ADM-XRC LTS Driver 4.4.0 for Linux Release Note

Introduction

This release note accompanies the ADM-XRC LTS Driver for Linux. The latest version of this driver can be found at:

https://support.alpha-data.com/pub/admxrc/linux

For support, send e-mail to support@alpha-data.com

Operating systems supported

This release of the ADM-XRC LTS Driver supports the following operating systems:

- GNU/Linux distribution with 2.6.x kernel
- GNU/Linux distribution with a 3.x, 4.x or 5.x kernel.

Due to the ever-changing nature of GNU/Linux, Alpha Data cannot guarantee that this driver can be successfully configured, built, installed and run on all Linux distributions past, present and future. Alpha Data makes best-efforts to ensure compatibility with all Linux distributions, but should a problem be encountered, please contact support@alpha-data.com.

Hardware supported

This release of the ADM-XRC LTS Driver supports the following Alpha Data hardware:

- ADM-XRC / ADM-XRC-P
- ADM-XRC-II-L
- ADM-XRC-II
- ADM-XPL
- ADM-XP
- ADP-WRC-II
- ADP-DRC-II
- ADM-XRC-4LX / ADM-XRC-4SX
- ADCP-XRC-4LX
- ADPE-XRC-4FX
- ADM-XRC-4FX / ADM-XMC-4FX
- ADM-XRC-5LX
- ADM-XRC-5T1
- ADM-XRC-5T2 / ADM-XRC-5T2-ADV / ADM-XRC-5T2-ADV6 / ADM-XRC-5T2-ADV-CC1
- ADM-XRC-5LXA
- ADM-AMC-5A2

- ADM-XRC-5TZ
- ADC-BBP
- ADM-PCIE-6S1

License Agreement

This release of software is licensed according to the terms of GNU Public License Version 2 (GPL V2). A copy of this license can be found in the file **gpl-2.0.txt** within this software package. Please contact Alpha Data if alternative licensing conditions are required.

Alpha Data reserves the right to use a different license agreement for future releases of this software.

Installation instructions

This release of the driver is distributed in source code form as a tarball (.tar.gz file extention). Please refer to the README file inside the tarball for instructions on how to configure, build and install the driver.

Completely uninstalling the driver

To uninstall the driver, first stop the driver by issuing the command **rmmod admxrc2**. Then delete the following files and symbolic links, if they exist:

1. **/usr/lib/libadmxrc2.*** and/or **/usr/lib32/libadmxrc2.*** and/or **/usr/lib64/libadmxrc2.***, as appropriate for your Linux distribution.
2. **/lib/modules/<kernel version>/kernel/drivers/addon/admxrc2/admxrc2.ko**
3. **/etc/udev/rules.d/51-admxrc2.rules**

VPD write-protection mechanism

To enable writes to VPD memory (calls to **ADMXRC2_WriteConfig**), the kernel module parameter **EnableVpdWrite** must be nonzero. For example:

```
modprobe admxrc2 EnableVpdWrite=1
```

This value takes effect when the driver starts, so it can be changed only by unloading the driver and restarting the driver with a different value for **EnableVpdWrite**. If this parameter is not specified, the driver considers it to be zero (write-to-VPD disabled).

Security considerations

By default, the **udev** rules file **51-admxrc2.rules** creates device nodes in **/dev** as follows:

- Mode: 664 (octal) => owner read, owner write, group read, group write, other read
- UID: **root**
- GID: **root**

This means that the default permissions are that (i) only **root** and members of the group **root** can open devices, in read-only or read-write mode and (ii) users that are not members of the group **root** can open a device in read-only mode. However, after installing the driver, the file **/etc/udev/rules.d/51-admxrc2.rules** can be customized to relax permissions. See the comments in that file for details.

Biarchitecture support and shared library installation

The "configure" script for ADM-XRC LTS Driver for Linux selects a non-biarchitecture build by default. In other words, by default, only native binaries are built when the "make clean all" command is issued. In non-biarchitecture systems, the system library directory is typically **/usr/lib**. This presents no problem for the "make install" command, and it places the shared library "libadmxrc2.so" in **/usr/lib**.

If the target system is biarchitecture, such as x86_64 Linux, passing "-biarch yes" to the "configure" script selects a biarchitecture build where 64-bit native binaries and 32-bit compatibility binaries are built when the "make clean all" command is issued.

In biarchitecture systems, there are multiple different conventions for where 64-bit and 32-bit shared libraries are located:

- The Redhat / Fedora / CentOS Linux convention where 64-bit native libraries are in **/usr/lib64** and 32-bit compatibility libraries are in **/usr/lib**.
- The Ubuntu Linux convention where 64-bit native libraries are in **/usr/lib** and 32-bit compatibility libraries are in **/usr/lib32**.

The "configure" script can detect which of the above conventions is in use in the target system. It generates the ".build_defs" file accordingly so that "make install" will install shared libraries in the correct locations.

Known issues

Downgrading to an earlier version

When downgrading to an earlier version of the driver, remove all files named **/usr/lib/libadmxrc2.*** (and **/usr/lib64/libadmxrc2.*** if on a 64-bit bi-architecture machine), before executing the **make install** command as root. Otherwise, the shared libraries remaining from the later version of the driver will be preferred by the system as they have a higher version number.

Release history

Release 4.4.0

- Compile-time fixes for Linux kernels up to 5.10.x.
- The **ADMXRC2_Read** & **ADMXRC2_Write** API functions now honour the **width** parameter. Previously, these calls resulted in a kernel-mode memory copy.
- The **ADMXRC2_Read** & **ADMXRC2_Write** API functions now honour the **ADMXRC2_IOFIXED** flag when passed in the **flags** parameter. Previously, these calls always incremented the Local Bus address during reads and writes.

Release 4.3.0

This is the first release of the ADM-XRC LTS Driver for Linux, compatible with Linux kernels up to 4.15.x.

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