



Linux For Embedded Systems

For Arabs

Course 102: Understanding Linux

Ahmed ElArabawy

Lecture 4: Using Wild Cards



Wild Cards

- Sometimes you will need to execute a command on a group of files instead of a single file
 - Examples:
 - You want to delete all log files
 - You want to list all image files
 - You want to copy old files (ending with .old) to a different place
- The solution for that is to use Wild Cards (also called Globbing)
- Wild cards are patterns that work as placeholders in file names and directory names that are used to apply the command on a group of files/directories that share something in their name
- Remember wild cards are used for file names and directory names ONLY For normal text another patterns are used (Regular Expressions) which will be covered in a future lecture

The “*” Wild Card

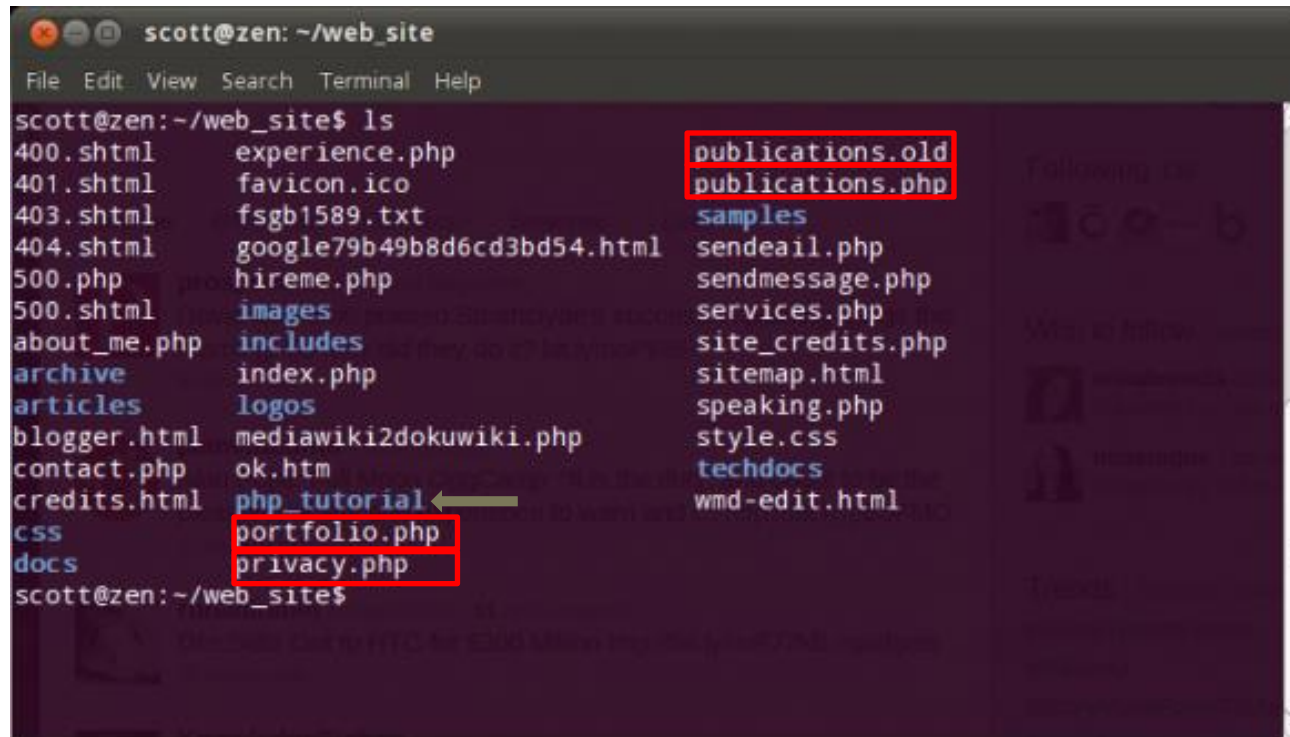
- The “*” can replace any set of characters (including none) in the file/directory name

```
scott@zen: ~/web_site
File Edit View Search Terminal Help
scott@zen:~/web_site$ ls
400.shtml      experience.php      publications.old
401.shtml      favicon.ico         publications.php
403.shtml      fsgb1589.txt       samples
404.shtml      google79b49b8d6cd3bd54.html
500.php        hireme.php          sendemail.php
500.shtml      images             sendmessage.php
about_me.php   includes           services.php
archive        index.php          site_credits.php
articles       logos             sitemap.html
blogger.html  mediawiki2dokuwiki.php
contact.php   ok.htm            speaking.php
credits.html  php_tutorial       style.css
css           portfolio.php      techdocs
docs          privacy.php        wmd-edit.html
scott@zen:~/web_site$
```

