Deploying Your Website

ACM Webmonkeys @ UIUC

Terminology: "Deployment"

- In web development, **deployment** refers to transferring your website to a live server.
    - When building your website initially, you use a **development** server. This is typically your personal computer.
    - For large projects, you usually have a **test** server which you deploy to first and ensure the site works correctly.
    - The **production** server is the actual server, which serves your website to all its visitors.
- So here, "deploying your website" means "putting your website on the web".

Terminology: Web Server

- Key idea: a **web server** is simply a normal computer with web server software installed.
  - This web server software **waits** for other computers (like yours) to contact it and **ask for a web page**.
  - The web server software **somehow retrieves that page** and **sends it back** to whomever requested it.
  - **Technical note:** this communication is done with sockets, using port 80 (usually) and the HTTP protocol.
- Any computer can be turned into a web server!
  - Just install web server software (Apache, IIS, etc.)
  - Not a good idea to try and use your PC as a production server, though -- your internet is probably too slow.

Your Computer

(with a personal web server installed for testing purposes)

Develop all the website's files locally. Make sure to contain them in a single folder so it's easy to upload them to the server.

DEPLOYMENT

Upload everything to the server! (explained in detail later)

Production Server

Put all the files in the right place (explained later), and the webserver will know how to find and use them.

(stored in a fancy datacenter somewhere)

Basic website development process

1. Come up with idea for a website.
2. Develop the website on your **local computer**.
3. When done, **upload** the website to a *real* **web server**.

So where do we get a "real" web server from?

Acquiring webspace

- There are a few options for getting webspace (a term used to describe space on a webserver in which your website can reside and be accessed):
  - Build your own datacenter on a major Internet pipe
    - Not really feasible.
  - Host your website on your own computer
    - Possible, but generally not a good idea. The latency on your average home connection is way higher than visitors can tolerate, even if your throughput is high enough.
  - Rent webspace from a web hosting company
    - JustHost, HostGator, Heroku, etc.
    - Every UIUC student has some webspace available.

