Quilt Tutorial

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Abstract

The tutorial is to introduce you to quilt. It illustrates with examples the various quilt commands and on how to manage patches. This tutorial is released under the GNU Free Documentation License. The quilt project is hosted at http://savannah.nongnu.org/projects/quilt. Have fun!

1 Tutorial

Create a directory and copy the given int.c, float.c and char.c files to it. An ls should show:

```
$ ls
char.c float.c int.c
```

1.1 new

Create a new patch:

```
$ quilt new int-1.diff
Patch int-1.diff is now on top
```

Quilt would have created the necessary folders:

```
$ ls -a
. .. char.c float.c int.c patches .pc
```

1.2 top

The topmost patch of the stack can be displayed using the "top" command:

```
$ quilt top
int-1.diff
```

1.3   series

The patches available in the stack can be displayed using the "series" command. The series file is present in the patches/ directory.

```
$ quilt series
```
int-1.diff

1.4   add

Associate the file int.c to the topmost patch, which is int-1.diff.

```
$ quilt add int.c
```
File int.c added to patch int-1.diff

Now, all changes made to int.c will be updated in the int-1.diff patch.

1.5   edit

The edit command is used to edit a file with quilt:

```
$ quilt edit int.c
```

(Add a comment "/* integer */" to the end of the line "int x;")

1.6   refresh

The refresh command is used to update the patch:

File int.c is already in patch int-1.diff

```
$ quilt refresh
```
Refreshed patch int-1.diff

The patch is now updated. You can view the patch:

```
$ cat patches/int-1.diff
```
Index: quilt-eg/int.c
===================================
— quilt-eg.orig/int.c 2006-04-05 22:00:50.000000000 +0530
+++ quilt-eg/int.c 2006-04-05 22:05:34.000000000 +0530
@@ -1,6 +1,6 @@
#include <stdio.h>
int main (void)
{
- int x;
+ int x; /* integer */
return 0;
}

1.7 Repeating 1.1 - 1.6 for float.c

Create a new patch:

```
$ quilt new float-2.diff
```
Patch float-2.diff is now on top

The topmost patch in the stack is now:

```
$ quilt top
```
float-2.diff

The series now contains (the stack grows downwards):

```
$ quilt series
```
int-1.diff
float-2.diff

You can simply use quilt to edit a file, and it will automatically be associated with the topmost patch.

```
$ quilt edit float.c
```

(Add "#include <math.h>" after "#include <stdio.h>")

File float.c added to patch float-2.diff

```
$ quilt refresh
```
Refreshed patch float-2.diff

The patch is now updated. You can view the patch:

```
$ cat patches/float-2.diff
```
Index: quilt-eg/float.c
=====================================
— quilt-eg.orig/float.c 2006-04-05 22:01:01.000000000 +0530
+++ quilt-eg/float.c 2006-04-05 22:11:11.000000000 +0530
@@ -1,4 +1,5 @@
#include <stdio.h>
+#include <math.h>
int main (void)
{
float f;

1.8   Repeating 1.1 - 1.6 for char.c

Create a new patch:

```
$ quilt new char-3.diff
```
Patch char-3.diff is now on top

The topmost patch in the stack is now:

```
$ quilt top
```
char-3.diff

The series now contains:

```
$ quilt series
```
int-1.diff
float-2.diff
char-3.diff

You can simply use quilt to edit a file, and it will automatically be associated with the topmost patch.

```
$ quilt edit char.c
```

(Add "#include <string.h" after "#include <stdio.h>", and add a comment "/* character */" to the end of the line "char ch;")

File char.c added to patch char-3.diff

```
$ quilt refresh
```
Refreshed patch char-3.diff

The patch is now updated. You can view the patch:

```
$ cat patches/char-3.diff
```
Index: quilt-eg/char.c
=====================================
— quilt-eg.orig/char.c 2006-04-05 22:01:17.000000000 +0530
+++ quilt-eg/char.c 2006-04-05 22:14:09.000000000 +0530
@@ -1,6 +1,7 @@
#include <stdio.h>
+#include <string.h>
int main (void)
{
- char ch;
+ char ch; /* character */
return 0;
}

1.9   pop

The "pop" command is used to undo all patches upto (and NOT including) the name of the patch provided.

```
$ quilt pop float-2
Removing patch char-3.diff
Restoring char.c

Now at patch float-2.diff
```

So, char.c has been restored:

```
$ cat char.c
#include <stdio.h>
int main (void)
{
char ch;
return 0;
}
```

The new top is now:

```
$ quilt top
float-2.diff
```

The series still contains the patches:

```
$ quilt series
int-1.diff
float-2.diff
char-3.diff
```

1.10   applied

The list of applied patches can be viewed from the "applied" command:

```
$ quilt applied
int-1.diff
float-2.diff
```