\$ rm *.php

The “*” Wild Card

- The “*” can replace any set of characters (including none) in the file/directory name



```
scott@zen: ~/web_site
File Edit View Search Terminal Help
scott@zen:~/web_site$ ls
400.shtml      experience.php  publications.old
401.shtml      favicon.ico    publications.php
403.shtml      fsgb1589.txt  samples
404.shtml      google79b49b8d6cd3bd54.html sendemail.php
500.php        hireme.php    sendmessage.php
500.shtml      images        services.php
about_me.php   includes      site_credits.php
archive        index.php     sitemap.html
articles       logos         speaking.php
blogger.html  mediawiki2dokuwiki.php style.css
contact.php   ok.htm        techdocs
credits.html  php_tutorial  wmd-edit.html
css           portfolio.php
docs          privacy.php
scott@zen:~/web_site$
```

The terminal window shows a file listing in a directory named ~/web_site. The files are listed in two columns. The files 'publications.old', 'publications.php', 'portfolio.php', and 'privacy.php' are highlighted with red boxes. A green arrow points to 'php_tutorial'.

\$ rm p*

The “*” Wild Card

- The “*” can replace any set of characters (including none) in the file/directory name

```
scott@zen: ~/web_site
File Edit View Search Terminal Help
scott@zen:~/web_site$ ls
400.shtml      experience.php  publications.old
401.shtml      favicon.ico    publications.php
403.shtml      fsgb1589.txt  samples
404.shtml      google79b49b8d6cd3bd54.html sendemail.php
500.php        hireme.php    sendmessage.php
500.shtml      images        services.php
about_me.php   includes      site_credits.php
archive        index.php     sitemap.html
articles       logos         speaking.php
blogger.html   mediawiki2dokuwiki.php style.css
contact.php    ok.htm        techdocs
credits.html   php_tutorial  vmd-edit.html
css            portfolio.php
docs           privacy.php
scott@zen:~/web_site$
```

\$ rm *.*htm*

The “*” Wild Card

- The “*” can replace any set of characters (including none) in the file/directory name

```
scott@zen: ~/web_site
File Edit View Search Terminal Help
scott@zen:~/web_site$ ls
400.shtml      experience.php  publications.old
401.shtml      favicon.ico    publications.php
403.shtml      fsgb1589.txt  samples
404.shtml      google79b49b8d6cd3bd54.html
500.php        hireme.php    sendemail.php
500.shtml      images        sendmessage.php
about_me.php   includes      services.php
archive        index.php     site_credits.php
articles       logos         sitemap.html
blogger.html   mediawiki2dokuwiki.php
contact.php    ok.htm        speaking.php
credits.html   php_tutorial  style.css
css            portfolio.php techdocs
docs           privacy.php   vmd-edit.html
scott@zen:~/web_site$
```

\$ rm -r *.*

The “*” Wild Card

- The “*” can replace any set of characters (including none) in the file/directory name

```
scott@zen: ~/web_site
File Edit View Search Terminal Help
scott@zen:~/web_site$ ls
400.shtml      experience.php  publications.old
401.shtml      favicon.ico    publications.php
403.shtml      fsgb1589.txt  samples
404.shtml      google79b49b8d6cd3bd54.html sendemail.php
500.php        hireme.php    sendmessage.php
500.shtml      images        services.php
about_me.php   includes      site_credits.php
archive        index.php     sitemap.html
articles       logos         speaking.php
blogger.html   mediawiki2dokuwiki.php style.css
contact.php    ok.htm        techdocs
credits.html   php_tutorial  wmd-edit.html
css            portfolio.php
docs           privacy.php
scott@zen:~/web_site$
```

