

Overview

The guide describes the software installation procedure for Ascension driveBAY and trakSTAR ATC3DG API for Linux.

Installation

Step 1.

The software installation for 32-bit and 64-bit Linux is packaged in an RPM file.

For 64-bit Linux use '3DGuidanceRevE-1.0-1.x86_64.rpm'

For 32-bit Linux use '3DGuidanceRevE-1.0-1.i686.rpm'

Step 2.

Enter the following shell commands to install the appropriate RPM file:

64-bit Linux:

```
su –  
<enter password>  
cd <rpm file directory>  
rpm -i --nosignature 3DGuidanceRevE-1.0-1.x86_64.rpm  
exit
```

32-bit Linux:

```
su –  
<enter password>  
cd <rpm file directory>  
rpm -i --nosignature 3DGuidanceRevE-1.0-1.i686.rpm  
exit
```

Step 3.

The Ascension API uses a user mode interface to the USB device driver.

In order to allow user mode access to the USB device driver a daemon is provided as part of the installation.

This daemon must run with 'root' access rights.

Enter the following shell commands to have the appropriate daemon inherit root access rights:

64-bit Linux:

```
su -  
<enter password>  
chmod +s /usr/bin/ATCdaemon64  
exit
```

32-bit Linux:

```
su -  
<enter password>  
chmod +s /usr/bin/ATCdaemon32  
exit
```

Step 4.

Three API sample applications are provided as part of the RPM installation.

In order to build these applications as a non-root user, enter the following shell commands:

64-bit Linux:

```
su -  
<enter password>  
chmod 777 /opt/3DGuidance.Rev.E.64/Samples/*  
exit
```

32-bit Linux:

```
su -  
<enter password>  
chmod 777 /opt/3DGuidance.Rev.E.32/Samples/*  
exit
```

The installation is complete.

Startup

The appropriate Ascension daemon must be running prior to using any of the Ascension provided applications or APIs.

The daemon can be invoked manually after every reboot or placed in the `initd.rc` or equivalent file for your Linux variant.

Enter the following shell command to execute the appropriate Ascension daemon manually:

64-bit Linux:

```
ATCdaemon64&
```

32-bit Linux:

```
ATCdaemon32&
```

Configuring the tracking device

A configuration utility is provided as part of the RPM installation.

The utility allows the user to configure, upgrade and test the driveBAY or trakSTAR tracking device.

See the Appendices in the Installation and Operation Guide (shipped with the hardware) for more information on using the utility.

Enter the following shell command to execute the appropriate configuration utility:

64-bit Linux:

```
3DGUtility64&
```

32-bit Linux:

```
3DGUtility32&
```

Test driving the ATC3DG API

An API test application is provided as part of the RPM installation.

The API test application allows the user to select individual API function calls, supply parameters, execute the API function and then examine the results of the call.

See the Appendices in the Installation and Operation Guide (shipped with the hardware) for more information on using the utility.

Enter the following shell command to execute the appropriate API test application:

64-bit Linux:

```
APITest64&
```

32-bit Linux:

```
APITest32&
```

Building the API samples

Three API sample applications are provided as part of the RPM installation.

Sample: Asynchronous data acquisition application.
Sample2: Asynchronous data acquisition application, that also illustrates most of the API calls and many of the parameters.
GetSynchronousRecord Sample: Synchronous data acquisition application.

Enter the following shell command to build and run the appropriate API sample application:

64-bit Linux:

```
cd /opt/3DGuidance.Rev.E.64/Samples/Sample  
make -f makefile64  
./Sample64
```

```
cd /opt/3DGuidance.Rev.E.64/Samples/Sample2  
make -f makefile64  
./Sample2_64
```

```
cd "/opt/3DGuidance.Rev.E.64/Samples/GetSynchronousRecord  
Sample"  
make -f makefile64  
"./GetSynchronousRecord Sample64"
```

32-bit Linux:

```
cd /opt/3DGuidance.Rev.E.32/Samples/Sample
```

```
make -f makefile32
./Sample64
```

```
cd /opt/3DGuidance.Rev.E.32/Samples/Sample2
make -f makefile64
./Sample2_32
```

```
cd "/opt/3DGuidance.Rev.E.32/Samples/GetSynchronousRecord
Sample"
make -f makefile64
"./GetSynchronousRecord Sample32"
```

