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| **Freescale Semiconductor** | Document |
| LDPAA AIOP SERVICE LAYER | Number: AIOPSLRN |
| Release Notes for LDPAA AIOP Service Layer Alpha v0.5.2.0 | Doc. Rev. 0.1 Dec 7, 2014 |

**LDPAA AIOP SERVICE LAYER ALPHA V0.5.2.0**

**Release Notes**

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1. Overview

This document describes the main updates included in the LDPAA AIOP Service Layer Alpha v0.5.2.0 as compared with v0.4.8.

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 branch: branch\_from\_0.4.4

GIT tag: **ldpaa-aiop-sl-v0.5.2.0**

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

The API book documentation may be downloaded from Compass at:

<http://compass.freescale.net/livelink/livelink?func=ll&objId=232593254&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 | 0.8.0 |
| FD\_section | 0.62.3 |
| CTLU\_AIOP\_bg | 0.7.4 |
| TMan | 0.7.81 |
| Parser\_Block\_Guide | 3.090 |
| AIOP\_Instruction\_Additions | 1.00 |
| Compiler | Build 289 |
| CW for DPAA | 10.0.13 |
| Simulator | m0127 |
| MC Firmware | 0.5.2 |
| PowerISA | 2.06 |
| AIOP\_z490\_CPU\_Specification | Rev1.2 |
|  |  |

1. New Features

The following new features have been added since version 0.4.8:

* Initial task ordering is configure-able. Default is concurrent. (ENGR00340907)
* Increased Slab maximum buffer size. (ENGR00338167)
* Increased Slab buffer amount. (ENGR00341815)
* Memory allocations beyond the 32bit address space. (ENGR00340906)
* DDR Storage Profile for Network Interfaces. (ENGR00339192)
* Configure-able number of applications. (ENGR00341738)
* Fatal Error Handler prints a notification. (ENGR00340891)
* Command Interface GPP ICID query. (ENGR00341218)
* Enhanced IPsec functionality:
  + IPv4 Tunnel mode, ESP encap
  + Exclusive ordering
  + SEC new output buffer mode
  + Transport mode ESP encap
  + IPv4 Tunnel mode UDP encapsulation
  + IPv6 ESP encap
  + Lifetime – kilobyte
  + Lifetime – packet
  + Concurrent ordering
* Added VxLAN (ENGR00335195) and MPLS (ENGR00335196) header modifications.

1. Changes

The following are changes from version v0.4.8:

* Maximum number of applications must be defined.
* Memory allocation functions were marked as deprecated while backward compatibility is maintained. Applications should migrate to the new memory allocation functions.
* When user callback is called during commands received by the AIOP, the ICID in the workspace is the ICID of the AIOP.
* Simulator configuration file must be updated due to UART register offset bugfix.

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

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 are bugs fixed in this release since version v0.4.8

* AIOP spins at lock\_spinlock() (ENGR00337904)
* Command Interface isolation issue (ENGR00340902)
* Command Interface memory corruption (ENGR00341199)
* UART register offset fixed (ENGR00339116)
* AIOP boot CTSCSR0 store bug (ENGR00341681)
* Fix FD[length] update for IPv6 frames for IPR (ENGR00340559)

1. Known Limitations/ Issues

## General Limitations

* The fsl\_os\_print() function is limited to strings smaller than 80 characters when called at runtime.
* Slab creation does not support additional buffers beyond the committed number (i.e. only extra\_buffs=0 is currently supported).
* Allocation from System DDR is not yet supported.
* The number of tasks per core should not be set to a value greater than 4 since some AIOP SL functions have not yet been optimized for minimal stack usage.
* IPR statistics are not supported.
* The Parser does not support the Invalid HXS error code (shown in the Parser Block Guide version 3.090).
* Packets without L2 Ethernet header are not supported due to a hardware bug (TKT237150).
* The SEGMENT\_OFFSET field in the Presentation Context must be set to 0. This means that a frame must be presented from its first byte.

## Known problems

* OSM errors are not supported.
* FDMA errors are not supported.
* GRO: Max size limit counter is not incremented.
* IPR:
  + IPv6 fails due to incorrect checksum. (ENGR341098)
  + L4 checksum validation for IPv4 frames with padding different than 0. (ENGR00342190)
* IPsec:
  + Transport mode does not support IPv6. (ENGR342116)
  + CCM Encryption is not supported. (ENGR341153)
  + Copy DSCP from inner header to outer header is not supported. (ENGR341311)

## Tools known issues

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

* IPsec:
  + Combined algorithms de-capsulation failed (ENGR337235)
  + DTTL field not work at transport mode (ENGR337696)
  + Incorrect byte count returned in FD[FLC] (ENGR338047)
  + Incorrect handling of IP Header in IPSec protocol descriptor Block (ENGR330235)
  + Concurrent mode de-capsulation output  frame buffer use un-release buffer (ENGR338965)
  + Transport encapsulation will exit when  cipher algorithm is NULL Encryption (ENGR338968)
  + ICV not matching (Authentication Data incorrect) (ENGR340563)
  + ESP trailer construction issues (ENGR340565)
  + Transport mode enable ESN de-capsulation will ICV check failure (ENGR340567)
  + De-capsulation failure and output frame is full zero data (ENGR340773)
  + Transport mode de-capsulation output frame IP header length field and payload data error (ENGR340827)
  + IPv6 frame ECN update error (ENGR341123)
* Table :
  + LPM Lookup after EOFH hits a general rule instead of the miss result (table\_lookup error flow) (ENGR334311)
  + Permanent NORSC failure while miss result is created (table\_create error flow) (ENGR341186)
  + Timestamp returned is not 0 although STDY == 0  (table\_lookup) (ENGR341623)
  + Miss result cannot be deleted in LPM table (no direct impact) (ENGR00339631)
  + TLUMISS issue in rule create or replace command (table\_rule\_create\_or\_replace) (ENGR341601)
* TMAN:
  + timer create cmd issue when timer number exceed max timer in tmi (ENGR00341111)
  + Timer create command (TIMER\_CREATE\_ILLEGAL\_DURATION\_VALUE) error code is wrong (ENGR00341232)

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