Getting to your webspace

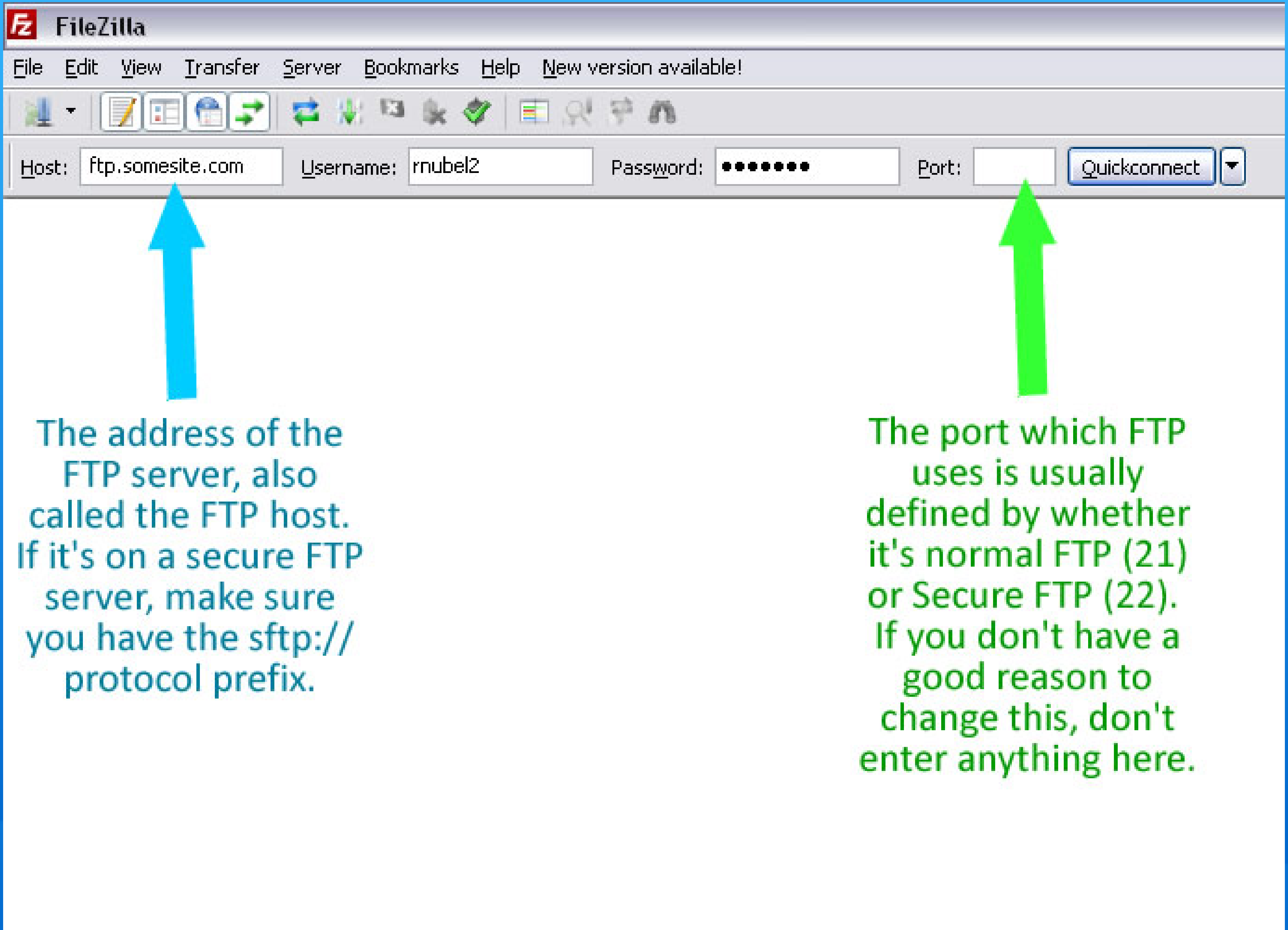
- In order to upload files to your webspace easily, you need to establish an FTP connection to the server.
    - FTP = File Transfer Protocol
    - Use a program like FileZilla (www.filezilla-project.org)
- I will go into detail on how to use a FTP client (like FileZilla) later, but the first thing that any FTP client will need to work is the **FTP connection information** to the server.
- If you're using your CITES webspace, you will need to use a different method to upload your website. See http://www.cites.illinois.edu/netfiles/desktop.html for more info.

The common scenario

- In most situations, you'll end up using some form of managed hosting (i.e. JustHost). Once you sign up for their service, you'll get an email containing:
    - Standard marketing upsell BS (ignore)
    - Information to log into the control panel for the site
- Log into the control panel as directed, and find the option to manage FTP accounts.
    - Typically a default FTP account has already been created, with the same info as your control panel.
    - If not, create a new FTP account to use.

Using an FTP client

- Okay, let's say we have the FTP info for the server we want to put our website on.
    - Username: rnubel2
    - Password: hunter2
    - FTP server address: ftp://ftp.somesite.com
        - If not given an FTP address, enter your website's domain name. It will probably work.
- What next?
- Open up FileZilla (steps are similar for other clients), and...


FileZilla
File Edit View Transfer Server Bookmarks Help New version available!
Quickconnect

Host: ftp.somesite.com

Username: rnubel2

Password: ••••••••

Port:

The address of the FTP server, also called the FTP host. If it's on a secure FTP server, make sure you have the sftp:// protocol prefix.

The port which FTP uses is usually defined by whether it's normal FTP (21) or Secure FTP (22). If you don't have a good reason to change this, don't enter anything here.