1.11   unapplied

The list of unapplied patches can be viewed from the "unapplied" command:

```
$ quilt unapplied
char-3.diff
```

1.12 previous

The patch below a patch can be displayed using the "previous" command:

```
$ quilt previous float-2
```
int-1.diff

1.13 next

The patch above a patch can be displayed using the "next" command:

```
$ quilt next float-2
```
char-3.diff

1.14 files

The list of files associated with the topmost patch can be displayed using the "files" command:

```
$ quilt files
```
float.c

1.15 patches

The list of patches associated with a given file can be displayed using the "patches" command:

```
$ quilt patches int.c
```
int-1.diff

1.16 push

The "push" command is used to apply patch(es) upto and including the patch:

```
$ quilt push char-3
```
Applying patch char-3.diff
patching file char.c

Now at patch char-3.diff

```
$ quilt refresh
```
Refreshed patch char-3.diff

```
$ quilt top
```
char-3.diff

The updated file:

```
$ cat char.c
#include <stdio.h>
#include <string.h>
int main (void)
{
char ch; /* character */
return 0;
}
```

1.17   grep

The "grep" command is used to search for patterns in the source
files (skips patch files, quilt meta-info):

```
$ quilt grep int
char.c: int main (void)
float.c: int main (void)
int.c:int main (void)
int.c: int x; /*integer */
```

1.18   delete

We are now going to "delete" char-3.diff.

```
$ quilt pop float-2
```
Removing patch char-3.diff
Restoring char.c

Now at patch float-2.diff

```
$ cat char.c
```
#include <stdio.h>
int main (void)
{
char ch;
return 0;
}

```
$ quilt top
```
float-2.diff

```
$ quilt series
```
int-1.diff
float-2.diff
char-3.diff

The "delete" command deletes the patch from the series file:

```
$ quilt delete char-3
```

```
$ cat char.c
```
#include <stdio.h>
int main (void)
{
char ch;
return 0;
}

```
$ quilt top
```
float-2.diff

```
$ quilt series
```
int-1.diff
float-2.diff

The patch still exists in the patches directory though:

```
$ ls patches/
```
char-3.diff float-2.diff int-1.diff series

1.19   fork

The "fork" command is used to make a copy of the topmost patch, so it can be used for branching options:

```
$ quilt fork
```
Fork of patch float-2.diff created as float-3.diff

Both the old and newly forked patch exists in the patches/ directory:

```
$ ls patches/
```
char-3.diff float-2.diff float-3.diff int-1.diff series

```
$ quilt top
```
float-3.diff

```
$ quilt series
```
int-1.diff
float-3.diff

```
$ quilt edit float.c
```

(Add a comment "/* floating */" to the line "float f;")

File float.c is already in patch float-3.diff

```
$ quilt refresh
```
Refreshed patch float-3.diff

```
$ cat patches/float-3.diff
```
Index: quilt-eg/float.c
=====================================
— quilt-eg.orig/float.c 2006-04-05 22:01:01.000000000 +0530
+++ quilt-eg/float.c 2006-04-05 22:54:39.000000000 +0530
@@ -1,6 +1,7 @@
#include <stdio.h>
+#include <math.h>
int main (void)
{
- float f;
+ float f; /* floating */
return 0;
}

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1.20 remove

The "remove" command is used to remove the associativity of files to a patch:

```
$ quilt remove -p float-3 float.c
```
File float.c removed from patch float-3.diff

```
$ quilt refresh
```
Nothing in patch float-3.diff

```
$ cat float.c
```
#include <stdio.h>
int main (void)
{
char ch;
return 0;
}

1.21 Cleaning up

Cleaning up:

```
$ quilt pop int-1.diff -f
```
Removing patch float-3.diff
Now at patch int-1.diff

```
$ cat float.c
```
#include <stdio.h>
int main (void)
{
float f;
return 0;
}
```
$ quilt top
```
int-1.diff

```
$ quilt series
```
int-1.diff
float-3.diff

```
$ quilt delete float-3
```

```
$ quilt series
```
int-1.diff

```
$ quilt remove int.c
```
File int.c removed from patch int-1.diff

```
$ cat int.c
```
#include <stdio.h>
int main (void)
{
int x;
return 0;
}

```
$ quilt refresh
```
Nothing in patch int-1.diff

```
$ quilt pop -f
```
Removing patch int-1.diff
No patches applied

```
$ quilt delete int-1
```

References

[1] Andrew   Morton: Patch   Management
    Scripts,   `http://lwn.net/Articles/13518/,`   and
    `http://www.zip.com.au/` akpm/linux/patches/patch-scripts-0.9.

[2] Andreas   Grünbacher   et   al.:   Patchwork   Quilt,
    `http://savannah.nongnu.org/projects/quilt.`

Contact

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