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liujianyan(raisecom.com)

SDK3 CLI Guide

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Realtek Semiconductor Corp.
No. 2, Innovation Road II, Hsinchu Science Park, Hsinchu 300, Taiwan
Tel.: +886-3-578-0211 Fax: +886-3-577-6047
www.realtek.com

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Revision	Release Date	Summary
1.0	2019/02/19	Initial

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1 Port

1.1 Port Command

Table 1-1 Port Basic command

Purpose	CLI Command
	API
Configure port admin state	port set port <port_list> state <admin_state>
	rtk_port_adminEnable_set()
Configure port auto-negotiation mode	port set auto-nego port <port_list> state <admin_state>
	rtk_port_phyAutoNegoEnable_set( )
Configure port auto-negotiation ability	port set auto-nego port <port_list> ability <an_ability>
	rtk_port_phyAutoNegoAbility_set( )
Configure port PHY force mode ability	port set phy-force port <port_list> ability <phy_force_ability>
	rtk_port_phyForceModeAbility_set( )
Configure port PHY force mode flow control	port set phy-force port <port_list> flow-control tx-pause <admin_state> rx-pause <admin_state>
	rtk_port_phyForceModeAbility_set( )
Configure port back pressure ability	port set back-pressure port <port_list> state <admin_state>
	rtk_port_backpressureEnable_set( )
Configure combo-port media mode	port set combo-mode port <port_list> <combo_media_type>
	rtk_port_phyComboPortMedia_set( )
Configure port cross over mode	port set cross-over port <port_list> mode <cross_over_mode>
	rtk_port_phyCrossOverMode_set( )
Configure port EEE mode	eee set port <port_list> state <admin_state>
	rtk_eee_portEnable_set( )
Configure port green enthernet ability	port set green port <port_list> state <admin_state>
	rtk_port_greenEnable_set( )
Configure port link down power saving ability	port set link-down-power-saving port <port_list> state <admin_state>
	rtk_port_linkDownPowerSavingEnable_set( )
Configure copper port down speed mode	port set port <port_list> down-speed <admin_state>
	rtk_port_downSpeedEnable_set( )
Configure fiber port down speed mode	port set port <port_list> fiber down-speed <admin_state>
	rtk_port_fiberDownSpeedEnable_set( )
Configure port jumbo frame size	switch set max-pkt-len port <port_list> <jumbo_speed> length <max_pkt_len>

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2 L2

2.1 L2 Command

Table 2-1 l2 Basic command

Purpose	CLI Command
	API
Add unicast MAC addresss	l2-table add mac-ucast <vid> <mac_addr> <dev_intf> <l2_paras>
	l2-table add mac-ucast <vid> <mac_addr> port <port_id> <l2_parars>
	l2-table add mac-ucast <vid> <mac_addr> trunk <trunk_id> <l2_parars>
	rtk_l2_addr_add( )
Configure unicast MAC parameters	l2-table set mac-ucast <vid> <mac_addr> <dev_intf> <l2_paras>
	l2-table set mac-ucast <vid> <mac_addr> port <port_id> <l2_paras>
	l2-table set mac-ucast <vid> <mac_addr> trunk <trunk_id> <l2_paras>
	rtk_l2_addr_set( )
Del unicast MAC address	l2-table del mac-ucast <vid> <mac_addr>
	rtk_l2_addr_del( )
Add multicast MAC address	l2-table add mac-mcast <vid> <mac_addr> port <port_list>
	l2-table add mac-mcast <vid> <mac_addr> index <pmask_idx>
	rtk_l2_mcastAddr_add( )
Configure multicast MAC parameters	l2-table set mac-mcast <vid> <mac_addr> port <port_list>
	rtk_l2_mcastAddr_set( )
Del multicast MAC address	l2-table del mac-mcast <vid> <mac_addr>
	rtk_l2_mcastAddr_del( )
Flush l2 table entry by interface, port , trunk ID or VID	l2-table set flush flush-entry <dev_intf> <l2_flush_paras>
	l2-table set flush flush-entry port <port_list> <l2_flush_paras>
	l2-table set flush flush-entry trunk <trunk_id> <l2_flush_parars>
	l2-table set flush flush-entry vid <vid> <l2_flush_paras>
	l2-table set flush flush-entry <l2_flush_paras>
	rtk_l2_ucastAddr_flush( )
Replace l2 table entry by interface, port , trunk ID or VID	l2-table set flush replace-entry port <port_list> <l2_replace_intf> <l2_replace_paras>
	l2-table set flush replace-entry trunk <trunk_id> <l2_replace_intf> <l2_replace_paras>
	l2-table set flush replace-entry vid <vid> <l2_replace_intf> <l2_replace_paras>
	l2-table set flush replace-entry <l2_replace_intf> <l2_replace_paras>
	rtk_l2_ucastAddr_flush( )

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Configure l2 table hash algorithm	l2-table set hash-algorithm <l2_block_id> <l2_hash_argo>
	rtk_l2_bucketHashAlgo_set( )
Configure port aging state	l2-table set age aging-out port <port_list> state <admin_state> l2-table set age aging-out trunk <trunk_id> state <admin_state>
	rtk_l2_portAgingEnable_set( ) rtk_l2_trkAgingEnable_set( )
Configure l2 table aging time	l2-table set age aging-time auto <aging_time>
	rtk_l2_agingTime_set( )
Configure suspend Mac entry aging time	l2-table set age aging-time suspend <aging_time>
	rtk_l2_agingTime_set( )
Configure link down flush MAC function	l2-table set link-down-flush state <admin_state>
	rtk_l2_flushLinkDownPortAddrEnable_set( )
Configure forwarding table member	l2-table set fwd-table <pmask_idx> <port_list>
	rtk_l2_mcastFwdPortmask_set( )
Configure l2 table learning full action	l2-table set learning-full action <learn_full_action>
	rtk_l2_learningFullAction_set( )
Configure unicast lookup miss action	l2-table set lookup-miss port <port_list> unicast action <lookup_miss_action>
	rtk_l2_portUcastLookupMissAction_set( )
Configure unicast lookup miss port list	l2-table set lookup-miss unicast port <port_list>
	rtk_l2_lookupMissFloodPortMask_set( )
Configure L2/IPv4/IPv6 multicast lookup miss action	vlan set profile entry <vlan_profile_idx> lookup-miss-type <multicast_type> action <lookup_miss_action>
	rtk_vlan_profile_set( )
Configure L2/IPv4/IPv6 multicast lookup miss port list	vlan set profile entry 0 lookup-miss-type <multicast_type> port <port_list>
	rtk_vlan_profile_set( )
Configure port learning mode	l2-table set src-mac port <port_list> learn-mode <mac_learning_mode>
	rtk_l2_portNewMacOp_set( )

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2.2 MAC Constraint Command

Table 2-2 MAC Constraint command

Purpose	CLI Command
	API
Configure System max	l2-table set limit-learning global <learn_count>

MAC limit learn count	rtk_l2_limitLearningNum_set( )
Configure System exceed limit learn action	l2-table set limit-learning global action <mac_constraint_act>
	rtk_l2_limitLearningAction_set( )
Configure VLAN based entry max MAC limit learn count	l2-table set limit-learning vlan-based < vlan_constraint_entry_id> vid <vid> <learn_count>
	rtk_l2_fidLimitLearningEntry_set( )
Configure VLAN based exceed limit learn action	l2-table set limit-learning vlan-based action drop
	rtk_l2_limitLearningAction_set( )
Configure port max MAC limit learn count	l2-table set limit-learning port <port_list> <learn_count>
	rtk_l2_limitLearningNum_set( )
Configure port exceed limit learn action	l2-table set limit-learning port <port_list> action <mac_constraint_act>
	rtk_l2_limitLearningAction_set( )
Configure port max MAC limit learn count	l2-table set limit-learning trunk <trunk_list> <learn_count>
	rtk_l2_limitLearningNum_set( )
Configure port exceed limit learn action	l2-table set limit-learning trunk <trunk_list> action <mac_constraint_act>
	rtk_l2_limitLearningAction_set( )

2.3 Trunk Command

Table 2-3 Trunk command

Purpose	CLI Command
	API
Configure trunk mode	trunk set mode <trunk_mode>
	rtk_trunk_mode_set( )
Configure trunk member	trunk set member-port trunk-group <trunk_id> <port_list>
	rtk_trunk_port_set( )
Configure stacking trunk member	trunk set member-port stack-trunk-group <stacking_trunk_id> <port_list>
	rtk_trunk_stkTrkPort_set( )
Configure trunk source port mapping	trunk set src-port-mapping devID <dev_id> port <port_id> trk_group <trunk_id>
	rtk_trunk_srcPortMap_set( )
Configure trunk local member	trunk set local-port trunk-group <trunk_id> member <port_list>
	rtk_trunk_localPort_set( )
Configure trunk egress member	trunk set egress-port trunk-group <trunk_id> port <trunk_egress_port_list>
	rtk_trunk_egrPort_set( )
Configure trunk distribute	trunk set distribute-algorithm parameter type <trunk_pkt_type> algorithm-id

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algorithm parameters	<trunk_algo_id> <trunk_distribute_algo_paras>
	rtk_trunk_distributionAlgorithmTypeParam_set( )
Configure trunk bind distribute algorithm	trunk set distribute-algorithm bind trunk-group <trunk_id> type <trunk_pkt_type> algo-id <trunk_algo_id>
	rtk_trunk_stkDistributionAlgorithmTypeBind_set( )
Configure trunk distribute parameter shift value	trunk set distribute-algorithm shift <trunk_distribute_paras> <trunk_shift_value>
	rtk_trunk_distributionAlgorithmShiftGbl_set( )
Configure trunk local first	trunk set local-first state <admin_state>
	rtk_trunk_localFirst_set( )
Configure trunk link fail-over when local first is enable	trunk set link-fail-avoid state <admin_state>
	rtk_trunk_localFirstFailOver_set( )
Configure avoid trunk member congest state when local first is enable	trunk set congst-avoid state <admin_state>
	rtk_trunk_localFirstFailOver_set( )

2.4 STP Command

Table 2-4 STP command

Purpose	CLI Command
	API
Create MSTP instance	stp create <msti_instance>
	rtk_stp_mstpInstance_create( )
Destroy MSTP instance	stp destroy <msti_instance>
	rtk_stp_mstpInstance_destroy( )
Configure port STP state of specific instance	stp set <msti_instance> <port_list> blocking
	rtk_stp_mstpState_set( )
Configure MSTP instance mode	stp set msti_mode <msti_mode>
	rtk_stp_mstpInstanceMode_set( )

