

GDAL COMPIRATION ON AARCH64 FROM SCRATCH

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QUICK SYSTEM PRECONFIG

<3 vim

```
#apt install openssh-server & binutils & cmake & g++ & tree & vim  
#service start ssh
```

GDAL-BIN

A subtle Analysis

Executing gdalinfo results in

```
Undefined symbol _ZN11xercesc_3_211InputSource11setEncodingEPKDs  
=> Verification by "nm -D /usr/lib/libgdal.so.20"
```

Do dependencies of libgdal.so.20 contain the symbol?

```
<empty string> per "nm /usr/lib/libxerces-c-3.2.so | grep InputSource11setEncodingEPKDs"
```

Did code changes happen between the installed gdal-bin version and one of its dependencies?

Yes. Libxerces-c-3.2.3 does contain a new encoding function ([link](#)) which was not listed in libxerces-c-3.2.0 under Bionic Beaver ([link](#))

Can we install and link the new version of the library against the GDAL binaries from source?

Yes, see following slides.

SOME GDAL DEPENDENCIES

Further Manual Source Compilation

- Libxerces
- PROJ>=6

LIBXERCES-3.2.3

Source Compilation on aarch64

```
$mkdir xerces-c-3.2.3 && cd xerces-c-3.2.3
```

```
$wget https://downloads.apache.org/xerces/c/3/sources/xerces-c-3.2.3.tar.gz
```

```
$tar -xvf xerces-c-3.2.3.tar.gz && cd xerces-c-3.2.3.tar.gz
```

```
$mkdir /opt/xerces-c
```

```
#chown nvidia:nvidia /opt/xerces-c
```

```
$mkdir build && cd build
```

```
#apt install libicu-dev
```

```
$cmake -G "Unix Makefiles" -DCMAKE_INSTALL_PREFIX=/opt/xerces-c -DCMAKE_BUILD_TYPE=Debug -Dmessage-loader=icu /home/nvidia/xerces-c-3.2.3/xerces-c-3.2.3
```

```
$make -j8
```

```
$make test
```

```
$make install
```

PROJ>=6

Source Compilation on aarch64

```
git clone https://github.com/OSGeo/PROJ.git && cd PROJ
```

```
$mkdir /opt/proj  
#chown nvidia:nvidia /opt/proj
```

```
$mkdir build && cd build
```

```
#apt install libsqlite3-dev  
#apt install libtiff-dev  
#apt install libcurl4-openssl-dev
```

```
$cmake cmake -DCMAKE_INSTALL_PREFIX=/opt/proj ..  
$ctest  
$make -j8  
$make install
```

```
#cp /opt/proj/lib/libproj.so* /usr/lib/aarch64-linux-gnu/
```

GDAL APPS

Source Compilation on aarch64

```
$git clone https://github.com/OSGeo/GDAL.git && cd GDAL
```

```
$mkdir /opt/gdal  
#chown nvidia:nvidia /opt/gdal
```

```
$vim build.sh
```

```
#!/bin/bash  
export CPPFLAGS='-I/opt/proj/include'  
export LDFLAGS='-L/opt/proj/lib'  
.configure --prefix=/opt/gdal
```

```
$chmod +x build.sh & ./build.sh  
$make -j8  
$make install
```

