OSAL Library

Release Notes

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Release Notes

OSAL Library version 01.00.00.16

Overview

This document provides the release information for the latest OSAL (Operating System Adaptation Layer) for the processor SDK components present under *"<pdk>/packages/ti"* folder which can be used by drivers and application that interface with those components.

OSAL module includes:

- Compiled library (Little Endian) of OSAL.
- Source code.
- API reference guide

Library Dependencies

OSAL Library is dependent on following external components delivered in PDK package:

- CSL

Resolved Incident Reports (IR)

Table 1 provides information on IR resolutions incorporated into this release.

Table 1 Resolved IRs for this Release

IR Parent/ Child Number	Severity Level	IR Description

Known Issues/Limitations

IR Parent/ Child Number	Severity Level	IR Description

New/Updated Features and Quality

Release 1.0.0.16

This release has the below changes

- Bug fixes for SMP examples
- Fixes/enhancements for J721E
- Fixes for MISRA-C and static analysis issues

Release 1.0.0.15

This release has the below changes

- Added support for SMP mode
- Fixes/enhancements for J7

Release 1.0.0.14

This release has the below changes

- Added support for J7
- Bug fixes for C++

Release 1.0.0.12

This release has the below changes

- Added support for AM65x

Release 1.0.0.11

This release has the below changes

IR Parent/ Child Number	Severity Level	IR Description
PRSDK-2194	Major	RTOS Installer script to autoset SDK_INSTALL_PATH
PRSDK-3544	Major	Missing osal_baremetal_test binaries for OMPAL13x and K2 Platforms

Release 1.0.0.10

This release has the below changes

IR Parent/ Child Number	Severity Level	IR Description
PRSDK-3558	Major	Support Configurable size of OSAL semaphore and Hwi Arrays
PRSDK-3040	Major	Added memory alignment for OMAPL138

Support for Configurable size of OSAL semaphore and Hwi Arrays:

In this feature user can select to use the default internal static memory allocated within OSAL library for SemaphoreP and HwiP objects.

Application can select to go with the either the default internal static allocation for SemaphoreP and HwiP or it can select external memory block that can be provided to create these objects. Note that this decision to go with external memory block or internal memory block need to be done at very beginning (not run time) just after Board_init() is called.

Osal interface returns the single element size for SemaphoreP and HwiP objects as defined below.

- OSAL_NONOS_HWIP_SIZE_BYTES
- OSAL_NONOS_SEMAPHOREP_SIZE_BYTES

Application can size memory accordingly and instruct OSAL library to use the external memory block for SemaphoreP or HwiP operations instead of using it from internal static memory block.

Below sample code sets SemaphoreP/HwiP to be used from external memory block:

```
/*
 *  ======== Extended memory block test function ========
 * This test aims at testing the create and delete functions that
 * are enhanced to support extended memory blocks for SemaphoreP and HwiP
 */
#define OSAL_TEST_NUM_EXT_SEMAPHORES    (1U)
#define OSAL_TEST_NUM_EXT_HWIPS         (1U)

#if defined (BARE_METAL)
#define SEMP_BLOCK_SIZE (OSAL_TEST_NUM_EXT_SEMAPHORES *
OSAL_NONOS_SEMAPHOREP_SIZE_BYTES)
#define HWIP_BLOCK_SIZE (OSAL_TEST_NUM_EXT_HWIPS * OSAL_NONOS_HWIP_SIZE_BYTES)
uint8_t semPMemBlock[SEMP_BLOCK_SIZE];
uint8_t hwiPMemBlock[HWIP_BLOCK_SIZE];
#else
#define SEMP_BLOCK_SIZE (OSAL_TEST_NUM_EXT_SEMAPHORES *
OSAL_TIRTOS_SEMAPHOREP_SIZE_BYTES)
#define HWIP_BLOCK_SIZE (OSAL_TEST_NUM_EXT_HWIPS * OSAL_TIRTOS_HWIP_SIZE_BYTES)
uint8_t semPMemBlock[SEMP_BLOCK_SIZE];
uint8_t hwiPMemBlock[HWIP_BLOCK_SIZE];
#endif
   /* Get the Hw Attrs */
```

```
osal_ret = Osal_getHwAttrs(&hwAttrs);
if (osal_ret != osal_OK)
{
   return (false);
}

/* This API should set to use external memory block */
hwAttrs.extSemaphorePBlock.base = (uintptr_t) &semPMemBlock[0];
hwAttrs.extSemaphorePBlock.size = SEMP_BLOCK_SIZE;
hwAttrs.extHwiPBlock.size       = HWIP_BLOCK_SIZE;
hwAttrs.extHwiPBlock.base       = (uintptr_t) &hwiPMemBlock[0];
osal_ret = Osal_setHwAttrs(ctrlBitMap, &hwAttrs);
```

