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Apache + mod_python + Pylons + DIRAC

Required packages

- httpd-devel
- httpd
- mod_ssl
- gcc
- gcc-c++
- zlib
- zlib-devel
- unzip

Prepare DIRAC

Compile python if it's not there

For Python2.5

```
<DIRACROOT>/external/sqlite-3.5.4/dirac-make  
<DIRACROOT>/external/Python-2.5/dirac-make  
<DIRACROOT>/contrib/pyGSI/dirac-make
```

For Python2.4

```
<DIRACROOT>/external/Python-2.4.4/dirac-make  
<DIRACROOT>/contrib/pyGSI/dirac-make
```

Install Pylons

```
<DIRACROOT>/<DIRACARCH>/bin/easy_install Pylons==0.9.6.2
```

If easy_install is absent you have to download file ez_setup from http://peak.telecommunity.com/dist/ez_setup.py (temporary link), and execute it by hand

```
<DIRACROOT>/<DIRACARCH>/bin/python ez_setup.py
```

Repeat this step till Pylons have been installed

Grid Requirements

In order to only allow valid certificates apache needs a CA directory (with CAs and CRLs updated periodically) and a certificate.

Setting up Apache

Install mod_python

```
<DIRACROOT>/external/mod_python/dirac-make  
cp <DIRACROOT>/DIRAC/Interfaces/Web/wgsi.py <DIRACROOT>/<DIRACARCH>/lib/python<PYTHONVERSION>/sit
```

Prepare DIRAC web root

- Create the web root directory

```
mkdir -p /opt/dirac/webRoot/
```

- Create the index.html file (vi /opt/dirac/webRoot/index.html)

```
<html>
<head>
  <META http-equiv="refresh" content="0; URL=DIRAC">
</head>
</html>
```

- Create a link to the DIRAC web root

```
ln -s <DIRACROOT>/DIRAC/Interfaces/Web/ /opt/dirac/webRoot/DIRAC
```

Configure Apache

Under SLC4 apache configuration file is **/etc/httpd/conf/httpd.conf**

- Load mod_python

```
LoadModule python_module modules/mod_python.so
```

- Set the desired directory as the Apache document root

```
DocumentRoot "/opt/dirac/webRoot"
```

- Define mod_python as the handler for the DIRAC web directory

```
<Directory "/opt/dirac/webRoot/DIRAC">
  SetHandler mod_python
  PythonHandler mod_python.wsgi
  PythonPath "['/opt/dirac/DIRAC3/DIRAC/Interfaces/Web'] + sys.path"
  PythonOption wsgi.application startup::app
  PythonOption SCRIPT_NAME /DIRAC
</Directory>
```

Configuring mod_ssl

Under SLC4 mod_ssl configuration file is **/etc/httpd/conf.d/ssl.conf** and it has to have defined the following settings:

- SSLCertificateFile /path/to/certfile
- SSLCertificateKeyFile /path/to/keyfile
- SSLCACertificatePath /etc/grid-security/certificates
- SSLCARevocationPath /etc/grid-security/certificates
- SSLVerifyClient require
- SSLVerifyDepth 10
- SSLOptions +StdEnvVars

libexpat problem

There could be a problems caused due to mismatches in the version of the "expat" library embedded into Python and that linked into Apache. A sign of such problem is a string appears in Apache error log like

following:

```
[notice] child pid 3238 exit signal Segmentation fault (11)
```

To make sure that this is the case, try to make the simple tests:

```
[root@volhcb11 dirac]# ldd /usr/sbin/httpd | grep expat
    libexpat.so.0 => /usr/lib64/libexpat.so.0 (0x0000002a95dba000)
[root@volhcb11 dirac]# strings /usr/lib64/libexpat.so.0 | grep expat_
expat_1.95.8
```

```
[root@volhcb11 dirac]# <DIRACROOT>/<DIRACARCH>/bin/python
Python 2.4.4 (#1, Sep 30 2008, 21:08:00)
[GCC 3.4.6 20060404 (Red Hat 3.4.6-10)] on linux2
Type "help", "copyright", "credits" or "license" for more information.
>>> import pyexpat
>>> pyexpat.version_info
(1, 95, 7)
```

As a temporary solution try to install appropriate version of the libexpat in to the system.

Install library

In order to setup the DIRAC SiteMap a OpenLayers library have to be installed on the machine. Since the library tree is not in CVS it should be downloaded from the official site of the project.

```
cd <DIRACROOT>/DIRAC/Interfaces/Web/dirac/public
wget http://openlayers.org/download/OpenLayers-2.6.tar.gz
tar xzvf OpenLayers-2.6.tar.gz
```

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