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| **Freescale Semiconductor** | Document |
| LDPAA AIOP SERVICE LAYER | Number: AIOPSLRN |
| Release Notes for LDPAA AIOP Service Layer Alpha v0.4.2 | Doc. Rev. 0.2 July. 23 2014 |

**LDPAA AIOP SERVICE LAYER ALPHA V0.4.2**

**Release Notes**

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1. Overview

This document describes the main updates included in the LDPAA AIOP Service Layer Alpha v0.4.2 as compared with v0.4.1.

This version enables one cluster, four AIOP Cores and 1 task per core by default. Multi-task per core has been disabled due to tool issues (ENGR00319165).

Applications should use the APIs in: aiopsl/src/include/

All other APIs are internal to the Service Layer and should not be called by applications.

The API may be changed in future releases.

The API may be updated in future releases to align with the latest HW specs.

This release can be retrieved from GIT:

GIT repository: ssh://gerrit/ldpaa/aiopsl/

GIT tag: **ldpaa-aiop-sl-v0.4.2**

Please see the aiopsl/docs/AIOPCoreLib\_ChangeLog.txt and aiopsl/docs/AIOP\_ARENA\_ChangeLog.txt files for a detailed list of changes.

The API documentation (.chm) may be downloaded from Compass at: <http://compass.freescale.net/livelink/livelink?func=ll&objId=230824100&objAction=browse&viewType=1>

Please subscribe to the AIOPSREL mailing list to receive future release notifications.

1. Compatibility List

This release is bit accurate with respect to the following docs/tools.

As such, it is suitable for running on RTL/Emulator/Simulator.

|  |  |
| --- | --- |
| **Tool/Doc** | **Version** |
| AIOP\_Archdef | 0.7.5 |
| FD\_section | 0.62.3 |
| CTLU\_AIOP\_bg | 0.7.2 |
| TMan | 0.7.7 |
| Parser\_Block\_Guide | 3.070 (spec version from 15/4/2014) |
| AIOP\_Instruction\_Additions | 1.00 |
| Compiler | Build 279 |
| CW for DPAA | 10.0.9 |
| Simulator | LS\_SIM\_f0117\_140716 |
| MC Firmware | 0.4.2.1 |
| PowerISA | 2.06 |
| AIOP\_z490\_CPU\_Specification | Rev1.2 |
|  |  |

1. New Features

The following new features have been added since v0.4.1.

**Command Interface:**

* Command Interface between GPP and AIOP

**Network Interfaces:**

* Broadcast packet reception by all NIs
* Ability to add/remove MAC addresses to/from a NI
* Getter/Setter for Maximum Frame Length (MFL)

**Multi-Core Support:**

* Spinlock API
* Service Layer multi-core runtime support

**Memory Management:**

* Buffer Pool Object Discovery  
  Derive BMan buffer pools assigned to the AIOP from the layout file.

**IP Fragmentation**

* IPv6 fragmentation
* Fragments restoration feature

**Keygen**

* Extraction of user metadata in keygen\_gen\_key command

**GSO**

* TCP checksum

**Header Modification**

* New routines:

                ipv4\_ts\_opt\_modification()

                ipv4\_mangle()

                ipv4\_dec\_ttl\_modification()

                ipv6\_mangle()

                ipv6\_dec\_hop\_limit\_modification()

                l2\_push\_and\_set\_vlan()

                l2\_arp\_response()

                l2\_set\_hw\_src\_dst()

**Frame Operations**

* New routines:

create\_arp\_request\_broadcast()

create\_arp\_request()

**Console IO:**

* “Light” print function.

**Utilities:**

* Time of day query
* Device Queries
* Endian swap accessors
* Random number generation

**Debug Support:**

* Stack overflow detection

1. Changes

The following are changes from version 0.4.1\_update02:

* Updated directory name from aiopsl/build/aiop\_t4ls\_sim to aiopsl/build/aiop\_sim
* Updated file/directory names from ls2100 to ls2085a
* Separated CW project’s compiler search paths to system and user paths.
* Updated Time Queries API.
* Removed fsl\_os\_exit().
* Updated FDMA API according to de-scoped features in CCB TKT213227

1. Quick Start with this release

Please see the README.txt file at aiopsl\build\aiop\_ sim\apps\app\_process\_packet\src\ for running instructions.

1. Contact Information

* Mail List: **AIOPSREL**
* Bug Reporting [Clear Quest](http://cq.freescale.net/cqweb/) BINs: **LS-AIOP-LOW-LEVEL** and **LS-ARENA**

1. Bug Fixes

The following bugs have been fixed since version 0.4.1\_update02:

* ENGR00322349 – phys\_to\_virt() and virt\_to\_phys() does not work properly in AIOP for PEB and DP\_DDR memory area
* ENGR00322345 – PEB overlap between AIOP and MC.
* TMI create with polling on the TMI active status is supported.
* TMAN Restriction of input/output pointers 16B alignment is documented and implemented.
* Timer query is treated the same as the simulator and not as the spec specifies (due to a spec error).
* ENGR00321575 – timer query is failing
* ENGR00321844 – keygen\_kcr\_create documentation is incomplete
* ENGR00321407 – Copy command flags documentation.
* ENGR00321711 – GRO termination conditions order.
* ENGR00322150 – Always update new aggregation headers length
* ENGR00323973 – Timer expiration aggregation handling.

1. Known Limitations/ Issues

## General Limitations

* The fsl\_os\_print() function is limited to strings smaller than 80 characters.
* Slab creation does not support additional buffers beyond the committed number (i.e. only extra\_buffs=0 is currently supported).
* The Parser profile ID is zero by default. Other Parser Profiles can be created.

## Known problems

* The slab\_debug\_info\_get() command does not check the validity of the slab being queried.  (ENG00312975)

## Tools known issues

The below are known simulator issues which cause limitations in the Service Layer.

* ENGR317066 - Due to compiler bug, the function keygen\_kcr\_delete() can be used only when working with optimization level 4. The reason is that there is a workaround that does not work in optimization level 0. (This bug is supposed to be fixed in CW 10.0.10).
* FDMA:
* ENGR323205 - Initial Frame Presentation Command - do not return 0xE for FDMA\_FD\_ERR case.
* ENGR323604 - Initial Frame Presentation Command - return 0x0a for FDMA\_ASA\_OFFSET\_BEYOND\_ASA\_LENGTH\_ERR case(should be 0x09).
* ENGR00321242 - Initial Frame Presentation Command - return status is not 0x08 for short frame.
* ENGR323195 -  timer\_query\_command - state error with one shot timer after timer delete without CCP.
* CDMA:
* ENGR322008 - cdma workspace limitation error not generate.
* ENGR00322729 - cdma error function wrong. DMA and Mutex are separate state machine and can happen independent of each other unless there is a combo command of mutex and dma.
* Parser
* ENGR323148 -: Simulator doesn't set "UDP Present" bit when UDP checksum is 0.
* ENGR00322928 - The parse result doesn't return the expected values of ip\_n\_unknown\_protocol field.
* ENGR00323000 -  Parser return truncation error when CFI field (VLAN header) is set.
* CTLU :
* ENGR00321926 - TLUMISS test in rule query command
* ENGR00322445 - the miss rule cannot be found after its miss result has been replaced
* ENGR00312494 - the covered instructions show not covered in coverage report
* ENGR00322996 – Keygen: The extract header will add random padding while the extract offset + size larger than the size of parse result
* Multi-Core: It is not currently possible to run single-core due to tool limitation.  (When running in AIOP-MC integrated environment, aiop.num\_cores  can not be set to 1.) (ENGR00313823)

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