



# Linux For Embedded Systems

## *For Arabs*

## Course 102: Understanding Linux

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# 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**

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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 p\***

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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\***

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scott@zen:~/web_site$ ls
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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

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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>