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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 lcmaps-without-gsi-devel lcmaps-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
```

```
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 provice 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= \
```

```
            $HOME/WORKAREA/debian/build_dev/org.glite.wms.common/usr \
            -DINSTALL_BUILD=$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/cont
cp debian/libglite-wms-common.install $HOME/WORKAREA/debian/build_nodev/org.glite.wms.common/DEBI

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/co
cp debian/libglite-wms-common-dev.install $HOME/WORKAREA/debian/build_dev/org.glite.wms.common/DE

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

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