

Software Development Kit Release Notes SDK 5.9.2

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Broadcom
Network Switching

Section 1: About This Document

These are the Release Notes for the Broadcom Network Switching Software Development Kit, Release 5.9.2.

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

Section 2: Product Documentation

The following documents are available through Broadcom's Customer Support Portal, <http://support.broadcom.com>. They are the primary source of information and should be referenced when using this release:

Table 1: Product Documentation

Document	Description
56XX-PG623-R	BCM and BCMX API Reference Guide. This manual describes the theory of operations of the API and all existing BCM and BCMX APIs for this release.
56XX-PG707-R	Stacking Software Guide This guide describes how to use the discovery and stacking applications provided in this release.
56XX-PG811-R	Platform Guide This guide describes the SDK source and Makefile structure, abstraction and porting layers, device specific interactions, and the platform/operating system specific features of the SDK. If this is your first time working with the SDK, start with this document.

Section 3: Release Media

The Software Development Kit is released as a gzipped tar file on the Broadcom Customer Support Portal, <http://support.broadcom.com>. The Network Switching Software Platform Guide, also available on the Customer Support Portal, provides documentation on the various components, the source directory layout, how to build the release for various platforms, and how to customize and port the software to new platforms.

Section 4: Support

Questions, feedback, and/or suggestions should be sent to your Broadcom FAE.

Section 5: New in this Release

This section describes feature and device support that is introduced in this release.

THINGS TO NOTE

This section lists items that require special attention.

NO WARMBOOT SUPPORT FOR EXTERNAL TABLE EXPANSION IN BCM56620 AND BCM56630

There is no warm boot support for External table expansion in BCM56620 and BCM56630 device family.

BCM_MIRROR MODULE LIMITATIONS FOR WARMBOOT.

On rare occasions the software management for a module may change in such a manner that a previously allowed hardware state is no longer permitted on subsequent versions of the driver.

`bcm_mirror` falls into this category in between SDK-5.8.x and SDK-5.9.x release trees. Please review the Warm Boot section in SDK-5.9.0 API guide for the recommended approach to avoid issues with WarmBoot in this regard.

NO SUPPORT FOR MIXED 1-BIT AND 2-BIT FLOW CONTROL IN BCM88130/BCM88230 SYSTEMS

All devices in a system have to run in either 1-bit flow control mode or in 2-bit flow control mode. Mixed 1-bit and 2-bit flow control is not supported in systems built on BCM88130 and BCM88230 devices.

NO SUPPORT FOR SINGLE GRANT MODE IN BCM88130/BCM88230 SYSTEMS

This release supports BCM88130 and BCM88230 systems operating in dual grant mode. Single grant mode is not supported.

NO SUPPORT FOR BCM88020 FAMILY OF DEVICES IN LINUX KERNEL MODE

BCM88020 and BCM88025 devices are not supported in Linux Kernel mode in this release. Only Linux User and Vx-Works are supported for these devices.

SUMMARY OF BCM AND BCMX API CHANGES

This section summarizes BCM and BCMX API changes in this release. Complete documentation is available in the Network Switching Software Programmer's Guide 56XX-PG623-R. (See section 2 earlier in this document for availability).

Unless otherwise mentioned, any newly defined or changed BCM API will have equivalent changes in the BCMX APIs.

CLASS OF SERVICE QUEUE CONFIGURATION

Added new GPORT discard control flag "BCM_COSQ_DISCARD_MARK_CONGESTION"

Table 2: gport Discard Color Flags

Flag	Description
BCM_COSQ_DISCARD_MARK_CONGESTION	Mark ECN instead of dropping

IP FLOW INFORMATION EXPORT MANAGEMENT

Added new IPFIX configuration flag "BCM_IPFIX_CONFIG_KEY_SOURCE_PORT_OR_INTERFACE"

Table 3: IPFIX Configuration Flags

Name	Purpose
BCM_IPFIX_CONFIG_KEY_SOURCE_PORT_OR_INTERFACE	For IP packets, collect information based on source port or interface

KERNEL NETWORK (KNET) CONFIGURATION

Added new network interface type "BCM_KNET_NETIF_T_TX_META_DATA"

Table 4: BCM KNET Network Interface Types

Name	Purpose
BCM_KNET_NETIF_T_TX_META_DATA	Tx packets are sent using raw meta data as DMA descriptors

Section 6: Resolved Issues for 5.9.2

The following issues are resolved in version 5.9.2 of the SDK.

Table 5:

Number	Release Notes For 5.9.2
SDK-23276	Updated Triumph2 FP group create logic to program TUNNEL_TYPE field in FIXED key section for bcmFieldQualifyMplsTerminated qualifier when this qualifier is part of an IFP group. Updated field warm boot code to recovery this qualifier configuration from hardware.
SDK-29136	Updated bcm_field_entry_install() and bcm_field_entry_policer_attach() APIs to return BCM_E_PARAM error when user attempts to share a Level0 policer between Entries created on Groups that are part of different IFP slices. This check is applicable to all devices that support Global Meter Pools.
SDK-29944	In a multi-chassis system, same resource may need to be programmed on multiple line cards. (1) In such a scenario, use bcm_mim_vpn_id_create API to obtain a vpn_id (BCM_MIM_VPN_WITH_ID not to be used). (2) BCM_MIM_VPN_WITH_ID along with VPN_ID obtained from step-1 to program same resource on other line cards.
SDK-30909 SDK-32010	The issue associated with fragmentation (Holes) within SOURCE_VP table during VP allocation/deletion is fixed. For 5.9.2 release, support for Warm boot upgrade is added. Warmboot downgrade is not supported on 5.9.2 release for this feature. For 5.10.0 release, support for Warmboot upgrade and downgrade is tracked and handled in SDK-32846.
SDK-31486	Added a missing Port Table config for embedded hlgig mode support.
SDK-31811	Added support in SDK for True Egress Mirroring using bcmFieldActionMirrorEgress action in EFP stage and warm boot code to recover this action configuration from hardware for Apollo and Chariot devices.
SDK-31832	Added (level one) warmboot support for recovery of HL flexport config for BCM5652x, BCM5663x and BCM56685 devices.
SDK-31970	bcm_port_sample_rate_get function fixed to return correct value
SDK-31972	Fixed bcm_tr_mpls_update_vp_nh() to properly initialize NEXT_HOP memory.
SDK-32016	Fix EGR_MASK programming on BCM5684x.
SDK-32060	bcm_vlan_control_vlan_set() was setting unintended TRILL fields. This issue has been resolved.
SDK-32120	Allow to select UDF1[31:0] and UDF1[95:64] with field data qualifier API.
SDK-32135	Change bcm_cosq_port_sched_set to return BCM_E_PORT instead of BCM_E_PARAM for bad input port bitmap (pbmp).
SDK-32152	timeout interval was not reset properly within soc_init() for BCM88130 devices, which could possibly cause incorrect timeout calculations which could result in the failure of BCM88130 devices to initialize under some conditions.
SDK-32154	BCM88130 (BM-9600) support for bcm_cosq_gport_sched_config_set and bcm_cosq_gport_sched_config_get added.
SDK-32155	Fix the issue about the incorrect register value got via the function, soc_robo_anyreg_read() .
SDK-32180	Updated bcmFieldQualifyDstTrunk qualifier support for Enduro, Triumph2, Apollo, Valkyrie2 and Trident devices.
SDK-32205	Fix limit calculation for bcm_cosq_control_set/get API on BCM5684x when type is bcmCosqControlEgressPoolLimitBytes, bcmCosqControlEgressPoolYellowLimitBytes, or bcmCosqControlEgressPoolRedLimitBytes.
SDK-32235	When trying to read stats for an unconfigured base queue through the Diagnostic Shell commands on BCM88230 family of devices, the appropriate error message will be displayed.
SDK-32236	Fixed bcmx_ipmc_remove() to remove fabric programming.
SDK-32238	Corrected BCM5684x partial build support for retrieving the bcmSwitchDirectedMirroring value.
SDK-32258	Support for using UDF1[31:0] from FPF1=9 or FPF3=9 instead of using UDF1/UDF2[127:0] from FPF2 in hurricane
SDK-32260	An issue in CLI: "clear all" command could hang MIPS CPU. This issue is fixed.



Table 5:

Number	Release Notes For 5.9.2
SDK-32261	Added code to prevent the clobbering of the EEE advertisement when the old port API that use <code>bcm_port_abil_t</code> [<code>bcm_port_advert_set/bcm_port_advert_get/bcm_port_advert_remote_get/bcm_port_ability_get</code>].
SDK-32327	Add interrupt support for ESM parity error handling.
SDK-32332	Select BCM5684x default higig/higig2 mode according to <code>spn_HIGIG2_HDR_MODE</code> setting.
SDK-32336	Fix <code>bcm_rpc_setup()</code> to check and return NULL if memory allocation fails.
SDK-32354	Forced the auto-mdix for the FE ports of BCM5328x chips.
SDK-32357	Fixed <code>bcm_ipmc</code> APIs to support L3 ingress interface greater than 4095.
SDK-32360	Ensure that hardware table index remains unchanged when an MPLS EXP egress map is modified.
SDK-32365	Check and clear invalid ports in the pbmp mask parameter for <code>bcm_field_qualify_InPorts()</code> API instead of returning BCM_E_PARAM error.
SDK-32373	Fixed the logic for deletion of <code>VC_n_SWAP_index</code> .
SDK-32375	Fixed a issue related to switching between HG port mode and IEEE port mode in BCM5684x platform
SDK-32387	Changing speed will not affect the link of the neighboring port within the same Warpcore serdes device in 4x10G mode on BCM5684x platform
SDK-32419	<code>soc_ledproc_config()</code> function now supports accessing the second LED processor in BCM5684x Switch.
SDK-32425	Disabled EF propagation on BCM88230 devices operating in 2 FIFO mode.
SDK-32437	Support port max speed 30G bps configuration on BCM5684x Switches
SDK-32452	Correctly handle unicast entries during ipmc table traversal.
SDK-32453	The following property has been added to enable checking for memory max size override properties: <code>mem_check_max_override</code> . This should be set to 1 to be able to set custom memory max sizes. By default it will be 0 to reduce boot times.
SDK-32488	Add support for using SC and QM queue on BCM5684x.
SDK-32494	BCM API <code>bcm_port_ifg_set()</code> should now work on BCM5684x Switch ports
SDK-32512	Fixed <code>bcm_field_compress()</code> API to use correct slice entry size while compressing a group for Scorpion and Trident device.
SDK-32517	Updated <code>bcmFieldQualifyTtl</code> qualifier support documentation for BCM5662x/BCM56680/BCM56725/BCM56820 devices.
SDK-32520	Fix egress queue threshold programming for ports that are capable of extended unicast queuing on BCM5684x.
SDK-32542	Fixed <code>bcm_field_qualify_DstMulticastGroup()</code> / <code>bcm_field_qualify_DstMulticastGroup_get()</code> API support for TRX family of devices. Updated warm boot support to recover the configuration from Hardware.
SDK-32555 SDK-32588	Level 1 policers /Hierarchical metering support has been enabled for Triumph and Chariot devices for External Stage Groups/Entries.
SDK-32556	While action is none, adding condition checking for not to remap the priority.
SDK-32562	Fix <code>dispatch.c</code> compilation errors when BCM API port translation is enabled (<code>INCLUDE_BCM_API_XLATE_PORT</code>).
SDK-32571	Allow <code>BCM_DBG_CNT_LAGLUPD</code> flag to be set by <code>bcm_stat_custom_set</code> in XGS4 devices. NB: For XGS4 devices, <code>bcm_stat_custom_add</code> should be used instead for configuration of all supported <code>bcm_custom_stat_trigger_t</code> selections.
SDK-32578	Implemented the switch control <code>bcmSwitchIpmcSameVlanPruning</code> for BCM5684x.
SDK-32581	Updated documentation for <code>sal_time_usecs</code> .
SDK-32582	CPUDB remote entries on stack master did not populate board flags and ID
SDK-32605	Added UNLOCK semaphore before returning from several code points in <code>bcm_cosq</code> APIs on BCM88230 family of devices.
SDK-32608	On BCM8802x devices running G2P3 microcode, L2CP handling in Ethernet Service OAM range is initialized as bypass.
SDK-32609	Enabled Intra-Slice/DOUBLE_WIDE_MODE mode support for lookup stage FP groups for Trident device.

Table 5:

Number	Release Notes For 5.9.2
SDK-32614	Fixed split horizon check for BCM56840 device family. For Split Horizon drop the following 2 conditions need to be met: - Packet ingress on a Network port with Split horizon enabled - Packet egress on another Network port
SDK-32616	Fixed diag shell command "vlan action translate show" to display correct values for the field KeyType.
SDK-32620	Fix <code>bcm_l2_replace</code> when deleting all entries of a specified virtual forwarding instance (VFI) on 5684x.
SDK-32621	Updated field warm boot recovery code to decrement free meters count from meter pool only for Ingress stage on Triumph/Scorpion family of devices.
SDK-32628	BCM API <code>bcmx_vlan_block_set()</code> was not allowing the block mask to be cleared.
SDK-32639	Allow <code>bcm_l2_cache_set</code> to configure internal priority to value between 0 and 15 on BCM5684x.
SDK-32642	Support MDIO firmware download for BCM8754 phy device
SDK-32644	Fixed field warm boot default version in the SDK.
SDK-32650	Updated warm boot code to recover SrcMimGport qualifier in Level2 recovery mode for Apollo and Enduro devices.
SDK-32675	An issue in l2 cache show command was causing "soc_mem_read: invalid index 512 for memory MY_STATION_TCAM" messages. This issue is fixed.
SDK-32688	Fix CMIC_XGXS_MDIO_CONFIG_x register programming for BCM5684x.
SDK-32709	Fix debug prints for 64-bit <code>dma_addr_t</code> in Linux kernel module linux-bcm-knet.
SDK-32710 SDK-32743	Update KNET kernel module to always access RCPu meta data in network byte order and only expect 32 bytes of RCPu meta data for Tx.
SDK-32711	Added KNET network interface type <code>BCM_KNET_NETIF_T_TX_META_DATA</code> for RCPu mode. There is no functional change, but interface type selection for RCPu mode should be more obvious.
SDK-32715	Use correct default IPG value for all HG ports using XMAC
SDK-32718 SDK-30908	Updated Field warm boot recovery code for Triumph/Scorpion family of devices to recover entries from expanded slices for a group in Lookup stage.
SDK-32720	Added <code>EGRESS_MODPORT</code> into common modport validation checking for QE-2000 devices.
SDK-32735	During MPLS egress object creation, <code>MPLS : : EGR_L3_NEXT_HOP</code> view was not properly initialized. This may cause field issues. With the fix, <code>MPLS : : EGR_L3_NEXT_HOP</code> view entries are properly initialized.
SDK-32738	A flaw in <code>bcm_cosq_init()</code> was leaving part of the internal array <code>bw_group_state[]</code> uninitialized on BCM88230 family of devices, which could result in unpredictable behavior on some systems.
SDK-32742	Updated <code>bcm_field_action_add()</code> API to return <code>BCM_E_UNAVAIL</code> error for <code>bcmFieldActionIpFix</code> and <code>bcmFieldActionIpFixCancel</code> actions for Trident family of devices.
SDK-32743 SDK-32710	Update KNET kernel module to always access RCPu meta data in network byte order and only expect 32 bytes of RCPu meta data for Tx.
SDK-32754	Added support for multiple Rx DMA channels in KNET mode.
SDK-32755	Fixed <code>bcm_ipmc_add</code> API to not overwrite IPMC group's Higig trunk override information.
SDK-32761	Added new configuration property "sirius_ddr3_read_vdl" for BCM88230 read DQSP/DQSN static VDL override
SDK-32764	Added missing exported symbols in linux core module to address an issue where kernel module fails to load due to missing symbols.
SDK-32767	Fix mirrored packets destined for remote MTP problem on BCM5684x.
SDK-32768	Fixed L3_IPMCM locking issue in <code>bcm_multicast_egress_delete</code> API.
SDK-32769	Fix CMIC_SCAN_PORTS programming for hardware linkscan on BCM5684x.
SDK-32785	Fix PAUSE programming on BCM5684x.
SDK-32792	Added support for <code>bcm_field_qualify_IcmpTypeCode()</code> and <code>bcm_field_qualify_IcmpTypeCode_get()</code> APIs in SDK for Trident and Chariot devices
SDK-32812	'fp action ports add' BCM DIAG shell command has to be used for setting RedirectPbmp/EgressMask/EgressPortsAdd actions for an FP Entry.

Table 5:

Number	Release Notes For 5.9.2
SDK-32814	Fixed MPLS entry insertion error during MPLS_PORT_REPLACE
SDK-32820	Fixed error in L3 ingress interface assignment through bcm_vlan_translate_action_add() function.
SDK-32822	Use skb_padto in Linux KNET kernel module to ensure that FCS bytes are initialized to zero.
SDK-32830	Resolved a failure in egress mirroring of non-unicast traffic when multiple ports mirrored to a given MTP, but one was deleted.
SDK-32831	Updated Linux KNET kernel module to support Linux kernels newer than 2.6.27.
SDK-32847	Updated _field_tr2_group_part_fixup() routine to not to delete duplicate InPort/InPorts/Stage/StageIngress/StageLookup/StageEgress/StageExternal qualifiers from primary slice of a group. These qualifiers are always part of the primary slice group array.
SDK-32856	Fix address calculation for register in y pipeline of PORT_GROUP_4 and 5 blocks on BCM5684x.
SDK-32859	BCM88230 initialization code now installs schedulers in the internal egress replication paths, and allows those schedulers to be probed via bcm_cosq_gport_attach_get() as part of the egress hierarchy.
SDK-32874	Fixed the failed insmod of Linux bcm core kernel module for ROBO support due to the missing bus type variable.
SDK-32878	Customers should be able to add Label-termination agnostic of Label-initiation and vice-versa. Behavior of bcm_mpls_port_add API is fixed for Label termination and Global Label Space. When using the global MPLS label space, mpls_port.port should be BCM_GPORT_INVALID. Scenario: mpls_port.port = BCM_GPORT_INVALID mpls_port.criteria = BCM_MPLS_PORT_MATCH_LABEL
SDK-32881	Updated field qualify (bcmFieldQualifyDstXxxx) APIs to program the D_TYPE field value based on the matched destination type for Triumph2/Trident family of devices.
SDK-32892	Fix buffer overflow when reading Linux proc file /proc/bcm/knet/dma.
SDK-32894	Fix the problem about the ARL callback issue while the L2 station movement is forced by SW.
SDK-32952	Updated field warm boot recovery code to reconstruct Meter pool information while recovering FP entries for TRX family of devices.
SDK-32961	DMA buffers were not released properly in bcm_multicast group of APIs that involved reading OITT on BCM88230 family of devices under some corner case conditions, which could cause a memory leak.
SDK-32989	Disabled SER protection for FP_GLOBAL_MASK_TCAM and FP_GM_FIELDS tables on Trident device.
SDK-33005	Removal of a scheduler node via bcm_cosq_gport_detach() / bcm_cosq_gport_delete() in BCM88230 devices operating in TME mode could result in incorrect traffic scheduling if the removed node was a sibling.
SDK-33015	Function bcmx_l2_addr_get() would return BCM_E_NOT_FOUND error when entry was present in first units but not found in last units.
SDK-33016	bcm_rlink_traverse_server_deinit() would assert.
SDK-33017	BCM56840 based systems would stack intermittently if not all stacked simultaneously.
SDK-33019	Added parameter check and return error for BCM56840 family ECMP group add API to avoid a potential assertion.
SDK-33028	Fix the issue of the failure to configure the fields of NON-IP slice 2 on BCM53115 and BCM53125.
SDK-33034	Fixed issue with KNET kernel module that would leak resources if no filters were matched.
SDK-33094	Fixed bcmFieldQualifyDrop qualifier not working for Raven device issue.
SDK-33129	Added parameter checks to bcm_mpls_port_add API for invalid values of active VPs.

