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## SA Low Level Driver

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# Release Notes

Applies to Product Release: 02.00.03.00  
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### Contributors to this document

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# SA Low Level Driver Alpha version 02.00.03.00

## Overview

This document provides the release information for the latest Security Accelerator Low Level Driver (SA LLD) which should be used by drivers and application that interface with SA. Although SASS supports 3GPP specific Ciphering and Authentication algorithms such as Kasumi F8/F9 and Snow3G F8, those algorithms are locked out in this standard SA LLD distribution. In order to access 3GPP specific functionalities, one must obtain the SASS 3GPP Enabler as well from TI.

SA LLD module includes:

- Compiled library (Big and Little) Endian of SA Low Level Driver.
- Sources
- Example and unit test code.
- API reference guide
- Software Manifest Documentation

This release notes is for SA LLD version 2.0.3.0(2\_0\_3\_0)

For the rest of the document the keyword *SA\_Version* will indicate the SA LLD version of this release.

The SA LLD is usually released with a PDK package; the keyword *PDK\_Version* indicates the corresponding PDK version.

## Licensing

Please refer to the software Manifest document for the details.

## Delivery Package

The delivery package from Texas Instruments will be delivered as follows:

```
setupwin32_salld_<device>_<SA_Version>.exe
```

```
setuplinux_salld_<device>_<SA_Version>.bin
```

## Installation Instructions

### Installation prerequisite

- Install CCSv5
- Install the functional simulator for the device under test if it is not included in CCSv5.
- Install the dependent components as listed in section “LLD Dependencies”. The LLD’s are expected to be installed as part of PDK for the device.

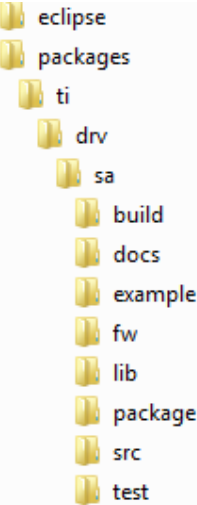
### Installation guidelines

The steps to be followed for installation of the SA LLD release are as follows:

1. Download the release executable
2. Run the executable file; follow the instructions and install the SA LLD software.
3. Install the dependent components as listed in section “LLD Dependencies”. The LLD’s are expected to be installed as part of PDK for the device.

### Directory structure

If SA LLD is installed in default location following would be directory structure:



The following table explains each individual directory covered as part of SA LLD installation:

Directory Name	Description
ti/drv/sa	The top level directory contains the following:- <ol style="list-style-type: none"><li>1. <u>Exported Driver header file</u> Header files which are provided by the SA low level driver and should be used by the application developers for driver customization and usage.</li></ol>

ti/drv/sa/build	The directory contains internal XDC build related files which are used to create the SA low level driver package.
ti/drv/sa/docs	The directory contains the SA low level driver documentation.
ti/drv/sa/example	The “example” directory in the SA low level driver contains the example projects
ti/drv/sa/test	The “test” directory in the SA low level driver contains unit test code and projects
ti/drv/sa/lib	The “lib” folder has pre-built Big and Little Endian libraries for the SA low level driver along with their <i>code/data size information</i> .
ti/drv/sa/fw	C data files required to configure the SA hardware sub-system.
ti/drv/sa/package	Internal SA low level driver package files.
eclipse	The directory contains the Eclipse plug-in help files
ti/drv/sa/src	The “src” directory contains the SA LLD source code. This directory is only available in a source release package.

## Customer Documentation List

Table 4 lists the documents that are accessible through the /docs folder on the product installation CD or in the delivery package.

**Table 4 Product Documentation included with this Release**

Document #	Document Title	File Name
1	API documentation (generated by Doxygen)	sa\docs\doxygen\html\index.html
2	Release Notes (this document)	sa\docs\ReleaseNotes_SA_LLD.pdf
3	Software Manifest document	sa\docs\SA_LLD_2_0_SoftwareManifest.pdf
4	User Guide	sa\docs\UserGuide_SA_LLD.pdf

## LLD Dependencies

- This release of SA LLD requires CSL package released with PDK.

## Label and Version Information

Table 1 lists the software label and versions supported by this release.

**Table 1 Label and versions supported by this release**

Label/Version Information
SALLD.02.00.03.00

## Resolved Incident Reports (IR)

Table 2 provides information on IR resolutions incorporated into this release.