2.5 Traffic Isolation Command

Table 2-5 Traffic Isolation key command

Purpose	CLI Command

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	API
Configure Port isolation member	port set isolation src-port <port_list> dst-port <port_list>
	rtk_port_isolation_set( )
Configure Port isolation member in stacking system	port set isolation dev-id <dev_id> src-port <port_list> dst-port <port_list>
	rtk_port_isolationExt_set( )
Configure routed packet restricted by port isolation	port set isolation port-based restrict-route state <admin_state>
	rtk_port_isolationRestrictRoute_set( )
Configure VLAN isolation entry parameters	port set isolation vlan-based entry <vlan_isolation_entry_id> vid <vid_lower> <vid_upper> state <admin_state>
	rtk_port_vlanBasedIsolationEntry_set( )
Configure VLAN isolation entry member	port set isolation vlan-based entry <vlan_isolation_entry_id> trust-port <vlan_isolation_trust_port_list>
	rtk_port_vlanBasedIsolationEntry_set( )
Configure VLAN bypass egress port of VLAN isolation	port set isolation vlan-based egress port <port_list> bypass state <admin_state>
	rtk_port_vlanBasedIsolationEgrBypass_set( )

2.6 RMA Command

Table 2-6 RMA command

Purpose	CLI Command
	API
Configure global RMA action	trap set rma layer2 <rma_tail> action <rma_action>
	rtk_trap_rmaAction_set( )
Configure port RMA action	trap set rma port-rma bpdu port <port_list> action <rma_action> trap set rma port-rma lldp port <port_list> action <rma_action> trap set rma port-rma ptp port <port_list> action <rma_action> trap set rma port-rma eapol port <port_list> action <rma_action>
	rtk_trap_portMgmtFrameAction_set( )
Configure learn behavior of global RMA	trap set rma layer2 <rma_tail> learn <admin_state>
	rtk_trap_rmaLearningEnable_set( )
Configure learn behavior of port RMA protocol packet SA	trap set rma port-rma ptp learn <admin_state> trap set rma port-rma lldp learn <admin_state> trap set rma port-rma eapol learn <admin_state>
	rtk_trap_mgmtFrameLearningEnable_set( )
Configure global RMA	trap set rma flood-portmask <port_list>

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flooding port mask	rtk_trap_rmaFloodPortmask_set( )
Configure port RMA flooding port mask	trap set rma bpdu flood-portmask <port_list> trap set rma eapol flood-portmask <port_list> trap set rma lldp flood-portmask <port_list>
	rtk_trap_bpduFloodPortmask_set( ) rtk_trap_eapolFloodPortmask_set( ) rtk_trap_lldpFloodPortmask_set( )
Configure cancel mirror RMA packet state	trap set rma cancel-mirror <admin_state>
	rtk_trap_rmaCancelMirror_set( )
Configure user define RMA action	trap set rma l2-user-define <rma_user_define_entry_id> action <rma_action>
	rtk_trap_userDefineRmaAction_set( )
Configure user define RMA entry state	trap set rma l2-user-define <rma_user_define_entry_id> state <admin_state>
	rtk_trap_userDefineRmaEnable_set( )
Configure user define RMA entry learn state	trap set rma l2-user-define <rma_user_define_entry_id> learn enable
	rtk_trap_userDefineRmaLearningEnable_set( )
Configure user define RAM entry MAC	trap set rma l2-user-define <rma_user_define_entry_id> mac <mac_addr> <mac_addr>
	rtk_trap_userDefineRma_set( )
Configure user define RMA entry ethertype	trap set rma l2-user-define <rma_user_define_entry_id> ether-type <ethertype>
	rtk_trap_userDefineRma_set( )
Configure user define RMA entry compare key	trap set rma l2-user-define <rma_user_define_entry_id> compare-type <rma_user_define_compare_key>
	rtk_trap_userDefineRma_set( )
Configure user define RMA flooding port mask	trap set rma l2-user-define flood-portmask <port_list>
	rtk_trap_userDefineFloodPortmask_set( )
Configure user define RMA bypass STP action	trap set rma l2-user-define <rma_user_define_entry_id> bypass-stp <admin_state>
	rtk_trap_bypassStp_set( )
Configure user define RMA bypass VLAN action	trap set rma l2-user-define <rma_user_define_entry_id> bypass-vlan <admin_state>
	rtk_trap_bypassVlan_set( )

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3 VLAN

3.1 VLAN procedure

3.1.1 IVC/MAC based VLAN/IP subnet based VLAN procedure

1. Global/Port setting:
    1. Configure IVC block mode
2. Port setting:
    1. Enable port IVC or MAC based VLAN or IP subnet based VLAN function
3. Block entry setting:
    1. Configure entry compare key
    2. Configure entry action
    3. Enable entry

3.1.2 EVC procedure

1. Port setting:
    1. Enable port EVC function
2. Block entry setting:
    1. Configure entry compare key
    2. Configure entry action
    3. Enable entry

3.1.3 Protocol Based VLAN procedure

1. Configure protocol vlan group setting
2. Configure VLAN data of port's protocol vlan group

3.2 VLAN Command

Table 2-7 VLAN Basic command

Purpose	CLI Command
	API
Create VLAN	vlan create vlan-table vid <vid>
	int32 rtk_vlan_create( )
Delete VLAN	vlan destroy vlan-table vid <vid>
	int32 rtk_vlan_destroy( )
Set VLAN member	vlan set vlan-table vid <vid> member <port_list>
	int32 rtk_vlan_port_set( )
Set VLAN untag member	vlan set vlan-table vid <vid> untag <port_list>

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	int32 rtk_vlan_port_set( )
Set VID as IVL mode	vlan set vlan-table hash-mode ivl <vlan_hash_packet_type> vid <vid>
	int32 rtk_vlan_l2LookupMode_set( )
Set VID as SVL mode	vlan set vlan-table hash-mode svl <vlan_hash_packet_type> vid <vid>
	int32 rtk_vlan_l2LookupMode_set( )
Set SVL FID	vlan set vlan-table hash-mode svl <vlan_hash_packet_type> fid <fid>
	int32 rtk_vlan_l2LookupSvlFid_set( )
Set Port Inner PVID	vlan set pvid inner port <port_list> <pvid>
	int32 rtk_vlan_portPvid_set( )
Set Port Outer PVID	vlan set pvid outer port <port_list> <pvid>
	int32 rtk_vlan_portPvid_set( )
Set port inner PVID apply mode	vlan set pvid-mode inner port <port-list> <vlan_apply_mode>
	int32 rtk_vlan_portPvidMode_set( )
Set port outer PVID apply mode	vlan set pvid-mode outer port <port-list> <vlan_apply_mode>
	int32 rtk_vlan_portPvidMode_set( )
Set Port Ingress VLAN filter	vlan set ingress-filter port <port_list> action <vlan_filter_action>
	int32 rtk_vlan_portIgrFilter_set( )
Set Port Egress VLAN filter	vlan set egress-filter port <port_list> state <admin_state>
	int32 rtk_vlan_portEgrFilterEnable_set( )
Set port inner VLAN accept frame mode	vlan set accept-frame-type inner port <port_list> <vlan_accept_type>
	int32 rtk_vlan_portAcceptFrameType_set( )
Set port outer VLAN accept frame mode	vlan set accept-frame-type outer port <port_list> <vlan_accept_type>
	int32 rtk_vlan_portAcceptFrameType_set( )
Set Outer TPID value	vlan set tpid outer entry <tipd_index> tpid <tpid_value>
	int32 rtk_vlan_tpidEntry_set( )
Set Inner TPID value	vlan set tpid inner entry <tipd_index> tpid <tpid_value>
	int32 rtk_vlan_tpidEntry_set( )
Set Port Outer TPID mapping	vlan set ingress port <port_list> outer tpid <tpid_idx_mask>
	int32 rtk_vlan_portIgrTpid_set( )
Set Port Inner TPID mapping	vlan set ingress port <port_list> inner tpid <tpid_idx_mask>
	int32 rtk_vlan_portIgrTpid_set( )

Table 2-8 VLAN Advance command

Purpose	CLI Command

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	API
Configure Ingress translation table mode	vlan set vlan-conversion ingress block-mode <igr_xlat_block_id> <igr_block_mode>
	rtk_vlan_igrVlanCnvtBlkMode_set( )
Configure Port's MAC based VLAN state	vlan set mac-based-vlan port <port_list> state <admin_state>
	rtk_vlan_portMacBasedVlanEnable_set( )
Configure MAC based VLAN entry compare key	vlan set mac-based-vlan entry <igr_xlat_entry_id> key <mac_vlan_compare_paras>
	rtk_vlan_macBasedVlanEntry_set( )
Configure MAC based VLAN entry action	vlan set mac-based-vlan entry <igr_xlat_entry_id> data <mac_vlan_action_paras>
	rtk_vlan_macBasedVlanEntry_set( )
Configure MAC based VLAN entry valid state	vlan set mac-based-vlan entry <igr_xlat_entry_id> state <admin_state>
	rtk_vlan_macBasedVlanEntry_set( )
Configure Port's IP Subnet based VLAN state	vlan set ip-subnet-based-vlan port <port_list> state <admin_state>
	rtk_vlan_portIpSubnetBasedVlanEnable_set( )
Configure IP Subnet based VLAN entry compare key	vlan set ip-subnet-based-vlan entry <igr_xlat_entry_id> key <ipsubnet_vlan_compare_paras>
	rtk_vlan_ipSubnetBasedVlanEntry_set( )
Configure IP Subnet based VLAN entry action	vlan set ip-subnet-based-vlan entry <igr_xlat_entry_id> data <ipsubnet_vlan_action_paras>
	rtk_vlan_ipSubnetBasedVlanEntry_set( )
Configure IP Subnet based VLAN entry valid state	vlan set ip-subnet-based-vlan entry <igr_xlat_entry_id> state <admin_state>
	rtk_vlan_ipSubnetBasedVlan_set( )
Configure Port's ingress VLAN translation state	vlan set vlan-conversion ingress port <port_list> state <admin_state>
	rtk_vlan_portIgrVlanCnvtEnable_set( )
Configure Port range check group for ingress VLAN translation	vlan set vlan-conversion ingress port <port_list> range-check <vlan_range_check_id>
	rtk_vlan_portIgrVlanCnvtRangeCheckSet_set( )
Configure Port ingress VLAN translation lookup miss action	vlan set vlan-conversion ingress port <port_list> <vlan_type> lookup-miss-action <xlat_lookup_miss_act>
	rtk_vlan_portIgrVlanCnvtLuMisAct_set( )
Configure Ingress VLAN translation entry compare key	vlan set vlan-conversion ingress entry <igr_xlat_entry_id> key <igr_xlat_compare_paras>
	rtk_vlan_igrVlanCnvtEntry_set( )
Configure Ingress VLAN translation entry vid action	vlan set vlan-conversion ingress entry <igr_xlat_entry_id> data inner-vid <vid> <vid_xlat_action> vlan set vlan-conversion ingress entry <igr_xlat_entry_id> data outer-vid <vid> <vid_xlat_action>
	rtk_vlan_igrVlanCnvtEntry_set( )
Configure Ingress VLAN translation entry priority action	vlan set vlan-conversion ingress entry <igr_xlat_entry_id> data inner-priority <priority> <priority_xlat_action> vlan set vlan-conversion ingress entry <igr_xlat_entry_id> data outer-priority

