

SYSLIB

Release Notes

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SYSLIB 4.00.00.00-Alpha

1 INTRODUCTION

1.1 Overview

This document provides the release information for the SYSLIB software package. The SYSLIB package includes the following:-

- SYSLIB Release Notes
- SYSLIB User's Guide
- Source code of all SYSLIB components
- Pre-built libraries (Little Endian) of all SYSLIB components
- API reference guide
- Software Manifest

This is an engineering tested alpha release package. Release notes from previous releases are also available in the release notes archive directory

2 RELEASE OVERVIEW

2.1 Hardware Device Support

The device and platforms tested for this release include:

- TMDXEVM6638Ixe

2.2 Components and Tools

The SYSLIB package is verified/tested using the **MCSDK 3.01.02.05** package. Please refer to the MCSDK Release notes for a list of all the component information. The following is the list of additional packages which were used to test the release:

1. SNOW3G 1.0.0.2
2. CUIA 1.01.00.06 Custom

3. UIA 2_00_03_40_eng
4. [SA3GPP Enabler 3.0.0.0](#)

The SYSLIB supports **only the RT kernel** from the MCSDK release. Please use the RT DEVKIT for the development of user space applications.

2.3 Licensing

Please refer to the software manifest

2.4 MCSDK Patches

Please ensure that the following environment variable is defined and saved in the UBOOT environment:-

```
setenv mem_reserve 1536M
```

This will ensure that the kernel reserved the higher order 1.5GB of memory for the DSP. Failure to do so will result in the kernel overwriting DSP memory. Application developers can modify and customize the DSP & ARM memory map.

Please refer to the MCSDK Patches (`SYSLIB_INSTALL_PATH/ti/mcsdk_patches`) directory and manually apply the following patches:

File Name	Issue	How to patch
uio_module_drv.ko	SCLTE-1892: Random Kernel crashes and lockups under load. This is only applicable for Queue Pend Interrupts.	<p>Remove and unload the kernel module</p> <pre>rmmod uio_module_drv.ko</pre> <pre>rm /lib/modules/3.10.10-rt7/extra/uio_module_drv.ko</pre> <p>TFTP the kernel module from <code>mcsdk_patches</code> onto the EVM into the <code>/lib/modules/3.10.10-rt7/extra/</code> directory</p> <p>Reboot the EVM</p> <p>(Driver sources available from: http://git.ti.com/cgit/cgit.cgi/keystone-linux/uio-module-drv.git/, Tag: 01.00.02.02_eng)</p>

The SYSLIB release modifies the default MCSDK released kernel DTS files. The kernel DTS files have been modified for the following features:-

- GIC Queues 8722 to 8735 were originally reserved for the Linux kernel. These queues are not used by the Linux kernel so these have been marked as unreserved and could not be used by the ARM applications
- Wiring of the GIC Queue and INTC_SET2 interrupt queues from using the UIO module.

Along with the kernel DTS file; the SYSLIB RMv2 files have also been modified for the following features:-

- GIC Queues 8722 onwards have been marked as usable
- INTC_SET2 queues have been allocated to ARM
- Wildcarding support
- Simplified L2 and L3 QoS shapers. This is for illustration only. Customers are recommended to modify the shapers as per their requirements.

NOTE: Please integrate the SYSLIB released DTS files with your application and always update the kernel DTB files and SYSLIB RMv2 DTB files.

3 What's new

3.1 New Features

1. IPv6 UDP checksum offload

The NETFP supports IPv6 checksum offload in NETCP hardware. This feature is enabled by default. Socket option - **Netfp_Option_TX_CHECKSUM_OFFLOAD** can be used to turn off the hardware offload, and calculate the UDP checksum in software.

2. VLAN interface priority mapping updates

NETFP Proxy provides IPC messages to reread the VLAN interface egress priority mappings and configures NETFP interface to use the updated mapping. The cmd_shell and default plugin have been modified to showcase the same.

3. SA replay window size

Default value for the replay window size has been modified from 64 to 128.

