aria
CYBERSECURITY
SOLUTIONS

Machine Vision Accelerator

RELEASE NOTES

February 19, 2021

Copyright © 2021 CSP Inc.

All rights reserved.

ARIA Cybersecurity Solutions, which includes ARIA SDS, Myricom network adapters, and nVoy security appliances, are designed and manufactured by the High Performance Products Division of CSP Inc.

No part of this publication may be reproduced, transmitted, transcribed, stored in a retrieval system, or translated into any language, in any form or by any means, electronic, mechanical, photocopying, recording, or otherwise, without prior written permission from CSP Inc.

All copyright, confidential information, patents, design rights and all other intellectual property rights of whatsoever nature contained herein are and shall remain the sole and exclusive property of CSP Inc. The information furnished herein is believed to be accurate and reliable. However, no responsibility is assumed by CSP Inc. for its use, or for any infringements of patents or other rights of third parties resulting from its use.

ARIA™ and nVoy™ are trademarks of CSP Inc. Myricom® is a registered trademark of CSP Inc. All other trademarks are the property of their respective owners.

PRELIMINARY NOTICE

This document is in the preliminary stage and is subject to change without notice.

Publishing Information

Revision	Date	Details
1.3.0	February 19, 2021	Preliminary release.

Address

ARIA Cybersecurity Solutions Product Development
C/O CSP Inc.
175 Cabot Street, Suite 210
Lowell, MA 01854
Tel: (800) 325-3110
ARIA_support@ariacybersecurity.com

https://www.ariacybersecurity.com

Contents

Summary

The ARIA™ Machine Vision Accelerator (MVA) solution greatly improves the performance of machine vision applications processing data from GigE Vision devices. MVA dramatically reduces the host processor overhead while providing maximum throughput when receiving GigE StreamProtocol (GVSP) content. MVA was designed for easy integration into existing GigE Vision Software Development Kits (SDKs) and native applications.

> For more information about MVA, see the *ARIA Machine Vision Accelerator User Guide*.

This document describes the new features, bug fixes, known issues, and limitations for various releases of the MVA solution.

Version 1.3.0

Version 1.3.0 of the ARIA MVA release contains the bug fixes, known issues, and limitations described in this section.

New Features

- (ID #75) Support for RHEL/CentOS 7.9, 8.3, and Stream was added.
- (ID #80) The MVA solution supports Linux kernels up to version 5.10.
- (ID #82) The MVA driver can be installed using InstallAnywhere (see the *Machine Vision Accelerator User Guide* for details).
- (ID #94) The mva_simple_recv application accepts a range for the -D (synthetic processing delay) argument.
- (ID #103) New functions for retrieving, setting, and resetting the name of an MVA adapter were added (see the *MVA API Guide* for details). These functions include:
  - mva_get_name()
  - mva_reset_all_name()
  - mva_reset_name()
  - mva_set_name()
- (ID #107) The MVA adapter supports the packet resend feature. For details about the feature, see the *ARIA Machine Vision Accelerator User Guide*. As part of this feature, the following changes were made in the API (see the *MVA API Guide* for details):
  - Added mva_open_stream_pr() and mva_poll_recv_pr() functions.
  - Enhanced the mva_stats and mva_block_status objects.
  - Enhanced the stream flags MVA_OPEN_ZEROLOSS, MVA_OPEN_DROP_INCOMPLETE, and MVA_OPEN_RETURN_INCOMPLETE.
  - Added the mva_packet_resend_config object.
  - Added the MVA_BOOO_XXX flags.
- (ID #107) New example applications (mva_simple_recv_pr and mva_rwdt_recv_pr) for the packet resend feature were added (see the *ARIA Machine Vision Accelerator User Guide* for details).
- (ID #117) Raw, file, and extended chunk payload files are now supported.
- (ID #206) Support for Ubuntu LTS versions up to 20.04 and Debian 10.7 was added.
- (ID # 269) The API provides the mva_clear_stats() function for resetting statistics.