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	<priority> <priority_xlat_action>
	rtk_vlan_igrVlanCnvtEntry_set( )
Configure Ingress VLAN translation entry tpid action	vlan set vlan-conversion ingress entry <igr_xlat_entry_id> data inner tpid <tpid_idx> <tpid_xlat_action> vlan set vlan-conversion ingress entry <igr_xlat_entry_id> data outer tpid <tpid_idx> <tpid_xlat_action>
	rtk_vlan_igrVlanCnvtEntry_set( )
Configure Ingress VLAN translation entry tag status action	vlan set vlan-conversion ingress entry <igr_xlat_entry_id> data status inner <tag_status_xlat_action> vlan set vlan-conversion ingress entry <igr_xlat_entry_id> data status outer <tag_status_xlat_action>
	rtk_vlan_igrVlanCnvtEntry_set( )
Configure Ingress VLAN translation entry valid state	vlan set vlan-conversion ingress entry <igr_xlat_entry_id> state <admin_state>
	rtk_vlan_igrVlanCnvtEntry_set( )
Configure VLAN range check entry of ingress VLAN translation	vlan set vlan-conversion ingress range-check <vlan_range_check_id> <vlan_range_check_entry_id> vid <vlan_type> <vid_lower> <vid_upper>
	rtk_vlan_igrVlanCnvtRangeCheckEntry_set( )
Configure Port's egress VLAN translation state	vlan set vlan-conversion egress port <port_list> state <admin_state>
	rtk_vlan_portEgrVlanCnvtEnable_set( )
Configure Port range check group for egress VLAN translation	vlan set vlan-conversion egress port <port_list> range-check <vlan_range_check_id>
	rtk_vlan_portEgrVlanCnvtRangeCheckSet_set( )
Configure Port egress VLAN translation lookup miss action	vlan set vlan-conversion egress port <port_list> <vlan_type> lookup-miss-action <xlat_lookup_miss_act>
	rtk_vlan_portEgrVlanCnvtLuMisAct_set( )
Configure egress VLAN translation entry compare key	vlan set vlan-conversion egress entry <egr_xlat_entry_id> key <egr_xlat_compare_paras>
	rtk_vlan_egrVlanCnvtEntry_set( )
Configure egress VLAN translation entry vid action	vlan set vlan-conversion egress entry <igr_xlat_entry_id> data inner-vid <vid> <vid_xlat_action> vlan set vlan-conversion egress entry <igr_xlat_entry_id> data outer-vid <vid> <vid_xlat_action>
	rtk_vlan_egrVlanCnvtEntry_set( )
Configure egress VLAN translation entry priority action	vlan set vlan-conversion egress entry <igr_xlat_entry_id> data inner-priority <priority> <priority_xlat_action> vlan set vlan-conversion egress entry <igr_xlat_entry_id> data outer-priority <priority> <priority_xlat_action>
	rtk_vlan_egrVlanCnvtEntry_set( )
Configure egress VLAN translation entry tpid action	vlan set vlan-conversion egress entry <igr_xlat_entry_id> data inner tpid <tpid_idx> <tpid_xlat_action> vlan set vlan-conversion egress entry <igr_xlat_entry_id> data outer tpid <tpid_idx> <tpid_xlat_action>

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	rtk_vlan_egrVlanCnvtEntry_set( )
Configure egress VLAN translation entry tag status action	vlan set vlan-conversion egress entry <igr_xlat_entry_id> data status inner <tag_status_xlat_action> vlan set vlan-conversion egress entry <igr_xlat_entry_id> data status outer <tag_status_xlat_action>
	rtk_vlan_egrVlanCnvtEntry_set( )
Configure egress VLAN translation entry valid state	vlan set vlan-conversion egress entry <egr_xlat_entry_id> state <admin_state>
	rtk_vlan_egrVlanCnvtEntry_set( )
Configure VLAN range check entry of egress VLAN translation	vlan set vlan-conversion egress range-check <vlan_range_check_id> <vlan_range_check_entry_id> vid <vlan_type> <vid_lower> <vid_upper>
	rtk_vlan_egrVlanCnvtRangeCheckEntry_set( )
Configure Port N:1 VLAN aggregation state	vlan set vlan-aggregation port <port_list> state <admin_state>
	rtk_vlan_portVlanAggrEnable_set( )
Configure Port N:1 VLAN aggregation VID source	vlan set vlan-aggregation port <port_list> vid-source <vlan_type>
	rtk_vlan_portVlanAggrCtrl_set( )
Configure protocol VLAN group setting	vlan set protocol-vlan group <protocol_vlan_group_id> frame-type <protocol_frame_type> frame-value <frame_type_value>
Configure VLAN data of port protocol VLAN	vlan set protocol-vlan port <port_list> group <protocol_vlan_group_id> vlan-type <vlan_type> vid <vid> state <admin_state> priority <vlan_priority> state <admin_state>

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4 ACL

4.1 ACL Procedure

1. ACL block setting:
    1. Configure ACL block state
    2. Configure ACL block lookup phase
    3. Configure used template of ACL block
    4. Configure user defined template fied (option)
2. ACL Port setting:
    1. Configure port ACL lookup state
3. ACL Block entry setting:
    1. Configure ACL entry compare key
    2. Configure ACL entry action
    3. Enable entry

4.2 ACL Command

Table 2-9 ACL command

Purpose	CLI Command
	API
Configure ACL block lookup state	pie set block <acl_block_id> lookup state <admin_state>
	rtk_pie_blockLookupEnable_set( )
Configure port ACL ingress phase lookup state	acl set port <port_id> igr lookup state <admin_state>
	rtk_acl_portLookupEnable_set( )
Configure ACL block lookup phase	pie set block <acl_block_id> phase <lookup_phase>
	rtk_pie_phase_set( )
Configure ACL block group and logic ID	pie set block <acl_block_id> group group_id <acl_group_id> logic_id <acl_logic_id>
	rtk_pie_blockGrouping_set( )
Configure ACL block template ID	acl set selector block <acl_block_id> <block_template_idx> <acl_template_id>
	rtk_acl_templateSelector_set( )
Configure ACL user define template field content	pie set template < acl_template_id > field_index <acl_field_idx> field_type <acl_field_type>
	rtk_pie_template_set( )
Configure VACL/IACL pre-define template VLAN field type	pie set phase <lookup_phase> template <acl_template_id> vlan-sel <acl_template_vlan_type>
	rtk_pie_templateVlanSel_set( )
Configure ACL entry	acl set entry phase <lookup_phase_id> entry <acl_entry_id> field <acl_field_name>

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field content	data <acl_field_data> mask <acl_data_mask>
	rtk_acl_ruleEntryField_write( )
Configure ACL forward action	acl set entry phase <lookup_phase_id> entry <acl_entry_id> action forward <acl_forward_act_paras >
	rtk_acl_ruleAction_set( )
Configure ACL redirect action	acl set entry phase <lookup_phase_id> entry <acl_entry_id> action redirect <acl_redirect_act_paras>
	rtk_acl_ruleAction_set( )
Configure ACL copy action	acl set entry phase <lookup_phase_id> entry <acl_entry_id> action copy <acl_copy_act>
	rtk_acl_ruleAction_set( )
Configure ACL drop action	acl set entry phase <lookup_phase_id> entry <acl_entry_id> action drop <acl_drop_act_paras >
	acl set entry phase <lookup_phase_id> entry <acl_entry_id> action yellow-drop <acl_drop_act_paras >
	acl set entry phase <lookup_phase_id> entry <acl_entry_id> action red-drop <acl_drop_act_paras >
	rtk_acl_ruleAction_set( )
Configure ACL remark action	acl set entry phase <lookup_phase_id> entry <acl_entry_id> action remark <acl_remark_act>
	acl set entry phase <lookup_phase_id> entry <acl_entry_id> action yellow-remark <acl_remark_act>
	acl set entry phase <lookup_phase_id> entry <acl_entry_id> action red-remark <acl_remark_act>
	rtk_acl_ruleAction_set( )
Configure ACL VLAN translation action	acl set entry phase <lookup_phase_id> entry <acl_entry_id> action vlan-xlate inner state <admin_state>
	acl set entry phase <lookup_phase_id> entry <acl_entry_id> action vlan-xlate inner-vid <acl_vlan_xlate_act_paras>
	acl set entry phase <lookup_phase_id> entry <acl_entry_id> action vlan-xlate outer state <admin_state>
	acl set entry phase <lookup_phase_id> entry <acl_entry_id> action vlan-xlate outer-vid <acl_vlan_xlate_act_paras>
	rtk_acl_ruleAction_set( )
Configure ACL VLAN TPID action	acl set entry phase <lookup_phase_id> entry <acl_entry_id> action vlan-xlate inner-tpid state <admin_state>
	acl set entry phase <lookup_phase_id> entry <acl_entry_id> action vlan-xlate inner-tpid-index <vlan_tpid_idx>
	acl set entry phase <lookup_phase_id> entry <acl_entry_id> action vlan-xlate outer-tpid state <admin_state>
	acl set entry phase <lookup_phase_id> entry <acl_entry_id> action vlan-xlate outer-vid-index <vlan_tpid_idx>
	rtk_acl_ruleAction_set( )

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Configure ACL VLAN priority action	acl set entry phase <lookup_phase_id> entry <acl_entry_id> action inner-priority <acl_vlan_prio_act_paras> acl set entry phase <lookup_phase_id> entry <acl_entry_id> action outer-priority < acl_vlan_prio_act_paras > rtk_acl_ruleAction_set( )
Configure ACL mirror action	acl set entry phase <lookup_phase_id> entry <acl_entry_id> action mirror <acl_mirror_act_paras> rtk_acl_ruleAction_set( )
Configure ACL meter action	acl set entry phase <lookup_phase_id> entry <acl_entry_id> action meter <acl_meter_act_paras> rtk_acl_ruleAction_set( )
Configure meter type and ratio	pie set meter entry <meter_idx> <meter_type_paras> rtk_pie_meterEntry_set(0
Configure ACL statistics action	acl set entry phase <lookup_phase_id> entry <acl_entry_id> action statistic <acl_stats_act_paras> rtk_acl_ruleAction_set( )
Configure ACL bypass action	acl set entry phase <lookup_phase_id> entry <acl_entry_id> action bypass <acl_bypass_act_paras> rtk_acl_ruleAction_set( )
Configure ACL internal priority action	acl set entry phase <lookup_phase_id> entry <acl_entry_id> action priority <acl_int_prio_act_paras> rtk_acl_ruleAction_set( )
Configure ACL CPU queue action	acl set entry phase <lookup_phase_id> entry <acl_entry_id> action cpu-qid <acl_cpu_qid_act_paras> rtk_acl_ruleAction_set( )

