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Tutorial on WMS build and debian package creation

This tutorial assumes that you have GIT access to WMS repository <https://github.com/MarcoCecchi/org.glite.wms> . It will help you to build all the component that you get when cloning the WMS GIT repository without the etics's build automation tools.

Pre-Requisites for build on SL6

- A "virgin" SLC6 installation
- yum-autoupdate disabled; execute as root:

```
chkconfig --level 0123456 yum-autoupdate off
/etc/init.d/yum-autoupdate stop
```

- EMI2 repo for external dependencies installation via yum; execute:

```
wget http://emisoft.web.cern.ch/emisoft/dist/EMI/2/RPM-GPG-KEY-emi
rpm --import RPM-GPG-KEY-emi
yum -y install yum-priorities
wget http://emisoft.web.cern.ch/emisoft/dist/EMI/2/sl6/x86_64/base/ \
    emi-release-2.0.0-1.sl6.noarch.rpm
rpm -ivh emi-release-2.0.0-1.sl6.noarch.rpm
```

- Remove the pre-installed c-ares package (that is wrong version):

```
rpm -e --nodeps c-ares-1.7.0-6.el6.x86_64
```

- Install all needed dependencies:

```
yum -y install mod_fcgid mod_ssl gridsite-apache httpd-devel zlib-devel boost-devel \
    c-ares-devel glite-px-proxyrenewal-devel voms-devel voms-clients \
    argus-pep-api-c-devel lcms-without-gsi-devel lcms-devel \
    classads-devel glite-build-common-cpp gsoap-devel libtar-devel cmake \
    globus-ftp-client globus-ftp-client-devel log4cpp-devel log4cpp \
    glite-jobid-api-c glite-jobid-api-c-devel glite-jobid-api-cpp-devel openldap \
    glite-wms-utils-exception glite-wms-utils-classad chrpath cppunit-devel \
    glite-wms-utils-exception-devel glite-wms-utils-classad-devel glite-jdl-api- \
    glite-lb-client-devel glite-lbjp-common-gsoap-plugin-devel
```

Checking out WMS from GIT repository

As normal user (having the GIT access as said above) clone the WMS repository:

```
cd $HOME; git clone git@github.com:MarcoCecchi/org.glite.wms.git WMS
```

Pre-Requisites for build on Debian and for .deb packaging

Execute (as root) the following commands:

```
apt-get install curl
curl http://emisoft.web.cern.ch/emisoft/dist/EMI/2/debian/dists/squeeze/main/ \
    binary-amd64/emi-release_2.0.0-1.deb6.1_all.deb \
    -o emi-release_2.0.0-1.deb6.1_all.deb
dpkg -i emi-release_2.0.0-1.deb6.1_all.deb
```

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```
apt-get install build-essential autoconf automake autotools-dev dh-make debhelper \  
devscripts fakeroot xutils lintian pbuilder cmake dpkg-dev pkg-config
```

Now an extra EMI software repository is needed to be able to install `glite-jobid*` packages; as root do the following:

```
curl http://eticssoft.web.cern.ch/eticssoft/pbuilder/emi-2-deb6-test-x86_64.list \  
-o /etc/apt/sources.list.d/emi-2-deb6-test-x86_64.list  
apt-get update
```

Now you can install some dependencies needed by WMS's build (as root):

```
apt-get install libglite-jobid-api-c-dev libglite-jobid-api-cpp-dev libglite-jobid2 libclassad0-d  
liblog4cpp5-dev libglobus-io-dev libglobus-gss-assist-dev libglobus-ftp-clie  
libglobus-common-dev libboost-regex-dev libboost-filesystem-dev \  
libboost-date-time-dev libldap2-dev
```

Now, some dependencies internal and external do not provide the `pkg-config` .pc files (this is the case of boost, classad, etc.). As root follow these steps:

```
curl http://devel12.cnaf.infn.it:7444/pub/emi/packaging/deb/emi-pkgconfig-compat/deb-emi-pkgconfi  
-o deb-emi-pkgconfig-compat-head  
  
chmod +x deb-emi-pkgconfig-compat-head  
./deb-emi-pkgconfig-compat-head  
dpkg -i BINARIES/emi-pkgconfig-compat_1.0.1-1_all.deb
```

At this point your debian box is ready to build WMS software, logout and login as "normal" user.

Build (on both SL6 and Debian6_2)

These are the steps to follow (at the moment only the `org.glite.wms.common` component is covered):