Section 7: Resolved Issues for 5.9.1

The following issues are resolved in version 5.9.1 of the SDK.

Table 6:

Number	Release Notes For 5.9.1
SDK-24831	Update <code>bcm_field_entry_reinstall()</code> API to install entries atomically when only actions have been modified for an entry.
SDK-29960	Added support for <code>BCM_FIELD_DATA_QUALIFIER_REPLACE</code> configuration for <code>bcm_field_data_qualifier_create()</code> API.
SDK-30726	Added support for DDRPhyTuneAuto Diagnostic shell command for BCM88230 devices. The command can be used to optimize the configuration parameters.
SDK-31153	On BCM56840, the L2MC table should be configured with L2 port bitmap when an IPMC group is configured. This has been fixed.
SDK-31340	Enhanced VLAN Translate APIs to accept <code>L3_IIF</code> as parameter, so that Port,Vlan based <code>VLAN_XLATE</code> entry points to an <code>L3_IIF</code> entry in the range of 4K+1 to 8K.
SDK-31404	Fixed <code>bcm_l3_ingress_create</code> API to program <code>qos_map_id</code> for <code>TRUST_DSCP</code> value.
SDK-31413	Modify l2 show output logic to print CPU and modport info correctly.
SDK-31511	<code>bcm_vlan_create</code> API used to initialize entry = vid within L3 Ingress interface memory. This issue is fixed.
SDK-31667	Updated <code>bcm_field_action_ports_add()</code> / <code>bcm_field_action_ports_get()</code> APIs for <code>bcmFieldActionRedirectPbmp</code> and <code>bcmFieldActionRedirectBcastPbmp</code> actions for Trident device. Updated warm boot support for these actions.
SDK-31671 SDK-28801 SDK-28664 SDK-28663	Updated <code>sal_mutex_take</code> and <code>sal_sem_take</code> to handle Linux user mode signals properly. This means that if any other signal than KILL or TERM is received, the lock operation will be retried. This change makes SDK mutex locks work correctly e.g. when gdb is used to stop and start an application.
SDK-31673	BCM API <code>bcmx_mirror_port_dest_add()</code> was passing uninitialized memory to BCM.
SDK-31711	For BCM56840 device family, Network facing <code>EGR_L3_NEXT_HOP</code> entries have <code>ENTRY_TYPE==1</code> , and it uses MPLS overlay. Access facing <code>EGR_L3_NEXT_HOP</code> entries have <code>ENTRY_TYPE==2</code> , and it uses SD_TAG overlay. Fixed inconsistent setting of MPLS and SD-TAG overlay fields of <code>EGR_L3_NEXT_HOP</code> .
SDK-31723	Fix error handling in <code>sal_dpc_init</code> . Fix error message if SAL initialization fails in Linux user mode.
SDK-31861	The top level EEE registers are reset during phy reset in BCM54680E, BCM54682E and BCM54685E drivers.
SDK-31992	Restore maximum frame size setting when switching MAC drivers.
SDK-32025	Fixed a problem that could cause failures in <code>bcm_cosq_gport_attach_get()</code> API for level 4 schedulers on BCM56931 and BCM56936 devices.

Table 6:

Number	Release Notes For 5.9.1
SDK-32034	For L3 forwarding and MPLS LSR scenario, TRUST_DSCP is derived from PORT_TABLE.TRUST_DSCP_V4 and PORT_TABLE.TRUST_DSCP_V6. Hence, do_not_trust_value for L3_IIF.TRUST_DSCP_PTR = 63 for MPLS and Tunnel for Triumph and Triumph2. For Trident, do_not_trust_value for L3_IIF.TRUST_DSCP_PTR = 127 for MPLS and Tunnel cases.
SDK-32043	Fixed the issue of cleanup of VP resource during failure of bcm_mpls_port_add API.
SDK-32050	bcm_cosq_gport_queue_attach() was not setting up sysport to node table for odd sysports (N+1 sysport) on BCM88230 family of devices.
SDK-32082 SDK-30859	Fixed a bug encountered when bcm_trunk_member_delete API is called to delete the last trunk member.
SDK-32083 SDK-32207	Fixed issue with on BCM56840_A0 device to create ECMP routes greater than 32. BCM56840_A0 allows ECMP entry with 256 routes and BCM56840_B0 with 1024 routes.
SDK-32109	Field warm boot recovery code has been updated to recover statistics information and InPort/InPorts qualifier information for FP entries from hardware for 56725, 56524, 5663x, 5668x, 5682x and 5684x devices.
SDK-32112	Fixed calculations for internal ports that otherwise could cause bcm_cosq_congestion_set() to fail on BCM888230 devices when running in "Extended port" mode.
SDK-32114	Fix bcm_port_control_set bcmPortControlLanes on BCM5684x to avoid possible crash.
SDK-32138	Added support to update FR_FLOW_CTR_GLOBAL and UNICAST registers via bcm_cosq_gport_size_set() on BCM88230 family of devices.
SDK-32156	Fixed bcm_port_class_set() / bcm_port_class_get() APIs for Trident device to program the correct index in SOURCE_TRUNK_MAP_TABLE table for bcmPortClassFieldIngress classification type.
SDK-32191	Addressed a problem that could cause bcm_cosq_gport_detach() followed by bcm_cosq_gport_attach() to fail under some circumstances on BCM88230 family of devices when running in "qe_tme_mode=3" INLINE mode.
SDK-32197 SDK-32666	bcm_cosq_control_get/set() implementation was enhanced to support type=bcmCosqControlEgressFlowControlThreshold0 and Threshold1 in "Extended port" mode of operation on BCM88230 family of devices.
SDK-32216	Added RCPU encapsulation support for KNET packets sent/received through the Linux network stack.
SDK-32219	Updated field API documentation for bcm_field_qualify_MyStationHit() / bcm_field_qualify_MyStationHit_get() APIs and bcmFieldActionServicePoolIdNew action.
SDK-32231	Fixed excessive bandwidth allocation between subscribers in a flat scheduler tree on BCM88230 family of devices.
SDK-32233	Fix EGR_ING_PORT table PORT_TYPE field when changing encaps on BCM5684x.
SDK-32268	Field warm boot recovery code has been updated to recover bcmFieldActionAddClassTag parameters for 5652x, 5682x, 5663x, 5668x and 56725 devices.
SDK-32285	Fixed compilation error with GPL sources generated using mkgpl.sh due to missing sdk_config.h file.

Table 6:

Number	Release Notes For 5.9.1
SDK-32293	Added new Port Control "bcmPortControlFabricKnockoutId" that can be passed to <code>bcm_port_control_set()</code> in order to set the SID value for the raw HiGig multicast targets used by XGS mode for front-panel device replication on BCM88230 devices.
SDK-32295	Fix <code>OVQ_MCQ_CREDITS</code> programming for Higig port on BCM5684x.
SDK-32299	Removed the usage of <code>_bcm_vp_if_used(int unit, int vp)</code> from <code>mpls</code> and <code>trill</code> modules.
SDK-32310	Updated <code>bcm_port_class_set()</code> API to set different port Class ID values for VFP(<code>bcmPortClassFieldLookup</code>) and IFP(<code>bcmPortClassFieldIngress</code>) stages.
SDK-32339	Updated Field warm boot recovery code for Firebolt2 device to reconstruct stats information associated with an egress stage FP entry correctly.
SDK-32340	Updated field api <code>bcm_field_qualify_xxx()</code> / <code>bcm_field_qualify_xxx_get()</code> documentation for Trident device.
SDK-32366	Fixed TRILL module initialization to be dependent on successful L3 Module Init.
SDK-32377	Updated <code>bcm_field_qualify_TcpControl()</code> and <code>bcm_field_qualify_TcpControl_get()</code> API implementation to program correct tables and bits in hardware for Trident device when these qualifiers are used in a double wide slice.
SDK-32414	Fixed programming error in setting <code>EGR_L3_NEXT_HOPm.HG_HDR_ENABLEf</code> for L3-VPN scenarios that includes LSR-SWAP, PHP.

Section 8: Resolved Issues for 5.9.0

The following issues are resolved in version 5.9.0 of the SDK.

Table 7:

Number	Release Notes For 5.9.0
SDK-13819	Control is provided via <code>bcmPortControlTxEnable</code> to stop traffic egress instantaneously using either scheduler control or metering control.
SDK-21715	Added support for missing field selector configurations for SVP based <code>bcmFieldQualifySrcWlanGport</code> qualifier.
SDK-24538	QoS APIs may be used to configure BCM56620 family of devices. The API sequence as follows: <code>bcm_qos_init (unit); # Create the L2 ingress map flags = BCM_QOS_MAP_L2 | BCM_QOS_MAP_INGRESS; bcm_qos_map_create (unit, flags, &ing_exp_map_id); # Add entry to the L2 ingress map bcm_qos_map_add (unit, \$flags, qos_map, ing_exp_map_id); #Attach QoS Map to MPLS GPORT bcm_qos_port_map_set (unit, mpls_port, ing_exp_map_id, 0);</code> <code>MPLS_ENTRY.TRUST_OUTER_DOT1P_PTR</code> gets configured to point to <code>ING_PRI_CNG_MAP</code> entry.
SDK-25092	Updated <code>bcm_field_group_create()</code> API to return <code>BCM_E_UNAVAIL</code> error on devices that do not support external stage.
SDK-28341	Fixed compiler warnings while using <code>PolicyCheck</code> definition in field API module. Added missing type cast in the macro.
SDK-28652	Added support for <code>bcmFieldActionRpSwitchToCpuCancel</code> Action for FB2 device in IFP stage and warm boot recovery support for this action.
SDK-28728	Added cold boot and warm boot support for <code>bcmFieldActionOuterVlanNew</code> , <code>bcmFieldActionDstMacNew</code> and <code>bcmFieldActionSrcMacNew</code> for applicable XGS3 and XGS4 devices.
SDK-28983 SDK-31126	Added support for setting/getting Admission Control table and registers on BCM88230 family of devices via <code>bcm_cosq_control_set()</code> . See <code>bcmCosqControlDropLimitBytes</code> , <code>bcmCosqControlDropLimitAlpha</code> , <code>bcmCosqGportOutLimitDroppedPkts</code> , <code>bcmCosqGportOutLimitDroppedPkts</code> and the surrounding controls in SDK API Guide.
SDK-29076	Changed port monitor thread name from <code>PortMon</code> to <code>bcmPortMon</code> and made thread priority user configurable via the <code>PORTMON_THREAD_PRI</code> property.
SDK-29098	The IFP egress mirroring MTP limit on XGS4 devices is changed to 4 in SDK-29485
SDK-29197	Updated <code>bcm_field_qualify_SrcPort/</code> <code>bcm_esw_field_qualify_DstPort</code> APIs to qualify ports in <code>SOC_PORT_ADDRESSABLE</code> range when <code>module_64ports</code> configuration parameter is set on device.
SDK-29363 SDK-29293	Resolved <code>bcmFieldQualifyIpFrag</code> qualifier DATA and MASK values not displayed for a group when in double wide mode by "fp show" command.
SDK-29686 SDK-29865	Updated "mcinit" Diag Shell sample code for systems with BCM88230 and BCM88025 devices in order to assure proper end-to-end congestion control.
SDK-29818	Moved the code that can access the file system under conditional definitions.
SDK-30213	Support for BCM56840 RTAG7 hash enhancement has been added.
SDK-30242	Fix code for clearing all entries by <code>bcm_l2_delete_by_xxx</code> API.
SDK-30261	Fix incorrect <code>CNG_MAP</code> programming by <code>bcm_port_priority_color_set</code> on BCM56634.
SDK-30282	Add <code>bcmCosqControlEgressPool</code> and few other control types for configuring egress buffer pool on BCM5684x.
SDK-30285	Added checks to return error code when invalid data or mask is passed to <code>bcm_field_qualify_InPorts()</code> API.

Table 7:

Number	Release Notes For 5.9.0
SDK-30287	Added support for creating UDF IFP entries on external slice for Triumph/ Triumph2 device using <code>bcm_field_data*</code> APIs.
SDK-30306	The <code>bcm_multicast_*</code> APIs now support XGS3 fabric devices.
SDK-30347	BCM 88020 & 88025 now support 2000 locally transmitting OAM endpoints at 3.3 ms (and greater) intervals.
SDK-30373	QE2000 ports are no longer powered down when a port is disabled via <code>bcm_port_enable_set()</code> , but the transmitter is forced low.
SDK-30396	Do not attempt hash table re-ordering if recurse depth is 0.
SDK-30397	Add code to support matching trunk for <code>bcm_l2_replace</code> using software traverse.
SDK-30410	Improve ESM L2 PPA flush performance.
SDK-30433	Fixed SDK BCM CLI to accept <code>vlan=4095</code> .
SDK-30436	Support of <code>BCM_L2_MIRROR</code> flag is discontinued for devices starting from BCM5662x. The functionality previously provided by this flag can not be guaranteed due to HW changes. Any use of <code>BCM_L2_MIRROR</code> flag in the L2 API on devices starting from BCM5662x will result in <code>BCM_E_PARAM</code> return code.
SDK-30475	Added support to program the <code>SVP_VALID</code> bit field for <code>bcmFieldQualifySrcMplsGport</code> qualifier on BCM5663x and BCM5684x series chips.
SDK-30493 SDK-30712	Added support for <code>bcmFieldQualifyLookupStatus</code> qualifier for Triumph2/Apollo/ Enduro/Valkyrie2/Trident devices.
SDK-30508 SDK-30522	Resolved conflicting lock order in Warm Boot sync.
SDK-30533	Additional BCM88235 COS model is now supported via the following extra values added to the configuration properties: "TM_LOCAL_SCHED_DISCIPLINE_TEMPLATE=2" (selects local queue scheduling template) and "TM_SCHED_DISCIPLINE_TEMPLATE=1" (selects higher node scheduling template).
SDK-30534	Fixed <code>bcm_mpls_port_delete()</code> to observe the physical port's ingress filter setting when called on BCM88025
SDK-30576	Fixed an issue where "fp show" command displays <code>bcmFieldQualifyRangeCheck</code> qualifier information even when the qualifier is not used in a field entry.
SDK-30579	Enhance <code>soc_l2x_freeze</code> and <code>soc_l2x_thaw</code> to reduce execution time.
SDK-30607 SDK-30571	The crash of <code>bcm_stk_modport_get</code> API when the switch control <code>bcmSwitchUseGport</code> is set has been fixed.
SDK-30651	Corrected <code>bcm_tx</code> to use the full range of module IDs on BCM569x devices.
SDK-30658	<code>bcm_port_vlan_vector_set</code> API is supported to bundle multiple Attachment UNI VID's to map to a VPxS circuit.
SDK-30675	Fix egress mirroring destinations for non-unicast traffic on BCM5663x, BCM5652x, and BCM5684x devices.
SDK-30676	<code>bcm_macsec</code> traverse API were fixed to check return value from callback
SDK-30686	Corrected the default value of the drive current in <code>serded65</code> LP PHY as bit 14 of the drive current setting is ignored.
SDK-30688	QE2000 SOC function provided for QM memory access so as not to interfere with scoreboarding <code>soc_qe2000_qm_mem_read_context_safe()</code> .
SDK-30706	<code>bcm_cosq_gport_queue_attach()</code> was enhanced to automatically update threshold values for newly-allocated flow control domains on BCM88230 device family.
SDK-30714	Fixed index range check in <code>bcm_l2_bpdu_set</code> API. Corrected initialization in <code>bcm_l2_cache_init</code> to match API documentation.
SDK-30721	CINT would segfault on certain assignments to a <code>uint64</code> type.
SDK-30727	Allow non-local ingress ports for <code>bcm_port_egress_set()</code> and <code>bcm_port_egress_get()</code> .