Bug Fixes

- (ID #55) Resolved an issue where some test examples resulted in a seg fault.
- (ID #132) Set the number of default buffers to 63 for mva_simple_recv.

- (ID #133) Resolved an issue where a seg fault would occur if the buffer size was too large.
- (ID #243) Fixed the verify block order (-V) functionality for the mva_simple_recv, mva_rwdt_recv_pr, and mva_simple_recv_pr scripts.

Limitations

1. Each adapter supports up to eight GVSP streams by default.
2. Up to 511 buffers can be queued to an MVA per stream at one time.
3. 10GbE line speed has been verified with 8972 byte packets (MTU 9000). Smaller packet sizes have not been extensively tested and may result in dropped packets.
4. MVA_OPEN_IPV6 is not supported.

Known Issues

None.

Linux Support

- CentOS 7.9, 8.3, and Stream
- RedHat 7.9 and 8.3
- Ubuntu 16.04, 18.04, and 20.04
- Debian 10.7

Windows Support

- Windows 10
- Windows Server 2016 and 2019

Version 1.2.7

Version 1.2.7 of the ARIA MVA release contains the bug fixes, known issues, and limitations described in this section.

New Features

(ID #47) The MVA solution supports Linux kernels up to version 5.5.

Bug Fixes

(ID #45) Resolved an issue where the driver would crash or lock on Ubuntu 18.04.

Limitations

1. Each adapter supports up to eight GVSP streams by default.
2. Up to 511 buffers can be queued to an MVA per stream at one time.
3. 10GbE line speed has been verified with 8972 byte packets (MTU 9000). Smaller packet sizes have not been extensively tested and may result in dropped packets.
4. MVA_OPEN_IPV6 is not supported.
5. MVA_OPEN_ZEROLOSS is not supported

Known Issues

None.

Version 1.2.6

Version 1.2.6 of the ARIA MVA release contains the bug fixes, known issues, and limitations described in this section.

New Features

1. (ID #36) Added support for variable-sized buffers. By default, the buffer size is 508 MB, but it can be decreased down to 60 MB.
2. (ID #37) Added a parameter named *myri_mva_desc_count* that allows you to adjust the number of descriptors for larger buffers.

```
matrix of allowed myri_mva_desc_count
descriptors   size       max buffer
    512        256          60 MB
    256        512         124 MB
    128       1024         252 MB
    64        2048         508 MB   (default)
```

To set the number of descriptors in Linux:

a. Modify and uncomment the module parameter for *myri_mva_desc_count* in the script /opt/mva/sbin/myri_start_stop.

```
#add/modify/uncomment MYRI_MODULES_PARAMS lines to change defaults
#MYRI_MODULE_PARAMS=" myri_mva_desc_count=256 $MYRI_MODULE_PARAMS"
```

b. Restart the driver.

```
sudo /opt/mva/sbin/myri_start_stop restart
```

To set the number of descriptors in Window:

a. Set the registry key.

```
PS C:\MVA_Myri-10G> REG ADD HKLM\SYSTEM\CurrentControlSet\services\mva /v
myri_mva_desc_count /t REG_DWORD /d 256
```

b. Select Control Panel > Network and Internet > **Network Connections**.

c. Disable the first and second Myri-10G PCIe NICs with MVA.

d. Enable the first and second Myri-10G PCIe NICs with MVA. This restarts the devices.

3. (ID #38) Added support for CentOS 8.2 and Linux kernels up to 5.5.

Bug Fixes

None.

Limitations

1. Each adapter supports up to eight GVSP streams by default.
2. Up to 511 buffers can be queued to an MVA per stream at one time.

3. 10GbE line speed has been verified with 8972 byte packets (MTU 9000). Smaller packet sizes have not been extensively tested and may result in dropped packets.
4. MVA_OPEN_IPV6 is not supported.
5. MVA_OPEN_ZEROLOSS is not supported

Known Issues

None.