Table 2-10 VACL field keyword list

field keyword	field desciption
template-id	template ID the entry maps to
frame-type	frame type (0b00: ARP, 0b01: L2 only, 0b10: IPv4, 0b11: IPv6)
spm	source port mask
dmac	destination MAC address
smac	source MAC address
itag-exist	packet with inner tag

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otag-exist	packet with outer tag
itag-fmt	0b0: inner tag packet, 0b1: untag/priority tag packet
otag-fmt	0b0: outer tag packet, 0b1: untag/priority tag packet
L2-frame-type	L2 frame type(0b00: Ethernet, 0b01: LLC_SNAP, 0b10: LLC_Other)
etag-exist	packet with extra tag
ethertype	ethernet type/length
arp-opcode	ARP/RARP Opcode
opri	O-TAG priority
dei	O-TAG DEI field
ovid	O-TAG VID
ipri	I-TAG priority
cfi	I-TAG CFI field
ivid	I-TAG VID
mgnt-vlan	mangement VLAN
fvid	forward VID
L4-frame-type	layer 4 format 0b000: UDP, 0b001: TCP, 0b010:ICMP/ICMPv6, 0b011: IGMP, 0x1XXX: L4 other
ip4-sip	IPv4 source IP
ip4-dip	IPv4 destination IP
ip6-sip	IPv6 srouce address
ip6-dip	IPv6 destinaction address
tos-tc	IPv4 TOS, IPv6 Traffic Class
proto-nh	IPv4 protocol, IPv6 Next Header
ip-flag	IP flag
ttl-hoplimit	IPv4 TTL, IPv6 hop limit 0b00: TTL = 0, 0b01: TTL = 1, 0b10: 2<= TTL < 255, 0b11: TTL = 255

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l4-sport	TCP/UDP source port
l4-dport	TCP/UDP destination port
ip6-auth-hdr-exist	IPv6 packet with authentication header
ip6-dest-hdr-exist	IPv6 packet with destination option header
ip6-frag-hdr-exist	IPv6 packet with fragment header
ip6-routing-hdr-exist	IPv6 packet with routing header
ip6-hop-hdr-exist	IPv6 packet with hop-by-hop header
igmp-type	IGMP type
tcp-ecn	TCP ECN
tcp-flag	TCP flag
tcp-nonzero-seq	TCP packet with non zero sequence
icmp-code	ICMP/ICMPv6 code
icmp-type	ICMP/ICMPv6 type
ip-nonzero-offset	IPv4/IPv6 fragment offset isn't 0
range-ip	IPv4/IPv6 range check result
range-len	Packet length(CRC included) range check result
field-selector-mask	Field selector valid mask
field-selector0	Field selector 0 output
field-selector1	Field selector 1 output
field-selector2	Field selector 2 output
field-selector3	Field selector 3 output
l2-crc-error	L2 crc error packet
stacking-port	stacking port
content-too-deep	packet length is longer than the length parser supports
spp	soure physical port
igr-nml-port	soure port is not CPU or stacking port
sender-addr	sender hardware address' of ARP header for ARP/RARP packet

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target-addr	target hardware address' of ARP header for ARP/RARP packet
dsap	DSAP for LLC/SNAP packet
ssap	SSAP for LLC/SNAP packet
snap-oui	OUI in SNAP header
igmp-max-resp-code	IGMP max response code
ip-frag	IPv4 or IPv6 fragment , include first fragment
l4-hdr	L4 header byte0-byte3
range-vid	VID range check result
range-l4port	TCP/UDP/SCTP port range check result
mac-based-hit	mac based vlan hit
ip-subnet-based-hit	ip subnet based vlan hit
ivc-hit	IVC hit
meta-data	meta data
igr-trunk-present	ingress trunk present
igr-dev-id	ingress device id
slp	soure logic port
lb-times	loopback times
lb-pkt	loopback packet
spn	source port number
ip6-esp-hdr-exist	IPv6 packet with ESP header
field-selector4	Field selector 4 output
field-selector5	Field selector 5 output
field-selector6	Field selector 6 output
field-selector7	Field selector 7 output
field-selector8	Field selector 8 output
field-selector9	Field selector 9 output
field-selector10	Field selector 10 output

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field-selector11	Field selector 11 output
ip-hdr-error	IPv4 header error packet
dp	drop precedence
datype	0b0: unicast dmac, 0b1: broadcast dmac, 0b10: reserved, 0b11: multicast dmac
ip6-mob-hdr-exist	IPv6 packet with mobility header
flow-label	IPv6 flow label

Table 2-11 IACL field keyword list

field keyword	field desciption
template-id	template ID the entry maps to
frame-type	frame type (0b00: ARP, 0b01: L2 only, 0b10: IPv4, 0b11: IPv6)
spm	source port mask
dmac	destination MAC address
smac	source MAC address
itag-exist	packet with inner tag
otag-exist	packet with outer tag
itag-fmt	0b0: inner tag packet, 0b1: untag/priority tag packet
otag-fmt	0b0: outer tag packet, 0b1: untag/priority tag packet
L2-frame-type	L2 frame type(0b00: Ethernet, 0b01: LLC_SNAP, 0b10: LLC_Other)
etag-exist	packet with extra tag
ethertype	ethernet type/length
arp-opcode	ARP/RARP Opcode
opri	O-TAG priority
dei	O-TAG DEI field
ovid	O-TAG VID

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ipri	I-TAG priority
cfi	I-TAG CFI field
ivid	I-TAG VID
mgnt-vlan	mangement VLAN
fvid	forward VID
L4-frame-type	layer 4 format 0b000: UDP, 0b001: TCP, 0b010: ICMP/ICMPv6, 0b011: IGMP, 0x1XXX: L4 other
ip4-sip	IPv4 source IP
ip4-dip	IPv4 destination IP
ip6-sip	IPv6 srouce address
ip6-dip	IPv6 destinaction address
tos-tc	IPv4 TOS, IPv6 Traffic Class
proto-nh	IPv4 protocol, IPv6 Next Header
ip-flag	IP flag
ttl-hoplimit	IPv4 TTL, IPv6 hop limit 0b00: TTL = 0, 0b01: TTL = 1, 0b10: 2<= TTL < 255, 0b11: TTL = 255
l4-sport	TCP/UDP source port
l4-dport	TCP/UDP destination port
ip6-auth-hdr-exist	IPv6 packet with authentication header
ip6-dest-hdr-exist	IPv6 packet with destination option header
ip6-frag-hdr-exist	IPv6 packet with fragment header
ip6-routing-hdr-exist	IPv6 packet with routing header
ip6-hop-hdr-exist	IPv6 packet with hop-by-hop header
igmp-type	IGMP type
tcp-ecn	TCP ECN
tcp-flag	TCP flag
tcp-nonzero-seq	TCP packet with non zero sequence

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icmp-code	ICMP/ICMPv6 code
icmp-type	ICMP/ICMPv6 type
ip-nonzero-offset	IPv4/IPv6 fragment offset isn't 0
range-ip	IPv4/IPv6 range check result
range-len	Packet length(CRC included) range check result
field-selector-mask	Field selector valid mask
field-selector0	Field selector 0 output
field-selector1	Field selector 1 output
field-selector2	Field selector 2 output
field-selector3	Field selector 3 output
l2-crc-error	L2 crc error packet
stacking-port	stacking port
src-fwd-vid	forwarding vid before route
dpn	destination port number decided before egress ACL
content-too-deep	packet length is longer than the length parser supports
spp	soure physical port
igr-nml-port	soure port is not CPU or stacking port
sender-addr	sender hardware address' of ARP header for ARP/RARP packet
target-addr	target hardware address' of ARP header for ARP/RARP packet
dev-dmac	DMAC is one of the router MAC TCAM entries with routing action
dsap	DSAP for LLC/SNAP packet
ssap	SSAP for LLC/SNAP packet
snap-oui	OUI in SNAP header
igmp-max-resp-code	IGMP max response code
ip-frag	IPv4 or IPv6 fragment , include first fragment
l4-hdr	L4 header byte0-byte3
ipuc-rout	packet to do IP unicast routing

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ipmc-rout	packet to do IP mulitcast routing
range-vid	VID range check result
range-l4port	TCP/UDP/SCTP port range check result
dip-host-hit	DIP exists in L3 host routing table
dip-prefix-hit	DIP exists in L3 prefix routing table
urpf-chk-fail	uRPF check fail
port-mv	port move
igr-vlan-drop	ingress vlan filter drop
stp-drop	stp drop
meta-data	meta data
vlan-grpmsk	vlan group mask
igr-trunk-present	ingress trunk present
igr-dev-id	ingress device id
slp	soure logic port
lb-times	loopback times
lb-pkt	loopback packet
vacl-drop	VACL drop action hit
vacl-copy	VACL copy action hit
vacl-redirect	VACL redirect action hit
spn	source port number
ip6-esp-hdr-exist	IPv6 packet with ESP header
field-selector4	Field selector 4 output
field-selector5	Field selector 5 output
field-selector6	Field selector 6 output
field-selector7	Field selector 7 output
field-selector8	Field selector 8 output
field-selector9	Field selector 9 output

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field-selector10	Field selector 10 output
field-selector11	Field selector 11 output
sa-l2hit	SA lookup result. 0: lookup miss 1: lookup hit
da-l2hit	DA lookup result. 0: lookup miss 1: lookup hit
attack-pkt	packet hit attack prevention criteria
ip-hdr-error	IPv4 header error packet
dp	drop precedence
datype	0b0: unicast dmac, 0b1: broadcast dmac, 0b10: reserved, 0b11: multicast dmac
ip6-mob-hdr-exist	IPv6 packet with mobility header
flow-label	IPv6 flow label

Table 2-12 ACL template field list

template field keyword	desciption
None	Unset template
spm0	source portmask for port 0-15
spm1	source portmask for port 16-31
dmac0	destination MAC [15:0
dmac1	destination MAC [31:16]
dmac2	destination MAC [47:32]
smac0	source MAC [15:0]
smac1	source MAC [31:16]
smac2	source MAC [47:32]
ethertype	ethernet type
otag	outer tag
itag	inner tag

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sip0	IPv4 or IPv6 source IP[15:0] or ARP/RARP source protocol address in header
sip1	IPv4 or IPv6 source IP[31:16] or ARP/RARP source protocol address in header
dip0	IPv4 or IPv6 destination IP[15:0] or ARP/RARP destination protocol address in header
dip1	IPv4 or IPv6 destination IP[31:16] or ARP/RARP destination protocol address in header
dip2	IPv6 destination IP[47:32]
dip3	IPv6 destination IP[63:48]
dip4	IPv6 destination IP[79:64]
dip5	IPv6 destination IP[95:80]
dip6	IPv6 destination IP[111:96]
dip7	IPv6 destination IP[127:112]
ip-tos-proto	IPv4 TOS/IPv6 traffic class and IPv4 protocold/IPv6 next header
l4-sport	TCP/UDP source port
l4-dport	TCP/UDP destination port
l34-header	packet with extra tag and IPv6 with auth, dest, frag, route, hop-by-hop option header, IGMP type, TCP flag
field_selector_valid_msk	field selector valid mask
field_selector0	field selector 0
field_selector1	field selector 1
field_selector2	field selector 2
field_selector3	field selector 3
fwd-vid	forwarding VID
range-check	layer4 port/VID/packet length/field selector range check
flow-label	flow label LSB 15-bit
field_selector4	field selector 4
field_selector5	field selector 5