Table 7:

Number	Release Notes For 5.9.0
SDK-30740	New BCMX Field APIs: <code>bcmx_field_data_qualifier_get()</code> <code>bcmx_field_data_qualifier_multi_get()</code>
SDK-30741	New BCMX APIs to support MY_STATION_HIT FP qualifier in 56840 devices: <code>bcmx_field_qualify_MyStationHit()</code> <code>bcmx_field_qualify_MyStationHit_get()</code>
SDK-30742	New BCMX stat APIs: <code>bcmx_stat_multi_get()</code> <code>bcmx_stat_multi_get32()</code>
SDK-30748	Consist the Thunderbolt CFP meter rate calculation mechanism with the IRC and ERC.
SDK-30750	Updated <code>_field_trx_ingress_selcodes_install/</code> <code>_field_trx_ingress_slice_clear</code> routines to SET/CLEAR SLICE_X_ENABLE field in FP_FORCE_FORWARDING_FIELD register when the FP group qset consists of <code>bcmFieldQualifyVrf</code> qualifier for Triumph2 and Trident devices.
SDK-30754	Fixed warm boot group qualifier recovery in fixed part of double wide group.
SDK-30758	<code>bcm_field_data_qualifier_packet_format_add()</code> BCM API can now support BCM_FIELD_DATA_FORMAT_MPLS_ANY MPLS tunnel label qualifier.
SDK-30776	Restore missing packet information for RCPU packets.
SDK-30781	<code>bcm_find</code> would not find "client" attached units if the subtype being matched was a valid CPUDB key but not in exactly the same format at the attached CPUDB key.
SDK-30785	Fixed segmentation fault for CLI command 'dbdump' when CPUDB is invalid.
SDK-30789	CINT would segfault when dereferencing a void pointer
SDK-30790	Do not reserve minimal guarantee queue space for extended unicast queue on BCM5684x unless the port is explicitly specified as "EQ" port in portmap config variable.
SDK-30793	Changed the handling of EGR_MAC_DA_PROFILE reference counts in the <code>bcm_mim_port_add</code> API..
SDK-30809	Return the correct statistic values for <code>snmplfOutUcastPkts</code> & <code>snmplfHCOutUcastPkts</code> on BCM5633x, BCM5614x, and BCM8823x devices.
SDK-30812	Changed default egress shaper burst size to 16Kbytes to prevent packet drops at large packet size (4Kbytes) on BCM88230 family of devices.
SDK-30825	Added <code>cint_defined()</code> to CINT to test for identifier existence.
SDK-30833	<code>bcm_fabric_predicate_action_create()</code> returned the same rule IDs for ingress and egress rules on BCM88230 devices. That was corrected to return IDs from two separate number spaces.
SDK-30841	Fixed MPLS tunnel packet data qualifier entries ordering issue in UDF_TCAM table by assigning priority values to MPLS tunnel label qualifiers. Precedence order is <code>MplsTwoLabel</code> > <code>MplsOneLabel</code> > <code>MplsAny</code> .
SDK-30845	Parity error handling will be disabled on the particular table that encounters an error. This is being done to enable users to continue using and debugging the system and avoid the system to keep receiving error interrupts and becoming un-usable.
SDK-30860	Added support for two new BCM apis <code>bcm_field_qualify_L2PayloadFirstEightBytes</code> and <code>bcm_field_qualify_L2PayloadFirstEightBytes_get</code> in SDK used to qualify first eight bytes following L2 header in a packet.
SDK-30862	Stack board programming with fabric trunks would fail on dual XGS3 platforms.
SDK-30871	Use the <code>cosq</code> argument of <code>bcm_cosq_gport_attach</code> API as the input number when attaching to S2 scheduler on BCM5684x.
SDK-30875	Fix <code>bcm_rx_cos_rate_set/get</code> and <code>bcm_rx_cos_burst_set/</code> <code>get</code> bandwidth calculation on BCM5684x.
SDK-30879	CINT can now use the environment variable <code>CINT_INCLUDE_PATH</code> , if set, to search for include files.
SDK-30887	Documentation update for usage of <code>BCM_MPLS_VPN_WITH_ID</code> .

Table 7:

Number	Release Notes For 5.9.0
SDK-30889	ifconfig command now works correctly on MPC8548 CPU platform with VxWorks 6.5 OS.
SDK-30906	Added missing match criteria for trunk port in the <code>bcm_port_match_multi_get</code> API.
SDK-30909 SDK-32010	The issue associated with fragmentation (Holes) within <code>SOURCE_VP</code> table during VP allocation/deletion is fixed. For 5.9.2 release, support for Warm boot upgrade is added. Warmboot downgrade is not supported on 5.9.2 release for this feature. For 5.10.0 release, support for Warmboot upgrade and downgrade is tracked and handled in SDK-32846.
SDK-30911	Complete the initialization for mirror tables in BCM5684x and BCM5674x devices.
SDK-30917	Fixed access to external memory only when external memory is enabled.
SDK-30918	<code>bcm_mirror_destination_create</code> will now return a <code>BCM_E_EXISTS</code> error when the specified destination has already been created. To recover the <code>mirror_dest_id</code> for that destination, use <code>bcm_mirror_destination_get</code> with a <code>mirror_dest_id</code> of <code>BCM_GPORT_INVALID</code> .
SDK-30921	Fix possible MMU port mapping error on BCM5684x when GE port in <code>XLPORT0</code> is configuration and at least one port is configure as 20G or 40G.
SDK-30930	Updated partial support markers to allow RedirectMcast when L3 support is not included in the compilation.
SDK-30933	Fixed wrong parameter type for 'config' in <code>bcmx_port_congestion_config_get()</code> . Parameter 'config' should be of type ' <code>bcmx_port_congestion_config_t</code> ' rather than ' <code>bcm_port_congestion_config_t</code> '.
SDK-30938	Add the support of source MAC address learning control for reserved multicast packets on ROBO chips.
SDK-30949	BCM88130 SI Port monitoring could potentially indicate good status when no SOTs would arrive.
SDK-30950	Added support for <code>bcm_fabric_port_destroy()</code> API on BCM88230 devices.
SDK-30951	Fix possible cosq index calculation for <code>bcm_cosq_gport_bandwidth_set/get</code> on BCM5684x.
SDK-30952	Fix burst setting calculation for <code>bcm_cosq_port_bandwidth_set/get</code> API on BCM5684x.
SDK-30953	Set mask bit to all 0 when clearing <code>MY_STATION_TCAM</code> table on BCM5684x.
SDK-30957 SDK-30964	Updated <code>pri_lut</code> table for BCM88230 to improve throughput and fairness issues
SDK-30959	<code>bcm_cosq_gport_size_set()</code> now cross-checks consistency with <code>bcm_cosq_gport_discard_set()</code> on BCM88230 devices.
SDK-30961	Fixed OAM module initialization routine to complete initialization of the module when the device has been reset with OAM already initialized.
SDK-30965	Sirius egress predicate offsets were off by one for 'packet' mode predicates on BCM88230 devices. Hardware was incorrectly programmed with the ending byte of the double byte, while it should be programmed with the starting byte.
SDK-30967 SDK-31676 SDK-31264	Enable FP for BCM5674x.
SDK-30972	Priority flow control support added for BCM5663x, BCM5652x, and BCM5633x devices.
SDK-30973	Updated Trident EFP policer install routine to program both <code>EFP_METER_TABLE_X</code> and <code>EFP_METER_TABLE_Y</code> pipeline tables while installing EFP entries. This change fixes EFP metering not working on Trident higher order ports issue.
SDK-30976	Added support for missing field selector configurations for SVP based qualifiers along with warm boot support for BCM5663x, BCM5652x and BCM5633x devices.

Table 7:

Number	Release Notes For 5.9.0
SDK-30979	On BCM8802x devices running G2P3 microcode, there is a packet parsing rule to direct raw encapsulation ids from host cpu to egress bridge stream, bypassing oam egress processing.
SDK-30980	Change 10/100/1000 port default behavior to drop PAUSE frame in MAC instead of forwarding upward.
SDK-30985	Fixed BCM_IPFIX_CONFIG_RECORD_DISCARD_PKT and BCM_IPFIX_CONFIG_RECORD_NON_DISCARD_PKT flags handling for bcm_ipfix_config_set/get API.
SDK-30986 PHY-354	Link is now correctly reported when both parallel detect and auto-negotiation is enabled on ports using BCM Gigbit serdes device
SDK-30992	Fixed the Route table size calculation during LPM Init, when URPF check is enabled. This resolves a warmboot issue.
SDK-30993	Corrected the wrong definition of PHY model number for XGXS16G device. This issue has no real impact to the port behavior.
SDK-30994	Fixed port mode initialization for the GE stacking ports of BCM56024.
SDK-30996	L3 MTU size management enhancement have been added for Firebolt, Firebolt2 and Scorpion devices. bcm_multicast_control_set/get are used to support multiple MTU sizes.
SDK-31004	Fixed array parameter direction for bcm_qos_multi_get() and bcm_qos_map_multi_get() .
SDK-31006	bcm_cosq_gport_queue_attach() now supports BCM88230 devices running in TME mode.
SDK-31007	Do not reset XMAC for bcm_port_probe API on BCM5684x.
SDK-31013	Add snmpleee8021PfcRequests and snmpleee8021PfcIndications to support corresponding 802.1bb MIB objects.
SDK-31014	Size for array parameter missing in bcm_qos_map_multi_get() and bcm_qos_multi_get() RPC client/server routines.
SDK-31017	Updated bcm_field_action_add() API for bcmFieldActionCosQNew, bcmFieldActionUcastCosQNew and bcmFieldActionMcastCosQNew FP actions to allow specifying unicast or multicast queues on BCM5684x.
SDK-31022	Do not set the BCM_L2_NATIVE flag for L2 callbacks if the L2 entry is learned on a trunk.
SDK-31023	Corrected access to invalid table field (for non BCM56840 devices).
SDK-31026	Fix incorrect CNG_MAP programming by bcm_port_priority_color_set on BCM56634.
SDK-31027	Add the support for the port control type bcmPortControlL2Move with the actions flags of BCM_PORT_LEARN_ARL, BCM_PORT_LEARN_CPU and BCM_PORT_LEARN_FWD for ROBO chips.
SDK-31032	Fixed parameter direction for bcm_port_match_add(), bcm_port_match_delete(), and bcm_port_match_replace() APIs. Argument(s) of type 'bcm_port_match_info_t *' should be INPUT rather than INPUT/OUTPUT.
SDK-31033	Fix incorrect port TDM programming on BCM5684x.
SDK-31034	The calling of _bcm_esw_link_port_info_skip_get() is now qualified with link down.
SDK-31035	Provide the intf id to the l3 ingress intf structure prior to calling the intf get function to resolve an issue in bcm_l3_ingress_get API
SDK-31042	PRBS function in 10G XAUI mode for Warpcore device should now work properly
SDK-31045	Fixed warm boot recovery of field entry port bitmaps for intraslice and double-wide groups.
SDK-31049 SDK-31132	Allow bcm_port_vlan_priority_map_set to set mapping for untagged packet when calling with both pkt_pri and cfi equal -1.
SDK-31053	The FIFO for each SPI channel needs to bet at least 7 lines.
SDK-31057	The BCM diag shell command would fail to switch from the BCMX command mode to a device command mode if XCore devices were enabled.

Table 7:

Number	Release Notes For 5.9.0
SDK-31058	Fixed incorrect IP header format values used for UDF_OFFSET table index calculation for BCM5660x devices.
SDK-31059 SDK-31134	Fixed bcm_l2_addr_delete, bcm_l2_tunnel_delete for the cases where MY_STATION_TCAM lookup return BCM_E_FULL.
SDK-31061	Add the support for the switch control types of 'bcmSwitchUnknownMcastToCpu' and 'bcmSwitchUnknownUcastToCpu' for ROBO devices.
SDK-31063	Change bcm_cosq_discard_port_set to allow separately configuring green/yellow/red non-tcp packet on BCM5684x.
SDK-31067	CINT print output was incorrect for long long types if the system printf() did not support %ll formats.
SDK-31068	CINT would use different case when printing the upper and lower halves of a 64 bit variable.
SDK-31069	CINT now accepts integer constants with type suffixes L,LL,U.
SDK-31071	Support for disabling source knockout and enabling VLAN membership check on a per virtual port basis has been added for BCM56840.
SDK-31074	Programming COSWEIGHTS for the case of BCM_COSQ_DEFICIT_ROUND_ROBIN does not skip zero values.
SDK-31077	Fixed TRILL_PORT_xxx header definitions.
SDK-31082 SDK-30490	Corrected an issue causing momentary traffic disruption when changing bandwidth shapers on BCM88230 family of devices.
SDK-31086	Add unit parameter for SOC_MAX_COUNTER_NUM macro
SDK-31087	On BCM8802x devices running G2P3 microcode, internal state is fixed so that false EXC_OAM_NO_ENDPOINT exceptions on passive saps are not generated when the active endpoint is removed.
SDK-31088	bcm_tr_l2_addr_delete may be used by VPLS application to remove L2X entry. However in BCM56840 family of devices, the API tries to remove [L2, VLAN] entry from MY_STATION_TCAM table. This operation may fail as VLAN is within the VPLS_VPN range. Fixed bcm_tr_l2_addr_delete to check for valid vlan range.
SDK-31091	Support added for setting the clock multiplier to 8 when the input frequency is 156250 KHz in BCM54682 / BCM54682E / BCM54685 / BCM54685E.
SDK-31102	Corrected the flex port MAC reset sequence so the port configuration is correct after toggling the mode twice.
SDK-31108	Add PFC support for Enduro.
SDK-31112	Configured INITIAL_L3_ECMPm table also when an ecmp group is added on BCM56840 family.
SDK-31118	Fix multiple issues reported for egress vlan xlate dual hash table re-ordering. Use the configured recursion depth for entry movement and the correct hash function setting.
SDK-31119	Running bcm_init() in parallel on several BCM88230 devices at once could result in undesired consequences and/or memory corruption.
SDK-31121	Fixed an issue to allow BCM5421S PHY device works properly with BCM56504 type of Switch device
SDK-31122	Added support for Scorpion in _bcm_xgs3_ing_rate_limit_ifg_set routine.
SDK-31127	Applicable for BCM88230 and BCM88235 devices. Changes to program the TDM table based on flexible assignments of HG interface subports and speeds.
SDK-31129	Fixed logic error in bcmFabricShaperQueueIncrement fabric control that prevented it from working in certain modes of BCM88230 family of devices.
SDK-31131	Integrated Multipath UPRF feature for BCM56840 family of devices.
SDK-31136	Made changes for Apollo B0 to support 6k ipv4 and 3k ipv6 routes with uRPF enabled.
SDK-31138	The BCM5482/robo, BCM54616, BCM640 and BCM54682 drivers preserve the power down setting when moving between Copper and Fiber media.

Table 7:

Number	Release Notes For 5.9.0
SDK-31155	Fix the configuration failure of the IP related qualifiers with field APIs for ROBO chips.
SDK-31156	Correct FP_POLICY_TABLE REDIRECT_TO_NHI field width for BCM5684x.
SDK-31158	Add the API support of bcm_field_qualify_Tos_get() for ROBO chips.
SDK-31165	The config property pbmp_xport_ge should override other factors when determining the port type.
SDK-31167	gcc 4.5.0 based compiler warnings have been fixed.
SDK-31171	CINT callbacks could segfault if the callback had a missing return statement.
SDK-31174	Fix the initialization failure for the ROBO chips attached on non-zero unit.
SDK-31176	Removed device dependent compilation flags around bcm_trans_ptr and CPU transport.
SDK-31179	Fixed segmentation fault while executing FP debug print statement.
SDK-31188 SDK-31694	"fp action add" diag shell command can now program non-local modid/port information for bcmFieldActionRedirect/bcmFieldActionRedirectPort action.
SDK-31189	Fixed wrong register field access in parity error processing routine for Enduro.
SDK-31203	Addressed several issues in bcm_cosq_gport_detach() handling dynamic removal of nodes in ingress hierarchy on BCM88230 family of devices.
SDK-31210	On BCM88025 devices running G2P3 microcode, upMEP generated packet TPID selection is supported.
SDK-31213	The assignment of bcm_pkt_t structure's vlan with Mac-in-Mac VPN id has been fixed.
SDK-31225	Fixed bug indexing DP value when retrieving statistics on BCM88230 devices.
SDK-31228	Added a fix for potentially corrupted read/write operations for the LMEP tables when OAM CCM transmission is active on BCM5663x, BCM5652x and BCM5633x devices.
SDK-31229	The DO_NOT_LEARN action was incorrectly recovered with param0 as 1 -- fixed.
SDK-31230 SDK-31769	Corrected the mirror module driver state after deleting an FP entry with a mirror action.
SDK-31233	Fixed bcm_trill_port_get_all API implementation.
SDK-31235	The buffer overflow issue, encountered on BCM56840 when bcm_multicast_egress_set API is called with a trunk group with more than 8 member ports, is fixed.
SDK-31236	Fixed L3-ECMP errors when scaling to 32 Next-hops on BCM56634 family of devices.
SDK-31244	Fixed BCMX lplist parameter direction.
SDK-31245	CINT would crash when dumping void * or auto casts.
SDK-31261	During OAM module re-init or when switch is reset using "rc" command, free up all dynamic memory allocated by OAM module.
SDK-31262	Reset flag parameter for each registered OAM interrupt event callback function.
SDK-31265	Warm boot:Recover bcmFieldActionDstMacNew, bcmFieldActionSrcMacNew and bcmFieldActionOuterVlanNew actions for Triumph2 device.
SDK-31266	Mask off non-parity status bits in parity error handling routine.
SDK-31267	The multicast group ID supplied to bcm_multicast_create when the BCM_MULTICAST_WITH_ID flag is used must be a group ID which was previously created by calling bcm_multicast_create on a different unit without the BCM_MULTICAST_WITH_ID flag.
SDK-31269	Print per-lane information for Warpcore serdes PRBS test in debug mode
SDK-31271 SDK-29952	Use correct entry number per-profile for ING_SERVICE_PRI_MAP table.
SDK-31278	Added support for e2ecc configurations for BCM88130/BCM88230 devices where fabric ports on a HiGig may belong to more than 1 module.

