These locations may be different depending on your distro. These instructions were made assuming a ubuntu distro.

Filling up cpp\_jail:

1. Run the createcontest file PHP page and navigate to /home/USER/CONTESTDIR/
2. Create directory cpp\_jail/usr
3. Create directory cpp\_jail/usr/bin
4. Create directory cpp\_jail/usr/lib
5. Create directory cpp\_jail/bin
6. Create directory cpp\_jail/lib64
7. Create directory cpp\_jail/lib
8. Create directory cpp\_jail/lib/x86\_64-linux-gnu
9. Copy /bin/sh TO cpp\_jail/bin/
10. Copy /lib/x86\_64-linux-gnu/libc.so.6 TO cpp\_jail/lib/x86\_64-linux-gnu/
11. Copy /lib/x86\_64-linux-gnu/libgcc\_s.so.1 TO cpp\_jail/lib/x86\_64-linux-gnu/
12. Copy / lib/x86\_64-linux-gnu/libm.so.6 TO cpp\_jail/ lib/x86\_64-linux-gnu/
13. Copy /lib64/ld-linux-x86-64.so.2 TO cpp\_jail/lib64/
14. Copy /usr/bin/sh TO cpp\_jail/usr/bin/
15. Copy /usr/lib/x86\_64-linux-gnu TO cpp\_jail/usr/lib/

Filling up c\_jail:

1. Create directory c\_jail/usr
2. Create directory c\_jail/usr/bin
3. Create directory c\_jail/usr/lib
4. Create directory c\_jail/bin
5. Create directory c\_jail/lib64
6. Create directory c\_jail/lib
7. Create directory c\_jail/lib/x86\_64-linux-gnu
8. Copy /bin/sh TO c\_jail/bin/
9. Copy /lib/x86\_64-linux-gnu/libc.so.6 TO c\_jail/lib/x86\_64-linux-gnu/
10. Copy /lib64/ld-linux-x86-64.so.2 TO c\_jail/lib64/

Filling up java\_jail:

1. Create directory java\_jail/bin
2. Create directory java\_jail/usr
3. Create directory java\_jail/usr/bin
4. Create directory java\_jail/lib
5. Create directory java\_jail/lib/x86\_64-linux-gnu
6. Create directory java\_jail/lib64
7. Create the directories /usr/lib/jvm/java-6-openjdk-amd64/
8. Copy /bin/sh TO java\_jail/bin/
9. Copy /usr/bin/java TO java\_jail/usr/bin/
10. Copy /lib/x86\_64-linux-gnu/libpthread.so.0 TO java\_jail/lib/ x86\_64-linux-gnu/
11. Copy /lib/x86\_64-linux-gnu/ libdl.so.2 TO java\_jail/lib/ x86\_64-linux-gnu/
12. Copy /lib/x86\_64-linux-gnu/ libc.so.6 TO java\_jail/lib/ x86\_64-linux-gnu/
13. Copy /lib64/ld-linux-x86-64.so.2 TO java\_jail/lib64
14. Copy /lib/x86\_64-linux-gnu/libz.so.1 TO java\_jail/lib/x86\_64-linux-gnu/
15. Copy /usr/lib/jvm/java-1.6.0-openjdk-amd64/\* TO java\_jail/usr/lib/jvm/java-1.6.0-openjdk-amd64/\*

Suexec/php/userdir:

* + 1. Install the suExec and php packages
    2. Setup userdir on apache (Seen in the example blow)
    3. Setup php-cgi (Seen in example)
    4. Add the .php extension to the CGI handler in the apache config
    5. Example of what the apache config could look like:
       1. <VirtualHost \*:80>
       2. ServerName touche
       3. ServerAlias touche.cse
       4. # this is where requests for / go
       5. DocumentRoot /var/www
       6. AddHandler cgi-script .php
       7. AddType application/x-httpd-php .css
       8. AddHandler application/x-httpd-php .html .pdf
       9. <Directory /home/\*/public\_html>
       10. Options +ExecCGI
       11. SetHandler cgi-script
       12. DirectoryIndex index.php
       13. </Directory>
       14. </VirtualHost>

5. Restart Apache and you should be set.

Setting up PHP to actually be runnable:

* + 1. Login as root
    2. Mount binfmt\_misc: mount binfmt\_misc -t binfmt\_misc /proc/sys/fs/binfmt\_misc
    3. Next we need to create the php file, example command:
       1. echo “:php:E::php::/usr/bin/php5-cgi:” > /proc/sys/fs/binfmt\_misc/register
    4. PHP files are now runnable on your server!