Release 1.0.0.9

This release has the below changes

- Added timer support for OMAPL137x
- Added support for static memory query
- Updates for sysbios 6.52.0.12 migration
- Added support for AM574x SOC
- Stack alignment fix for examples

Release 1.0.0.8

This release has the below changes

- Added support for TDA2px
- Remove dynamic memory allocations from osal ti-rtos library
- Added timer base configuration for AM335x and AM437x
- Aligning baremetal linker command file for K2G to align with CSL vector address.
- Fixed example projects' .txt files for CCS project creation
- Clean up of osal_board.h to remove explicit board specific includes

Release 1.0.0.7

This is an **engineering release**, tested by the development team for early integration effort Resolved IRs is under Resolved IRs for this release section.

- This release adds OMAPL13x SoC support

Release 1.0.0.6

This is an **engineering release**, tested by the development team for early integration effort
Resolved IRs as below:

IR Parent/ Child Number	Severity Level	IR Description
PRSDK-1769	Major	Osal Library Enhancement: OSAL support for OMAPL138
PRSDK-1592	Major	Osal delay api support
PRSDK-1119	Major	RTOS: K2G OSAL C66x baremetal HwiP_create() only enables last configured interrupt if called multiple times
PRSDK-1980	Major	c++ complaince fixed
PRSDK-2087	Major	Adding crossbar IRQ configuration to MuxIntcP for sysbios
PRSDK-1901	Major	Adding Interrupt Register functions using Event Combiner for C6x

Release 1.0.0.5

This is an **engineering release**, tested by the development team for early integration effort
Resolved IRs is as below for this release section.

IR Parent/ Child Number	Severity Level	IR Description
PRSDK-658	Major	Osal Library Enhancement: Timer Driver support
PRSDK-867	Major	Bare metal examples for AM3/AM4

Release 1.0.0.4

Release 1.0.0.3

- Added bare metal semaphore support.
- Added bare metal support for Cortex-M4.
- Added bare metal support for MuxIntcP.
- Added unit test framework.
- Added OSAL APIs for Cache Operation.

Release 1.0.0.2

- Added library build support for K2G.

Release 1.0.0.1

- Added support for cpIntc and Semaphore support for KeyStone devices and bare metal.

Release 1.0.0.0

- Initial release

Licensing

Please refer to the software Manifest document for the details.

Delivery Package

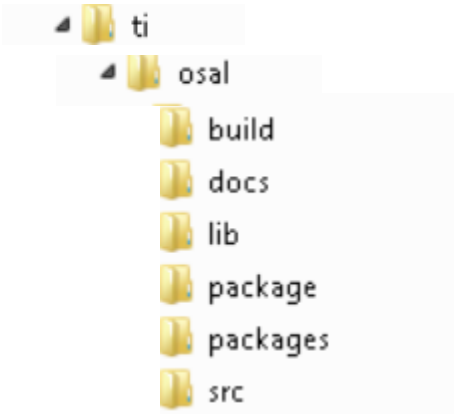
There is no separate delivery package. The OSAL library is being delivered as part of PDK.

Installation Instructions

The library is currently bundled as part of Platform Development Kit (PDK). Refer installation instruction to the release notes provided for PDK.

Directory structure

The following is the directory structure after the OSAL Library package has been installed:



The following table explains each individual directory:

Directory Name	Description
`ti/osal`	The top level directory contains the following:- 1. *Environment configuration batch file* The file "`setupenv.bat`" is used to configure the build environment for the OSAL library. 2. *XDC Build and Package files* These files (`config.bld, package.xdc` etc) are the XDC build files which are used to create the OSAL package.

	3. *Exported Driver header file* Header files which are provided by the OSAL Library and should be used by the application developers for driver customization and usage.
`ti/osal/build`	The directory contains internal XDC build related files which are used to create the OSAL library package.
`ti/osal/docs`	The directory contains the OSAL library documentation.
`ti/osal/lib`	The "`lib`" folder has pre-built Little Endian libraries for the OSAL library along with their *code/data size information*.
`ti/osal/package`	Internal OSAL library package files.
`ti/osal/src`	Source code for the OSAL library.

Customer Documentation List

Table 2 lists the documents that are accessible through the **/docs** folder on the product installation CD or in the delivery package.

Table 2 Product Documentation included with this Release

Document #	Document Title	File Name
1	API documentation (generated by Doxygen)	Docs/doxygen/html/index.html
2	Software Manifest	docs/OSAL_SoftwareManifest.html
3	Release Notes	This document