Table 7:

Number	Release Notes For 5.9.0
SDK-31279	In API <code>bcmx_mpls_switch_add()</code> , add support for <code>BCMx_LPORT_ETHER_ALL</code> in <code>src_lport</code> member of <code>bcmx_mpls_switch_t</code> struct to indicate all ports.
SDK-31285	Change to allow specifying full range of 32-bit value for <code>bcmSwitchHashSeed0</code> and <code>bcmSwitchHashSeed1</code> .
SDK-31293	CINT print would not issue newlines after printing integers and string expressions
SDK-31294	New BCMX Field APIs: <code>bcmx_field_qualify_DstMultipath()</code> <code>bcmx_field_qualify_DstMultipath_get()</code>
SDK-31296	Fixed "fabric gport sched_show" Diag Shell command on BCM88230 family of devices
SDK-31298	API <code>bcmx_mirror_destination_create</code> will now return a <code>BCM_E_EXISTS</code> error when the specified destination has already been created. To recover the <code>mirror_dest_id</code> for that destination, use <code>bcmx_mirror_destination_get</code> with a <code>mirror_dest_id</code> of <code>BCM_GPORT_INVALID</code> . Parameter direction for <code>bcmx_mirror_destination_t</code> * was modified from OUT to IN/OUT.
SDK-31301	Fixed warmboot mode init with limited (basic) scache support.
SDK-31305	<code>bcm_cosq_attach_scheduler()</code> was off by one in regards to validating the number of children per gport and was returning an error in case when 8 children were attempted to be created.
SDK-31307	Correct <code>FP_POLICY_TABLE REDIRECT_TO_NHI</code> field width for BCM5684x.
SDK-31311	Fix incorrect accounting issue when sending packet with non-zero cos queue value on BCM5684x. Without this fix there could be MMU accounting issues and potential hang.
SDK-31312	Fixed a Flex port issue when switching from 2x10G mode back to 4x10G mode on the BCM56840 switch device.
SDK-31317	Enhanced parameter and configuration validation in <code>bcm_cosq_gport_attach()</code> to not allow the application to attach more than 1 queue groups to the same level 2 node in BCM88230 family of devices, as such configuration is not supported by the device.
SDK-31325	Allow cached DMA memory in Linux user mode through <code>SAL_BDE_CACHE_DMA_MEM</code> compile flag.
SDK-31329	Fix incorrect mac limit counting when invoking <code>bcm_l2_addr_add</code> with <code>BCM_L2_REPLACE_DYNAMIC</code> flag to replace a dynamic entry by a static entry.
SDK-31331	<code>bcm_cosq_gport_delete()</code> did not work on BCM88230 devices when deleting an egress group in extended port mode.
SDK-31332	The legacy behavior of BCM8747 firmware is enabled when the BCM8747 driver is chained to an BCM848X.
SDK-31333	Corrected the mirror to GRE tunnel header configuration on BCM5684x devices.
SDK-31335	During addition of L3 entry that points to a trunk, API used to return <code>BCM_E_PARAM</code> on BCM56820 device family. This issue is fixed.
SDK-31337	<code>bcm_tr_mpls_tunnel_switch_add</code> API with <code>BCM_MPLS_SWITCH_ACTION_PHP</code> used to causes traffic-drop or unexpected behavior on BCM56634 device family. This issue is fixed.
SDK-31343	Reset the virtual port untagged configuration when the destroy an untagged virtual port that doesn't belong to other virtual groups on Thunderbolt chips.
SDK-31352	Switching between IEEE port type and Higi port type on BCM56840 10G port now works correctly.
SDK-31354	Fixed several issues preventing 64K TME queue creation on BCM88230 family of devices.
SDK-31355	Update flow control ingress table correctly in both extended and non-extended port modes for BCM88230 device family.

Table 7:

Number	Release Notes For 5.9.0
SDK-31357	Locks were not released correctly in several exception handling paths of <code>bcm_port</code> and <code>bcm_fabric</code> APIs on XCore devices.
SDK-31361	Assignments to <code>bcm_pbmp_t</code> types via CINT would only set one bit.
SDK-31362 SDK-31407	EF traffic went into non-EF FIFO in the FIFO group in some BCM88230 TME and/or hybrid configurations due to the <code>local_ef</code> bit not being set in <code>gg_ef_type_decode</code> register.
SDK-31369	Applicable for BCM88230 and BCM88235 devices. Changes to TDM table to address ITUFL/FCS errors when running at 88G bandwidth.
SDK-31388	Fix the issue that flood block control for unknown multicast packets can not be set with other flood control types on ROBO chips.
SDK-31392	<code>bcm_cosq_gport_bandwidth_set()</code> API was sending all egress FIFO shaped traffic through the same set of queue groups on BCM88230 devices.
SDK-31399	Fix <code>bcm_port_untagged_priority_set</code> to allow configuring priority for untagged packet on BCM5684x.
SDK-31402	Updated the queue resources allocated to internal redirection in BCM5652x devices.
SDK-31404	Fixed <code>bcm_l3_ingress_create</code> API to program <code>qos_map_id</code> for TRUST_DSCP value.
SDK-31406	When <code>bcmFieldQualifyLookupStatus</code> qualifier is used in a group, add <code>bcmFieldQualifyMyStationHit</code> qualifier internally only when device has <code>soc_feature_field_qual_my_station_hit</code> support enabled.
SDK-31414	The <code>bcm_ipmc_*</code> APIs now use the same resource lock as the <code>bcm_l3_*</code> APIs due to interconnected implementations.
SDK-31419	Fix <code>bcm_cosq_gport_sched_set</code> weight programming for multicast queue group scheduler on BCM5684x.
SDK-31421	<code>bcm_cosq_gport_size_set()</code> no longer performs a delete/re-add of a queue when the queue max depth is increased by the application on BCM88230 family of devices.
SDK-31443	<code>soc_init()</code> returned an error if invoked more than once on BCM88230 devices.
SDK-31444	Corrected the setting of various port switch controls in BCM5663x and BCM5652x devices.
SDK-31445	BCM88230 TME sysport generation is dependent on allocated FCD. A boundary check was added to sysport allocation to validate that the generated index does not extend beyond the array boundaries.
SDK-31449	Fixed <code>bcm_mpls_tunnel_switch_add</code> API for the case of SWAP to PHP Label Update.
SDK-31474	H/w registers will be used to determine if the requested shaper rate falls within the accuracy acceptable to <code>leak_cycle</code> and <code>max_nodes</code> on BCM88230 family of devices and an error will be returned if shaping cannot be provided at the requested rate.
SDK-31477	<code>PACKET_IFG_BYTES_2f</code> field of <code>EGR_SHAPING_CONTROLr</code> is also configured as part of <code>bcmSwitchMeterAdjust</code> switch control.
SDK-31478	On BCM56840 device family, <code>bcm_mpls_port_get</code> API used to return <code>BCM_MPLS_PORT_INT_PRI_SET</code> flag even though application didn't specify this initially when mpls port was created. This issue is fixed.
SDK-31480	L3 packets were losing the internal priority on BCM56840 devices as <code>ING_ROUTED_INT_PRI_MAPPING</code> table was not initialized. Fixed the issue.
SDK-31488	PLL clock jitter issues can potentially cause link failure between BCM5684x and BCM8073. Updated PLL device initialization to resolve this.
SDK-31490	Fixed AF CIR guarantee issue when mixing 4 cos level queue group and 8 cos level queue group for BCM88230 devices.
SDK-31497	Add parameter validation for <code>bcm_port_vlan_priority_map_set/get</code> and <code>bcm_port_vlan_priority_unmap_set</code> API.

Table 7:

Number	Release Notes For 5.9.0
SDK-31508	Adjusted <code>bcm_cosq_control_set()</code> for BCM88230 family of devices so that FIFO thresholds (<code>bcmCosqControlDropLimitAlpha</code> , <code>bcmCosqControlDropLimitBytes</code> , etc) can be set for for non-aggregate HiGig links.
SDK-31509	CINT Diag Shell component was using C99 %hh format specifications and variable length auto arrays.
SDK-31511	<code>bcm_vlan_create</code> API used to initialize entry = vid within L3 Ingress interface memory. This issue is fixed.
SDK-31581	Fix wrong higig-lite mode setting for Enduro
SDK-31583	Correct the register which was used to get <code>refresh_bitsize</code> and <code>bucket_bitsize</code> for Enduro in API <code>_bcm_tr_cosq_port_packet_bandwidth_set</code> .
SDK-31584	Fixed incorrect returned value when get port's DSCP and priority mapping mode of BCM53242 family.
SDK-31589	Added documentation of switch control <code>bcmSwitchMirrorPktChecksEnable</code> to enable/disable all packet checks for mirrored packets.
SDK-31604	Fixed incorrect recovery of selector codes in FP warm start for lookup stage, for upper half of intraslice group.
SDK-31629	Corrected the comparison of L2 entries by omitting a field cleared by hardware aging.
SDK-31634	On BCM5684x, Do not program TDM table if total bandwidth supplied in portmap config variables exceeds the device can support.
SDK-31641	Fixed <code>bcm_l3_ingress_create</code> API to program <code>qos_map_id</code> for TRUST_DSCP value.
SDK-31662	Enhanced VLAN Translate APIs to accept <code>L3_IIF</code> as parameter, so that Port,Vlan based <code>VLAN_XLATE</code> entry points to an <code>L3_IIF</code> entry in the range of 4K+1 to 8K.
SDK-31666	Enhanced VLAN Translate APIs to accept <code>L3_IIF</code> as parameter, so that Port,Vlan based <code>VLAN_XLATE</code> entry points to an <code>L3_IIF</code> entry in the range of 4K+1 to 8K.
SDK-31677	For warm start, BCM56820 is considered a variant of BCM56634. However, the BCM56634-based warm start code was not being included in a BCM56820-only build. Fixed to now include BCM56634 warm start for BCM56820-only build.
SDK-31678	Verify that the <code>mirror_dest</code> parameter is a mirror type gport in <code>bcm_mirror_port_dest_add/delete</code> APIs, else report <code>BCM_E_PARAM</code> .
SDK-31681	Fixed <code>bcm_switch_control_port_set()</code> API not programming <code>EGR_COUNTER_CONTROLr</code> for <code>bcmSwitchMeterAdjust</code> switch control for Trident/Apollo/Triumph2/Valkyrie2.
SDK-31689	Updated Field group create logic for external stage to program <code>IPV4_ACL_MODE</code> and <code>IPV6_ACL_MODE</code> fields in <code>ESM_MODE_PER_PORT</code> register when <code>L2_ACL_KEY/L2_ACL_7K_KEY</code> search is selected for Triumph/Triumph2 devices.
SDK-31699	ECMP group size greater than 255 resulted in data width error as <code>uint8</code> holder was used for the same. This issue is fixed.
SDK-31711	For BCM56840 device family, Network facing <code>EGR_L3_NEXT_HOP</code> entries have <code>ENTRY_TYPE==1</code> , and it uses MPLS overlay. Access facing <code>EGR_L3_NEXT_HOP</code> entries have <code>ENTRY_TYPE==2</code> , and it uses SD_TAG overlay. Fixed inconsistent setting of MPLS and SD-TAG overlay fields of <code>EGR_L3_NEXT_HOP</code> .
SDK-31712	Implemented the <code>bcmSwitchStableUsed</code> switch control for retrieving the total memory allocated for Warm Boot stable records.
SDK-31721	Fix the failure of the field group creation with the "HopLimit", "NextHeader" or "TrafficClass" qualifiers of IPv6 slices for BCM53115 and BCM53125.
SDK-31729	The queue's <code>buff_template</code> was not getting correctly updated when increasing the queue buff size for BCM88230 family of devices.

Table 7:

Number	Release Notes For 5.9.0
SDK-31763	SDK-31763: Fixed <code>bcm_field_qualify_DstPort_get</code> and <code>bcm_field_qualify_SrcPort_get</code> APIs to construct and return correct GPORT value from hardware for DualModid devices.
SDK-31778	Fixed field warm boot recovery code to setup number of free entries available per slice for slices that are in <code>_FP_GROUP_INTRASLICE_DOUBLEWIDE</code> mode for Triumph and Firebolt family of devices.
SDK-31780	Added new member <code>ipmc_psc</code> to <code>bcmx_trunk_add_info_t</code> struct to support software IPMC trunk resolution feature for BCM56840.
SDK-31800	Do not include loopback ports in the bit field used for clearing port counters to avoid array out of bound access since s/w counter space is not allocated for internal loopback ports.
SDK-31854	The set and get versions of <code>bcm_rx_redirect_reasons</code> have been updated to return the correct error codes for wrong unit or wrong mode.
SDK-31862 SDK-31848	Put the XMAC in a soft reset state when disabled to allow packets to drain from the TX FIFO.
SDK-31907	Fixed <code>bcm_vlan_control_vlan_get</code> to obtain urpf mode setting.
SDK-31935	Resolved an issue with BCM88230 family of devices running in TME mode that could cause multicast EF packets to go into non-EF FIFO when running in double-port (more than 128 ports) mode.
SDK-31948	(1) In <code>_field_tr2_scache_slice_group_recover()</code> , <code>new_grp</code> was not initialized to NULL for *every* memory allocation. (2) Added version check for field scache. (3) Fixed typo in <code>_SHR_SCACHE_VERSION</code> macro for packing version information into <code>uint16</code> . These issues were causing warm boot upgrade failures in <code>bcm_field</code> API module.
SDK-31969	CINT would not compile with <code>gcc -ansi</code> .
SDK-31971	CINT, which requires <code>sal/appl</code> libraries, was not an excluded feature when compiling with <code>NO_SAL_APPL</code> .
SDK-31973	Corrected the definition of the VRF bits in the external V4 TCAM to avoid errors with VRF ids with the MSB set.
SDK-31975	SDK-5.8.0 or 5.9.0 has full PFC function support on BCM5684x.
SDK-31976	Enable <code>BCM_XGS3_FABRIC_SUPPORT</code> for BCM56740, BCM56743, BCM56744, BCM56745, BCM56746 partial chip builds.
SDK-31989	Fixed error in <code>relative_offset</code> value assignment statement in <code>_bcm_field_fb_data_qualifier_ip_protocol_add()</code> routine.
SDK-31995	Updated TDM table on BCM88230 family of devices in order to improve line rate performance across multiple packet sizes and to reduce data path latency for certain configurations.
SDK-31999	Fix <code>bcm_port_frame_max_set</code> on BCM5684x.
SDK-32026	Adjusted oversubscription detect code on BCM88230 family of devices to only consider bandwidth of configured subports and to exclude the bandwidth used by internal subports.
SDK-32032	On BCM56840 device family, a TRILL DVP signifies a destination RBridge. Multiple TRILL DVPs may share the same next-hop index. Hence TRILL-stats need to be per-DVP basis. On BCM56840 device family per-DVP stats are not implemented. if <code>GPORT = TRILL_TYPE</code> , then <code>bcm_trill_stat_get</code> returns <code>BCM_E_UNAVAIL</code> . If <code>GPORT = MODPORT_TYPE</code> or <code>LOCAL_PORT_TYPE</code> , then <code>bcm_trill_stat_get</code> returns per-port stats If <code>GPORT = GPORT_INVALID</code> , then <code>bcm_trill_stat_get</code> returns device-wide stats
SDK-32059	On BCM88230 devices, <code>bcm_fabric_congestion_size_set()</code> can now be used to set <code>max_ports</code> to 0 for a specific <code>module_id</code> in order to clean up the module in E2ECC.

Table 7:

Number	Release Notes For 5.9.0
SDK-32064	Updated OAM implementation for Enduro and Triumph2 chips to enable IRQ_MEM_FAIL interrupt in soc_triumph2_oam_handler_register() / soc_enduro_oam_handler_register() routines.
SDK-32081	Fixed bcm_tr_mpls_update_vp_nh(), to delete old MAC_DA_profile before adding the new entry.
SDK-32083 SDK-32207	Fixed issue with on BCM56840_A0 device to create ECMP routes greater than 32. BCM56840_A0 allows ECMP entry with 256 routes and BCM56840_B0 with 1024 routes.
SDK-32089	Corrected the configuration of multicast stack ports on bcm568xx devices.
SDK-32095	Fixed bcmFieldQualifyVrf qualifier field width (11-bits) for Scorpion device for PPF1[7] and PPF1[8] field selector modes.
SDK-32121	Updated bcm_field_group_create() API for BCM56224 family device to setup Inner VLAN Overlay settings when bcmFieldQualifyVrf qualifier is part of the Group QSET.
SDK-32129	Change bcm_cosq_discard_port_set to allow separately configuring green/yellow/red or all non-tcp packet on BCM5684x.
SDK-32155	Fix the issue about the incorrect register value got via the function, soc_robo_anyreg_read().
SDK-32184 SDK-32889	Fixed input parameter check in bcm_stk_modport_add API to allow Higig trunk group gport.
SDK-32224	Provided ability to preserve the correct EEE ability (chip's reported EEE ability gets cleared) when legacy bcm_port_ability_local_get() APIs are used.
SDK-32236	Fixed bcmx_ipmc_remove() to remove fabric programming.
SDK-32255	Fixed crashing of "ipmc repl show" diag-shell command on BCM56840.
SDK-32275	Added support for local WRED for inline mode of BCM88230 devices
SDK-32286	Add .unit extension to the config variables generated by extt and extt2 program.
SDK-32301	Improved cross node traffic fairness for BCM88230 FIC systems
SDK-32306	Add BCM_COSQ_DISCARD_MARK_CONGESTION flag to allow application using bcm_cosq_discard_set and bcm_cosq_gport_discard_set API to choose between ECN marking or dropping for WRED on BCM5684x.
SDK-32320	Fix the generated config variable ext_sram_tuning2_stat when the eye of the ESM SRAM tuning result is totally open (all entries passed). The false config variable does not affect operation, it is used for recording the size of the eye for future reference when debugging.
SDK-32329	1. Updated field warm boot group selector code setup logic 2. Fixed src_class_sel and dst_class_sel comparison in _field_group_slice_mode_validate() 3. Field warm boot recovery code h/w meter index calculation logic for scorpion device.
SDK-32334	Fix modid count when configure module_64ports=1 on BCM5684x.
SDK-32359	Fixed debug print statements in phyident.c and esw/mirror.c.
SDK-32361 SDK-32374	Integrated enhancement for MPLS label sharing between Pseudo-wire and LSR application.
SDK-32363	Enable dual modid for BCM56840.
SDK-32379	Modify mac_uni_ifg_set to program register only when the specified speed/duplex matches the current setting.
SDK-32400	Fixed the transfer specification of the data argument of bcm_ipmc_get_by_index API.
SDK-32401	Fixed parameter argument direction for API bcmx_ipmc_get_by_index()
SDK-32406	Restored the correct test of the encap_id value for stack ports in bcm_multicast_* APIs.
SDK-32408	Fixed scheduler detach issue when nodes are reserved during attach for BCM88230 family of devices.