Redistribution

An end user is free to redistribute the following files as part of their installation:

```
/usr/bin/ATCdaemon64
/usr/bin/ATCdaemon32
/usr/lib64/ATC3DGlib64.so
/usr/lib/ATC3Dglib32.so
```

Uninstall

Enter the following shell command to uninstall the appropriate RPM file:

64-bit Linux:

```
su -
<enter password>
rpm -e 3DGuidanceRevE-1.0-1.x86_64
exit
```

32-bit Linux:

```
su -
<enter password>
rpm -e 3DGuidanceRevE-1.0-1.i686.rpm
exit
```

Installation image addendum

64-bit Linux:

```
/etc:
ATC3DG.ini
```

/opt:
3DGuidance.Rev.E.64

/opt/3DGuidance.Rev.E.64:
3DGuidance_trakSTAR_Installation_and_Operation_Guide.pdf
trakSTAR_MUS_Installation_Guide_addendum.pdf

/opt/3DGuidance.Rev.E.64/3DGuidanceAPI:
ATC3DG.h
ATC3DG.ini
ATC3DGlib64.so

/opt/3DGuidance.Rev.E.64/Binaries:
3DGUtility64
APITest64
ATCdaemon64

/opt/3DGuidance.Rev.E.64/Firmware:
DiagStr.diag_bin
ErrStr.err_bin
mdsp.mdsp_ldr
poserver.po_ldr

/opt/3DGuidance.Rev.E.64/Samples/GetSynchronousRecord Sample:
GetSynchronousRecordSample.cpp
GetSynchronousRecordSample.h
makefile64
resource.h
StdAfx.cpp
StdAfx.h

/opt/3DGuidance.Rev.E.64/Samples/Sample:
makefile64
resource.h
Sample.cpp
Sample.h
StdAfx.cpp
StdAfx.h

/opt/3DGuidance.Rev.E.64/Samples/Sample2:
makefile64
resource.h
Sample2.cpp
Sample2.h
StdAfx.cpp
StdAfx.h

/usr/bin:
3DGUtility64
APITest64
ATCdaemon64

/usr/lib64:
ATC3DGlib64.so
libQtCore.so.4

libQtCore.so.4.6.2
libQtGui.so.4
libQtGui.so.4.6.2

32-bit Linux:

/etc:
ATC3DG.ini

/opt:
3DGuidance.Rev.E.32

/opt/3DGuidance.Rev.E.32:
3DGuidance_trakSTAR_Installation_and_Operation_Guide.pdf
trakSTAR_MUS_Installation_Guide_addendum.pdf

/opt/3DGuidance.Rev.E.32/3DGuidanceAPI:
ATC3DG.h
ATC3DG.ini
ATC3DGlib32.so

/opt/3DGuidance.Rev.E.32/Binaries:
3DGUtility32
APITest32
ATCdaemon32

/opt/3DGuidance.Rev.E.32/Firmware:
DiagStr.diag_bin
ErrStr.err_bin
mdsp.mdsp_ldr
poserver.po_ldr

/opt/3DGuidance.Rev.E.32/Samples/GetSynchronousRecord Sample:
GetSynchronousRecordSample.cpp
GetSynchronousRecordSample.h
makefile32
resource.h
StdAfx.cpp
StdAfx.h

/opt/3DGuidance.Rev.E.32/Samples/Sample:
makefile32
resource.h
Sample.cpp
Sample.h
StdAfx.cpp
StdAfx.h

/opt/3DGuidance.Rev.E.32/Samples/Sample2:
makefile32
resource.h
Sample2.cpp
Sample2.h
StdAfx.cpp
StdAfx.h

/usr/bin:
3DGUtility32
APITest32
ATCdaemon32

/usr/lib:
ATC3DGlib32.so
libQtCore.so.4
libQtCore.so.4.6.2
libQtGui.so.4
libQtGui.so.4.6.2