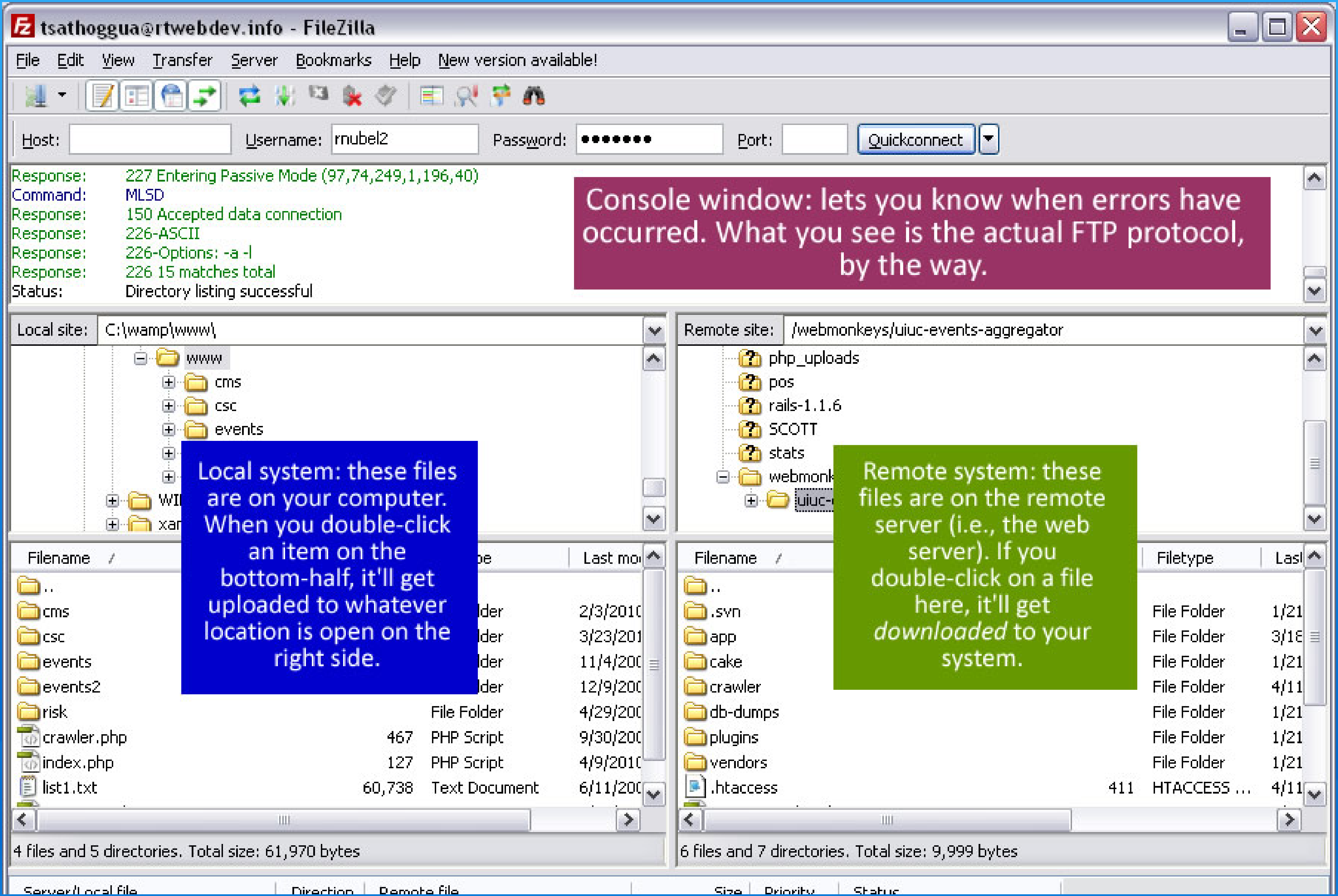
Enter your information, then click (Quick)connect.

Connected!

- If your info is right, you're now connected to the server. It's time to upload all our files!

- If it didn't work:
  - Check that your information is right. Most web servers will not tell you that your username is wrong -- they'll say "User: totallywronguser OK" just to mess with you.
  - Check that you're connecting to the right server.
  - Check that you're using the right protocol (FTP vs SFTP)
  - Make sure your account exists on the server.

Interface breakdown


tsathoggua@rtwebdev.info - FileZilla
File Edit View Transfer Server Bookmarks Help New version available!
Quickconnect

Host: Username: rnubel2 Password: ●●●●●●● Port:

```
Response:   227 Entering Passive Mode (97,74,249,1,196,40)
Command:    MLSD
Response:   150 Accepted data connection
Response:   226-ASCII
Response:   226-Options: -a -l
Response:   226 15 matches total
Status:     Directory listing successful
```

Console window: lets you know when errors have occurred. What you see is the actual FTP protocol, by the way.