Table 7:

Number	Release Notes For 5.9.0
SDK-32416	Fixed handling of the <code>multicast_l3_range</code> configuration variable for BCM56840.
SDK-32458	Updated field warm boot recovery code to recover <code>bcmFieldActionVrfSet</code> action for BCM56820 and BCM56725 devices.
SDK-32481	During <code>bcm_mpls_port_add</code> reference count for TPID used to get incremented twice, which caused problems during <code>bcm_mpls_port_delete</code> . This issue is fixed.
SDK-32492	E2ECC registers now modified appropriately for inline and extended port modes on BCM88230 family of devices in order to be able to exercise flow control in 176 port mode.
SDK-32504	Remove the simulator acceleration <code>SCHAN</code> op function declaration from the function body in which it is used to resolve a compilation failure.
SDK-32509	Add <code>FP_GM_FIELDS_X</code> and <code>FP_GM_FIELDS_Y</code> memory view for BCM56840.
SDK-32579	Fix the issue about the CLI diagnostic command, "write", can't configure the value to the memories of ROBO chips.
SDK-32589	Fix <code>bcm_port_control_get</code> <code>bcmPortControlTimestampTransmit</code> type on BCM5684x.
SDK-32590	The usage of <code>LEGACY</code> view is removed. Instead <code>MPLS</code> and <code>SD_TAG</code> views of <code>EGR_L3_NEXT_HOP</code> are properly used within <code>mpls</code> module.

Section 9: Device and Platform Support

The section describes all devices, platforms, and operating systems that are supported by this release.

SWITCH DEVICES

Table 8: Switch Devices

Family	Devices	Description
BCM5324	BCM5324 A0	Single-Chip L2+ Managed Switch with 24 10/100 Ports + 2 GbE Ports
	BCM5324 A1	
	BCM5324 A2	
BCM5347	BCM5347 A0	Managed Switch with 24 10/100 Ports + Four GbE Ports
	BCM5347 A1	
BCM5348	BCM5348 A0	Single-Chip L2+ Managed Switch with 48 10/100 Ports + Four GbE Ports
	BCM5348 A1	
BCM5389	BCM5389 A0	8-Port GbE Switch with Integrated SerDes
	BCM5389 A1	
BCM5395	BCM5395 A0	Multiport Gigabit Ethernet Switch
BCM5396	BCM5396 A0	16-Port GbE Switch with Integrated SerDes
BCM5397	BCM5397 A0	6-Port GbE Switch With 5 Integrated PHYs and LoopDTech
BCM5398	BCM5398 A0	9-Port GbE Switch With 8 Integrated PHYs and LoopDTech
BCM53101	BCM53101 A0	5-Port Fast Ethernet Managed Switch + 1 Fast Ethernet WAN port
	BCM53101 B0	
BCM53115	BCM53115 A0	5-Port GbE Managed Switch + 1 Gigabit WAN port with integrated serdes
	BCM53115 A1	
	BCM53115 B0	
	BCM53115 B1	
	BCM53115 C0	
BCM53118	BCM53118 A0	8-Port Gigabit Ethernet Switch
	BCM53118 B0	
	BCM53118 B1	
BCM53125	BCM53125 A0	5-Port Gigabit Ethernet Switch with 1 Gigabit WAN port and 8051 processor
	BCM53125 B0	
BCM53128	BCM53128 A0	8-Port Gigabit Ethernet Switch with embedded 8051 processor
	BCM53128 B0	
BCM53242	BCM53242 A0	Managed Switch with 24 FE Ports + 2 GbE Interface
	BCM53242 B0	
	BCM53242 B1	
BCM53262	BCM53262 A0	Managed Switch with 24 FE Ports + 4 GbE Interface
	BCM53262 B0	
	BCM53262 B1	
BCM53280	BCM53282 A0	8-Port Fast Ethernet + 2-Port Gigabit Ethernet Multilayer Switch
	BCM53282 B0	
	BCM53282 B1	
	BCM53282 B2	
BCM53283	BCM53283 A0	16-Port Fast Ethernet + 2-Port Gigabit Ethernet Multilayer Switch
	BCM53283 B0	
	BCM53283 B1	
	BCM53283 B2	

Table 8: Switch Devices

Family	Devices	Description
	BCM53284 A0	24-Port Fast Ethernet + 2-Port Gigabit Ethernet Multilayer Switch
	BCM53284 B0	
	BCM53284 B1	
	BCM53284 B2	
	BCM53286 A0	24-Port Fast Ethernet + 4-Port Gigabit Ethernet Multilayer Switch
	BCM53286 B0	
	BCM53286 B1	
	BCM53286 B2	
	BCM53288 A0	24-Port Fast Ethernet + 2-Port Gigabit Ethernet Multilayer Switch with one 2.5GbE Uplink Port
	BCM53288 B0	
	BCM53288 B1	
	BCM53288 B2	
BCM53300	BCM53300 A0	Managed 24-port L2 Switch
	BCM53300 A1	
	BCM53301 A0	Managed 16-port L2 Switch
	BCM53301 A1	
	BCM53302 A0	Managed 24-port L2 Switch
	BCM53302 A1	
BCM53310	BCM53312 A0	BCM53312 Integrated Multilayer Switch and CPU
	BCM53312 B0	
	BCM53313 A0	BCM53313 Integrated Multilayer Switch and CPU
	BCM53313 B0	
	BCM53314 A0	BCM53314 Integrated Multilayer Switch and CPU
	BCM53314 B0	
BCM53320	BCM53322 A0	BCM53322 Integrated Multilayer Switch and CPU
	BCM53323 A0	BCM53323 Integrated Multilayer Switch and CPU
	BCM53324 A0	BCM53324 Integrated Multilayer Switch and CPU
BCM53710	BCM53714 A0	BCM56714 Integrated Multilayer Switch and CPU
	BCM53714 A1	
	BCM53714 A2	
	BCM53716 A0	BCM56716 Integrated Multilayer Switch and CPU
	BCM53716 A1	
	BCM53716 A2	
	BCM53718 A0	BCM56718 Integrated Multilayer Switch and CPU
	BCM53718 A1	
	BCM53718 A2	
BCM53720	BCM53724 A0	Managed 24-port L2 Switch with Integrated CPU
	BCM53724 B0	
	BCM53726 A0	Managed 24-port L2 Switch with Integrated CPU
	BCM53726 B0	

Table 8: Switch Devices

Family	Devices	Description
BCM5650	BCM5650 A0	24-Port BCM5650 Integrated Multi-Layer Switch
	BCM5650 B0	
	BCM5650 C0	
	BCM5655 A0	48-Port BCM5655 Integrated Multi-Layer Switch
	BCM5655 B0	
BCM5665	BCM5665 A0	48-Port BCM5665 Integrated Multi-Layer Switch
	BCM5665 B0	
BCM5670	BCM5670 A0	BCM5670 8-Port, 160 Gbps Switch Fabric
	BCM5670 A1	
	BCM5671 A0	BCM5671 4-Port, 80-Gbps Switch Fabric
	BCM5671 A1	
	BCM5671 A2	
BCM5673	BCM5673 A0	10 Gigabit Ethernet/HiGig Multilayer Switch
	BCM5673 A1	
	BCM5673 A2	
BCM5674	BCM5674 A0	Multilayer 2-Port 10 Gigabit Ethernet and HiGig+ Switch
BCM5675	BCM5675 A0	8-Port, 192-Gbps Switch Fabric
	BCM5675 A1	
	BCM5676 A0	4-Port, 96-Gbps Switch Fabric
	BCM5676 A1	
BCM5690	BCM5690 A0	Scalable 12-Port Gigabit Ethernet MultiLayer Switch
	BCM5690 A1	
	BCM5690 A2	
	BCM5691 A0	12-Port Gigabit Ethernet MultiLayer Switch
	BCM5691 A1	
	BCM5691 A2	
	BCM5692 A0	Scalable 12-Port Gigabit Ethernet Layer 2 Switch
	BCM5692 A1	
	BCM5692 A2	
	BCM5693 A0	12-Port Gigabit Ethernet Layer 2 Switch
	BCM5693 A1	
	BCM5693 A2	
BCM5695	BCM5695 A0	MultiLayer 12-Port Gigabit Ethernet Stackable Switch
	BCM5695 A1	
	BCM5695 B0	
	BCM5696 A0	Multilayer 12-Port Gigabit Ethernet Switch
	BCM5696 A1	
	BCM5696 B0	
	BCM5697 A0	12-Port Gigabit Ethernet Stackable Layer 2+ Switch
	BCM5697 A1	
	BCM5697 B0	
	BCM5698 A0	12-Port Gigabit Ethernet Layer 2+ Switch

Table 8: Switch Devices

Family	Devices	Description
	BCM5698 A1	
	BCM5698 B0	
BCM56010	BCM56014 A0	24-Port Integrated Multilayer Switch and CPU
	BCM56014 A1	
	BCM56014 A2	
	BCM56018 A0	48-Port Integrated Multilayer Switch and CPU
	BCM56018 A1	
	BCM56018 A2	
	BCM56018 A1	48-Port Integrated Multilayer Switch and CPU
BCM56020	BCM56024 A0	24-Port Integrated Multilayer Switch and CPU
	BCM56024 B0	
	BCM56025 A0	24-Port Integrated L2 Switch and CPU
	BCM56025 B0	
	BCM56026 A0	24-Port Integrated L2 Switch and CPU
	BCM56026 B0	
BCM56100	BCM56100 A0	24-Port Fast Ethernet and 2-Port Gigabit Ethernet Multilayer Switch
	BCM56100 A1	
	BCM56101 A0	24-Port Fast Ethernet and 2-Port Gigabit Ethernet Multilayer Switch with One 10-Gigabit Ethernet/HiGig Port
	BCM56101 A1	
	BCM56102 A0	24-Port Fast Ethernet and 2-Port Gigabit Ethernet Multilayer Switch with Two 10-Gigabit Ethernet/HiGig Ports
	BCM56102 A1	
	BCM56105 A0	24-Port Fast Ethernet and 2-Port Gigabit Ethernet Layer 2 Switch
	BCM56105 A1	
	BCM56106 A0	24-Port Fast Ethernet and 2-Port Gigabit Ethernet Layer 2 Switch with One 10-Gigabit Ethernet/HiGig Port
	BCM56106 A1	
	BCM56107 A0	24-Port Fast Ethernet and 2-Port Gigabit Ethernet Layer 2 Switch with Two 10-Gigabit Ethernet/HiGig Ports
	BCM56107 A1	
BCM56110	BCM56110 A0	24-Port Fast Ethernet and 2-Port Gigabit Ethernet Multilayer Switch
	BCM56111 A0	24-Port Fast Ethernet and 2-Port Gigabit Ethernet Multilayer Switch with One 10-Gigabit Ethernet/HiGig Port
	BCM56112 A0	24-Port Fast Ethernet and 2-Port Gigabit Ethernet Multilayer Switch with Two 10-Gigabit Ethernet/HiGig Ports
	BCM56115 A0	24-Port Fast Ethernet and 2-Port Gigabit Ethernet Layer 2 Switch
	BCM56116 A0	24-Port Fast Ethernet and 2-Port Gigabit Ethernet Layer 2 Switch with One 10-Gigabit Ethernet/HiGig Port
	BCM56117 A0	24-Port Fast Ethernet and 2-Port Gigabit Ethernet Layer 2 Switch with Two 10-Gigabit Ethernet/HiGig Ports
BCM56130	BCM56132 A0	24-Port Fast Ethernet Multilayer Switch with Two 10-GbE/HiGig2 and Two 1G/2.5Gb Uplink Ports
	BCM56132 B0	
	BCM56134 A0	24-Port Fast Ethernet Multilayer Switch with four 1G/2.5Gb Uplink Ports
	BCM56134 B0	

Table 8: Switch Devices

Family	Devices	Description
BCM56140	BCM56142 A0	24-Port Gigabit Ethernet Multilayer switch with combination of two/four 1G/2.5/HiGig2 Uplink Ports
	BCM56143 A0	24-Port Gigabit Ethernet Multilayer switch with combination of two/four 1G/2.5/HiGig2 Uplink Ports
	BCM56144 A0	16-Port Gigabit Ethernet Multilayer switch with four 1G/2.5HG Uplink Ports
	BCM56146 A0	24-Port Fast-Ethernet Multilayer switch with four 2.5HG Uplink Ports
	BCM56147 A0	24-Port Fast-Ethernet Multilayer switch with combination of one/two/four 1G/2.5G/10/12/13HG Uplink Ports
BCM56210	BCM56212 A0	
	BCM56212 A1	
	BCM56212 A2	
	BCM56213 A0	
	BCM56213 A1	
	BCM56213 A2	
	BCM56214 A0	BCM56214 Integrated Multilayer Switch and CPU
	BCM56214 A1	
	BCM56214 A2	
	BCM56215 A0	
	BCM56215 A1	
	BCM56215 A2	
	BCM56216 A0	BCM56216 Integrated Multilayer Switch and CPU
	BCM56216 A1	
	BCM56216 A2	
	BCM56217 A0	
	BCM56217 A1	
	BCM56217 A2	
	BCM56218 A0	BCM56218 Integrated Multilayer Switch and CPU
	BCM56218 A1	
	BCM56218 A2	
	BCM56219 A0	BCM56219 Integrated Multilayer Switch and CPU
	BCM56219 A1	
	BCM56219 A2	
BCM56220	BCM56224 A0	24 GbE + 4 x 1 Gb/2.5 Gb, L3/L2+
	BCM56224 B0	24 GbE + 4 x 1 Gb/2.5 Gb, L3/L2+
	BCM56225 A0	24 GbE + 4 x 1 Gb/2.5 Gb, L2+
	BCM56225 B0	24 GbE + 4 x 1 Gb/2.5 Gb, L2+
	BCM56226 A0	16 GbE + 4 x 1 Gb/2.5 Gb, L3/L2+
	BCM56226 B0	16 GbE + 4 x 1 Gb/2.5 Gb, L3/L2+
	BCM56227 A0	16 GbE + 4 x 1 Gb/2.5 Gb, L2+
	BCM56227 B0	16 GbE + 4 x 1 Gb/2.5 Gb, L2+
	BCM56228 A0	8 GbE + 4 x 1 Gb/2.5 Gb, L3/L2+
	BCM56228 B0	8 GbE + 4 x 1 Gb/2.5 Gb, L3/L2+

Table 8: Switch Devices

Family	Devices	Description
BCM56300	BCM56229 A0	8 GbE + 4 x 1 Gb/2.5 Gb, L2+
	BCM56229 B0	8 GbE + 4 x 1 Gb/2.5 Gb, L2+
	BCM56300 A0	24-Port Gigabit Ethernet Multilayer Switch
	BCM56300 A1	
	BCM56300 B0	
	BCM56300 B1	
	BCM56301 A0	Four 10-Gigabit Ethernet/HiGig+ Ports
	BCM56301 A1	
	BCM56301 B0	
	BCM56301 B1	
	BCM56302 A0	24-Port Gigabit Ethernet Multilayer Switch with Two 10-Gigabit Ethernet/HiGig+ Ports
	BCM56302 A1	
	BCM56302 B0	
	BCM56302 B1	
	BCM56303 A0	24-Port Gigabit Ethernet Multilayer Switch with Three 10 Gigabit Ethernet/HiGig+ Ports
	BCM56303 A1	
	BCM56303 B0	
	BCM56303 B1	
	BCM56304 A0	24-Port Gigabit Ethernet Multilayer Switch with Four 10-Gigabit Ethernet/HiGig+ Ports
	BCM56304 A1	
	BCM56304 B0	
	BCM56304 B1	
	BCM56305 A0	24-Port Gigabit Ethernet Multilayer Switch
	BCM56305 A1	
	BCM56305 B0	
	BCM56305 B1	
	BCM56306 A0	16 Port Gigabit Ethernet Switch
	BCM56306 A1	
	BCM56306 B0	
	BCM56306 B1	
	BCM56307 A0	24-Port GE L2 Switch with Two 10 GE/HiGig+ Ports
	BCM56307 A1	
	BCM56307 B0	
	BCM56307 B1	
	BCM56308 A0	24-Port GE L2 Switch with Three 10 GE/HiGig+ Ports
	BCM56308 A1	
	BCM56308 B0	
	BCM56308 B1	
	BCM56309 A0	24-Port GE L2 Switch with Four 10 GE/HiGig+ Ports

Table 8: Switch Devices

Family	Devices	Description
	BCM56309 A1	
	BCM56309 B0	
	BCM56309 B1	
BCM56310	BCM56310 A0	BCM56310 Series 24-Port GbE Multilayer Switch with Four 10-GbE/HiGig+ Uplink Ports
	BCM56311 A0	Four 10-Gigabit Ethernet/HiGig+ Ports
	BCM56312 A0	24-Port Gigabit Ethernet Multilayer Switch with Two 10-Gigabit Ethernet/HiGig+ Ports
	BCM56313 A0	24-Port Gigabit Ethernet Multilayer Switch with Three 10-Gigabit Ethernet/HiGig+ Ports
	BCM56314 A0	24-Port Gigabit Ethernet Multilayer Switch with Four 10-Gigabit Ethernet/HiGig+ Ports
	BCM56315 A0	BCM56310 Series 24-Port GbE Layer 2 Switch with Four 10-GbE/HiGig+ Uplink Ports
	BCM56316 A0	Four 10-Gigabit Ethernet/HiGig+ Ports
	BCM56317 A0	24-Port Gigabit Ethernet Layer 2 Switch with Two 10-Gigabit Ethernet/HiGig+ Ports
	BCM56318 A0	24-Port Gigabit Ethernet Layer 2 Switch with Three 10-Gigabit Ethernet/HiGig+ Ports
	BCM56319 A0	24-Port Gigabit Ethernet Layer 2 Switch with Four 10-Gigabit Ethernet/HiGig+ Ports
BCM56320	BCM56320 A0	24-Port GbE Multilayer Switch with Four 10-GbE/HiGig2 Uplink Ports
	BCM56320 B0	
	BCM56321 A0	24-Port GbE Multilayer Switch with Four 10-GbE/HiGig2 Uplink Ports
	BCM56321 B0	
BCM56330	BCM56331 A0	24-Port GbE Multilayer Switch with Four 2.5GbE Uplink Ports
	BCM56331 B0	
	BCM56333 A0	16-Port GbE Multilayer Switch
	BCM56333 B0	
	BCM56334 A0	24-Port GbE Multilayer Switch with Four 10-GbE/HiGig2 Uplink Ports
	BCM56334 B0	
	BCM56338 A0	8-Port GbE Multilayer Switch with two 10-GbE/HiGig2 Uplink Ports
	BCM56338 B0	
BCM56500	BCM56500 A0	24-Port Gigabit Ethernet Multilayer Switch
	BCM56500 A1	
	BCM56500 B0	
	BCM56500 B1	
	BCM56500 B2	
	BCM56501 A0	Four 10-Gigabit Ethernet/HiGig+ Ports
	BCM56501 A1	
	BCM56501 B0	
	BCM56501 B1	
	BCM56501 B2	
	BCM56502 A0	24-Port GbE Multilayer Switch with Two 10-GbE/HiGig+ Ports
	BCM56502 A1	
	BCM56502 B0	

