To build a Linux software application to operate an ADLINK DAQ card (e.g., DAQ-2205), download the Linux drivers and install them. The steps for downloading and installing the Linux drivers are detailed in this document.

ADLINK provides pre-built driver binaries for Ubuntu LTS Linux kernels. These binaries are regularly updated and officially supported to work with specific Ubuntu Linux kernels indicated in this document and on the ADLINK website. If you want to use another Linux OS or Linux Kernel, you need to sign the NDA to get the driver source code and build the Linux driver by yourself.
Solution:

Step 1:

Find out the system kernel version. Go to the terminal and type “uname -a”

NOTE: ADLINK only supports Linux Kernel version 4.15.0-20-generic, 5.4.0-26-generic, and 5.4.0-47-generic.
Step 2:

Go to the official ADLINK website, search for “D2K-DASK/X”, and download the driver that corresponds to your OS and kernel version.

Direct link (login required):
https://www.adlinktech.com/Products/Data_Acquisition/SoftwareandDrivers/D2K-DASK_X

Software Download:
DAQ-2000 Series Driver

Linux Ubuntu

- D2K-DASK/X, v21.03 for Ubuntu 18.04 & 20.04
- 4.15.0-20-generic
- 5.4.0-26-generic
- 5.4.0-47-generic
(4.34M8)
Upload: 2021-03-24

- D2K-DASK/X, v20.01 for Ubuntu 16.04 & 16.04.6 and 16.04.6 Linux Driver and SDK for ADLINK D2K DAQ Series
Step 3:

Unpack the .gz file. There are two files in the archive.
Step 4:

Double-click the .deb file and select “Software Install” as the default application if it isn’t already. Follow the steps to install the files and reboot the system.
Step 5:

After reboot, go to the terminal and type “lspci -vxxx” to check if the system detected and allocated the resources for ADLINK devices.
Step 6:

Go to the terminal and type "lsmod" to check the driver service is activated and running in the Linux kernel.
Step 7:
The ADLINK software package deploy files such as documents, utilities, and samples to the following folder: //usr/local/adlink/d2k-dask/
Step 8:

Choose a sample program (e.g., //usr/local/adlink/d2k-dask/samples/2205/2205ai) . Users can modify the sample program as needed and type “make” to build the executable.
Step 9:

Launch the executable and check the output. The image below shows a successful execution of the ADLINK DAQ and the acquired data output to a .dat file.
Step 10:

If necessary, adjust the data acquisition settings (default: 1 MB, 256 pages). To adjust the settings, go to the terminal and type "./reconfig.sh". Refer to the following images for further details.

a. Choose “(1) Change to user settings”
b. Select the card type for configuration

```
<table>
<thead>
<tr>
<th>Card Type</th>
<th>Cards</th>
<th>Buffer Size [unit: pages(4KB/page)]</th>
<th>AI</th>
<th>AO</th>
<th>DI</th>
<th>DO</th>
<th>Legacy</th>
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<tbody>
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</tr>
</tbody>
</table>

Select the card type for configuration, or '0' to exit: [ ]
```
c. Select “(1) User Config” for configuration
d. Enter memory pages for AI/AO for your device. After that, check if the setting is correct.

![Image showing D2K_DASK LINUX Configuration Utility]

Card_Type : DAQ2205
How many DAQ2205 adapters in your machine : 1
Memory pages for AI function ( 1 Mem_Page = 4 KB ) : 512
Memory pages for AO function ( 1 Mem_Page = 4 KB ) : 512
Ignore Board ID : 0

The setting for DAQ2205 :
AI: 512 Pages AO: 512 Pages DI: 0 Pages DO: 0 Pages for 1 DAQ2205 Cards (legacy=0)

are these correct (Y/N) ? Y

e. Reboot the system.

![Image showing current configuration]

Current Config:
Card | AI | AO | DI | DO | LEGACY [unit: KB]
daq2213 | 1024 | 0 | 0 | 0 | 0
daq2203 | 1024 | 0 | 0 | 0 | 0
daq2204 | 1024 | 1024 | 0 | 0 | 0
daq2005 | 1024 | 1024 | 0 | 0 | 0
daq2006 | 1024 | 1024 | 0 | 0 | 0
daq2502 | 4096 | 2048 | 0 | 0 | 1
daq2501 | 1024 | 1024 | 0 | 0 | 0
daq2015 | 1024 | 1024 | 0 | 0 | 0
daq202x | 1024 | 0 | 0 | 0 | 0
daq2010 | 1024 | 1024 | 0 | 0 | 0
daq2206 | 1024 | 1024 | 0 | 0 | 0
daq2205 | 2048 | 2048 | 0 | 0 | 0
daq2214 | 1024 | 1024 | 0 | 0 | 0

Move Config file...
>>>>> SYSTEM REBOOT REQUIRED <<<<<

Do you want to reboot now? (Y/N)