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field_selector6	field selector 6
field_selector7	field selector 7
field_selector8	field selector 8
field_selector9	field selector 9
field_selector10	field selector 10
field_selector11	field selector 11
tcp-info	TCP info
packet-info	Packet lookup info
dsap-ssap	DSAP/SSAP for LLC/SNAP packet
snap-oui	OUI in SNAP header
vlan-group-mask	VLAN Group Mask/IP range check
meta-data	meta data
slp	source logic port

4.3 Example

4.3.1 ACL Drop and count packet

```
// port configure, enable all port
port set port all state enable

// ACL Block configure
pie set block 0 lookup state enable
pie set block 0 phase vacl
acl set selector block 0 template-index0 0

// ACL entry configure
// Filter: source port = p1
// Action: drop and count statistic
acl set entry phase 0 entry 0 field template-id data 0x0 mask 0x1
acl set entry phase 0 entry 0 field spm data 0x2 mask 0xfffffffd
acl set entry phase 0 entry 0 action forward state enable
acl set entry phase 0 entry 0 action forward drop
acl set entry phase 0 entry 0 action statistic state enable
acl set entry phase 0 entry 0 state valid
```

4.3.2 ACL Policer

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```
// port configure, enable all port
port set port all state enable

// VLAN configure, all port of VLAN 1 is tag member
vlan set vlan-table vid 1 untag-port none

// ACL Block configure
pie set block 0 lookup state enable
pie set block 0 phase vacl
acl set selector block 0 template-index0 0

// ACL entry configure
// Filter: source port = p1
// Action: enable meter 1, green packet is forward, yellow packet is remark IP
ToS=5, red packet is drop
acl set entry phase 0 entry 1 field template-id data 0x0 mask 0x1
acl set entry phase 0 entry 1 field spm data 0x2 mask 0xfffffffd
acl set entry phase 0 entry 1 action forward state enable
acl set entry phase 0 entry 1 action permit
acl set entry phase 0 entry 1 action meter 1
acl set entry phase 0 entry 1 action meter state enable
acl set entry phase 0 entry 1 action yellow-remark state enable
acl set entry phase 0 entry 1 action yellow-remark tos 5
acl set entry phase 0 entry 1 action red-drop state enable
acl set entry phase 0 entry 1 action red-drop drop
acl set entry phase 0 entry 1 state valid

// Meter configure, meter 1 as TrTCM, pir=50Mbps, cir=10Mbps
pie set meter entry 1 trtcm color-blind cir 640 cbs 10 pir 3200 pbs 10
pie set meter entry 1 mode byte
```

4.3.3 VLAN based ACL

```
// port configure
port set port all state enable

// VLAN configure, create VID=2 VLAN and all ports are member port
vlan create vlan-table vid 2
vlan set vlan-table vid 2 member all

// ACL Block configure
pie set block 0 lookup state enable
pie set block 0 phase vacl
pie set phase vacl template 0 vlan-sel inner
acl set selector block 0 template-index0 0

// ACL entry configure
// Filter: Inner VID = 1
// Action: drop packet
acl set entry phase 0 entry 2 field template-id data 0x0 mask 0x1
acl set entry phase 0 entry 2 field ivid data 0x1 mask 0xfff
acl set entry phase 0 entry 2 action forward state enable
acl set entry phase 0 entry 2 action forward drop
acl set entry phase 0 entry 2 state valid
```

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4.3.4 Flow based Mirror

```
// port configure
port set port all state enable

// VLAN configure
// create VID=10 VLAN and p8-p11 are member port
// congiure VID=1 member, p0-p3 are member port
vlan create vlan-table vid 10
vlan set vlan-table vid 1 member 0-3
vlan set vlan-table vid 10 member 8-11

// mirror confiugre, mirror entry 0 work as flow based, mirroring port is p8,
no any ingress and egress mirrored port
mirror set mirror-id 0 type flow-based mirroring 0 8 ingress-mirrored none
egress-mirrored none
mirror set mirror-id 0 state enable

// ACL Block configure
pie set block 0 lookup state enable
pie set block 0 phase vacl
acl set selector block 0 template-index0 0

// ACL entry configure
// Filter: DMAC=00:00:00:00:02:02
// Action: mirror packet to mirror entry 0
acl set entry phase 0 entry 3 field template-id data 0x0 mask 0x1
acl set entry phase 0 entry 3 field dmac data 0x000000000202 mask 0xffffffffffff
acl set entry phase 0 entry 3 action mirror state enable
acl set entry phase 0 entry 3 action mirror 0 original
acl set entry phase 0 entry 3 state valid
```

4.3.5 Redirect packet to CPU

```
// port configure
port set port all state enable

// VLAN configure, VLAN 1 member port = P0-P27
vlan set vlan-table vid 1 member 0-27


// ACL Block configure
pie set block 0 lookup state enable
pie set block 0 phase vacl
acl set selector block 0 template-index0 0

// ACL entry configure
// Filter: DMAC=01:80:C2:00:00:00
// Action: mirror packet to mirror entry 0
acl set entry phase 0 entry 5 field template-id data 0x0 mask 0x1
acl set entry phase 0 entry 5 field dmac data 0x0180C2000000 mask 0xffffffffffff
```

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```
acl set entry phase 0 entry 5 action forward state enable
acl set entry phase 0 entry 5 action redirect dev 0 port 28
acl set entry phase 0 entry 5 state valid

// enable RX NIC trace
nic set rx trace start raw-data
```

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5 L3 (RTL93xx family only)

5.1 L3 Procedure

5.1.1 Unicast Route Procedure

1. Global routing setting:
    1. Configure global unicast routing state
2. Interface routing setting:
    1. Enable interface unicast routing state
3. L3 unicast host entry setting:
    1. Create L3 interface
    2. Create next hop entry
    3. add next hop entry
4. L3 unicast net route entry setting:
    1. Create L3 interface
    2. Create next hop entry
    3. Add net route entry

5.1.2 Multicast Route Procedure

1. Global routing setting:
    1. Configure global multicast routing state
2. Interface routing setting:
    1. Enable interface multicast routing state
3. L3 multicast route entry setting:
    1. Create L3 interface
    2. Create multicast group
    3. Bind multicast group with L3 interface
    4. Add multicast group L3 outgoing list
    5. Add multicast group L2 outgoing list

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5.2 L3 Command

Table 2-13 L3 command

Purpose	CLI Command
	API
Configure Global	l3 set ipuc routing state <admin_state>

unicast routing state	l3 set ip6uc routing state <admin_state>
	rtk_l3_globalCtrl_set( )
Configure global multicast routing state	ipmcast set ipmc routing state <admin_state> ipmcast set ip6mc routing state <admin_state>
	rtk_ipmc_globalCtrl_set( )
Create L3 Interface	l3 create intf vid <vid> mac-addr <mac_addr> l3 create intf <l3_intf> vid <vid> mac-addr <mac_addr>
	rtk_l3_intf_create( )
Destroy L3 interface	l3 destroy intf <l3_intf>
	rtk_l3_intf_destroy( )
Set routing MAC entry	l3 set router-mac entry <router_mac_idx> state <admin_state> l3 set router-mac entry <router_mac_idx> key port <port_list> state <admin_state> l3 set router-mac entry <router_mac_idx> key trunk <trunk_id> state <admin_state> l3 set router-mac entry <router_mac_idx> key vid <vid> vid_mask <vid_mask> l3 set router-mac entry <router_mac_idx> key intf <l3_intf> intf_mask <l3_intf_mask> l3 set router-mac entry <router_mac_idx> key mac-addr <mac_addr> mac-addr-mask <mac_addr_mask>
	rtk_l3_routerMacEntry_set
Configure interface unicast routing state (for RTL9300 family)	vlan set profile entry <vlan_profile_idx> ipuc routing state <admin_state> vlan set profile entry <vlan_profile_idx> ip6uc routing state <admin_state>
	rtk_vlan_profile_set( )
Configure interface multicast routing state (for RTL9300 family)	vlan set profile entry <vlan_profile_idx> ipmc routing state <admin_state> vlan set profile entry <vlan_profile_idx> ip6mc routing state <admin_state>
	rtk_vlan_profile_set( )
Configure interface unicast routing state (for RTL9310 family)	l3 set interface <l3_intf> ipuc routing state <admin_state> l3 set interface <l3_intf> ip6uc routing state <admin_state>
	rtk_l3_intfCtrl_set( )
Configure interface multicast routing state (for RTL9310 family)	l3 set interface <l3_intf> ipmc routing state <admin_state> l3 set interface <l3_intf> ip6mc routing state <admin_state>
	rtk_l3_intfCtrl_set( )
Create next Hop Entry	l3 create next-hop intf <l3_intf> mac-addr <mac_addr> l3 create next-hop intf <l3_intf> mac-addr <mac_addr> action <next_hop_act> l3 create next-hop nh-id <nh_id> intf <l3_intf> mac-addr <mac_addr> l3 create next-hop nh-id <nh_id> intf <l3_intf> mac-addr <mac_addr> action <next_hop_act> l3 create ecmp ecmp-id <ecmp_id> <nh_id_1> <nh_id_2> <nh_id_3> <nh_id_4> <nh_id_5> <nh_id_6> <nh_i_7> <nh_id_8>
	rtk_l3_nextHop_create( )

