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AnywhereUSB® Manager Release Notes

Linux Versions

Version 0.6 (August 31, 2021)

Beta Release

INTRODUCTION

These are the release notes for the Linux version of the Manager for Digi International's AnywhereUSB® Plus.

SUPPORTED PRODUCTS

- AnywhereUSB® 2 Plus
- AnywhereUSB® 8 Plus

TESTED LINUX DISTRIBUTIONS

- Ubuntu 20.04
- Debian 10.9
- Mint 20
- Kubuntu 20.04
- CentOS 8.3
- OpenSUSE Leap 15.2
- Fedora 33

SUPPORTED LINUX KERNELS

- >=4.13.x

KNOWN ISSUES

1. Due to limitations in Linux for the number of ports supported on a USB hub, the AnywhereUSB® 24 Plus is not currently supported.
2. No Wayland support yet.

The AnywhereUSB® Manager requires the X Windowing system (aka Xorg or X11) and, in particular, does not currently run properly on Wayland, which has become the default on many distributions. Until we add Wayland support, a workaround on distributions like Debian 10, CentOS/RHEL 8, and OpenSUSE 15 is to select X windowing when logging in. For example, on the OpenSUSE or Debian GUI login screen (where you enter your password), click on the gear icon near the "Sign in" button and choose "GNOME on Xorg" then continue with the sign in process.

3. Some distributions (e.g: CentOS/RHEL) do not provide the `vhci_hcd` driver module. Workaround: Suitable binaries may be available in El Repo or other extra package repositories.
4. Automatic discovery of AnywhereUSB® Plus hubs is not implemented in this version of the Manager. Use the Configure -> Known Hubs feature in the Manager to manually specify the IP addresses of AnywhereUSB® Plus hubs.
5. Running `awusbmanager` in a VirtualBox VM. Using remote USB 3.X devices may require configuring the "USB 3.0 (xHCI) Controller" passthrough configuration option in the Virtualbox Settings -> USB menu.
6. After setting the Client ID (File -> Preferences -> Setup -> Client ID -> Save), the field appears populated on subsequent invocations. But on Kubuntu 20.04 the field displays as blank. The value is nevertheless stored and used properly, but it should also display.

ADDITIONAL INFORMATION

Installed file locations when installed via DEB or RPM packages:

Binary:

`/usr/sbin/awusbmanager`

Release notes:

`/usr/share/doc/awusbmanager/release_notes.pdf`

udev:

`/etc/udev/rules.d/70-awusb.rules`

UPDATE BEST PRACTICES

Digi recommends the following best practices:

1. Test the new release in a controlled environment with your application before you update production devices.
2. Unless otherwise noted, apply updates in the following order:
 - a. Device firmware
 - b. Modem firmware
 - c. Configuration
 - d. Application

TECHNICAL SUPPORT

Get the help you need via our Technical Support team and online resources. Digi offers multiple support levels and professional services to meet your needs. All Digi customers have access to product documentation, firmware, drivers, knowledge base and peer-to-peer support forums. Visit us at <https://www.digi.com/support> to find out more.

UPDATE CONSIDERATIONS

Prerequisites

- Kernel version ≥ 4.13
- `vhci_hcd` driver available for the running kernel.
To verify:

```
modinfo vhci_hcd
```

This command will display information about the module, rather than “Module `vhci_hcd` not found”.

- X Windowing system (as opposed, for example, to Wayland, which is not currently supported).
To verify:

```
echo $XDG_SESSION_TYPE
```

This command should return “x11”.

- If the Manager is installed from the DEB or RPM package, the process will automatically create the “awusb” Linux group (if it doesn't already exist). In order to have full access to the AnywhereUSB® Plus devices, Manager users must belong to this group. To add a user to the awusb group:

```
sudo usermod -a -G awusb <username>
```

where “<username>” should be replaced with the name of the user who will run the Manager.

NOTE: Changes to a user's group affiliations do not take effect until the next time the user logs in. So, while invoking the Manager immediately after running the above “usermod” command will appear to work, the user will not have permissions to connect to attached USB devices until first logging out and then logging back in.

To see your current group assignments, run “groups”.

- If the Manager is installed from the DEB or RPM package, udev rules are automatically written to `/etc/udev/rules.d/70awusb.rules` to ensure suitable awusb group access to

needed resources when the `vhci_hcd` driver loads.

- If the Manager is installed manually from the TGZ package and `udev` is available, you'll want to manually copy the included `70awusb.rules` file to `/etc/udev/rules.d/70awusb.rules`, and then instruct `udev` to reload its ruleset with:

```
sudo udevadm control -R
```

- If the Manager is installed manually and `udev` is not available on your system, manually change permissions on module resources so the Manager can access them:

```
sudo chgrp -R awusb /sys/devices/platform/vhci_hcd.0
sudo chmod 0220 /sys/devices/platform/vhci_hcd.0/attach
sudo chmod 0220 /sys/devices/platform/vhci_hcd.0/detach
```

Specifics for installing these prerequisites vary between Linux distributions. For example, on Ubuntu 20.04, X windowing is the default, the `vhci_hcd` driver is provided as a kernel module so those prerequisites are satisfied by default. Some examples:

Prerequisites Example: Ubuntu 20.04

X windowing is the default, the `vhci_hcd` driver is provided as a kernel module. If the Manager displays a:

```
Failed to load...canberra-gtk-module"
```

error message, install the missing package with:

```
sudo apt-get install libcanberra-gtk-module
```

Prerequisites Example: CentOS 8.3/RHEL 8.3

The `vhci-hcd` (and associated `usbip` drivers) are not usually provided on RHEL based systems like RHEL 8 and CentOS 8. But they are available in the `kmod-usbip` package from the add-on El Repo (<http://elrepo.org>) repository.