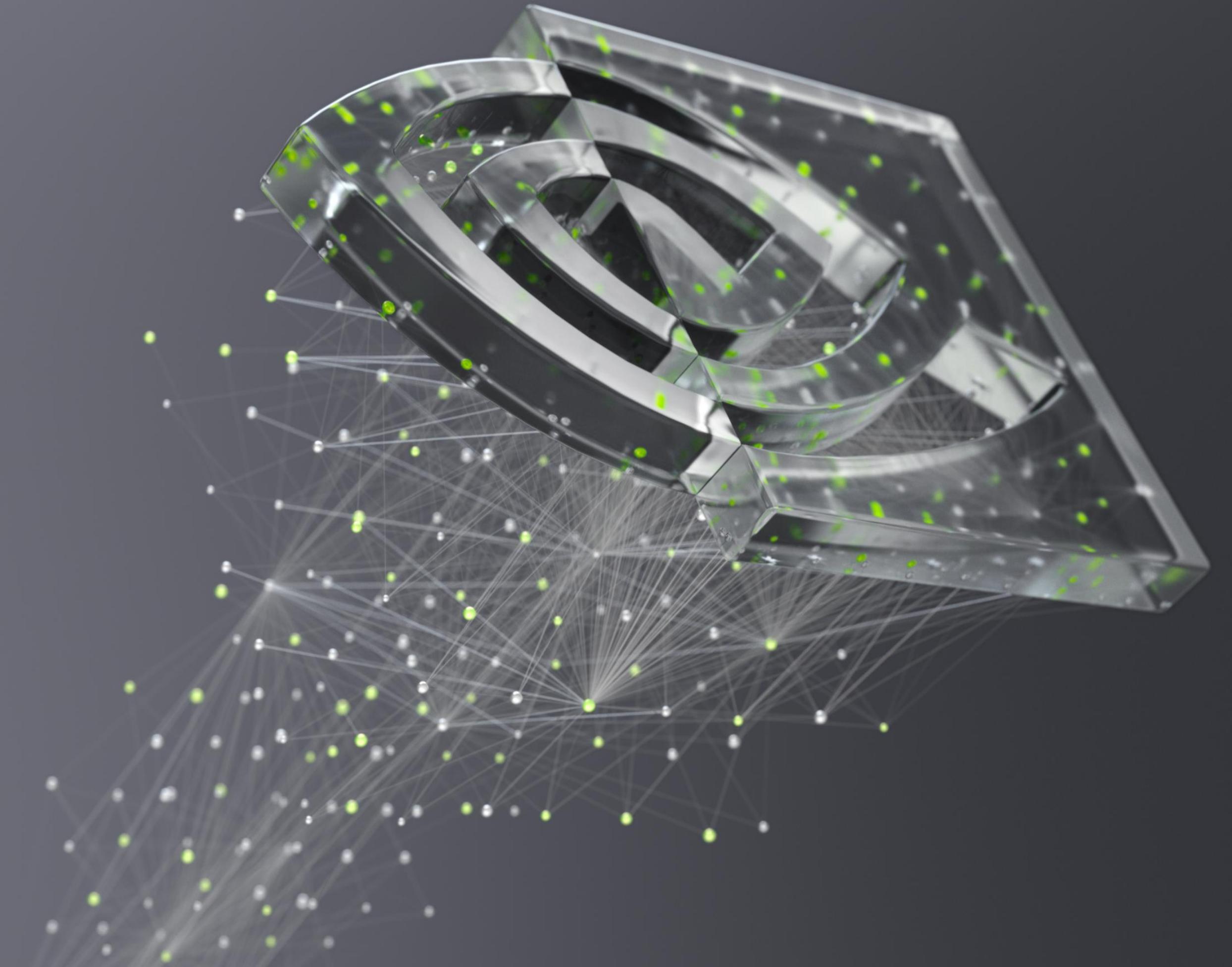
GDAL

Subtitle Optional

GDAL apps can successfully be executed on aarch64 running DSW10

```
nvidia@tegra-ubuntu:/opt/gdal/bin$ ./gdalinfo
Usage: gdalinfo [--help-general] [-json] [-mm] [-stats | -approx_stats] [-hist] [-nogcp] [-nomd]
                 [-norat] [-noct] [-nofl] [-checksum] [-proj4]
                 [-listmdd] [-mdd domain|`all`] [-wkt_format WKT1|WKT2|...]*
                 [-sd subdataset] [-oo NAME=VALUE]* [-if format]* datasetname

FAILURE: No datasource specified.
```



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