Local site: C:\wamp\www\

```
www
  cms
  csc
  events
WI
xar
```

Remote site: /webmonkeys/uiuc-events-aggregator

```
php_uploads
pos
rails-1.1.6
SCOTT
stats
webmonk
  uiuc-
```

Local system: these files are on your computer. When you double-click an item on the bottom-half, it'll get uploaded to whatever location is open on the right side.

Filename /		pe	Last mo
..			
cms		lder	2/3/201
csc		lder	3/23/201
events		lder	11/4/200
events2		lder	12/9/200
risk		File Folder	4/29/200
crawler.php	467	PHP Script	9/30/200
index.php	127	PHP Script	4/9/201
list1.txt	60,738	Text Document	6/11/200

4 files and 5 directories. Total size: 61,970 bytes

Remote system: these files are on the remote server (i.e., the web server). If you double-click on a file here, it'll get *downloaded* to your system.

Filename /		Filetype	Last
..			
.svn		File Folder	1/21
app		File Folder	3/18
cake		File Folder	1/21
crawler		File Folder	4/11
db-dumps		File Folder	1/21
plugins		File Folder	1/21
vendors		File Folder	1/21
.htaccess	411	HTACCESS ...	4/11

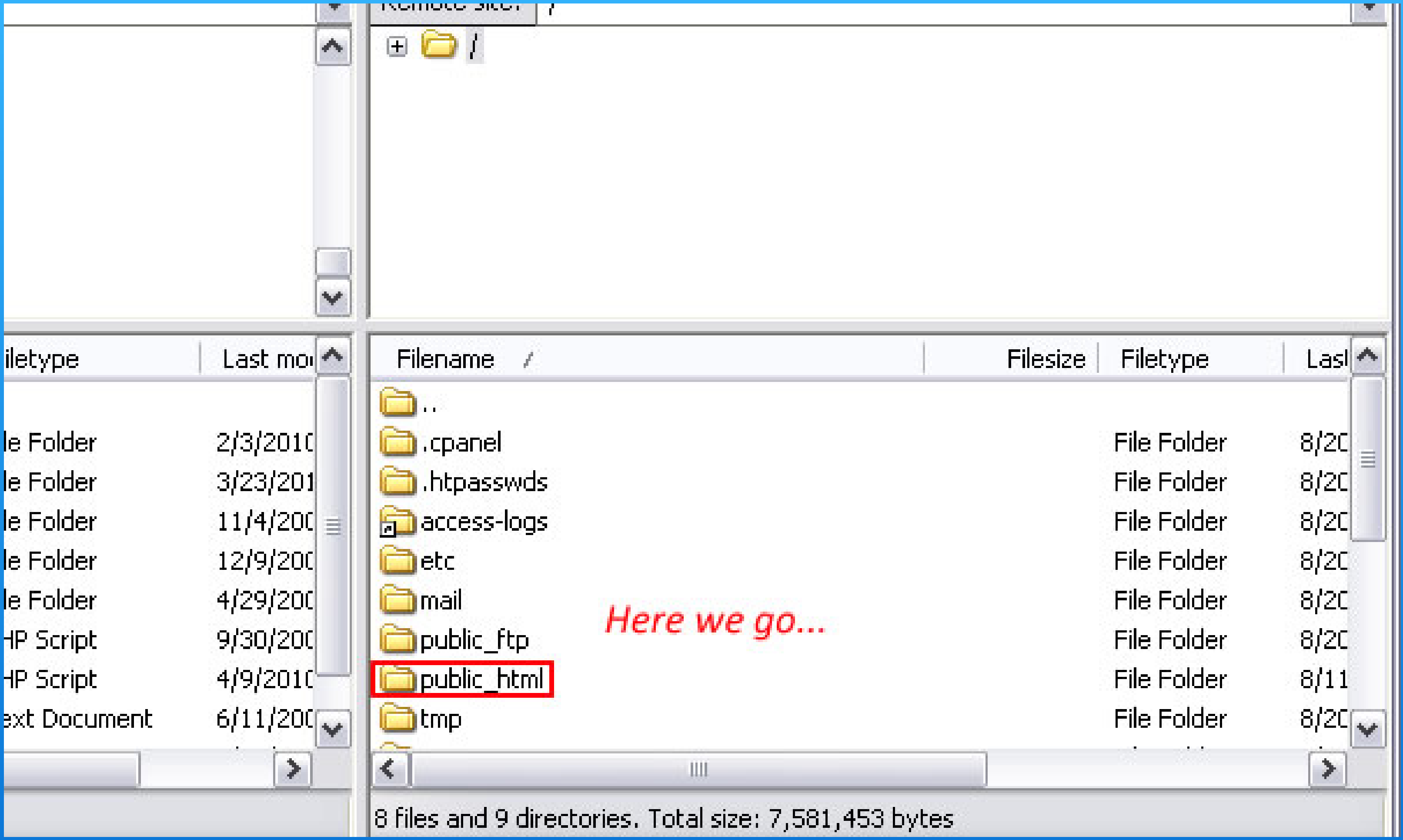
6 files and 7 directories. Total size: 9,999 bytes