```
cd $HOME  
mkdir WORKAREA  
cd WORKAREA  
  
git clone git@github.com:italiangrid/classad-utils.git  
git clone git@github.com:italiangrid/jobman-exception.git  
git clone git@github.com:MarcoCecchi/org.glite.wms.git  
  
cd classad-utils  
cmake . -DCMAKE_INSTALL_PREFIX=$HOME/WORKAREA/stage \  
-Dprefix=$HOME/WORKAREA/stage/usr -Dexec_prefix=$HOME/WORKAREA/stage/usr \  
-Dlibdir=$HOME/WORKAREA/stage/usr/lib -Dincludedir=$HOME/WORKAREA/stage/usr/include \  
-DPVER=$VERSION  
make install  
cd ..  
  
cd jobman-exception  
cmake . -DCMAKE_INSTALL_PREFIX=$HOME/WORKAREA/stage \  
-Dprefix=$HOME/WORKAREA/stage/usr -Dexec_prefix=$HOME/WORKAREA/stage/usr \  
-Dlibdir=$HOME/WORKAREA/stage/usr/lib -Dincludedir=$HOME/WORKAREA/stage/usr/include \  
-DPVER=$VERSION  
make install  
cd ..  
  
cd org.glite.wms/org.glite.wms.common  
cmake . -DPREFIX=$HOME/WORKAREA/stage/usr -DINSTALL_BUILD_DEV= \  

```

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```
$HOME/WORKAREA/debian/build_dev/org.glite.wms.common/usr \  
-DINSTALL_BUILD=$HOME/WORKAREA/debian/build_nodev/org.glite.wms.common/usr \  
-DOFFICIAL_INSTALL_PREFIX=/usr -DPVER=$VERSION  
make install
```

In order to make sure that everything worked try to execute an executable provided by `org.glite.wms.common`:

```
export LD_LIBRARY_PATH=$HOME/WORKAREA/stage/usr/lib  
$HOME/WORKAREA/stage/usr/bin/glite-wms-get-configuration  
Configuration problem: file "glite_wms.conf" not found in the path(s) /etc/glite-wms, /opt/glite/
```

It doesn't matter the error output, this is just to verify that the exe is correctly compiled and linked. **TBC**

Produce the debian packages

The control and .install files needed to produce the .deb packages are already there, in the `org.glite.wms.common/debian` directory. To produce the debian packages it's just matter of change `dir` on the directories specified when `cmake` has been invoked (look above for the `INSTALL_BUILD` and `INSTALL_BUILD_DEV` macros) and execute the .deb build command. Then do the following:

```
cd $HOME/WORKAREA/org.glite.wms/org.glite.wms.common  
  
mkdir -p $HOME/WORKAREA/debian/build_nodev/org.glite.wms.common/DEBIAN  
cp debian/deb-control-file.txt $HOME/WORKAREA/debian/build_nodev/org.glite.wms.common/DEBIAN/control  
cp debian/libglite-wms-common.install $HOME/WORKAREA/debian/build_nodev/org.glite.wms.common/DEBIAN/control  
  
mkdir -p $HOME/WORKAREA/debian/build_dev/org.glite.wms.common/DEBIAN  
cp debian/deb-control-file-dev.txt $HOME/WORKAREA/debian/build_dev/org.glite.wms.common/DEBIAN/control  
cp debian/libglite-wms-common-dev.install $HOME/WORKAREA/debian/build_dev/org.glite.wms.common/DEBIAN/control  
  
dpkg -b $HOME/WORKAREA/debian/build_nodev/org.glite.wms.common \  
    $HOME/WORKAREA/debian/build_nodev/org.glite.wms.common/glite-wms-common.deb  
dpkg -b $HOME/WORKAREA/debian/build_dev/org.glite.wms.common \  
    $HOME/WORKAREA/debian/build_dev/org.glite.wms.common/glite-wms-common-dev.deb
```

-- AlviseDorigo - 2012-10-04

This topic: WMS > BuildWMSOnSL6FromScratchGITWorkarea

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