To verify that they are not already available on your system, if:

```
modinfo vhci-hcd
```

returns:

```
modinfo: ERROR: Module vhci-hcd not found.
```

then you need to install them manually. You can install the El Repo versions with:

```
sudo rpm --import https://www.elrepo.org/RPM-GPG-KEY-elrepo.org
sudo yum install https://www.elrepo.org/elrepo-release-8.el8.elrepo.noarch.rpm
sudo yum --enablerepo=elrepo install kmod-usbip
```

After this, re-running the above `modinfo` command should confirm the presence of the `vhci-hcd` driver.

Must select an X11 (not Wayland) option at login. E.g: select "Standard (X11 display server)"

from the options menu on the user login menu.

Prerequisites Example: Fedora 33

The `vhci-hcd` and associated drivers are installed by default and it appears that the Manager runs properly under both X11 ("GNOME on Xorg") and the default Wayland ("GNOME").

Prerequisites Example: OpenSUSE Leap 15.2

Must select an X11 (not Wayland) option at login.

Prerequisites Example: Debian 10.9

Must select an X11 (not Wayland) option at login. E.g: select "GNOME on Xorg" from the options menu on the user login menu.

If you get:

error while loading shared libraries: `libgtk-x11-2.0.so.0`: cannot open shared object file: No such file or directory

Run:

```
sudo apt install libgtk2.0-dev
```

If the Manager displays a:

Failed to load...`canberra-gtk-module`"

error message, install the missing package with:

```
sudo apt install libcanberra-gtk-module
```

Prerequisites Example: Kubuntu 20.04

Additional prerequisite to avoid a GTK warning:

```
sudo apt install gnome-themes-standard
```

Without this you will likely get this:

```
Gtk-WARNING... Unable to locate theme engine in module_path:  
"adwaita"
```

INSTALL/REMOVE

Digi distributes a single, part numbered archive via its web site. This archive includes a copy of these release notes as well as individual package files. Throughout this section of the notes, it is assumed that the packages have been extracted from the archive. In the history section of the notes, checksums of the individual, constituent packages are provided.

The `awusbmanager` files can be installed automatically using the DEB (for Debian derived distributions such as Debian, Ubuntu, Mint, etc.) or RPM (for RedHat derived distributions such as RHEL, CentOS, openSUSE, Fedora, etc.) release packages, or manually using the `.tgz` package.

Automatic install using DEB package

Package name: 40003060_B_amd64.deb

Install:

```
# Note the leading "./"
sudo apt install ./40003060_B_amd64.deb
```

Remove:

```
sudo apt remove awusbmanager
```

Automatic install using RPM package

Package name: 40003060_B-1.x86_64.rpm

Install:

```
# On RHEL, CentOS,, Fedora, etc:
# Note the leading "./"
sudo dnf install ./40003060_B-1.x86_64.rpm
```

```
# On OpenSUSE, etc:
# Note the leading "./"
sudo zypper install ./40003060_B-1.x86_64.rpm
```

Note: zypper may complain “Package is not signed!”. If so, select the “i” option to ignore this warning.

Remove:

```
# On RHEL,CentOS, Fedora, etc:
sudo dnf remove awusbmanager
```

```
# On OpenSUSE, etc:
sudo zypper remove awusbmanager
```

Note: it is also possible to install using "rpm -i" and remove using "rpm -e" but if you subsequently update to a different driver version (say updating from version 1.1 to 1.2), it will then be your responsibility to first manually remove the deprecated version. In contrast, dnf (and yum and zypper) are smart enough to recognize when you are installing a changed version of an already installed driver, in which case it tells you if it's upgrading (the version string of the candidate driver is newer than the currently installed driver) or downgrading (the version string of the candidate driver is older than the currently installed driver), and it removes the previously installed version.

Manual install using .tgz package

Package name: 40003060_B.tgz

Install:

```
#Unpack the distribution file into a temporary working directory
tar -xvzf 40003060_B.tgz
```

TBD: Manually perform the steps delineated in debian/DEBIAN/postinst (which are run automatically when the Manager is installed from the DEB package.)

RUNNING THE MANAGER

Binary names and install locations.

The Manager executable are named:

```
awusbmanager64 # For 64-bit systems
awusbmanager32 # For 32-bit systems
```

When installed via the DEB or RPM packages, the proper binary for the host machine type is selected and installed as /usr/sbin/awusbmanager. When installed via the TGZ tarball, the binaries will be in the local directory where you unpacked them.

The Manager can be run by any user, but to have access to the AnywhereUSB® Plus attached devices the user must be a member of the "awusb" Linux group. See the Prerequisites section for a discussion of using usermod to do this.

While logged in as a user in the "awusb" group, invoke the binary from the Linux command line, using the pathname if needed, e.g:

```
/usr/sbin/awusbmanager or ./awusbmanager
```

If you get a "Failed to load...canberra-gtk-module" error message:

```
sudo apt-get install libcanberra-gtk-module
```

If you get a "vhci_hcd driver not loaded" error message:

```
sudo modprobe vhci_hcd
```

CHANGE LOG

VERSION 0.6(August 31, 2021)

NEW FEATURES

1. None

ENHANCEMENTS

1. Add RPM distribution package.

SECURITY FIXES

1. None

BUG FIXES

1. None

VERSION 0.2(January 12, 2021)

This is the initial release of the AnywhereUSB® Linux Manager

MD5 checksum:

946228ce0c4c23f5c5eea61b73f12307 awusbmanager_0.2.deb

SHA256 checksum:

98574446ff17313941fd79a68354801eaba2dc900f329d115a9007ef18df268b awusbmanager_0.2.deb