Our plan

1. On the left (our computer), navigate to the root folder of the website's files.
2. On the right (web server), navigate to the web root.
3. Select everything on the left and right click -> Upload
4. Wait a while
5. Done!

Problem: where's the web root?

- That plan sounds great, but first we need to find the web root.
  - Web root: the directory on a server's file system which the web server by default assumes to be the root; any request it receives are viewed as relative to this path.
- Theoretically, the web root can be *anywhere* on the system -- you'd need to check the server's config files.
- In practice, your FTP account is usually set to point to **one level above the web root**. Look for a folder named like www, public_html, wwwroot, or something similar.
  - Sometimes, the FTP account already points to your web root.



Remote site: /

/

iletype	Last mo
le Folder	2/3/2010
le Folder	3/23/201
le Folder	11/4/200
le Folder	12/9/200
le Folder	4/29/200
HP Script	9/30/200
HP Script	4/9/2010
ext Document	6/11/200

Filename	Filesize	Filetype	Last
..			
.cpanel		File Folder	8/20
.htpasswds		File Folder	8/20
access-logs		File Folder	8/20
etc		File Folder	8/20
mail		File Folder	8/20
public_ftp		File Folder	8/20
public_html		File Folder	8/11
tmp		File Folder	8/20

8 files and 9 directories. Total size: 7,581,453 bytes

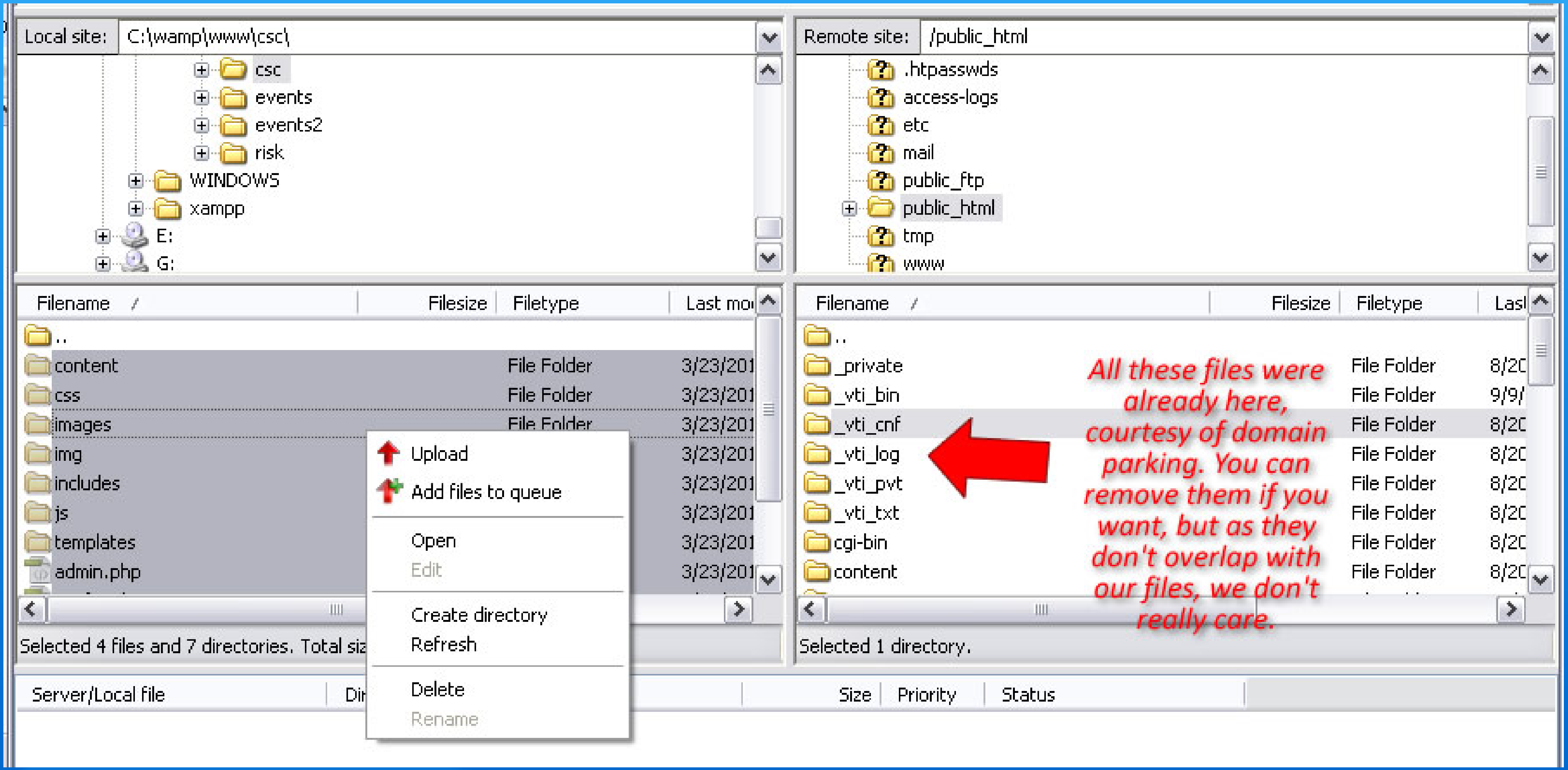
Here we go...

You might, sometimes, see *two* folders that look plausible. In this case, one of them is probably a shortcut to the other.

Some finer details

- Be careful what you upload where!