Table 8: Switch Devices

Family	Devices	Description
	BCM56502 B1	
	BCM56502 B2	
	BCM56503 A0	24-Port GbE Multilayer Switch with Three 10-GbE/HiGig+ Ports
	BCM56503 A1	
	BCM56503 B0	
	BCM56503 B1	
	BCM56503 B2	
	BCM56504 A0	24-Port GbE Multilayer Switch with Four 10-GbE/HiGig+ Ports
	BCM56504 A1	
	BCM56504 B0	
	BCM56504 B1	
	BCM56504 B2	
	BCM56505 A0	24-Port GbE Layer 2 Switch
	BCM56505 A1	
	BCM56505 B0	
	BCM56505 B1	
	BCM56505 B2	
	BCM56506 A0	Four 10-Gigabit Ethernet/HiGig+ Ports
	BCM56506 A1	
	BCM56506 B0	
	BCM56506 B1	
	BCM56506 B2	
	BCM56507 A0	24-Port GbE Layer 2 Switch with Two 10-GbE/HiGig+ Ports
	BCM56507 A1	
	BCM56507 B0	
	BCM56507 B1	
	BCM56507 B2	
	BCM56508 A0	24-Port GbE Layer 2 Switch with Three 10-GbE/HiGig+ Ports
	BCM56508 A1	
	BCM56508 B0	
	BCM56508 B1	
	BCM56508 B2	
	BCM56509 A0	24-Port GbE Layer 2 Switch with Four 10-GbE/HiGig+ Ports
	BCM56509 A1	
	BCM56509 B0	
	BCM56509 B1	
	BCM56509 B2	
BCM56510	BCM56510 A0	24-Port Gigabit Ethernet Multilayer Switch
	BCM56511 A0	Four-Port 10-GbE/HiGig+ Multilayer Switch
	BCM56512 A0	24-Port GbE Multilayer Switch With Two 10-GbE/HiGig+ Ports
	BCM56513 A0	24-Port GbE Multilayer Switch With Three 10-GbE/HiGig+ Ports

Table 8: Switch Devices

Family	Devices	Description
	BCM56514 A0	24-Port GbE Multilayer Switch With Four 10-GbE/HiGig+ Ports
BCM56520	BCM56520 A0	24-Port GbE Multilayer Switch
	BCM56520 B0	
	BCM56522 A0	24-Port GbE Multilayer Switch with Two 10-GbE/HiGig2 Uplink Ports
	BCM56522 B0	
	BCM56524 A0	24-Port GbE Multilayer Switch with Four 10-GbE/HiGig2 Uplink Ports
	BCM56524 B0	
	BCM56526 A0	28-Port GbE Multilayer Switch with Six 10-GbE/HiGig2 Uplink Ports
	BCM56526 B0	
BCM56530	BCM56534 B0	24-Port GbE Multilayer Switch with Four 10-GbE/HiGig2 Uplink Ports
	BCM56538 B0	48-Port GbE Multilayer Switch with Four 10-GbE/HiGig2 Uplink Ports
BCM56580	BCM56580 A0	16 x 2.5 GbE + 4 x 10 GbE Ethernet Multilayer Switch
BCM56600	BCM56600 A0	12 x GbE High-Feature Ethernet Multilayer Switch
	BCM56600 B0	
	BCM56600 C0	
	BCM56601 A0	12 x GbE High-Feature Ethernet Multilayer Switch With HiGig+ Uplink
	BCM56601 B0	
	BCM56601 C0	
	BCM56602 A0	10-GbE High-Feature Ethernet Multilayer Switch With HiGig+ Uplink
	BCM56602 B0	
	BCM56602 C0	
	BCM56603 A0	HG+ High-Feature Ethernet Multilayer Proxy
	BCM56603 B0	
	BCM56603 C0	
	BCM56605 A0	12 x GbE High-Feature Ethernet Multilayer Switch
	BCM56605 B0	
	BCM56605 C0	
	BCM56606 A0	12 x GbE High-Feature Ethernet Multilayer Switch With HiGig+ Uplink
	BCM56606 B0	
	BCM56606 C0	
	BCM56607 A0	10-GbE High-Feature Ethernet Multilayer Switch With HiGig+ Uplink
	BCM56607 B0	
	BCM56607 C0	
	BCM56608 A0	HG+ High-Feature Ethernet Multilayer Proxy
	BCM56608 B0	
	BCM56608 C0	
BCM56620	BCM56620 A0	
	BCM56620 A1	
	BCM56620 B0	
	BCM56620 B1	
	BCM56624 A0	49 port 1-GbE Multilayer Ethernet Switch with 4 x 10-GbE/HiGig2 Uplink ports and External Table Expansion

Table 8: Switch Devices

Family	Devices	Description
	BCM56624 A1	
	BCM56624 B0	
	BCM56624 B1	
	BCM56624 B2	
	BCM56626 A0	25 port 1-GbE Multilayer Ethernet Switch with 6 x 10-GbE/HiGig2 Uplink ports and External Table Expansion
	BCM56626 A1	
	BCM56626 B0	
	BCM56626 B1	
	BCM56626 B2	
	BCM56628 A0	8 port 10-GbE/HiGig2 Multilayer Ethernet Switch with External Table Expansion
	BCM56628 A1	
	BCM56628 B0	
	BCM56628 B1	
	BCM56628 B2	
	BCM56629 B0	25 port 1-GbE Multilayer Ethernet Switch with 8 x 10-GbE/HiGig2 Uplink ports and External Table Expansion
	BCM56629 B1	
BCM56630	BCM56630 A0	24-Port GbE Multilayer Switch with Four 10-GbE/HiGig2 Uplink Ports
	BCM56630 B0	
	BCM56634 A0	48-Port GbE Multilayer Switch with Four 10-GbE/HiGig2 Uplink Ports
	BCM56634 B0	
	BCM56636 A0	24-Port GbE + 2-Port 10-GbE Multilayer Switch with Four 10-GbE/HiGig2 Uplink Ports
	BCM56636 B0	
	BCM56638 A0	4-Port 10-GbE Multilayer Switch with Four 10-GbE/HiGig2 Uplink Ports
	BCM56638 B0	
	BCM56639 A0	24-Port GbE + 4-Port 10-GbE Multilayer Switch with Four 10-GbE/HiGig2 Uplink Ports
	BCM56639 B0	
BCM56680	BCM56680 A0	25 port 1-GbE/2.5GbE Multilayer Ethernet Switch with 4 x 10-GbE/HiGig2 Uplink ports
	BCM56680 A1	
	BCM56680 B0	
	BCM56680 B1	
	BCM56684 A0	24 port 1-GbE/2.5GbE Multilayer Ethernet Switch with 4 x 10-GbE/HiGig2 Uplink ports
	BCM56684 A1	
	BCM56684 B0	
	BCM56684 B1	
BCM56685	BCM56685 A0	24-Port GbE Multilayer Switch with Four 10-GbE/HiGig2 Uplink Ports
	BCM56685 B0	
	BCM56689 A0	24-Port GbE Multilayer Switch with Four 10-GbE/HiGig2 Uplink Ports
	BCM56689 B0	

Table 8: Switch Devices

Family	Devices	Description
BCM56700	BCM56700 A0	16-Port, 192-Gbps Lossless Switch Fabric
	BCM56701 A0	12-Port, 144-Gbps Lossless Switch Fabric
BCM56720	BCM56720 A0	16 Port, 16-Gbps HiGig2 Switch Fabric
	BCM56721 A0	12 Port, 16-Gbps HiGig2 Switch Fabric
BCM56725	BCM56725 A0	8 Port, 20-Gbps + 4 Port, 16-Gbps HiGig2 Switch Fabric
BCM56740	BCM56743 A0	480 Gbps Switch fabric
	BCM56743 A1	
	BCM56743 A2	
	BCM56743 B0	
	BCM56745 A0	640 Gbps Switch fabric
	BCM56745 A1	
	BCM56745 A2	
	BCM56745 B0	
	BCM56744 A0	480 Gbps Switch fabric
	BCM56746 A0	640 Gbps Switch fabric
BCM56800	BCM56800 A0	20-Port 10-Gigabit Ethernet Multilayer Switch
	BCM56801 A0	10-Port 10-Gigabit Ethernet and 8-Port HiGig2/10GbE Multilayer Switch
	BCM56802 A0	16-Port 10-GbE/HiGig2 Multilayer Switch
	BCM56803 A0	12 Port 10GE/HiGig2 Multilayer Switch
BCM56820	BCM56820 A0	24 x 10-GbE + 4 x 1-GbE Multilayer Ethernet Switch
	BCM56820 B0	
	BCM56821 A0	12 x 10-GbE + 8 x HiGig2 + 4 x 1-GbE Multilayer Ethernet Switch
	BCM56821 B0	
	BCM56822 A0	12 x 10-GbE + 4 x 20-Gbps HiGig2 + 4 x 1-GbE Multilayer Ethernet Switch
	BCM56822 B0	
	BCM56823 A0	8 x 10-GbE + 4 x 20-Gbps HiGig2 + 4 x 1-GbE Multilayer Ethernet Switch
	BCM56823 B0	
	BCM56825 B0	16 x 10-GbE + 8 x 20-Gbps HiGig2 + 1 x 1-GbE Multilayer Ethernet Switch
	BCM56841 A0	320 Gbps Ethernet Multilayer Switch
BCM56840	BCM56841 A1	
	BCM56841 A2	
	BCM56841 A3	
	BCM56841 B0	
	BCM56843 A0	480 Gbps Ethernet Multilayer Switch
	BCM56843 A1	
	BCM56843 A2	
	BCM56843 A3	
	BCM56843 B0	
	BCM56845 A0	640 Gbps Ethernet Multilayer Switch
	BCM56845 A1	
	BCM56845 A2	
	BCM56845 A3	

Table 8: Switch Devices

Family	Devices	Description
	BCM56845 B0	
BCM56840_PLUS	BCM56842 A0	320 Gbps Ethernet Multilayer Switch
	BCM56844 A0	480 Gbps Ethernet Multilayer Switch
	BCM56846 A0	640 Gbps Ethernet Multilayer Switch
BCM88020	BCM88020 A0	XGS Core (XCore/SBX) Fully Programmable Carrier Packet Processor with 24 GbE Ports, 2 10GbE Ports and 2 SPI Interfaces
	BCM88020 A1	
	BCM88020 A2	
BCM88025	BCM88025 A0	XGS Core (XCore/SBX) Fully Programmable Carrier Packet Processor with 24 GbE Ports, 2 10GbE Ports and 2 SPI Interfaces
BCM88130	BCM88130 A0	XGS Core (XCore/SBX) 630 Gbps Bandwidth Manager and Switching Engine
	BCM88130 A1	
BME-3200	BME-3200 A0	XGS Core (XCore/SBX) Fabric Bandwidth Manager with 32 SCI control ports and up to 40 SFI data ports
	BME-3200 B0	
QE-2000	QE-2000 A1	XGS Core (XCore/SBX) Fabric Queueing Engine with 49 SPI 4.2 subports
	QE-2000 A2	
	QE-2000 A3	
	QE-2000 A4	
BCM88230	BCM88230 A0	XGS Core (XCore/SBX) Fabric Queueing Engine with Integrated Traffic Management with 4 HiGig2 ports, 50Gbps
	BCM88230 B0	
	BCM88235 A0	XGS Core (XCore/SBX) Fabric Queueing Engine with Integrated Traffic Management with 4 HiGig2 ports, 80Gbps
	BCM88235 B0	
	BCM88231 A0	XGS Core (XCore/SBX) Traffic Manager with 4 HiGig2 ports, 50Gbps
	BCM88231 B0	
	BCM88236 A0	XGS Core (XCore/SBX) Traffic Manager with 4 HiGig2 ports, 80Gbps
	BCM88236 B0	
BCM56930	BCM56931 A0	XGS pass-through and standalone Traffic Manager, 4 HiGig2 ports, 50Gbps
	BCM56931 B0	
	BCM56936 A0	XGS pass-through and standalone Traffic Manager, 4 HiGig2 ports, 80Gbps
	BCM56936 B0	

Warm boot Supported devices

Note: There is no warm boot support for External table expansion in BCM56620 and BCM56630 device family.

Table 9: Switch Devices that support Warm boot

Family	Devices	Description
BCM5675	BCM5675 A0	8-Port, 192-Gbps Switch Fabric
	BCM5675 A1	
	BCM5676 A0	4-Port, 96-Gbps Switch Fabric
	BCM5676 A1	



Table 9: Switch Devices that support Warm boot

Family	Devices	Description
BCM56020	BCM56024 A0	24-Port Integrated Multilayer Switch and CPU
	BCM56024 B0	
	BCM56025 A0	24-Port Integrated L2 Switch and CPU
	BCM56025 B0	
	BCM56026 A0	24-Port Integrated L2 Switch and CPU
	BCM56026 B0	
BCM56130	BCM56132 A0	24-Port Fast Ethernet Multilayer Switch with Two 10-GbE/HiGig2 and Two 1G/2.5Gb Uplink Ports
	BCM56132 B0	
	BCM56134 A0	24-Port Fast Ethernet Multilayer Switch with four 1G/2.5Gb Uplink Ports
	BCM56134 B0	
BCM56220	BCM56224 A0	24 GbE + 4 x 1 Gb/2.5 Gb, L3/L2+
	BCM56224 B0	24 GbE + 4 x 1 Gb/2.5 Gb, L3/L2+
	BCM56225 A0	24 GbE + 4 x 1 Gb/2.5 Gb, L2+
	BCM56225 B0	24 GbE + 4 x 1 Gb/2.5 Gb, L2+
	BCM56226 A0	16 GbE + 4 x 1 Gb/2.5 Gb, L3/L2+
	BCM56226 B0	16 GbE + 4 x 1 Gb/2.5 Gb, L3/L2+
	BCM56227 A0	16 GbE + 4 x 1 Gb/2.5 Gb, L2+
	BCM56227 B0	16 GbE + 4 x 1 Gb/2.5 Gb, L2+
	BCM56228 A0	8 GbE + 4 x 1 Gb/2.5 Gb, L3/L2+
	BCM56228 B0	8 GbE + 4 x 1 Gb/2.5 Gb, L3/L2+
	BCM56229 A0	8 GbE + 4 x 1 Gb/2.5 Gb, L2+
	BCM56229 B0	8 GbE + 4 x 1 Gb/2.5 Gb, L2+
BCM56330	BCM56331 A0	24-Port GbE Multilayer Switch with Four 2.5GbE Uplink Ports
	BCM56331 B0	
	BCM56333 A0	16-Port GbE Multilayer Switch
	BCM56333 B0	
	BCM56334 A0	24-Port GbE Multilayer Switch with Four 10-GbE/HiGig2 Uplink Ports
	BCM56334 B0	
	BCM56338 A0	8-Port GbE Multilayer Switch with two 10-GbE/HiGig2 Uplink Ports
	BCM56338 B0	
BCM56500	BCM56500 A0	24-Port Gigabit Ethernet Multilayer Switch
	BCM56500 A1	
	BCM56500 B0	
	BCM56500 B1	
	BCM56500 B2	
	BCM56501 A0	Four 10-Gigabit Ethernet/HiGig+ Ports
	BCM56501 A1	
	BCM56501 B0	
	BCM56501 B1	
	BCM56501 B2	
	BCM56502 A0	24-Port GbE Multilayer Switch with Two 10-GbE/HiGig+ Ports

Table 9: Switch Devices that support Warm boot

Family	Devices	Description
	BCM56502 A1	
	BCM56502 B0	
	BCM56502 B1	
	BCM56502 B2	
	BCM56503 A0	24-Port GbE Multilayer Switch with Three 10-GbE/HiGig+ Ports
	BCM56503 A1	
	BCM56503 B0	
	BCM56503 B1	
	BCM56503 B2	
	BCM56504 A0	24-Port GbE Multilayer Switch with Four 10-GbE/HiGig+ Ports
	BCM56504 A1	
	BCM56504 B0	
	BCM56504 B1	
	BCM56504 B2	
	BCM56505 A0	24-Port GbE Layer 2 Switch
	BCM56505 A1	
	BCM56505 B0	
	BCM56505 B1	
	BCM56505 B2	
	BCM56506 A0	Four 10-Gigabit Ethernet/HiGig+ Ports
	BCM56506 A1	
	BCM56506 B0	
	BCM56506 B1	
	BCM56506 B2	
	BCM56507 A0	24-Port GbE Layer 2 Switch with Two 10-GbE/HiGig+ Ports
	BCM56507 A1	
	BCM56507 B0	
	BCM56507 B1	
	BCM56507 B2	
	BCM56508 A0	24-Port GbE Layer 2 Switch with Three 10-GbE/HiGig+ Ports
	BCM56508 A1	
	BCM56508 B0	
	BCM56508 B1	
	BCM56508 B2	
	BCM56509 A0	24-Port GbE Layer 2 Switch with Four 10-GbE/HiGig+ Ports
	BCM56509 A1	
	BCM56509 B0	
	BCM56509 B1	
	BCM56509 B2	
BCM56510	BCM56510 A0	24-Port Gigabit Ethernet Multilayer Switch
	BCM56511 A0	Four-Port 10-GbE/HiGig+ Multilayer Switch



