ADLINK Technical Document
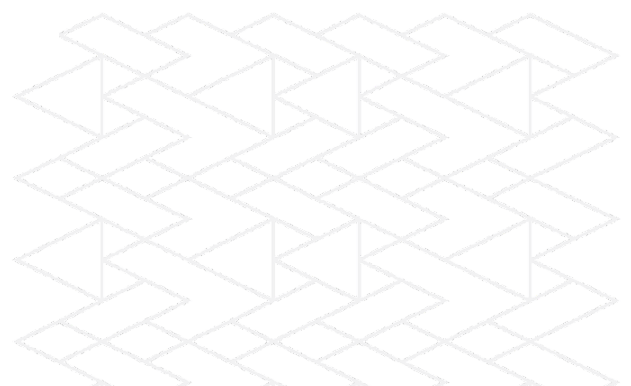
Abstract	How to install Linux drivers for the WD-DASK/X
OS	Linux
Keyword	Linux, WD-DASK/X
Related Products	PCIe-9814, PCIe-9834, PXIe-9834, PCIe-9842,PXIe-9842, PXIe-9848, PCIe-9852, PXIe-9852, PCI-9816, PCI-9826, PCI-9846,PXI-9816,PXI-9826,PXI-9846,PCI-9820
Date	2021-08-26 **No.** 202110001

● Issue Details:

To build a Linux software application to operate an ADLINK Digitizer DAQ card (e.g. PCIe-9834), download the Linux drivers and install them. The steps for downloading and installing the Linux drivers are detailed in this document.

● More information:

ADLINK provides pre-built driver binaries for Ubuntu LTS Linux kernels. These binaries are regularly updated and officially supported to work with specific 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.
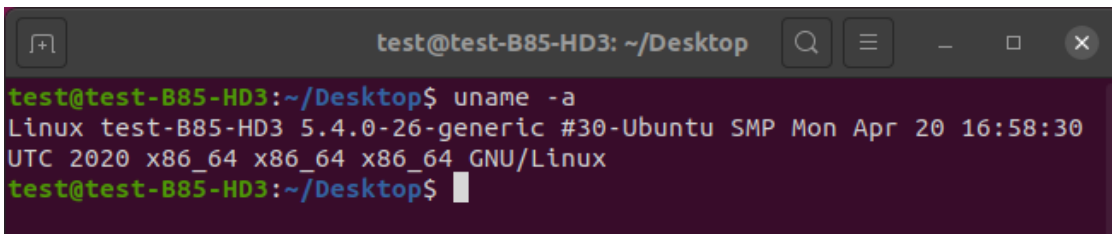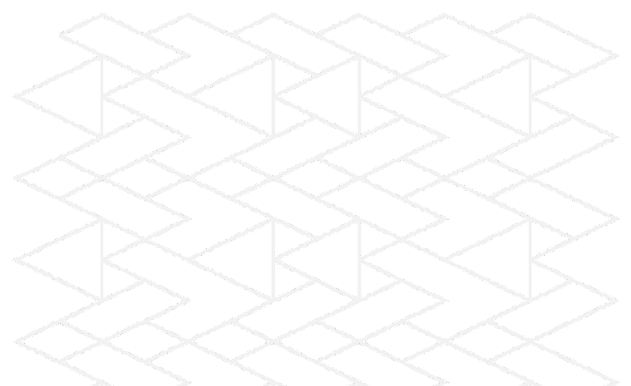
- Solution:

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 "WD-DASK/X", and download the driver corresponding to your OS and kernel version.

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

Software Download :

PCIe-9814 Driver

Linux Ubuntu

WD-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)
(5.37MB)
Upload: 2021-03-24

WD-DASK/X, v20.01 for Ubuntu 16.04 & 16.04.6 i686, Linux Driver and SDK for ADLINK Digitizer
(5.23MB)
Upload: 2020-03-02

Step 3:

Go to the terminal and type "tar zxvf WD-DASK-xxxxxx.tar.gz" to unpack the .gz file. There are two files in the target folder.

```
ist@ist-MXC2300:~/Documents$ tar zxvf WD-DASK-X_21.03_release.tar.gz
WD-DASK-X_21.03_release/
WD-DASK-X_21.03_release/wd-dask_ubuntu_21.03.release.deb
WD-DASK-X_21.03_release/readme
ist@ist-MXC2300:~/Documents$
```

Step 4:

Go to the terminal and type "sudo dpkg –I wd-dask_xxxxxx.deb" to install the driver. Alternatively, double-click the .deb file in the graphical user interface. Reboot when done.
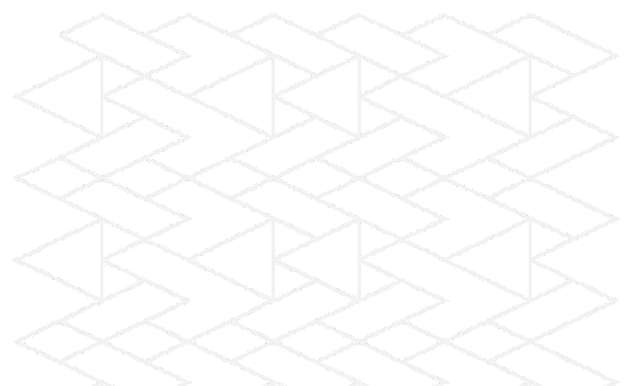

wd-dask-x
ADLINK Technology Inc.

