

## openLDAP compilation, "not a Walk in the Park"

Contributed by Michael Felt

After a question on the forums, and an extra request from a manager I got more interested in examining the compilation process of openLDAP package on AIX.

Generally, compiling openSource packages is a "Walk in the Park", or "no-brainer". openLDAP required a bit of extra effort. I have my guesses as to why, but right now I am running the test. Probably before I finish typing all this, the test will be complete and I can report that as well.

Well, what is an AIX porting "Walk in the Park"? For me, the walk is the next seven steps.

- Download package
- Unpack package to project directory
- Scan README and INSTALL files - especially the .aix versions if included
- ./configure
- make
- make test
- su root -c "make install"

With openLDAP my walk was disturbed on step 4. After coming back from a literal walk (coffee, watching my son play football) I was disappointed to see that ./configure was not complete. There was a warning about not finding openssl (which is obviously in /usr/local/openssl) and not finding a proper version of bdb (Berkeley database). This was confusing because /usr/local/BerkeleyDB was a symbolic link to /usr/local/BerkeleyDB.4.4. More confusing, it was finding bdb version 3.3.

When confused go for the detailed notes. openLDAP also makes a file named config.log giving more detail about what it is finding and not finding. To my surprise I saw that gcc was not being used (too many openSource packages only compile with the latest version of gcc). So I: did some research; went back to step 3 and studied the README and INSTALL files; read the AIX related FAQ files on the openLDAP project site.

This resulted in following file (env) and additional substeps:  
 CPPFLAGS="-I/usr/local/ssl/include -I/usr/local/BerkeleyDB/include"  
 LDFLAGS="-L/usr/local/ssl/lib -L/usr/local/BerkeleyDB/lib"  
 LIBPATH=/usr/local/lib:/opt/freeware/lib:/lib:/usr/lib

```
$ ./env
$ ./configure
```

And I got exactly the same results. Thinking it might be the IBM compiler (vac6 is quite an old version) I switched to gcc and got worse results - openLDAP and my gcc installation could not agree on pthread support. So I switched back to vac and started thinking more about the bdb version 3.3 rather than 4.4 as expected (and required! 4.2+ is required). And then I remembered that I also have some RPM from the IBM Toolbox for AIX repository.

```
# rpm -q -a
cdrecord-1.9-4
mkisofs-1.13-4
scsi.0025-0025-01
readline-4.3-2
db-3.3.11-4
gdbm-1.8.3-2
gettext-0.10.40-1
openssl-0.9.7l-1
gcc-3.3.2-3
gcc-c++-3.3.2-3
zlib-1.2.2-4
python-2.3.4-2
AIX-rpm-5.2.0.85-4
```

I tried just removing the db package, but python package depends on it, and I use python to keep the rootvg sitemap

current. I reexamined the config.log file and also started looking the the generated libtool. What I noticed is that my environment variables were not in either of these files.

And then I realized what I was forgetting? Have you already spotted it? ./configure runs many subshells. Environment variables are not inherited by subshells unless they are exported.

So now I:

add CC=/usr/bin/vac/cc\_r to the file env

```
$ ./env
```

```
$ export CPPFLAGS
```

```
$ export LDFLAGS
```

```
$ ./configure
```

And I have a successful configuration. The next step listed in INSTALL is make depend, and the FAQ says for AIX a manual addition is required, so the next step becomes:

```
$ make depend MKDEP=$PWD/build/mkdep.aix
```

```
$ make
```

```
$ make test
```

I am running into some test errors now, so I'll get back on this later. If you have an error while running "make test" I suggest verifying your free disk space. Seems mine was running out. After that, the tests that could be run, ran successfully (have to read nohup.out carefully to be sure, but I am an optimist today)