SDK 6.5.26

Release Notes

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Section 1: About This Document

This document contains the release notes for DNX devices affected by the Broadcom network switching Software Development Kit (SDK) release 6.5.26.

The document provides a general description of the SDK and its new features. It also describes the DNX chips supported by the release, BCM API additions or changes, resolved issues, and any relevant open issues.

Only new features are described in this document. For a comprehensive review of the DNX SDK features and issues, refer to earlier release notes for SDK 6.5.x.

For the full resolved list (Both Bugs and Improvement), please reference the file SDK-6.5.26-Resolved-Issues-Improvements.xlsx in the RELDOCS directory in the release package.

Section 2: Devices supported in this release

For any given SDK release, support for certain devices may be provided in preview or supported status. Devices in “Supported DNX Switch Devices” have completed the full QA process and are intended for use in production systems. It is expected that customers would integrate the version of the SDK which provides "Supported" status for their use on actual development or production systems.

Devices in “Preview DNX Switch Devices” are provided to allow early integration of the customer's application with the SDK APIs that support that device. This software has not been fully tested on the physical target device and is not expected to fully function.

Section 2.1: Supported DNX Switch Devices

Family	*Devices*	*Description*
BCM8828X		Q2U - GA quality
BCM8880X/BCM8882X		J2C - GA quality
BCM8848X		Q2A - GA quality
BCM8869X		J2 - GA quality
BCM8879X		Ramon - GA quality
BCM8868X		J+ - GA quality
BCM8837X/BCM8867X		JR - GA quality
BCM8866X		ARAD+ - GA quality
BCM8827X		QUX - GA quality
BCM8847X		QAX - GA quality
BCM8829X		Q2n - GA quality

Section 2.2: Preview DNX Switch Devices

Family	*Devices*	*Description*
BCM8883X		J2X - Pre quality

Section 3: Information per Device

This release is an incremental version for DPP, DNX, DNXF, DFE family devices.
The subsequent sections describe the increment in available features compared to 6.5.25 and 6.5.26-EA1, backward-compatible notes, major bug-fixes and known issues.

It is very important to carefully go over the release-notes prior to adapting a new release.

The following sections describe the features validated for this release, known issues and bring-up guidelines.

Section 3.1: DNX-Family

This section includes the following family devices:

- **BCM8869X-Family (Jericho2)**
- **BCM8880X/BCM8882X-Family (Jericho2C)**
- **BCM8848X-Family (Qumran2A)**
- **BCM8828X-Family (Qumran2U)**
- **BCM8829X-Family (Qumran2N)**
- **BCM8883X-Family (Jericho2X)**

Section 3.1.1: Important Notes

Before integrating the new release, review this section thoroughly.

JIRA	Module	Release-note	Affected Devices
SDK-246890	SKU	As part of the SDK release, a reference configuration for DNX devices is provided (config*.bcm). When an SKU cannot be loaded with the provided reference configuration (in most cases due to ports configuration) the SDK provides a configuration file that adjusts the reference configuration so it can be loaded with the SKU. What is changing? * SKUs configuration files were provided in an rc script format. Starting this release, the configuration will be provided in a config file format. * SKUs were separated into a file per SKU folder. Starting this release, all SKUs will be in a single file config-skus.bcm. Backward compatibility: As the dnx_sku.soc loading was removed from the default soc files, old format soc files won't be automatically loaded. In order to load SKU in an rc format (in case taken from an older release), a load command should be placed explicitly in dnx.soc	88480_B0, 88690_B0, 88790, 88800_A0

		("rcload <sku_file_name>"). Note: there is no specific action required from the user and each SKU will be able to load with the default configuration as before now.	
SDK-287809	CLI	"quit" and "exit" shell commands were changed to perform detach sequence to make sure all SW resources are freed before the process exits. As a result ,"quit"/"exit" shell commands take more time now (few seconds, depends on the CPU performance).	88480_B0, 88690_B0, 88790, 88800_A0

Section 3.1.1.1: Backward Compatible Important Notes

SW Compatibility Guidelines to 6.5.26

Please go over the list carefully.

Note: This document is written with the assumption that upgrade is done from 6.5.26-EA1. In case upgrade is done from older releases, users must first go over previous release notes.