- If your site is contained in a folder called mysite, and you want e.g. mysite/index.html to be accessible from www.mynewsite.com/index.html, then do NOT upload the mysite folder itself!
    - Upload everything *inside* the folder directly into public_html.
    - Otherwise, you'll end up having to go to www.mynewsite.com/mysite/index.html, which isn't good.

So, as an example…



Local site: C:\wamp\www\csc\

csc
events
events2
risk
WINDOWS
xampp
E:
G:

Remote site: /public_html

.htpasswds
access-logs
etc
mail
public_ftp
public_html
tmp
www

Filename /	Filesize	Filetype	Last mo
..			
content		File Folder	3/23/201
css		File Folder	3/23/201
images		File Folder	3/23/201
img			3/23/201
includes			3/23/201
js			3/23/201
templates			3/23/201
admin.php			3/23/201

Selected 4 files and 7 directories. Total siz

Filename /	Filesize	Filetype	Last
..			
_private		File Folder	8/20
_vti_bin		File Folder	9/9/
_vti_cnf		File Folder	8/20
_vti_log		File Folder	8/20
_vti_pvt		File Folder	8/20
_vti_txt		File Folder	8/20
cgi-bin		File Folder	8/20
content		File Folder	8/20

Selected 1 directory.

All these files were already here, courtesy of domain parking. You can remove them if you want, but as they don't overlap with our files, we don't really care.

All uploaded! Now what?

- Test that it works!
  - Go to the site on the web and make sure it works.
  - If your site has dynamic functionality, verify that this works as you expected.
  - This is called **regression testing** -- making sure that your code still works.
- And if it doesn't?
  - Check that your site is configured correctly.
    - Will talk more about this in later tutorials.