**Table 2 Resolved IRs for this Release**

IR Parent/ Child Number	Severity Level	IR Description
SDOCM00104806	Major	Sa_chanControl API should check sa_CONTROLINFO_VALID_CTRL_BITMAP

## Known Issues/Limitations

**Table 3 Known Issue/IRs for this Release**

IR Parent/ Child Number	Severity Level	IR Description
SDOCM00102646	Major	SA Examples do not use RM
SDOCM00102793	Minor	SA LLD Unit Test does not support IPSec Tunnel which is half duplex

## Migration Information

None

### Migration information for SA LLD 2.0.2 Release from Previous release

- Example applications are enhanced to be linked with static libraries when there is no environment variable "USEDYNAMIC\_LIB" set to "yes".
- When USEDYNAMIC\_LIB=yes environment variable is set, the example applications are not forced to link with static libraries.

### Migration Information for SA LLD 2.0.1 Release

- Multiprocess Support is added – Below two new elements are added to 'Sa\_Config\_t' config structure, which needs to be set to 'zero' if not used for multiprocessing.
  - void \*instPoolBaseAddr: /\*\*< Base address of the global shared memory pool from which global LLD instance & channel instance memory is allocated.\*/
  - void \*scPoolBaseAddr: /\*\*< Base address of the global shared memory pool from which SA security context memory is allocated. This is a DMA'able memory \*/
- Please memset the 'Sa\_Config\_t' structure to zero before initializing any configuration elements.
- Updated new environment variables in armsetupenv.sh script to enable or disable the SA 3gpp support in the SA examples.

## Component Compatibility

The example and unit test have been verified with certain version of PDK package and may need to be modified as per API changes introduced by other components if used with a different version of PDK. Following are the version dependencies.

**k2h SoC:** PDK package released with MCSDK version 03.00.02.13 and above

## New/Updated Features and Quality

### Release 2.0.3.0

- Bug fixes in SA LLD.

### Release 2.0.2.0

- Shared object library support
- IRs fixed in the release

IR Parent/ Child Number	Severity Level	IR Description
SDOCM00103233	Major	LLD makefiles need to support shared libraries
SDOCM00102566	Minor	Add an error check and return error if the required 3GPP ciphering modes are not enabled

### Release 2.0.1.4

- Production release of SA LLD 2.0.1
- IRs fixed in this release

IR Parent/ Child Number	Severity Level	IR Description
SDOCM00102453	Major	Enable Multiprocess support for SA LLD
SDOCM00102765	Major	SA LLD does not return Channel Stats when an IPSec tunnel is half duplex
SDOCM00101388	Minor	SA LLD examples are not restartable
SDOCM00102767	Minor	SA test makefiles use SA_INSTALL_PATH incorrectly
SDOCM00102769	Minor	SA test makefiles do not have support for building with SA_3GPP_SUPPORT
SDOCM00102842	Major	SA LLD library should be compiled with -mno-unaligned-access compiler flag for ARM User space

### Release 2.0.1.3, Release 2.0.1.2

- Internal Release

### Release 2.0.1.1

- Pre-release demonstrating multiprocess example in SA LLD.

### Release 2.0.1.0

- Initial release (Pre-release) for Multiprocess support in SA LLD

### **Release 2.0.0.6**

- Resolved IRs as listed below

IR Parent/Child Number	Severity Level	IR Description
SDOCM00100043	Major	SA LLD RN should indicate the Migration notes for ARM UserSpace LLD build from Keystone1
SDOCM00100931	Minor	ARM SaExample k2k makefile is missing from the SA LLD package
SDOCM00101341	Minor	SA LLD: System statistics not updated at certain scenario

### **Beta Release 2.0.0.5**

- Resolved IRs as listed below.

IR Parent/Child Number	Severity Level	IR Description
SDOCM00099200	Major	sa example projects are not released with the bundle
SDOCM00100678	Major	Memory overwritten in function Sa_create() - SA LLD 2.00.00.04
SDOCM00099198	Major	SA Project Create does not have a Linux counter part
SDOCM00100410	Minor	Use by LLD makefiles of gcc instead of ld to perform library link fails with certain gcc versions

### **Alpha Release 2.0.0.4**

- This release includes the following feature enhancements
  - Keystone2 support
  - Merged (Sync up) Keystone1 SA LLD 1.0.5.4 features. Refer to Keystone1 SA LLD 1.0.5.4 release notes for details.

- Resolved IRs as listed at section “Resolved Incident Reports (IR)”.

NOTE: If you are using PDK Keystone2 1.0.0.7, please manually update the #define for “cslr\_device.c” files under “ti\pdk\_keystone2\_1\_00\_00\_07\packages\ti\cs\device\k2k\src” and “ti\pdk\_keystone2\_1\_00\_00\_07\packages\ti\cs\device\k2h\src” as below.

**#define CSL\_NETCP\_CFG\_SA\_CFG\_REGS (0x02000000 + 0xC0000)**

This is fixed in next Keystone2 PDK releases.

### **Release 2.0.0.0 through Release 2.0.0.3**

- Internal Releases