Table 9: Switch Devices that support Warm boot

Family	Devices	Description
	BCM56512 A0	24-Port GbE Multilayer Switch With Two 10-GbE/HiGig+ Ports
	BCM56513 A0	24-Port GbE Multilayer Switch With Three 10-GbE/HiGig+ Ports
	BCM56514 A0	24-Port GbE Multilayer Switch With Four 10-GbE/HiGig+ Ports
BCM56520	BCM56520 A0	24-Port GbE Multilayer Switch
	BCM56520 B0	
	BCM56522 A0	24-Port GbE Multilayer Switch with Two 10-GbE/HiGig2 Uplink Ports
	BCM56522 B0	
	BCM56524 A0	24-Port GbE Multilayer Switch with Four 10-GbE/HiGig2 Uplink Ports
	BCM56524 B0	
	BCM56526 A0	28-Port GbE Multilayer Switch with Six 10-GbE/HiGig2 Uplink Ports
	BCM56526 B0	
BCM56530	BCM56534 B0	24-Port GbE Multilayer Switch with Four 10-GbE/HiGig2 Uplink Ports
	BCM56538 B0	48-Port GbE Multilayer Switch with Four 10-GbE/HiGig2 Uplink Ports
BCM56620	BCM56620 A0	
	BCM56620 A1	
	BCM56620 B0	
	BCM56620 B1	
	BCM56624 A0	49 port 1-GbE Multilayer Ethernet Switch with 4 x 10-GbE/HiGig2 Uplink ports and External Table Expansion
	BCM56624 A1	
	BCM56624 B0	
	BCM56624 B1	
	BCM56624 B2	
	BCM56626 A0	25 port 1-GbE Multilayer Ethernet Switch with 6 x 10-GbE/HiGig2 Uplink ports and External Table Expansion
	BCM56626 A1	
	BCM56626 B0	
	BCM56626 B1	
	BCM56626 B2	
	BCM56628 A0	8 port 10-GbE/HiGig2 Multilayer Ethernet Switch with External Table Expansion
	BCM56628 A1	
	BCM56628 B0	
	BCM56628 B1	
	BCM56628 B2	
	BCM56629 B0	25 port 1-GbE Multilayer Ethernet Switch with 8 x 10-GbE/HiGig2 Uplink ports and External Table Expansion
	BCM56629 B1	
BCM56630	BCM56630 A0	24-Port GbE Multilayer Switch with Four 10-GbE/HiGig2 Uplink Ports
	BCM56630 B0	
	BCM56634 A0	48-Port GbE Multilayer Switch with Four 10-GbE/HiGig2 Uplink Ports
	BCM56634 B0	
	BCM56636 A0	24-Port GbE + 2-Port 10-GbE Multilayer Switch with Four 10-GbE/HiGig2 Uplink Ports
	BCM56636 B0	

Table 9: Switch Devices that support Warm boot

Family	Devices	Description
	BCM56638 A0	4-Port 10-GbE Multilayer Switch with Four 10-GbE/HiGig2 Uplink Ports
	BCM56638 B0	
	BCM56639 A0	24-Port GbE + 4-Port 10-GbE Multilayer Switch with Four 10-GbE/HiGig2 Uplink Ports
	BCM56639 B0	
BCM56680	BCM56680 A0	25 port 1-GbE/2.5GbE Multilayer Ethernet Switch with 4 x 10-GbE/HiGig2 Uplink ports
	BCM56680 A1	
	BCM56680 B0	
	BCM56680 B1	
	BCM56684 A0	24 port 1-GbE/2.5GbE Multilayer Ethernet Switch with 4 x 10-GbE/HiGig2 Uplink ports
	BCM56684 A1	
	BCM56684 B0	
	BCM56684 B1	
BCM56685	BCM56685 A0	24-Port GbE Multilayer Switch with Four 10-GbE/HiGig2 Uplink Ports
	BCM56685 B0	
	BCM56689 A0	24-Port GbE Multilayer Switch with Four 10-GbE/HiGig2 Uplink Ports
	BCM56689 B0	
BCM56700	BCM56700 A0	16-Port, 192-Gbps Lossless Switch Fabric
	BCM56701 A0	12-Port, 144-Gbps Lossless Switch Fabric
BCM56720	BCM56720 A0	16 Port, 16-Gbps HiGig2 Switch Fabric
	BCM56721 A0	12 Port, 16-Gbps HiGig2 Switch Fabric
BCM56725	BCM56725 A0	8 Port, 20-Gbps + 4 Port, 16-Gbps HiGig2 Switch Fabric
BCM56800	BCM56800 A0	20-Port 10-Gigabit Ethernet Multilayer Switch
	BCM56801 A0	10-Port 10-Gigabit Ethernet and 8-Port HiGig2/10GbE Multilayer Switch
	BCM56802 A0	16-Port 10-GbE/HiGig2 Multilayer Switch
	BCM56803 A0	12 Port 10GE/HiGig2 Multilayer Switch
BCM56820	BCM56820 A0	24 x 10-GbE + 4 x 1-GbE Multilayer Ethernet Switch
	BCM56820 B0	
	BCM56821 A0	12 x 10-GbE + 8 x HiGig2 + 4 x 1-GbE Multilayer Ethernet Switch
	BCM56821 B0	
	BCM56822 A0	12 x 10-GbE + 4 x 20-Gbps HiGig2 + 4 x 1-GbE Multilayer Ethernet Switch
	BCM56822 B0	
	BCM56823 A0	8 x 10-GbE + 4 x 20-Gbps HiGig2 + 4 x 1-GbE Multilayer Ethernet Switch
	BCM56823 B0	
	BCM56825 B0	16 x 10-GbE + 8 x 20-Gbps HiGig2 + 1 x 1-GbE Multilayer Ethernet Switch

Table 10: Switch Device Codenames

Product Family	Architecture	Codename
BCM5650	StrataXGS	-
BCM5665	StrataXGS	-
BCM5670	StrataXGS	-
BCM5673	StrataXGS	-
BCM5674	StrataXGS II	-
BCM5675	StrataXGS II	-
BCM5690	StrataXGS	-
BCM5695	StrataXGS II	-
BCM53310	StrataXGS III	Hawkeye
BCM53710	StrataXGS III	Raptor
BCM53720	StrataXGS III	Raven
BCM56010	StrataXGS III	Raptor
BCM56020	StrataXGS III	Tropicana
BCM56100	StrataXGS III	Felix
BCM56110	StrataXGS III	Felix+
BCM56140	StrataXGS IV	Hurricane
BCM56210	StrataXGS III	Raptor
BCM56220	StrataXGS III	Raven
BCM56300	StrataXGS III	Helix
BCM56310	StrataXGS III	Helix+
BCM56320	StrataXGS IV	Helix3
BCM56330	StrataXGS IV	Enduro
BCM56130	StrataXGS IV	Stardust
BCM56500	StrataXGS III	Firebolt
BCM56510	StrataXGS III	Firebolt2
BCM56520	StrataXGS IV	Apollo
BCM56530	StrataXGS IV	Firebolt3
BCM56580	StrataXGS III	Goldwing
BCM56600	StrataXGS III	Easyrider
BCM56620	StrataXGS IV	Triumph
BCM56629	StrataXGS IV	Triumph
BCM56630	StrataXGS IV	Triumph2
BCM56680	StrataXGS IV	Valkyrie
BCM56685	StrataXGS IV	Valkyrie2
BCM56700	StrataXGS III	Humv
BCM56720	StrataXGS IV	HUMV+
BCM56725	StrataXGS IV	Conqueror
BCM56740	StrataXGS IV	Titan
BCM56744	StrataXGS IV	Titan+
BCM56800	StrataXGS IV	Bradley
BCM56820	StrataXGS IV	Scorpion
BCM56825	StrataXGS IV	Sco320G
BCM56840	StrataXGS IV	Trident
BCM56840_PLUS	StrataXGS IV	Trident+
BCM88020	XGS Core	Caladan FE-2000
BCM88025	XGS Core	Caladan2
BCM88130	XGS Core	Polaris
BCM88230	XGS Core	Sirius
BCM88235	XGS Core	Sirius+
BCM88231	XGS Core	Sirius TM

Table 10: Switch Device Codenames

Product Family	Architecture	Codename
BCM88236	XGS Core	Sirius+ TM
BCM56931	XGS Core	Sportster
BCM56936	XGS Core	Sportster+
BCM53101	ROBO	Lotus
BCM53115	ROBO	Vulcan
BCM53118	ROBO	Blackbird
BCM53125	ROBO	Starfighter
BCM53128	ROBO	Blackbird2
BCM53242	ROBO	Harrier
BCM53280	ROBO	Thunderbolt

PHYS

Table 11: PHYs

Device	Driver Family	Description
BCM5218	522x	10/100Base-TX/FX Octal-PHY(tm) Transceiver
BCM5220	522x	10/100BASE-TX/FX Mini-F(tm) Transceiver
BCM5221	522x	10/100BASE-TX/FX Mini-F(tm) Transceiver
BCM5226	522x	10/100 BASE- TX/FX Hex-PHY(tm) Transceiver
BCM5228	522x	10/100BASE-TX/FX Octal-F(tm) Transceiver
BCM5238	522x	10/100BASE-TX OCTAL-f(tm) Transceiver
BCM5248	522x	10/100BASE-TX Octal-F(tm) Transceiver
BCM5401	5401	10/100/1000BASE-T Gigabit Copper Transceiver
BCM5402	5402	10/100/1000BASE-T Gigabit Copper Transceiver
BCM5404	5404	Quad-Port 10/100/1000BASE-T Gigabit Copper Transceiver
BCM5424	5424	Quad 10/100/1000BASE-T Gigabit Ethernet Transceiver
BCM5434	5424	Quad 10/100/1000BASE-T Gigabit Ethernet Transceiver
BCM5411	5411	10/100/1000BASE-T Gigabit Copper Transceiver
BCM5421	5421S	10/100/1000BASE-T Gigabit Copper Transceiver
BCM5421S	5421S	10/100/1000BASE-T Gigabit Copper Transceiver with SerDes
BCM5461	5464	10/100/1000BASE-T Gigabit Ethernet Transceiver
BCM5464	5464	Quad-Port 10/100/1000BASE-T Gigabit Copper Transceiver
BCM5464R	5464	Quad-Port 10/100/1000BASE-T Gigabit Copper Transceiver
BCM5464S	5464	Quad-Port Gigabit Copper Transceiver with Copper/Fiber Media Interface
BCM5464SR	5464	Quad-Port Gigabit Copper Transceiver with Copper/Fiber Media Interface
BCM5466	5464	Quad-Port 10/100/1000BASE-T Gigabit Copper Transceiver
BCM5466R	5464	Quad-Port 10/100/1000BASE-T Gigabit Copper Transceiver
BCM5466S	5464	Quad-Port Gigabit Copper Transceiver with Copper/Fiber Media Interface
BCM5466SR	5464	Quad-Port Gigabit Copper Transceiver with Copper/Fiber Media Interface
BCM5482	5482	Dual-Port 10/100/1000BASE-T Gigabit Ethernet Transceiver
BCM5488	5464	Octal 1000/100/10BASE-T Gigabit Ethernet Transceiver
BCM54540_A0	54580	Quad 1000/100/10BASE-T Gigabit Ethernet Transceiver (Needs additional software component)
BCM54580_A0	54580	Octal 1000/100/10BASE-T Gigabit Ethernet Transceiver (Needs additional software component)
BCM54584_A0	54580	Octal 1000/100/10BASE-T Gigabit Ethernet Transceiver (Needs additional software component)
BCM54616_A0	54616	Single-Chip 10/100/1000BASE-T Gigabit Ethernet Transceiver
BCM54640	54640	Quad-Port Gigabit Copper Transceiver with Copper/Fiber Media Interface
BCM54640E_A1	54640	Quad-Port Gigabit Copper Transceiver with Copper/Fiber Media Interface
BCM54680_A0	54680	Octal-Port 10/100/1000BASE-T Gigabit Ethernet Transceiver
BCM54680E_A1	54680	Octal-Port 10/100/1000BASE-T Gigabit Ethernet Transceiver
BCM54680E_B0	54680	Octal-Port 10/100/1000BASE-T Gigabit Ethernet Transceiver
BCM54682E_A1	54682	Octal-Port 10/100/1000BASE-T Gigabit Ethernet Transceiver with 2 Copper/Fiber Media Interface (Preview)
BCM54684_D0	54684	Octal-Port 10/100/1000BASE-T Gigabit Ethernet Transceiver
BCM54685	54682	Octal QSGMII to 10/100/1000BaseT or Fiber Ethernet Transceiver
BCM54685E_A1	54682	Octal-Port 10/100/1000BASE-T Gigabit Ethernet Transceiver with Copper/Fiber Media Interface
BCM54810_A0	54880	BroadR-Reach Single-Port 10/100/1000BASE-T Gigabit Ethernet Transceiver
BCM54880_A0	54880	Octal-Port 10/100/1000BASE-T Gigabit Ethernet Transceiver with BroadR-Reach support

Table 11: PHYs

Device	Driver Family	Description
BCM54880_B0	54880	Octal-Port 10/100/1000BASE-T Gigabit Ethernet Transceiver with BroadR-Reach support
BCM54880E_A1	54680	Octal-Port 10/100/1000BASE-T Gigabit Ethernet Transceiver
BCM54880E_B0	54680	Octal-Port 10/100/1000BASE-T Gigabit Ethernet Transceiver
BCM54881_B0	54880	Octal 10/100Base/Tx Ethernet BroadReach Transceiver
BCM54980_B2	54980	Octal 1000/100/10BASE-T Gigabit Ethernet Transceiver
BCM54980_C0	54980	Octal 1000/100/10BASE-T Gigabit Ethernet Transceiver
BCM54980_C1	54980	Octal 1000/100/10BASE-T Gigabit Ethernet Transceiver
BCM8040_A2	8040	Eight-Channel Multirate 1-Gbps - 3.2-Gbps Retimer/Switch
BCM8073_A0	8072	Dual-Channel Serial 10-GbE BASE-KR to XAUI Transceiver. Firmware version d502.
BCM8074_A0	8072	Quad-Channel Serial 10-GbE BASE-KR to XAUI Transceiver. Firmware version 010C.
BCM8704	8703	Serial 10-Gigabit Ethernet/Fibre Channel Transceiver with XAUI Interface
BCM8705	8705	Serial 10-Gigabit Ethernet/Fibre Channel Transceiver with WIS Layer and XAUI Interface
BCM8725	8705	Dual Serial 10-Gigabit Ethernet/Fibre Channel Transceiver with WIS Layer and XAUI Interface
BCM8726_A0	8706	Dual Serial 10-Gigabit Ethernet/Fibre Channel Transceiver with XAUI Interface
BCM8726_B1	8706	Dual Serial 10-Gigabit Ethernet/Fibre Channel Transceiver with XAUI(TM) Interface. Firmware version 0x0127
BCM8727_B0	8706	Dual Serial 10-Gigabit Ethernet/Fibre Channel Transceiver with XAUI Interface. Firmware version 0406.
BCM8727_C0	8706	Dual Serial 10-Gigabit Ethernet/Fibre Channel Transceiver with XAUI Interface. Firmware version 050D.
BCM8728_A0	8706	Dual-Channel 10-GbE SFI-to-XAUI(TM) Transceiver with EDC. Firmware version 0511. (Preview)
BCM8742	8706	Quad-Channel 10-GbE SFI-to-XAUI(TM) Transceiver
BCM8747_A0	8706	Quad-Channel 10-GbE SFI-to-XAUI(TM) Transceiver with EDC. Firmware version 0511.
BCM8750_A0	8750	Dual-Channel 10 GbE SFI-to-XFI PHY with EDC
BCM8752_A0	8750	Dual-Channel 10 GbE SFI-to-XFI PHY with EDC
BCM8754_A0	8750	Quad-Channel 10 GbE SFI-to-XFI PHY with EDC. Firmware version 040B.
BCM8481_B0	8481	10GBASE-T Transceiver (Firmware version B0 02.10)
BCM8481_C0	8481	10GBASE-T Transceiver (Firmware version C0 02.13)
BCM84812_A0	8481	Dual 10GBASE-T Transceiver. Firmware version 2.13
BCM84821_A0	8481	10GBASE-T Transceiver. Firmware version 2.13 (Preview)
BCM84822_A0	8481	Dual 10GBASE-T Transceiver. Firmware version 3.02
BCM84823_A0	8481	Dual 10GBASE-T Transceiver. Firmware version 3.02
BCM84823_B0	8481	Dual 10GBASE-T Transceiver. Firmware version 3.01 (preview)

OPERATING SYSTEMS

The SDK provides the SAL and BDE abstraction implementations necessary for running the SDK on the following operating systems. See the Platform Guide (56XX-PG810-R) for instructions on porting the SDK to another platform.