JIRA	Module	Release-note	Affected Devices
SDK-292112	General-PP	Due to a bug in the initial Egress processing, Global OutLIFs stack was not aligned to System headers Global OutLIFs stack. Two cases of mismatch: 1. When packet has 3 outLIFs (outLIF 0..2), OutLIF 1 in System headers is actually Global OutLIF 2 in egress processing and OutLIF 2 in system headers is actually Global OutLIF 1 in egress processing. 2. When packet has 4 outLIFs (outLIF 0..3), OutLIF 1 in System headers is actually Global OutLIF 3 in egress processing and OutLIF 3 in system headers is actually Global OutLIF 1 in egress processing. Those cases are now fixed and no more mismatch between system headers and egress processing. In case ePMF applications used qualifications of Global OutLIFs (bcmFieldActionOutVport1..3), for the packet scenarios above, the	88480_B0, 88690_B0, 88800_A0

		qualifications entries need to be changed accordingly. In case some PP application used the fact that when two Global OutLIFs access the same EEDB phase, the access winner was according to the old Global OutLIFs stack, now the winner will be according to the System headers Global OutLIFs stack (as it should be). In addition, the change, fixed incorrect packet flow of IPMC fallback to bridge where more than 2 outLIFs are passed from the ingress.	
SDK-287129	COSQ-Header-Compensation	The current implementation of API bcm_cosq_control_set() with control type bcmCosqControlPacketLengthAdjust sets the compensation value to all ports (channels) of a given channelized interface. The implementation was adjusted to set the compensation only on the user provided port, even if it is a part of a channelized interface.	88480_B0, 88690_B0, 88800_A0
SDK-297459	Fabric	A mode parameter was added to the bcm_port_ber_proj_params_t structure . Only value of 0 is supported for this parameter. To make sure the structure is initialized correctly use bcm_port_ber_proj_params_t_init() API.	88480_B0, 88690_B0, 88800_A0, 88790
SDK-286822	Trap	bcmRxTrapTerminatedGenericCoeFlowControl trap previously could be configured by bcm_rx_trap_type_create() and bcm_trap_action_profile_set() This trap wasn't actually supported, hence APIs now returns an error as they should be.	88480_B0, 88690_B0, 88800_A0
SDK-285353	Fabric	PRE3 value is not supported by API bcm_port_phy_tx_setfor DNX devices. From this release, the API won't allow any value different then 0 to be given for PRE3 parameter for all DNX devices.	88480_B0, 88690_B0, 88800_A0
SDK-284545	SRv6	Tunnel types bcmTunnelTypeSR6 and bcmTunnelTypeEthSr6 are no longer supported for creating tunnel termination entry. bcm_tunnel_terminator_create should be called in the following manner: bcmTunnelTypeSR6 replaced by bcmTunnelTypeIpAnyIn6 bcmTunnelTypeEthSR6 replaced by bcmTunnelTypeEthIn6	88480_B0, 88690_B0, 88800_A0

SDK-278596	MPLS-Port, VLAN-Port	bcm_mpls_port_create with flags BCM_MPLS_PORT2_ALLOC_SYMMETRIC and BCM_MPLS_PORT2_INGRESS_ONLY is not allowed. bcm_vlan_port_create with flags BCM_VLAN_PORT_ALLOC_SYMMETRIC and BCM_VLAN_PORT_NATIVE and BCM_VLAN_PORT_CREATE_INGRESS_ONLY is not allowed. From this release, it is forbidden to create first the ingress LIF with symmetric flag (which means to allocate global lif that free also for egress LIF), since egress global lif allocation have more restrictions than ingress global lif. SDK will now return error. Following errors appear now: VLAN-Port: "BCM_VLAN_PORT_ALLOC_SYMMETRIC and BCM_VLAN_PORT_CREATE_INGRESS_ONLY cannot be used together". MPLS-Port: "BCM_MPLS_PORT2_ALLOC_SYMMETRIC and BCM_MPLS_PORT2_INGRESS_ONLY cannot be used together".	88480_B0, 88690_B0, 88800_A0

Section 3.1.2: SDK build & load

Compile and set config files :

setenv SDK `pwd`

Example of Intel GTS CPU compilation:

```
# Copy pre compiled mdb and kaps libraries into the relevant build folder.
# For Intel GTS CPU 64b build flavor, Following are the relevant 2 libraries and the
#  relevant build folder (names in build folder must be libkaps.a & libmdb.a):
mkdir -p $SDK/build/unix-user/x86-64-fc28/
cp  $SDK/libs/bin/dnx/GTS_64B_libkaps.a  $SDK/build/unix-user/x86-64-fc28/libkaps.a
cp  $SDK/libs/bin/dnx/GTS_64B_libmdb.a   $SDK/build/unix-user/x86-64-fc28/libmdb.a
# Additional mdb and kaps libraries flavors can be found under $SDK/libs/bin/.

# Compile SDK
cd $SDK/systems/linux/user/x86-64-fc28/
make -j 5 MAKE_LOCAL=$SDK/make/local/dnx/Make.custom.gts
```