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Add VRRP entry	l3 add vrrp vid <vid> vrid <vrid> l3 del vrrp vid <vid> vrid <vrid> l3 del vrrp vid <vid> vrid all l3 get vrrp vid <vid> vrid
	rtk_l3_vrrp_add
Destroy next hop entry	l3 destroy next-hop nh-id <nh_id>
	rtk_l3_nextHop_destroy( )
Add Host entry	l3 add host vrf-id <vrf_id> ip <ip_addr> path-id <path_id> fwd-action <fwd_act> l3 add host vrf-id <vrf_id> ip6 <ip_addr> path-id <path_id> fwd-action <fwd_act>
	rtk_l3_host_add( )
Del Host Entry	l3 del host vrf-id <vrf_id> ip <ip_addr> l3 del host vrf-id <vrf_id> ip6 <ip_addr>
	rtk_l3_host_del( )
Add Net route entry	l3 add route vrf-id <vrf_id> ip <ip_addr> prefix-length <prefix_len> path-id <path_id> fwd-action <fwd_act>
	rtk_l3_route_add( )
Del Net route entry	l3 del route vrf-id <vrf_id> ip <ip_addr> prefix-length <prefix_len>
	rtk_l3_route_del( )
Create multicast group	mcast create group group-type mac mcast create group group-type ip
	rtk_mcast_group_create( )
Bind multicast group with L3 interface	ipmcast add addr vrf-id <vrf_id> sip <ip_addr> dip <ip_addr> vlan <vid> group <multicast_group_id>
	rtk_ipmc_addr_add( )
Add multicast group L2 outgoing list	mcast add egress-interface group <multicast_group_id> l2 port <port_list>
	rtk_mcast_egrIf_add( )
Add multicast group L3 outgoing list	mcast add egress-interface group <multicast_group_id> l3 intf <l3_intf> port <port_list>
	rtk_mcast_egrIf_add( )
Configure port URPF state	l3 set port <port_list> ipuc urpf state <admin_state> l3 set port <port_list> ip6uc urpf state <admin_state>
	rtk_l3_intfCtrl_set( )
Configure port URPF mode	l3 set port <port_list> ipuc urpf mode <urpf_mode> l3 set port <port_list> ip6uc urpf mode <urpf_mode>
	rtk_l3_intfCtrl_set( )
Configure port URPF default route state	l3 set port <port_list> ipuc urpf default-route state <admin_state> l3 set port <port_list> ip6uc urpf default-route state <admin_state>
	rtk_l3_intfCtrl_set( )

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Configure port URPF fail action	l3 set port <port_list> ipuc urpf fail-action <urpf_fail_act> l3 set port <port_list> ip6uc urpf fail-action <urpf_fail_act>
	rtk_l3_intfCtrl_set( )
Configure IP header error action	l3 set routing-exception ip header-error-action <header_error_act> l3 set routing-exception ip6 header-error-action <header_error_act>
	rtk_l3_globalCtrl_set( )
Configure Non-IP packet action	l3 set routing-exception non-ip-action <route_exception_act>
	rtk_l3_globalCtrl_set( )
Configure next-hop entry age out action	l3 set routing-exception next-hop-age-out-action <route_exception_act>
	rtk_l3_globalCtrl_set( )
Configure IP unicast routing exception	l3 set routing-exception ipuc <ipuc_route_exception_event> action <route_exception_act> l3 set routing-exception ip6uc <ip6uc_route_exception_event> action <route_exception_act>
	rtk_l3_globalCtrl_set( )
Configure IP multicast routing exception	ipmcast set routing-exception ipmc <ipmc_route_exception_event> action <route_exception_act> ipmcast set routing-exception ip6mc <ip6mc_route_exception_event> action <route_exception_act>
	rtk_ipmc_globalCtrl_set( )
Configure IP multicast lookup miss action	ipmcast set routing-exception ipmc routing lookup-miss-action <ipmc_lookup_miss_act> ipmcast set routing-exception ip6mc routing lookup-miss-action <ipmc_lookup_miss_act>
	rtk_ipmc_globalCtrl_set( )
Configure IP multicast source VLAN filter state	ipmcast set routing-exception ipmc src-vlan-filter state <admin_state> ipmcast set routing-exception ip6mc src-vlan-filter state <admin_state>
	rtk_ipmc_globalCtrl_set( )

5.3 Example

5.3.1 Unicast Routing

```
// Enable All port
port set port all state enable

//Set All Port PVID apply to untag only
vlan set pvid-mode inner port all untag-only

// Create VLAN 20 & 30
vlan create vlan-table vid 20
vlan create vlan-table vid 30
vlan set vlan-table vid 20 member 1
vlan set vlan-table vid 30 member 2
```

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```
vlan set vlan-table vid 1 member 3-28
vlan set vlan-table vid 20 profile-index 0
vlan set vlan-table vid 30 profile-index 0
vlan set pvid inner port 1 20
vlan set pvid inner port 2 30

// Enable global unicast routing
l3 set ipuc routing state enable

// Create L3 Interface and enable ipuc routing for vlan 20
l3 create intf vid 20 mac-addr 00:00:00:01:01:01

// Create L3 Interface and enable ipuc routing for vlan 30
l3 create intf vid 30 mac-addr 00:00:00:01:01:01

// Interface enable unicast routing
// !! RTL9300 family only
//vlan set profile entry 0 ipuc routing state enable

// !! RTL9310 family only (uncomment below lines)
l3 set intf 1 ipuc routing state enable
l3 set intf 1 vrf-id 1
l3 set intf 2 ipuc routing state enable
l3 set intf 2 vrf-id 1

// Create Next Hop Entry for Host A
l3 create next-hop intf 1 mac-addr 00:00:00:02:02:02

// Create Next Hop Entry for Host B
l3 create next-hop intf 2 mac-addr 00:00:00:03:03:03

// Add Host entry for Host A IP with interface 1
l3 add host vrf-id 1 ip 2.2.2.2 path-id 1 fwd-action forward

// Add Host entry for Host B IP with interface 2
l3 add host vrf-id 1 ip 3.3.3.3 path-id 2 fwd-action forward

// Add Host L2 entry
l2-table add mac-ucast 20 00:00:00:02:02:02 port 1 static
l2-table add mac-ucast 30 00:00:00:03:03:03 port 2 static

// Add net route entry
l3 add route vrf-id 1 ip 2.2.2.0 prefix-length 24 path-id 0 fwd-action trap-to-cpu
l3 add route vrf-id 1 ip 3.3.3.0 prefix-length 24 path-id 0 fwd-action trap-to-cpu
```

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5.3.2 Multicast Routing

```
// Enable All port
port set port all state enable

// Set All Port PVID apply to untag only
vlan set pvid-mode inner port all untag-only

// Create VLAN and configure VLAN members
vlan create vlan-table vid 20
vlan create vlan-table vid 30
vlan create vlan-table vid 40
vlan set vlan-table vid 20 member 1,2,3
vlan set vlan-table vid 30 member 1,2,4
```

```
vlan set vlan-table vid 40 member 1,2,3,4
vlan set vlan-table vid 1 member 5-28
vlan set vlan-table vid 20 profile-index 0
vlan set vlan-table vid 30 profile-index 0
vlan set vlan-table vid 40 profile-index 0
vlan set pvid inner port 0-3 20
vlan set pvid inner port 4 30


// enable IP multicast routing feature
ipmcast set ipmc routing state enable

// Create L3 Interface and enable ipmc routing for vlan 30,
l3 create intf vid 30 mac-addr 00:00:00:01:01:01

// Create L3 Interface and enable ipmc routing for vlan 40,
l3 create intf vid 40 mac-addr 00:00:00:02:02:02

// Create L3 Interface and enable ipmc routing for vlan 20
l3 create intf vid 20 mac-addr 00:00:00:03:03:03

// Interface enable IP multicast routing feature
// !!  RTL9300 family only
vlan set profile entry 0 ipmc routing state enable

// !!  RTL9310 family only (uncomment below lines)
// l3 set intf 0 ipmc routing state enable
// l3 set intf 1 ipmc routing state enable
// l3 set intf 2 ipmc routing state enable

mcast create group group-type ip
ipmcast add addr vrf-id 0 sip 8.8.8.8 dip 224.1.1.1 vlan 20 group 0x2000000