3.2 Bug Fixes

Issue Type	Key	Summary	Requirement
Bug	SCLTE-1795	Default route with Gateway IP as zero is not supported correctly in NetfpProxy	
Bug	SCLTE-2000	NETFP run time configuration of L3 QoS is not supported	
Bug	SCLTE-1892	Kernel Crash [UIO Module]	

3.3 API changes:

3.4 Feature list in JIRA:

Issue Type	Key	Summary	Requirement
Story	SCLTE-2048	Adding support for IPv6 chained packet in Egress Path	
Story	SCLTE-1063	Fast Path UDP Checksum handling for IPv6 by NETCP HW	SCLTE-881
Story	SCLTE-1074	Policy Offload. Replay protection	SCLTE-1050
Story	SCLTE-1905	NetFP Security Policy maintenance	SCLTE-1816
Story	SCLTE-1852	Policy Offload. Initial ESP Sequence number	SCLTE-1812
Story	SCLTE-1993	NetFP support of dynamic DSCP to VLAN priority mapping updates	SCLTE-1986
Story	SCLTE-2013	NetFP sockets handling of Interface properties	SCLTE-2002
Story	SCLTE-2014	NetFP support of global NetCP counters	SCLTE-2012
Story	SCLTE-1994	NetFP support of dynamic changes in L3 QoS shaping	SCLTE-1973
Story	SCLTE-1992	NetFP support of dynamic physical interface to switch port mapping	SCLTE-1972
Story	SCLTE-2005	Syslib support of second PktDMA flows and channels	SCLTE-1904

3.5 Known Issues:

Issue Type	Key	Summary	Priority
Bug	SCLTE-2051	Packet loss was observed during re-keying when application deletes old SA prematurely	Minor
Bug	SCLTE-2050	NetfpServer Crashes when trying to delete an already deleted fastpath	Major
Bug	SCLTE-2019	Fixed 1GHz clock used in DAT_TIME_ELAPSED	Minor
Bug	SCLTE-1999	Netfp Proxy - Monitoring of aliased interface is not supported	Major
Bug	SCLTE-1924	Syslib4 uses dynamic local file handles	Minor
Bug	SCLTE-1921	CLONE - netfp fix to support drb-Identity less than 3	Major
Bug	SCLTE-1920	netfp fix to support drb-Identity less than 3	Major
Bug	SCLTE-1898	LTE Demos Not Supported	Major
Bug	SCLTE-1897	Reassembly operations do not support receiving frags that are larger than 1536 (outer), 15xx (inner)	Minor
Bug	SCLTE-1612	while(1) loop in msgcom code needs to be removed.	Minor

4 RELEASE BUILDING

Please setup the following environment variables:-

```
export
ARMTTOOLS_INSTALL_PATH=/home/a0868491/tools/gcc-linaro-arm-linux-gnueabihf-4.7-2013.03-20130313_linux
export
ARAGO_INSTALL_PATH=/home/a0868491/ti/mcsdk_linux_3_01_02_05_devkit_rt/sysroots/cortexa15hf-vfp-neon-3.8-oe-linux-gnueabi
export CGT_INSTALL_PATH=/home/a0868491/ti/cgt_7.4.8
export XDC_INSTALL_PATH=~/.ti/xdctools_3_30_04_52
export PDK_INSTALL_PATH=~/.ti/pdk_keystone2_3_01_02_05/packages
export SNOW3G_INSTALL_PATH=~/.ti/snow3g_1_0_0_2/packages
export UIA_INSTALL_PATH=~/.ti/uia_2_00_03_40_eng/packages
export INSTALL_JAMMER_INSTALL_PATH=~/.tools/installjammer-1.2.15
```

```
export BIOS_INSTALL_PATH=~/.ti/bios_6_40_04_47/packages
export IPC_INSTALL_PATH=~/.ti/ipc_3_30_01_12/packages
export CUIA_INSTALL_PATH=~/.tools/cuia_1_01_00_06Custom
export SYSLIB_DEVICE=k2h
export SYSLIB_INSTALL_PATH=~/.ti/syslib_4_00_00_00_alpha9/packages
```

The environment variables are illustrative and should be modified by the customer as per their install paths.

Once configured please setup the build environment by executing the following script:-SYSLIB_INSTALL_PATH/scripts/setupenv.sh. This will setup the build environment and will also sanity check to make sure that all the required environment variables are configured.

Please execute the release script (SYSLIB_INSTALL_PATH/scripts/release.sh) as follows:-

```
source ./release.sh 1 0 1
```

The script takes 3 arguments:-

1. Argument1: Build the SYSLIB ARM libraries.
2. Argument2: Build the SYSLIB DSP libraries. [Should always be set to 0]
3. Argument3: Build the SYSLIB LTE Demo

To rebuild the DSP libraries; please execute the following path from the SYSLIB_INSTALL_PATH

```
xdc clean -PR .
xdc -PR .
```

For information on how to build the DSP and ARM unit tests and for execution instructions please refer to the SYSLIB Unit Test documentation.