Table 12: Operating Systems

Operating System
VxWorks 5.5
VxWorks 6.2
VxWorks 6.4
VxWorks 6.5
VxWorks 6.6
Linux 2.4.20 User Mode
Linux 2.4.20 Kernel Resident Mode
Linux 2.6.14 User Mode
Linux 2.6.14 Kernel Resident Mode
Linux 2.6.21 User Mode
Linux 2.6.21 Kernel Resident Mode
Linux 2.6.25 User Mode
Linux 2.6.25 Kernel Resident Mode
Linux 2.6.27 User Mode
Linux 2.6.27 Kernel Resident Mode
POSIX Compliant (SAL ONLY)

CPU SUBSYSTEMS

Table 13: CPU Subsystems

CPU Subsystem	Description
BCM95836	CPCI 32-bit MIPS with BCM5836 Processor
BCM98245	CPCI 32-bit PPC with Motorola 8245 Processor
BCM91125	CPCI 32/64-bit MIPS with BCM1125 SiByte Processor
BCM98548XMC	XMC 32-bit PPC with Freescale 8548 Processor
BCM953003C	XMC 32-bit MIPS with BCM53003 Processor
BCM5621X	Integrated MIPS CPU on BCM5621X Switch Devices
BCM5622X	Integrated MIPS CPU on BCM5622X Switch Devices
BCM5331X	Integrated MIPS CPU on BCM5331X Switch Devices

CPU AND OPERATING SYSTEM COMBINATIONS

The following CPU and Operating System combinations are supported by the SDK (in addition to the above):

Table 14: CPU and Operating System Combinations

CPU Subsystem	Operating System	Description
BCM95836	VxWorks 5.5	BSP Provided
BCM95836	Linux 2.4.20	Supported with MontaVista 3.1 Preview kit
BCM95836	Linux 2.6.14	Supported with Windriver Linux 1.5
BCM95836	Linux 2.6.21	Supported with WindRiver Linux 2.0
BCM98245	VxWorks 5.5	BSP Provided
BCM98245	VxWorks 6.2	BSP Provided
BCM98245	Linux 2.4.20	Supported with MontaVista 3.1 Preview kit
BCM98245	Linux 2.6.14	Supported with WindRiver Linux 1.4/1.5
BCM98245	Linux 2.6.21	Supported with WindRiver Linux 2.0
BCM91125	VxWorks 5.5	BSP Provided
BCM91125	VxWorks 6.2	BSP Provided
BCM91125	VxWorks 6.4	BSP Provided
BCM91125	Linux 2.4.20	Supported with MontaVista 3.1 Preview kit
BCM91125	Linux 2.6.10	Supported with MontaVista 4.0 Professional
BCM91125	Linux 2.6.14	Supported with WindRiver Linux 1.5
BCM91125	Linux 2.6.21	Supported with WindRiver Linux 2.0
BCM5621X	VxWorks 5.5	BSP Provided
BCM5621X	VxWorks 6.4	BSP Provided
BCM5621X	Linux 2.6.14	Supported with WindRiver Linux 1.5 bcm_ntswics
BCM5621X	Linux 2.6.21	Supported with WindRiver Linux 2.0 bcm_ntswics
BCM5331X	VxWorks 5.5	BSP Provided
BCM5331X	VxWorks 6.4	BSP Provided
BCM5331X	Linux 2.6.14	Supported with WindRiver Linux 1.5 bcm_ntswics
BCM5331X	Linux 2.6.21	Supported with WindRiver Linux 2.0 bcm_ntswics
BCM98548XMC	VxWorks 6.4	BSP Provided
BCM98548XMC	VxWorks 6.5	BSP Provided
BCM98548XMC	Linux 2.6.21	Supported with WindRiver Linux 2.0
BCM98548XMC	Linux 2.6.27	Supported with WindRiver Linux 3.0. Note: Additional patches for issues WIND00172598 and WIND00161649 are required. Contact your WindRiver support personnel for these patches and other WindRiver information.
BCM5300X	VxWorks 5.5	BSP Provided
BCM5300X	VxWorks 6.6	BSP Provided
BCM5300X	Linux 2.6.21	Supported with WindRiver Linux 2.0
BCM5300X	Linux 2.6.27	Supported with WindRiver Linux 3.0

REFERENCE DESIGNS

The following Switch Reference Designs are available from Broadcom and are supported in the SDK.

Table 15: Reference Designs

Platform	Description
BCM953001R24M	24-port FE + 2-port GE 53242 SW Ref. Design with BCM53001 Processor
BCM953115R5GM	5-port GE + 1-port serdes 53115 Ref. Design
BCM953125RM	5-port GE 53125 Ref. Design
BCM95324R24GM	24-port FE + 2-port GE 5324 SW Ref. Design
BCM953242R24M	24-port FE + 2-port GE 53242 SW Ref. Design
BCM953262R24M	24-port FE + 4-port GE 53262 SW Ref. Design
BCM953284R	24-port FE + 2-port GE 53284 SW Ref. Design
BCM953286R	24-port FE + 4-port GE 53286 SW Ref. Design
BCM95347R24M	24-port FE + 4 GE 5348 - 5836 CPU Managed Switch Ref. Design
BCM95348R48M	48-port FE + 4 GE 5348 - 5836 CPU Managed Switch Ref. Design
BCM95395R5GM	5-port GE 5395 Switch Ref Design - Managed (BCM5836)
BCM95396R16GM	16-port GE + 1-port FE(SFP) 5396 Switch Ref Design - Managed (BCM5836)
BCM953300	24-port GE 53300 Switch Ref Design
BCM953302	48-port GE 53302 Switch Ref Design
BCM953314K	24-port GE - 53314 System Verification Kit
BCM953314R24GS	24-port GE - 53314 Switch Ref Design
BCM953324K	24-port GE - 53324 System Verification Kit
BCM956018K48T	48-port FE + 2-port GE + 2-port HGL(CAT 7) - 56018 SVK
BCM956024K24T	24-port FE + 4-port HGL(CAT 7) - 56024 SVK
BCM956102R48XS	48-port FE + 4 port GE 56102 SW Ref Design w/2-HiGig/10GE
BCM956112R48XS-02	48-port FE + 4 port GE 56112 SW Ref Design w/2-HiGig/10GE - PPC8245
BCM956132K	24-port FE 56132 SW SVK Design w/ two 10GE/HiGig2 and two 1G/2.5Gb Uplink Ports
BCM956214R26T	26-port GE (2 TX/SX) + 2-port HGL(CAT 7) - 56214 Reference Design
BCM956219K50T	50-port GE + 2-port HGL(CAT 7) - 56218 - PPC8245 SVK
BCM956218K50T	50-port GE + 2-port HGL(CAT 7) - 56218 System Verification Kit
BCM956224K24T	24-port GE + 4-port HGL(CAT 7) - 56224 SVK
BCM956224R24F	24-port GE + 4-port GE SFP - BCM56224 Reference board.
BCM956300R24	24-port GE 56300 Switch Ref Design
BCM956304R24XS	24-port GE (2 TX/SX) 56304 SW Ref Des w/2-HiGig + 2-10GE
BCM956314R24ST	24-port GE + 4 HiGig/2.5GE(CAT 7) 56314 Ref Design
BCM956314R24XST	24-port GE + 4 10GE/HiGig/2.5GE(CX4) - 56314 Ref Design
BCM956334K_02/BCM956334K_03	24xGE + 4x10G/13HG (iPass) with BCM56334 switch
BCM956500R24	24-port GE 56500 Switch Ref Design
BCM956504R24XS	24-port GE (2 TX/SX) 56504 SW Ref Des w/2-HiGig + 2-10GE
BCM956504R48XSP	48-port GE (12 w/POE) 56504 Switch Ref Design 4 - HiGig/10GE
BCM95650K24	24-port FE + 4 port GE Switch Development Kit
BCM95650R24	24-port FE + 4 port GE (TX or SFP) Reference Design
BCM956514R24XST	24-port GE + 4 10GE/HiGig/2.5GE(CX4) - 56514 Ref Design
BCM956514R48XSP	48-port GE (12 w/POE) 56514 Switch Ref Design 4 - HiGig/10GE
BCM956580K16TXS	16-port 2.5G SFP Fibre + 4 HiGig/10GE 56580 SDK
BCM956601K12D	12-port GE + 1-HiGig 56601 DDR SDRAM SDK



Table 15: Reference Designs

Platform	Description
BCM956601K12N	12-port GE + 1-HiGig 56601 Netlogic TCAM SDK
BCM956602KXSN	1-HiGig + 1-10GE 56602 Netlogic TCAM SDK
BCM95665K48	48-port FE + 4 port GE TX/SX + 1HiGig Switch Development Kit
BCM956700K16S	16-port HiGig CX4 56700 SDK
BCM95670K8	8-port 5670 GE Switch Development Kit
BCM95673K2S	2 x 5673 10-GE + HiGig Switch Development Kit
BCM95673R8	8-port 5673 10 GE XFP Switch Reference Design
BCM95673R8CX4	8-port 5673 10 GE CX4 Switch Reference Design
BCM95675K8	8-port 5675 GE Switch Development Kit
BCM95675K8U	8-port 5675 GE Switch Development Kit - PPC8245
BCM956800K20X	20-port 10 GE CX4 56800 SDK
BCM95690K24S	24-port 5690 GE Switch Development Kit w/2HiGig
BCM95690K24	24-port 5690 GE Switch Development Kit
BCM95690P24REF	24-port 5690 GE + 5671 w/2HiGig Ports Reference Design
BCM95690R24	24-port 5690 GE Ports Reference Design
BCM95690R24S	24-port 5690 GE + 5671 w/2HiGig Ports Reference Design
BCM95690R48S	48-port 5690 GE + 5670 w/4HiGig Ports Reference Design
BCM95690R48X2S	48-port 5690 GE + 5670 w/2-HiGig Ports + 2-10-GE Ports Ref. Design
BCM95691K12	12-port 5691 GE Switch Development Kit
BCM95695K24	24-port 5695 GE Switch Development Kit
BCM95695R24S	24-port 5695 GE + 5671 w/2HiGig Ports Reference Design
BCM95695R24X2S	24-port 5695 GE + 2-port 5675 HiGig + 2-port 5674 10GE CX4
BCM95695R48X2S	48-port 5695 GE + 5670 w/2-HiGig Ports + 2-10-GE Ports Ref. Design
BCM91125CFM16	BCM956010CS Dual 5675 Fabric + 1125H CPU
BCM91125CFM8	BCM956006CS Single 5675 Fabric + 1125H CPU
BCM956501LM	12-port 10GE CX4 56501/5675 Line Module
BCM956504LM	48-port GE 56504 Line Module
BCM956700CFM16	16-HiGig 56700 Fabric + BCM1125 CPU Module
BCM95674LM	6-port 10GE CX4 5674/5675 Line Module
BCM956802LM	12-port 10GE CX4 56802 Line Module
BCM95695LM	48-port GE 5695/5675 Line Module
BCM956802CFM8	BCM956006CS 56802 Fabric + 8 10GE + 1125H CPU
BCM956680K24TS_02/BCM956680K24TS_05	25 port 1-GbE/2.5GbE Multilayer Ethernet Switch with 4 x 10-GbE/HiGig2 Uplink ports SVK
BCM956624K49TS_02/ BCM956624K49TS_05	49 port 1-GbE Multilayer Ethernet Switch with 4 x 10-GbE/HiGig2 Uplink ports and External Table Expansion SVK
BCM956624R49S_02	49 port 1-GbE Multilayer Ethernet Switch with 4 x 10-GbE SFP+ Uplink ports BCM56624 reference board
BCM956634K49S_02	49xGE + 4 x XAUI/HG (iPass) with BCM56634 switch
BCM956636K25S_02	24x1GE + 2x12HG + 4x16HG (iPass) with BCM56636 switch
BCM956638K8XS_02	4x12HG + 4x16HG (iPass) with BCM56638 switch
BCM956639K25S_02	24x1GE + 8x10G (iPass) with BCM56639 switch
BCM956526K29S_02	28x1GE + 6x12HG (iPass) with BCM56526 switch
BCM956685K24TS_02	24 port 1-GbE/2.5GbE Multilayer Ethernet Switch with 4 x 10-GbE/HiGig2 Uplink ports SVK
BCM956820K24XG_02/BCM956820K24XG_05	24 x 10-GbE + 4 x 1-GbE Multilayer Ethernet Switch SVK
BCM956820R24XG_02	24 x 10-GbE + 4 x 1-GbE BCM56820 Multilayer Ethernet Switch Reference board with SFP+ interface.
BCM956825K24XG_02	16 x 10-GbE + 8 x 20-Gbps HG2 + 1 x 1-GbE Multilayer Ethernet Switch Reference board.

Table 15: Reference Designs

Platform	Description
BCM956720K16S_02/BCM956720K16S_05	16-Port, 256-Gbps Switch Fabric + 4 x 1-GbE SVK
BCM956725K16S_02/BCM956725K16S_05	8-Port (20Gbps) + 4-port (16Gbps) Switch Fabric + 4 x 1-GbE SVK
BCM988020QSK24X2	Carrier Ethernet 24-port GE + 2-port 10GbE Reference Design (also known as Metrocore)
BCM988130FK24X2	Carrier Ethernet 24-port GE + 2-port 10GbE Reference Design (also known as Polaris Line card)
BCM988025QSK24X2	Carrier Ethernet 24-port GE + 2-port 10GbE Reference Design (also known as C2 SVK)
BCM988130K_02	BCM88130 SVK with 96 fabric serdes connections (24 iPass ports)
BCM988235K_02	BCM88235 SVK with 4 HiGig2 ports (4 iPass), 2 flow control ports (2 iPass)
BCM953724R26WS	26-Port, 26-Gbps Integrated Multilayer Switch and CPU
BCM956628K8TS	8 port 10-GbE/HiGig2 Multilayer Ethernet Switch with External Table Expansion
BCM956620K24TS	24 port 1-GbE Multilayer Ethernet Switch with 4 x 10-GbE/HiGig2 Uplink ports
BCM956684K24TS	24 port 1-GbE/2.5GbE Multilayer Ethernet Switch with 4 x 10-GbE/HiGig2 Uplink ports
BCM956725K16S	8 Port, 20-Gbps + 4 Port, 16-Gbps HiGig2 Switch Fabric
BCM956626K8TS	25 port 1-GbE Multilayer Ethernet Switch with 6 x 10-GbE/HiGig2 Uplink ports and External Table Expansion
BCM956629K24S	25 port 1-GbE Multilayer Ethernet Switch with 8 x 10-GbE/HiGig2 Uplink ports and External Table Expansion
BCM956224R50T	50-port GE + 2-port HGL(CAT 7) - 2 X BCM56224
BCM956024R50T	48-port FE + 2-port GE + 2-port HGL(CAT 7) - 2 X BCM56024
BCM956524K24S_02	24xGE + 4 x XAUI/HG (iPass) with BCM56524 switch
BCM956521K_02	24-Port GbE Multilayer Switch with 10 GbE/HiGig2 Uplink Ports
BCM956740K_02	480/640 Gbps Switch fabric
BCM956743K_02	480/640 Gbps Switch fabric
BCM956840K_02	320/480/640 Gbps Ethernet Multilayer Switch
BCM956845K_02	320/480/640 Gbps Ethernet Multilayer Switch
BCM98727MC	16 port Ipass to SFP+ Media Converter
BCM956534K24TS	24xGE + 4 x XAUI/HG (iPass) with BCM56534 switch
BCM956538K49S	48-Port GbE Multilayer Switch with Four 10-GbE/HiGig2 Uplink Ports SVK

Note: The flash sizes of some old BCM53XX platforms are 4 MBytes only. As the code size of SDK increases, the 4 MB flash is not enough for this release. Replace the flash to 8 MB or above for those reference designs.

Section 10: SDK Externally Licensed Software Components

SDK contains a number of third-party externally licensed software components. This appendix contains information regarding these components, the license for each of these components, and where these components are used in SDK.

Table 16: EXTERNALLY LICENSED SOFTWARE COMPONENTS

Component	Origin	Location in source tree	License terms and conditions
EDITLINE	/afs/athena.mit.edu/contrib/sipb/src/editline	src/sal/appl/editline	See (EDITLINE License terms and conditions) (page 57)
CINT	http://www.gnu.org/software/bison/	src/appl/cint/cint_parser.[ch]	See (CINT parser license terms and conditions) (page 59)

EDITLINE LICENSE TERMS AND CONDITIONS

This package was obtained from the following location, and was modified for purposes of inclusion into the SOC diagnostics shell.

Removed files:

MANIFEST Make.os9 Makefile os9.h sysos9.c testit.c unix.h

Added files:

sysvxworks.c Makefile

Changed functionality:

Merged unix.h into editline.h

M-P and M-N now behave like tcsh.

list_history(count) routine displays history

Commented out completion

Changed rl_complete and rl_list_possib into caller-settable global functions

Don't ring bell on TAB if word is already complete

Index of /afs/athena.mit.edu/contrib/sipb/src/editline

[	]	Name	Last modified	Size	Description

[DIR]		Parent Directory	11-May-99 03:40	-	
[	]	MANIFEST	07-Jul-97 11:20	1k	
[	]	Make.os9	07-Jul-97 11:20	1k	
[	]	Makefile	01-Sep-97 00:34	2k	
[	]	complete.c	07-Jul-97 11:20	4k	
[	]	editline.3	07-Jul-97 11:20	5k	
[	]	editline.c	07-Jul-97 11:20	25k	
[	]	editline.h	07-Jul-97 11:20	2k	
[	]	os9.h	07-Jul-97 11:20	1k	
[	]	sysos9.c	07-Jul-97 11:20	1k	
[	]	sysunix.c	07-Jul-97 11:20	3k	
[	]	testit.c	07-Jul-97 11:20	1k	
[	]	unix.h	07-Jul-97 11:20	1k	

\$Revision: 1.3 \$

This is a line-editing library. It can be linked into almost any program to provide command-line editing and recall.

It is call-compatible with the FSF readline library, but it is a fraction of the size (and offers fewer features). It does not use standard I/O. It is distributed under a "C News-like" copyright.

Configuration is done in the Makefile. Type "make testit" to get

a small slow shell for testing.

This contains some changes since the posting to comp.sources.misc:

- Bugfix for completion on absolute pathnames.
- Better handling of M-n versus showing raw 8bit chars.
- Better signal handling.
- Now supports termios/termio/sgttyb ioctl's.
- Add M-m command to toggle how 8bit data is displayed.

The following changes, made since the last public release, come from J.G. Vons <vons@cesar.crbcal.sinet.slb.com>:

- History-searching no longer redraws the line wrong
- Added ESC-ESC as synonym for ESC-?
- SIGQUIT (normally ^) now sends a signal, not indicating EOF.
- Fixed some typo's and unclear wording in the manpage.
- Fixed completion when all entries shared a common prefix.
- Fixed some meta-char line-redrawing bugs.

Enjoy,

Rich \$alz
<rsalz@osf.org>

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CINT PARSER LICENSE TERMS AND CONDITIONS

The C code for the parser CINT was generated by using GNU Bison parser generator from the file `cint_grammar.y`. CINT is an optional diagnostic tool that can be included in your system by adding CINT to the `FEATURE_LIST` in SDK compilation flags.

Removed files:

None

Added files:

None

Changed functionality:

None

```
/* A Bison parser, made by GNU Bison 2.4.1.  */

/* Skeleton implementation for Bison's Yacc-like parsers in C

   Copyright (C) 1984, 1989, 1990, 2000, 2001, 2002, 2003, 2004, 2005, 2006
   Free Software Foundation, Inc.

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   the Free Software Foundation, either version 3 of the License, or
   (at your option) any later version.

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   along with this program. If not, see <http://www.gnu.org/licenses/>.  */

/* As a special exception, you may create a larger work that contains
   part or all of the Bison parser skeleton and distribute that work
   under terms of your choice, so long as that work isn't itself a
   parser generator using the skeleton or a modified version thereof
   as a parser skeleton. Alternatively, if you modify or redistribute
   the parser skeleton itself, you may (at your option) remove this
   special exception, which will cause the skeleton and the resulting
   Bison output files to be licensed under the GNU General Public
   License without this special exception.

   This special exception was added by the Free Software Foundation in
   version 2.2 of Bison.  */

/* C LALR(1) parser skeleton written by Richard Stallman, by
   simplifying the original so-called "semantic" parser.  */
```