//
mcast add egress-interface group 0x2000000 l2 port 1-3
mcast add egress-interface group 0x2000000 l3 intf 0 port 1,2,4
mcast add egress-interface group 0x2000000 l3 intf 1 port 1,2,3,4
```

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6 QoS

6.1 QoS Command

Table 6-1 QoS command

Purpose	CLI Command
	API
Configure port's priority mapping group	qos set priority-selector port <port_list> group-id <prio_group_id>
	rtk_qos_portPriSelGroup_set ( )
Configure priority group source weight	qos set priority-selector group-id <prio_group_id> <prio_src_paras> <prio_weight>
	rtk_qos_priSelGroup_set( )
Configure port based priority setting	qos set remapping port <port_list> internal-priority <priority>
	rtk_qos_priRemap_set( )
Configure inner-tag based priority setting	qos set remapping inner-tag system dei <dei_value> priority <priority> internal-priority <priority>
	rtk_qos_priRemap_set( )
Configure outer-tag based priority setting	qos set remapping outer-tag system dei <dei_value> priority <priority> internal-priority <priority>
	rtk_qos_priRemap_set( )
Configure dscp based priority setting	qos set remapping dscp system dscp <dscp_list> internal-priority <priority>
	rtk_qos_priRemap_set( )
Configure VACL priority setting	Please refer ACL internal priority action of ACL example guide
Configure MAC based VLAN priority setting	Please refer MAC based VLAN entry action
Configure IP Subnet based VLAN priority setting	Please refer IP Subnet based VLAN entry action
Configure MAC/IP Subnet based VLAN priority remapping state	qos set remapping mac-based-vlan-priority-remap system state <admin_state>
	rtk_qos_priRemapEnable_set( )
Configure Protocol based VLAN priority setting	Please refer port protocol VLAN data setting
Configure Protocol based VLAN priority remapping state	qos set remapping protocol-based-vlan-priority-remap system state <admin_state>
	rtk_qos_priRemapEnable_set( )
Configure internal priority to output queue mapping	qos set priority-to-queue priority <priority> queue-id <queue_id>
	rtk_qos_pri2QidMap_set( )
Configure CPU queue ID to normal port queue	qos set cpu-queue-to-normal-queue cpu-queue-id <cpu_queue_id> queue-id <queue_id>

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mapping	rtk_qos_cpuQid2QidMap_set( )
Configure CPU queue ID to stacking port queue mapping	qos set cpu-queue-to-stack-queue cpu-queue <cpu_queue_id> queue-id <stack_queue_id>
	rtk_qos_cpuQid2StackQidMap_set( )
Configure packet to CPU queue ID by register trap/copy action	trap set reason <cpu_reason_code> queue-id <cpu_queue_id>
	rtk_trap_mgmtFrameQueue_set( )
Configure DP source weight	qos set drop-precedence-selector port <port_list> <dp_src_paras> <dp_weight>
	rtk_qos_portDpSel_set( )
Configure inner-tag / outer-tag based dp setting	qos set remapping inner-tag system dei <dei_value> priority <priority> drop-precedence <dp_value> qos set remapping outer-tag system dei <dei_value> priority <priority> drop-precedence <dp_value>
	rtk_qos_dpRemap_set( )
Configure dscp based dp setting	qos set remapping dscp system dscp <dscp_list> drop-precedence <dp_value>
	rtk_qos_dpRemap_set( )
Configure port's queue strict-priority state	qos set scheduling egress strict-priority port <port_list> queue-id <queue_id> state <admin_state>
	rtk_qos_portQueueStrictEnable_set( )
Configure port schedule type	qos set scheduling algorithm port <port_list> <schedule_type>
	rtk_qos_schedulingAlgorithm_set( )
Configure port's queue weight	qos set scheduling queue-weight port <port_list> queue-id <queue_id> weight <queue_weight>
	rtk_qos_schedulingQueue_set( )
Configure inner-tag/outer-tag remarking source	qos set remarking inner-tag system source <inner_prio_remarking_src> qos set remarking outer-tag system source <outer_prio_remarking_src>
	rtk_qos_1pRemarkSrcSel_set( ) rtk_qos_outer1pRemarkSrcSel_set( )
Configure inner-priority remarking setting for output inner-priority and outer-priority	qos set remarking inner-tag system inner-priority <priority> remark-inner-priority <priority> qos set remarking outer-tag system inner-priority <priority> remark-inner-priority <priority>
	rtk_qos_1pRemarking_set( ) rtk_qos_outer1pRemarking_set( )
Configure outer-priority remarking setting for output inner-priority and outer-priority	qos set remarking inner-tag system outer-priority <priority> remark-inner-priority <priority> qos set remarking outer-tag system outer-priority <priority> remark-inner-priority <priority>
	rtk_qos_1pRemarking_set( ) rtk_qos_outer1pRemarking_set( )
Configure internal-priority	qos set remarking inner-tag system internal-priority <priority> remark-inner-priority

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remarking setting for output inner-priority and outer-priority	<priority> qos set remarking outer-tag system internal-priority <priority> remark-inner-priority <priority>
	rtk_qos_1pRemarking_set( ) rtk_qos_outer1pRemarking_set( )
Configure dscp remarking setting for output inner-priority and outer-priority	qos set remarking inner-tag system dscp <dscp_value> remark-inner-priority <priority> qos set remarking outer-tag system dscp <dscp_value> remark-inner-priority <priority>
	rtk_qos_1pRemarking_set( ) rtk_qos_outer1pRemarking_set( )
Configure port inner-tag/outer-tag remarking state	qos set remarking inner-tag port <port_list> state enable qos set remarking outer-tag port <port_list> state enable
	rtk_qos_port1pRemarkEnable_set( ) rtk_qos_portOut1pRemarkEnable_set( )
Configure DSCP remarking source	qos set remarking dscp system source <dscp_remarking_src>
	rtk_qos_dscpRemarkSrcSel_set( )
Configure inner-tag, outer-tag remarking setting for output dscp	qos set remarking dscp system inner-priority <priority> remark-dscp <dscp_value> qos set remarking dscp system outer-priority <priority> remark-dscp <dscp_value>
	rtk_qos_dscpRemarking_set( )
Configure internal-priority remarking setting for output dscp	qos set remarking dscp system internal-priority <priority> remark-dscp <dscp_value>
	rtk_qos_dscpRemarking_set( )
Configure dscp remarking setting for output dscp	qos set remarking dscp system dscp <dscp_value> remark-dscp <dscp_value>
	rtk_qos_dscpRemarking_set( )
Configure dp and internal priority remarking setting for output dscp	qos set remarking dscp system drop-precedence <dp_value> internal-priority <priority> remark-dscp <dscp_value>
	rtk_qos_dscpRemarking_set( )
Configure port dscp remarking state	qos set remarking dscp port <port_list> state <admin_state>
	rtk_qos_portDscpRemarkEnable_set( )
Configure DEI remarking source	qos set remarking dei system source <dei_remarking_src>
	rtk_qos_deiRemarkSrcSel_set( )
Configure DP remarking setting for output DEI	qos set remarking dei system drop-precedence <dp_value> dei <dei_value>
	rtk_qos_deiRemarking_set( )
Configure Internal priority remarking setting for output DEI	qos set remarking dei system internal_priority <priority> dei <dei_value>
	rtk_qos_deiRemarking_set( )
Configure port DEI	qos set remarking dei port <port_list> state <admin_state>

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remarking state	rtk_qos_portDeiRemarkEnable_set( )
Configure port DEI remaking tag	qos set remarking dei tag-selector port <port_list> <dei_remark_vlan_tag>
	rtk_qos_portDeiRemarkTagSel_set( )

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7 Rate Limit

7.1 Rate Limit Command

Table 6-2 Rate Limit command

Purpose	CLI Command
	API
Configure port ingress rate limit state	bandwidth set ingress port <port_list> state <admin_state>
	rtk_rate_portIgrBwCtrlEnable_set( )
Configure port ingress rate limit value	bandwidth set ingress port <port_list> rate <igr_rate>
	rtk_rate_portIgrBwCtrlRate_set( )
Configure counting IFG byte in ingress rate limit	bandwidth set ingress ifg <ifg_type>
	rtk_rate_includeIfg_set( )
Configure flow control state when reach ingress rate limit	bandwidth set ingress flow-control port <port_list> state <admin_state>
	rtk_rate_portIgrBwFlowctrlEnable_set( )
Configure ingress rate limit bypass packet	bandwidth set ingress bypass-packet <igr_bypass_pkt> state enable
	rtk_rate_igrBandwidthCtrlBypass_set( )
Configure port egress rate limit state	bandwidth set egress port <port_list> state <admin_state>
	rtk_rate_portEgrBwCtrlEnable_set( )
Configure port egress rate limit value	bandwidth set egress port <port_list> rate <egr_rate>
	rtk_rate_portEgrBwCtrlRate_set( )
Configure counting IFG byte in egress rate limit	bandwidth set egress ifg <ifg_type>
	rtk_rate_includeIfg_set( )
Configure port's queue egress rate limit state	bandwidth set egress port <port_list> queue <queue_id> state <admin_state>
	rtk_rate_portEgrQueueBwCtrlEnable_set( )
Configure port's queue egress rate limit value	bandwidth set egress port <port_list> queue <queue_id> rate <egr_rate>
	rtk_rate_portEgrQueueBwCtrlRate_set( )
Configure port's queue assure bandwidth state	bandwidth set egress assured-bandwidth port <port_list> queue <queue_id> state <admin_state>
	rtk_rate_portEgrQueueAssuredBwCtrlEnable_set( )
Configure port's queue assure bandwidth rate value	bandwidth set egress assured-bandwidth <port_list> queue <queue_id> rate <egr_rate>
	rtk_rate_portEgrQueueAssuredBwCtrlRate_set( )
Configure port's queue assure bandwidth mode	bandwidth set egress assured-bandwidth <port_list> queue <queue_id> mode <egr_assure_mode>
	rtk_rate_portEgrQueueAssuredBwCtrlMode_set( )
Configure CPU port counting mode	bandwidth set egress cpu-counting-mode <pkt_counting_mode>
	rtk_rate_cpuEgrBandwidthCtrlRateMode_set( )

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7.2 Strom Control Command

Table 6-3 Strom Control command

Purpose	CLI Command
	API
Configure storm packet state	storm-control set unicast port <port_list> state <admin_state> storm-control set multicast port <port_list> state <admin_state> storm-control set broadcast port <port_list> state <admin_state>
	rtk_rate_portStormCtrlEnable_set( )
Configure storm packet rate value	storm-control set unicast port <port_list> rate <storm_rate> storm-control set multicast port <port_list> rate <storm_rate> storm-control set broadcast port <port_list> rate <storm_rate>
	rtk_rate_portStormCtrlRate_set( )
Configure storm packet type	storm-control set unicast port <port_list> type <storm_pkt_type> storm-control set multicast port <port_list> type <storm_pkt_type>
	rtk_rate_portStormCtrlTypeSel_set( )
Configure storm packet counting mode	storm-control set port <port_list> counting-mode <pkt_counting_mode>
	rtk_rate_portStormCtrlRateMode_set( )
Configure counting IFG in strom rate limit	storm-control set ifg <ifg_type>
	rtk_rate_includeIfg_set( )
Configure storm bypass packet state	storm-control set bypass-packet <storm_bypass_pkt> state <admin_state>
	rtk_rate_stormControlBypass_set( )
Configure storm protocol packet state	storm-control set proto-storm <storm_protocol_pkt> port <port_list> state <admin_state>
	rtk_rate_stormCtrlProtoVlanConstrtEnable_set( )
Configure storm protocol packet rate	storm-control set proto-storm <storm_protocol_pkt>port <port_list> rate <storm_rate>

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8 Network Monitoring

8.1 Mirror Command

Table 6-4 Port Basic key command

Purpose	CLI Command
	API
Configure mirror entry	mirror set mirror-id <mirror_id> type <mirror_type> mirroring <devId> <portId> ingress-mirrored <port_list> egress-mirrored <port_list> option <mirror_option>
	rtk_mirror_group_set( )
Configure mirror entry valid state	mirror set mirror-id <mirror_id> state <admin_state>
	rtk_mirror_group_set( )
Configure mirror queue function	mirror set queue-id <queue_id> state <admin_state>
	rtk_mirror_egrQueue_set( )
Configure mirror sample rate	sflow set mirror-group <mirror_id> sample <sample_rate>
	rtk_mirror_sflowMirrorSampleRate_set( )

8.2 sFlow Command

Table 6-5 sFlow command

Purpose	CLI Command
	API
Configure port ingress sFlow rate	sflow set ingress <port_list> sample <sample_rate>
	rtk_mirror_sflowPortIgrSampleRate_get( )
Configure port ingress sFlow rate	sflow set egress <port_list> sample <sample_rate>
	rtk_mirror_sflowPortEgrSampleRate_get( )
Configure sample type if both ingress and egress packet are sampled	sflow set sample control <sflow_sample_type>
	rtk_mirror_sflowSampleCtrl_set( )
Configure sample target	sflow set sample-target <trap_target>
	rtk_mirror_sflowSampleTarget_set( )

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9 Stacking (RTL93xx family only)

9.1 Stacking Command

Table 6-6 Stacking command

Purpose	CLI Command
	API
Configure DUT device ID	stack set devID <devID>
	rtk_stack_devId_set( )
Configure master device ID in stacking system	stack set master-devID <devID>
	rtk_stack_masterDevId_set( )
Configure stacking port	stack set port <stack_port_list>
	rtk_stack_port_set( )
Configure outgoing port for specific device ID DUT	stack set dev-port-map dev <devID> port <stack_port_list>
	rtk_stack_devPortMap_set( )
Configure loop guard state	stack set loop-guard state <admin_state>
	rtk_stack_loopGuard_set( )
Configure non-unicast packet block port for from specific device ID DUT	stack set non-unicast-block src-dev <devID> port <stack_port_list>
	rtk_stack_nonUcastBlockPort_set()
Configure stacking trunk member	trunk set member-port stack-trunk-group <stack_trunk_id> <stack_port_list>
	rtk_trunk_stkTrkPort_set( )

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10 Diagnostic

10.1 OAM Command

Table 6-7 OAM command

Purpose	CLI Command
	API
Enable and trap OAM packet to CPU	trap set oampdu trap-to-cpu
	rtk_trap_oamPDUAction_set( )
Configure OAM packet trap target	trap set oam trap-target <trap_target>
	rtk_trap_oamTarget_set ( )
Drop OAM packet	trap set oampdu drop
	rtk_trap_oamPDUAction_set( )
Forward OAM packet	trap set oampdu forward
	rtk_trap_oamPDUAction_set( )
Configure OAM loopback port RX parser action	trap set oam-loopback-ctrl <port_list> par <loopback_par_act>
	rtk_trap_portOamLoopbackParAction_set( )
Configure OAM loopback port TX mux action	oam set loopback-ctrl port <port_list> mux action <loopback_mux_act>
	rtk_oam_portLoopbackMuxAction_set( )
Configure packet's mac swap action when packet is loopback	oam set loopback-ctrl mac-swap state <admin_state>
	rtk_oam_loopbackMacSwapEnable_set( )
Configure OAM packet source MAC learn act	oam set pdu sa-learn <admin_state>
	rtk_oam_pduLearningEnable_set( )
Configure port dying gasp state	oam set asic-auto-dying-gasp port <port_list> state <admin_state>
	rtk_oam_autoDyingGaspEnable_set( )
Configure port dying gasp payload	oam set dying-gasp port <port_list> payload <dying_gasp_packet_payload>
	rtk_oam_portDyingGaspPayload_set( )
Configure port dying gasp packet count	oam set dying-gasp packet-count <dying_gasp_pkt_count>
	rtk_oam_dyingGaspPktCnt_set( )
Manual trigger DUT send out dying gasp packet	oam set dying-gasp send enable
	rtk_oam_dyingGaspSend_set( )

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10.2 Example

10.2.1 Loopback

