

## Configuration of nph-srep on Apache (Ubuntu 14.04)

In this examples Sculptor is installed inside the *"/sculptor"* directory and belongs to the user and group *sc*.

### Set up Apache on the Server

First install it (if not already installed)

```
sc@localhost$ sudo apt-get install apache2
```

For security configure apache to use the user *sc*:

```
sc@localhost$ sudo chown -R sc:sc /var/www/html
sc@localhost$ sudo chmod -R 755 /var/www
sc@localhost$ sudo vim /etc/apache2/envvars
export APACHE_RUN_USER=sc
export APACHE_RUN_GROUP=sc
```

Configure apache to start when starting the OS, enable needed modules and start it:

```
sc@localhost$ sudo update-rc.d apache2 defaults
sc@localhost$ sudo a2enmod rewrite
sc@localhost$ sudo a2enmod cgi
sc@localhost$ sudo service apache2 start
```

### Use nph-srep directly on html directory

```
sc@localhost$ cp /sculptor/bin/nph-srep /var/www/html
```

```
sc@localhost$ sudo cat sites-enabled/000-default.conf
<VirtualHost *:80>
  DocumentRoot /var/www/html

  ScriptAlias /nph-srep /var/www/html/nph-srep

  SetEnv SCULPTOR /sculptor
</VirtualHost>
```

Now if we copy helloworld.q into the */var/www/html* we can use the URL:

<http://localhost/nph-srep?helloworld.q>

### Map Sculptor extensions with a copied nph-srep

```
sc@localhost$ sudo mkdir /var/www/cgi-bin
sc@localhost$ sudo chown -R sc:sc /var/www/cgi-bin/
sc@localhost$ cp /sculptor/bin/nph-srep /var/www/cgi-bin
```

```
sc@localhost$ sudo cat sites-enabled/000-default.conf
<VirtualHost *:80>
  DocumentRoot /var/www/html

  <Directory "/var/www/cgi-bin/">
    Options +ExecCGI
  </Directory>

  RewriteEngine on
  RewriteCond %{CONTEXT_DOCUMENT_ROOT}%{REQUEST_FILENAME} -f
  RewriteRule ^(\.*/)([^\/*]\.(q|sch|scj|scx))$ /var/www/cgi-bin/nph-srep?$2 \
[H=cgi-script,QSA,E=SC_CHDIR:%{CONTEXT_DOCUMENT_ROOT}$1,E=SCULPTOR:/sculptor,L]
</VirtualHost>
```

Now if we copy helloworld.q into the /var/www/html we can use the URL:

http://localhost/helloworld.q

## Map Sculptor extensions with \$SCULPTOR/bin/nph-srep

```
sc@localhost$ sudo cat sites-enabled/000-default.conf
<VirtualHost *:80>
    DocumentRoot /var/www/html

    <Directory "/sculptor/bin/nph-srep">
        Options +ExecCGI
        Require all granted
    </Directory>

    RewriteEngine on
    RewriteCond %{CONTEXT_DOCUMENT_ROOT}%{REQUEST_FILENAME} -f
    RewriteRule ^(\.*/)([^\.]*\.(q|sch|scj|scx))$ /sculptor/bin/nph-srep?$2 \
[H=cgi-script,QSA,E=SC_CHDIR:%{CONTEXT_DOCUMENT_ROOT}$1,E=SCULPTOR:/sculptor,L]
</VirtualHost>
```

Now if we copy helloworld.q into the /var/www/html we can use the URL:

http://localhost/helloworld.q

## Notes on Apache 2.2:

The “Require all granted” has to be removed and CONTEXT\_DOCUMENT\_ROOT changed with DOCUMENT\_ROOT, eg:

```
sc@localhost$ sudo cat sites-enabled/000-default.conf
<VirtualHost *:80>
    DocumentRoot /var/www/html

    <Directory "/sculptor/bin/nph-srep">
        Options +ExecCGI FollowSymLinks
    </Directory>

    RewriteEngine on
    RewriteCond %{DOCUMENT_ROOT}%{REQUEST_FILENAME} -f
    RewriteRule ^(\.*/)([^\.]*\.(q|sch|scj|scx))$ /sculptor/bin/nph-srep?$2 \
[H=cgi-script,QSA,E=SC_CHDIR:%{DOCUMENT_ROOT}$1,E=SCULPTOR:/sculptor,L]
</VirtualHost>
```

## Use SuExec, with a virtual host and mapping Sculptor extensions with \$SCULPTOR/bin/nph-srep

Install a modified suexec module that permits us to specify the directories where it operates:

```
sc@localhost:~ $ sudo apt-get install apache2-suexec-custom
sc@localhost:~ $ sudo a2enmod suexec
sc@localhost:~ $ sudo a2enmod cgi
```

Add the user if needed (no need in our case – we will use the already created sc user)

Add the “/home/sc/sculptor/bin” as docroot into the suexec configuration

```
sc@localhost:~ $ sudo cat /etc/apache2/suexec/www-data
/home/sc/sculptor/bin
public_html/cgi-bin
# The first two lines contain the suexec document root and the suexec userdir
# suffix. If one of them is disabled by prepending a # character, suexec will
# refuse the corresponding type of request.
# This config file is only used by the apache2-suexec-custom package. See the
# suexec man page included in the package for more details.
```

Change directory and files permission to comply with suexec security requirements:

```
sc@localhost:~ $ chmod -R og-w /home/sc/sculptor/
```

Define the virtual host:

- Note the use of HTTP\_SC\_CHDIR, HTTP\_LANG and HTTP\_SCULPTOR needed as suexec clears the rest of environment variables (needs nph-srep at least revision 1429)
- Added +FollowSymLinks only if you need to use a symbolic link in the nph-srep pathname. In that case the r and x permission should be set for all users in the whole path.

```
sc@localhost:/etc/apache2 $ sudo cat sites-available/001-scu.conf
<VirtualHost *:80>
    ServerName scu.tst
    ServerAlias www.scu.tst

    SuexecUserGroup sc sc

    DocumentRoot /var/www/scu

    <Directory "/home/sc/sculptor/bin/nph-srep">
        Options +ExecCGI +FollowSymLinks
        Require all granted
    </Directory>

    RewriteEngine on
    RewriteCond %{CONTEXT_DOCUMENT_ROOT}%{REQUEST_FILENAME} -f
    RewriteRule ^(.*)/([^\.]*(q|sch|scj|scx))$ /home/sc/sculptor/bin/nph-srep?$2 \
[H=cgi-script,QSA,E=HTTP_SC_CHDIR:%{CONTEXT_DOCUMENT_ROOT}$1,E=HTTP_LANG:en_GB.ISO-8859-
15,E=HTTP_SCULPTOR:/home/sc/sculptor,L]
</VirtualHost>
```

```
sc@localhost:/etc/apache2 $ sudo a2ensite 001-scu
sc@localhost:/etc/apache2 $ sudo service apache2 restart
```

Now if we copy helloworld.q into the /var/www/scu we can use the URL (add the url to hosts file or DNS. In this case “scu.tst”):

http://scu.tst/helloworld.q