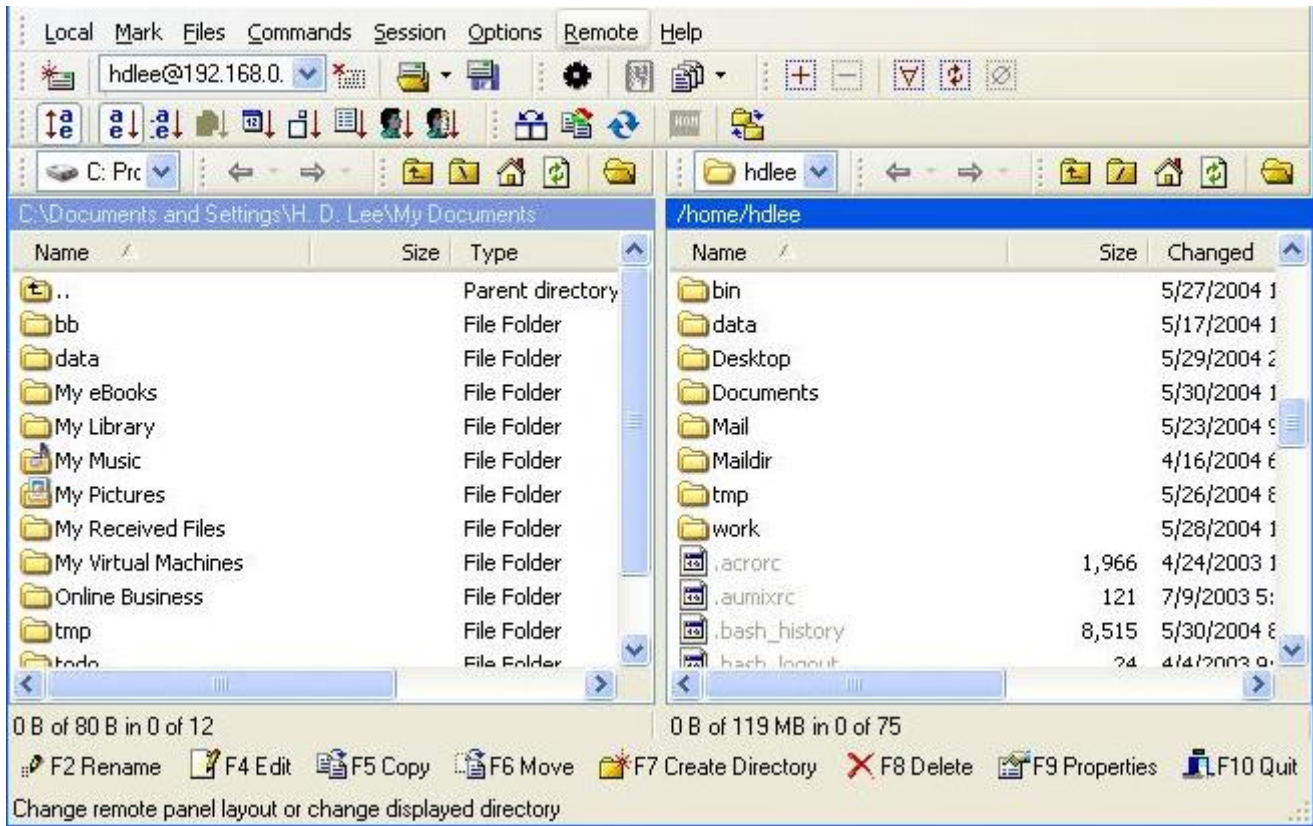


Figure 15 – WinSCP in action

Your screen should be different, depend on the files and other settings on the server and your part.

5. Try copying files to your server (upload) and vice versa (download).

Highlight the files or directories with up or down button, and press F5 to copy. You can drag and drop too if you like to. To switch from one pane to the other, press Tab key.

From now, rest assured that all your data will be transferred in a secure channel, even the plain text and HTML file.

Get familiar with both programs and use it extensively every time when you have to transfer files between your host and web hosting.

Troubleshooting

If for some reason you can not duplicate what have been shown here, there have to be some glitches, or steps forgotten. Please follow the guide to the letter. If it persists, it might be one of the following:

1. Failed internet connection

Make sure that your connection is fine. Try to browse some website, and see if it works.

2. Firewall

Firewall is a piece of software or hardware that sit between your PC and the Internet to guard malicious packets travel inbound or outbound. If you have a personal firewall installed, unload it. Better yet, allow SSH connection. For your information, SSH uses port 22 and TCP (Transport Control Protocol).

If you disabled the firewall, don't forget to turn it back on and set it to allow only SSH connection. You unload the firewall just to find if it is the one that block your SSH connection.

If your ISP block SSH packets to/from hosts, then complain loudly to your ISP instead.

3. Corrupted files

Corrupted files due to errors in download will refuse to run. Download and try again.

4. Refused connection

Ensure that your web host enables SSH connection. Some web hosting provider decided not to allow it for security reason (it is too powerful for users).