Example of CMODEL compilation:

```
# Copy pre compiled mdb and kaps libraries into the relevant build folder.
# For CMODEL build flavor, Following are the relevant 2 libraries and the
#  relevant build folder (names in build folder must be libkaps.a & libmdb.a):
mkdir -p $SDK/build/unix-linux-64-cmodel/
cp  $SDK/libs/bin/dnx/CModel_libkaps.a  $SDK/build/unix-linux-64-cmodel/libkaps.a
cp  $SDK/libs/bin/dnx/CModel_libmdb.a   $SDK/build/unix-linux-64-cmodel/libmdb.a
# Additional mdb and kaps libraries flavors can be found under $SDK/libs/bin/.

# Compile SDK
cd $SDK/systems/sim/dpp
make -j 5 MAKE_LOCAL=$SDK/make/local/dnx/Make.pkg.dnx_only_sim_cmodel
target_suffix=-cmodel
```

Common config files:

```
ln -fs $SDK/rc/rc.soc
ln -fs $SDK/rc/dnx.soc
ln -fs $SDK/rc/jer2pemla-ucode.bcm
ln -fs $SDK/tools/sand/db
ln -fs $SDK/rc/config-skus.bcm
ln -fs $SDK/rc/dnx_dram
ln -fs $SDK/rc/cmicfw/linkscan_led_fw.bin
ln -fs $SDK/rc/cmicfw/custom_led.bin
```

BCM8869X specific links:

```
ln -fs $SDK/rc/config-jr2.bcm config.bcm
ln -fs $SDK/rc/bcm88690_revB_board.bcm
ln -fs $SDK/rc/bcm88690_board.bcm
ln -fs $SDK/rc/bcm88690_legacy_interop_board.bcm
```

BCM8880X/BCM8882X specific links:

```
ln -fs $SDK/rc/config-j2c.bcm config.bcm
ln -fs $SDK/rc/bcm88800_board.bcm
```

BCM8848X/BCM8828X specific links:

```
ln -fs $SDK/rc/config-q2a.bcm  config.bcm
ln -fs $SDK/rc/bcm88480_board.bcm
```

BCM8883X specific links:

```
ln -fs $SDK/rc/config-j2x.bcm  config.bcm
```

```
ln -fs $SDK/rc/bcm88830_board.bcm
```

Run :

```
./bcm.user
```

Section 3.2: DNXF-Family (BCM88790-Family)

Section 3.2.1: Supported SKUs

The following SKUs are supported:

- 88790
- 88795
- 88797

Section 3.2.2: Important Notes

Before integrating the new release, review this section thoroughly.
See Section 3.1.1: Important Notes

Section 3.2.2.1: Backward Compatible Important Notes

SW Compatibility Guidelines 6.5.25 to 6.5.26

Please go over the list carefully.

Note: This document is written with the assumption that upgrade is done from 6.5.26-EA1 to 6.5.26. In case upgrade is done from older releases, users must first go over previous release notes.

See section Section 3.1.1.1

Section 3.3: DPP-Family - BCM88670/680/470/270 Family GA Release

This release is for:

- BCM88670 (Jericho) family product lines.
- BCM88270 (QUX) family product line
- BCM88470 (QAX) family product line
- BCM88680 (Jericho+) family product line

The subsequent sections describe the increment in available features compared to 6.5.26-EA1, major bug-fixes and known issues. Before integrating the new release, review the “Backward compatible important notes” section.

Section 3.3.1: Important Notes

Before integrating the new release, review this section thoroughly.

JIRA	Module	Release-note	Affected Devices
SDK-290380	COSQ	Improve hungry thresholds granularity for bcm_cosq_delay_tolerance_level_set() API: credit_request_hungry_off_to_slow_thresh, credit_request_hungry_off_to_normal_thresh, credit_request_hungry_slow_to_normal_thresh, credit_request_hungry_normal_to_slow_thresh The granularity improvement introduces a better thresholds precision and opens the API for higher threshold values (values that previously returned error). Note - this change might affects the calculation of HW thresholds. Meaning that existing systems will be affected and have a different threshold set to HW (a more percise value).	88270_A0, 88470_B0, 88670_B0, 88680_A0

Section 3.3.2: Backward Compatible Important Notes

SW Compatibility Guidelines to 6.5.26

Note: This document is written with the assumption that upgrade is done from 6.5.26-EA1. In case upgrade is done from earlier releases to 6.5.26, it must first go over previous SDK release notes.

None

Section 3.4: DFE-Family - BCM88770 (FE3600) Release

The Broadcom BCM88770 (formerly named BCM88950) is the fourth generation in the DNX product line of Fabric Element (FE) devices.

This is a sustaining release.