Install

Support kernel version:
    Ubuntu 18.04 (4.15.0-20-generic)
    Ubuntu 20.04 (5.4.0-26-generic, 5.4.0-47-generic)

Details

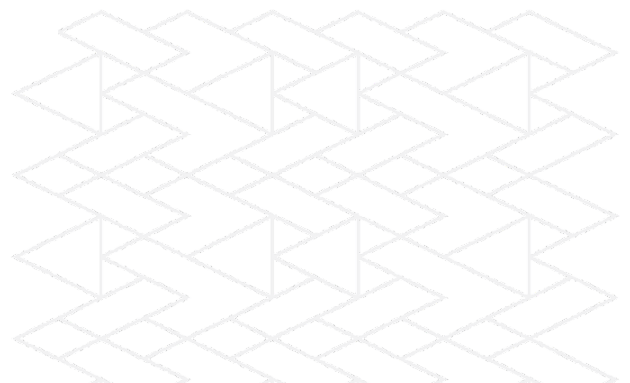|	
Version	21.03
Updated	2021年八月19日
License	Proprietary
Source	wd-dask_ubuntu_21.03.release.deb
Download Size	0 bytes

Step 5:

After reboot, go to the terminal and type "lspci" to check if the system has detected and allocated 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.
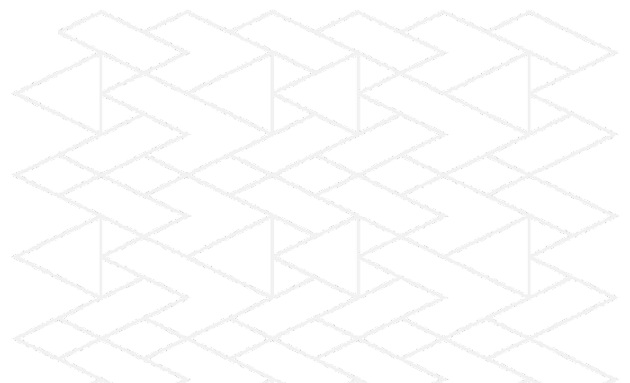
Step 7:

The ADLINK software package deploys files such as documents, utilities, and samples to the following folder: *//usr/local/adlink/wd-dask/*

```
ist@ist-MXC2300: /usr/local/adlink/wd-dask

ist@ist-MXC2300:~/Documents/WD-DASK-X_21.03_release$ cd /usr/local/adlink/wd-das
k/
ist@ist-MXC2300:/usr/local/adlink/wd-dask$ ls
conf  docs  include  readme  reconfig.sh  ref  RelNotes.txt  samples  util
ist@ist-MXC2300:/usr/local/adlink/wd-dask$ 
```

Step 8:

Choose a sample program (e.g., *//usr/local/adlink/wd-dask/samples/9814_34/others/aidbf*). Users can modify the sample program as needed and type "make" to build the executable.

```
ist@ist-MXC2300: /usr/local/adlink/wd-dask/samples/9814_34

ist@ist-MXC2300:~$ cd /usr/local/adlink/wd-dask/
ist@ist-MXC2300:/usr/local/adlink/wd-dask$ ls
conf  docs  include  readme  reconfig.sh  ref  RelNotes.txt  samples  util
ist@ist-MXC2300:/usr/local/adlink/wd-dask$ cd samples/
ist@ist-MXC2300:/usr/local/adlink/wd-dask/samples$ ls
9814_34  9842  9852  common     Makefile                    ReadmeFirst.txt
9820     9848  98x6  LargeSizeEx  new_event_handling.txt  sigevt
ist@ist-MXC2300:/usr/local/adlink/wd-dask/samples$ cd 9814_34/
ist@ist-MXC2300:/usr/local/adlink/wd-dask/samples/9814_34$ ls
CAIFilter       CAInfinitTrg          CAInfinitTrgCbEx  CSelfTest  others
CAIMeasueStats  CAInfinitTrgCallback  CAIsimuDma_dbclk  Makefile
ist@ist-MXC2300:/usr/local/adlink/wd-dask/samples/9814_34$ 
```

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.
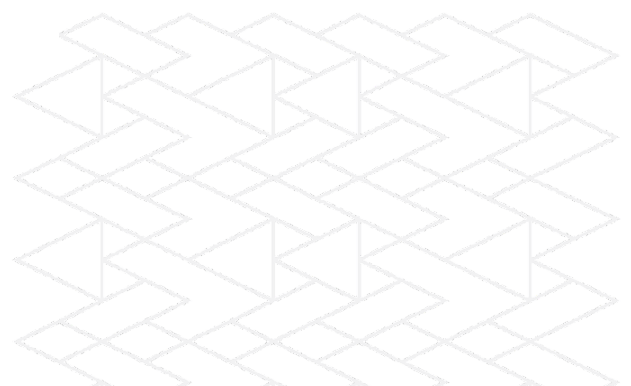
Step 10:

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

a. Choose "Change to user setting".

b. Select the card type for configuration and "User Config" for configuration.

c. Enter memory pages for AI for your device. After that, you need to check if the setting is correct.

```
************************************************************************
*****            WD_DASK LINUX Configuration Utility            *****
************************************************************************

Card_Type : PCIe9814/9834

 How many PCIe9814/9834 adapters in your machine : 1
 Memory pages for AI function ( 1 Mem_Page = 4 KB ) : 1024


 The setting for PCIe9814
\n--------------------------------------------------------------------
 AI: 1024 Pages    AO: 0 Pages    DI: 0 Pages    DO: 0 Pages    for 1 PCIe9814 Ca
rds

                                        are these          correct (Y/N) ?
y
```

d. Reboot the system.

```
 The memory size you configure for your WD-DASK adapters is 21 Mem_Pages.

kernel: x86_64


======================================================================
Current Config:
 Card           AI      AO      DI      DO      [unit: KB]
 pci9842        1024    0       0       0
 pci9820        1024    0       0       0
 pcie9814       4096    0       0       0
 pxie9848       1024    0       0       0
 pcie9852       1024    0       0       0
 pci98x6        1024    0       0       0


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

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