\$ rm -r *

The “?” Wild Card

- The “?” wild card stands for any single character

```
scott@zen: ~/web_site
File Edit View Search Terminal Help
scott@zen:~/web_site$ ls
400.shtml  experience.php  publications.old
401.shtml  favicon.ico     publications.php
403.shtml  fsgb1589.txt   samples
404.shtml  google79b49b8d6cd3bd54.html  sendemail.php
500.php    hireme.php     sendmessage.php
500.shtml  images         services.php
about_me.php  includes      site_credits.php
archive     index.php     sitemap.html
articles    logos         speaking.php
blogger.html mediawiki2dokuwiki.php  style.css
contact.php ok.htm        techdocs
credits.html php_tutorial  wmd-edit.html
css
docs
scott@zen:~/web_site$
```

\$ rm 40?.shtml

The “?” Wild Card

- The “?” wild card stands for any single character

```
scott@zen: ~/web_site
File Edit View Search Terminal Help
scott@zen:~/web_site$ ls
400.shtml      experience.php  publications.old
401.shtml      favicon.ico    publications.php
403.shtml      fsgb1589.txt  samples
404.shtml      google79b49b8d6cd3bd54.html sendemail.php
500.php        hireme.php    sendmessage.php
500.shtml      images        services.php
about_me.php   includes      site_credits.php
archive        index.php     sitemap.html
articles       logos         speaking.php
blogger.html  mediawiki2dokuwiki.php style.css
contact.php   ok.htm        techdocs
credits.html  php_tutorial  wmd-edit.html
css           portfolio.php
docs          privacy.php
scott@zen:~/web_site$
```

\$ rm ?0?.shtml

[<chars>] and [!<chars>]

- We can have more restriction than the use of “?” by specifying a limited set of options for the character

“[ars]” : Stands for a Single character from the list a,r,s

“[!ars]” : Stands for any Single character except for the list a,r,s

“[2-5]” : Stands for a Single character from the range 2 to 5

“[!2-5]” : Stands for any Single character except for the list 2 to 5

“[a-l]” : Stands for a Single character from range of ‘a’ to ‘l’

“[!a-l]” : Stands for any Single character except for the list a to l

“[1-37-9]” : Stands for 1,2,3,7,8,9

“[a-chk]” : Stands for a,b,c,h,k

- Examples:

\$ rm -r ab[c-fh-j]

removes the files/folders named abc,abd,abe,abf, abh,abi,abj

\$ ls results-[0-9][0-9].log

lists the files named results-00.log to results-99.log

`[[:<Class Name>:]]`

- “`[[:<class name>:]]`” stands for a single character belonging to the specified class
- Some of used classes,

`[[:alnum:]]` Alpha Numeric characters (a-z, A-Z, 0-9)

`[[:alpha:]]` Alphabets (a-z, A-Z)

`[[:digit:]]` Digits (0-9)

`[[:lower:]]` Lower case character (a-z)

`[[:upper:]]` Upper case character (A-Z)

- Examples:

`$ cp results-[[:digit:]][[:digit:]]-[[:alpha:]].log ~/log`

Use of Curly Brackets “{ }”

- Curly brackets are used to group selections
- Examples,

```
$ rm {*.log,*.txt}
```

```
$ cp {*.pdf,*.doc} ~/documents/
```

- Note:

This also works

```
$ rm *.log *.txt
```

```
$ cp *.pdf *.doc ~/documents/
```

A nice tip,

- If you are going to remove a bunch of files/directories using wild cards, a good idea is to list them first with the same wildcard pattern to make sure you are not doing a mistake and removing the wrong files, then replace “*ls*” with an “*rm*”
- Or if not sure, use the ‘*-i*’ to confirm each file delete before it is deleted

Escape Sequence “\”

- Some special letters has a meaning (such as *space*, ***, *“*, *’*, *(*, ...)
- It is not recommended to use these letters in file/directory names
- But, if we have to then there is a special way of dealing with them,
- If we need to delete a file named “my results.txt”
\$ rm my results.txt
\$ rm my\ results.txt
- This is called “Escaping the space letter” which means changing its default meaning from a separator letter into a general letter inside the filename

Examples of Escape Sequence

Real File Name	File Name representation
my?file.log	my\?file.log
my*file.log	my*file.log
my file (today).txt	my\ file\ \ (today\).txt
"my file"	\ "my\ file\"
abc[!2]	abc\\[!2\\



Linux 4

Embedded Systems

<http://Linux4EmbeddedSystems.com>