```
// enable all port
port set port all state enable
// Enable loopback and  MAC swap function
oam set loopback-ctrl mac-swap state enable
trap set oampdu trap-to-cpu

// Set port 0 RX as loop back mode
trap set oam-loopback-ctrl 0 par loopback
oam set loopback-ctrl port 0 mux action forward
```

10.2.2 Dying gasp

```
// enable all port
port set port all state enable
// enable per port dying gasp function
oam set asic-auto-dying-gasp port all state enable
// set dying gasp packet data into ASIC
oam set dying-gasp port all payload
0x12345678901234567890123456789012345678901234567890123456789012345678901234
5678901234567890123456789012345678901234567890123456789012345678901234567890
// trigger to send dying gasp packet
oam set dying-gasp send enable
```

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11 Security

11.1 Attack Prevent Command

Table 6-8 Attack Prevent command

Purpose	CLI Command
	API
Configure port attack prevent state	security set attack-prevent <port_list> state <admin_state>
	rtk_sec_portAttackPreventEnable_set( )
Configure attack prevent event action	security set attack-prevent <attack_prevent_event> action <attack_prevent_act>
	rtk_sec_attackPreventAction_set( )
Configure attack prevent trap target	security set trap-target <trap_target>
	rtk_sec_trapTarget_set( )
Configure ARP validation action	security set arp-validation <port_list> action <attack_prevent_act>
	rtk_sec_portAttackPrevent_set( )
Configure maximum length of ICMP packet	security set max-ping <max_icmp_len>
	rtk_sec_maxPingLen_set( )
Configure minimum size of IPv6 fragments	security set min-ipv6-frag <min_ipv6_frag_len>
	rtk_sec_minIPv6FragLen_set( )
Configure minimum size of TCP header	security set min-tcp-header <min_tcp_hdr>
	rtk_sec_minTCPHdrLen_set( )
Configure SMURF network mask	security set smurf-netmask <smurf_netmask_len>
	rtk_sec_smurfNetmaskLen_set( )

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11.2 IP-MAC binding command (RTL9310 family only)

Table 6-9 IP-MAC binding command

Purpose	CLI Command
	API
Configure port IP-MAC binding check ip packet state	security set port <port_list> ip-mac-bind ip state <admin_state>
	rtk_sec_portIpMacBindEnable_set( )
Configure port IP-MAC binding check arp packet state	security set port <port_list> ip-mac-bind arp state <admin_state>
	rtk_sec_portIpMacBindEnable_set( )
Add IP-MAC binding entry	security add ip-mac-bind entry ip <ip_addr> mac <mac_addr> vid <vid> <port_or_trunk_id>
	rtk_sec_ipMacBindEntry_add( )
Delete IP-MAC binding entry	security del ip-mac-bind entry ip <ip_addr> mac <mac_addr> vid <vid> <port_or_trunk_id>
	rtk_sec_ipMacBindEntry_del( )
Dump IP-MAC binding entry	security dump ip-mac-bind entry from <begin_idx> to <end_idx>
	rtk_sec_ipMacBindEntry_getNext( )
Configure IP-MAC binding match action	security set ip-mac-bind match action <fwd_act_all>
	rtk_sec_ipMacBindAction_set( )
Configure IP-MAC binding mismatch action	security set ip-mac-bind mismatch action <fwd_act_all>
	rtk_sec_ipMacBindAction_set( )
Configure IP-MAC binding lookup-miss action	security set ip-mac-bind look-up-miss action <fwd_act_all>
	rtk_sec_ipMacBindAction_set( )

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12 Tunneling

For tunneling, unicast routing is necessary. Please refer to 5.1.1 for the routing configuration.

12.1 IP tunneling command (RTL9310 family only)

Purpose	CLI Command
	API
Create tunnel interface	tunnel create intf type <tunnel_intf_type>
	rtk_tunnel_intf_create( )
Configure tunnel local IP	tunnel set intf <tunnel_intf_id> local-ip <ip_addr>
	rtk_tunnel_intf_set( )
Configure tunnel remote IP	tunnel set intf <tunnel_intf_id> remote-ip <ip_addr>
	rtk_tunnel_intf_set( )
Configure tunnel local port	tunnel set intf <tunnel_intf_id> local-port <l4_port>
	rtk_tunnel_intf_set( )
Configure tunnel remote port	tunnel set intf <tunnel_intf_id> remote-port <l4_port>
	rtk_tunnel_intf_set( )
Configure tunnel nexthop	tunnel set intf <tunnel_intf_id> path-id <path_id>
	rtk_tunnel_intfPathId_set( )
Configure tunnel options	tunnel set intf <tunnel_intf_id> flag <tunnel_opt> state <admin_state>
	rtk_tunnel_intf_set( )
Configure tunnel encap check action	tunnel set encap <tunnel_ecap_check_opt> action <tunnel_chk_fail_action>
	rtk_tunnel_globalCtrl_set( )
Configure tunnel decap IP check state	tunnel set decap <tunnel_decap_ip_check_opt> state <admin_state>
	rtk_tunnel_globalCtrl_set( )
Configure tunnel decap check action	tunnel set decap <tunnel_decap_check_opt> action < tunnel_chk_fail_action >
	rtk_tunnel_globalCtrl_set( )
Configuire tunnel ip header identification	tunnel set encap ip-hdr-identification <tunnel_ip_header_ident>
	rtk_tunnel_globalCtrl_set( )

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12.2 VxLAN command (RTL9310 family only)

Purpose	CLI Command
	API
Confgiure flexible table for VxLAN usage	switch set flexible-table format l2-tunnel
	rtk_switch_flexTblFmt_set( )
Create VxLAN tunnel interface	tunnel create intf type <vxlan_tunnel_type>
	rtk_tunnel_intf_create( )
Configure VxLAN tunnel local IP	tunnel set intf < vxlan_tunnel_intf_id> local-ip <ip_addr>
	rtk_tunnel_intf_set( )
Configure VxLAN tunnel remote IP	tunnel set intf < vxlan_tunnel_intf_id> remote-ip <ip_addr>
	rtk_tunnel_intf_set( )
Conifgure VxLAN tunnel local L4 port	tunnel set intf < vxlan_tunnel_intf_id> local-port <l4_port>
	rtk_tunnel_intf_set( )
Conifgure VxLAN tunnel remote L4 port	tunnel set intf < vxlan_tunnel_intf_id> remote-port <l4_port>
	rtk_tunnel_intf_set( )
Add VxLAN VNI entry	vxlan add vxlan-entry intf <vxlan_tunnel_inf_id> vni <vni_id>
	rtk_vxlan_vni_add( )
Configure VxLAN VNI to inner VID mapping	vxlan set vxlan-entry intf <vxlan_tunnel_inf_id> vni <vni_id > inner-tag <vlan_traffic_type> <vid>
	rtk_vxlan_vni_set( )
Configure VxLAN VNI to outer VID mapping	vxlan set vxlan-entry intf <vxlan_tunnel_inf_id> vni <vni_id> outer-tag <vlan_traffic_type> <vid>
	rtk_vxlan_vni_set( )
Configure VxLAN tunnel as MCAST group L2 egress interface	mcast add egress-interface group <mcast_group_id> vxlan entry <vxlan_entry_id>
	rtk_mcast_egrIf_add( )
Configure VxLAN tunnel as UCAST destination interface	l2-table add mac-ucast <vid> <mac_addr> vxlan-entry <vxlan_entry_id>
	rtk_l2_addr_add( )

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12.3 MPLS command (RTL9310 family only)

Purpose	CLI Command
	API
Confgiure flexible table for VxLAN usage	switch set flexible-table format mpls
	rtk_switch_flexTblFmt_set( )
Create MPLS encap. entry with LABEL ID	mpls create encap label <mpls_label_id>
	rtk_mpls_encap_create( )
Configure MPLS encap. operation	mpls set encap <mpls_entry_id> operation <mpls_encap_op>
	rtk_mpls_encap_set( )
Configure MPLS next label encap.	mpls set encap <mpls_entry_id> next-encap <mpls_entry_id>
	rtk_mpls_encap_set( )
Configure MPLS nexhop for encap entry	mpls create nexthop interface <l3_intf> mac <mac_addr> encap <mpls_entry_id>
	rtk_mpls_nextHop_create( )
Create MPLS decap. entry for LABEl ID	mpls create decap label <mpls_label_id>
	rtk_mpls_decap_create( )
Configure MPLS decap. operation.	mpls set decap <mpls_entry_id> operation <mpls_decap_op>
	rtk_mpls_decap_set( )
Configure MPLS decap. interface	mpls set decap <mpls_entry_id> interface <l3_intf>
	rtk_mpls_decap_set( )

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Appendix A - Command Term

<acl_block_id>: available value is from 0 ~ 15

<acl_bypass_act_paras>:

"ingress-bandwidth-control state <admin_state>"

"ingress-stp state <admin_state>", IACL doesn't support

"state <admin_state>"

"ingress-vlan state <admin_state>", IACL doesn't support

<acl_copy_act>:

"portmask-index <pmask_idx>"

"dev <dev_id> port <port_id>"

"Trunk <trunk_id>"

<acl_cpu_qid_act_paras>:

"state <admin_state>"

"<qid_id>"

<acl_data_mask>: acl field data mask value, according to configure field name to decide

<acl_drop_act_paras>

"state <admin_state>"

"permit"

"drop"

<acl_entry_id>: acl entry ID,

<acl_field_data>: acl field data value, according to configure field name to decide

<acl_field_idx>: available value is from 0 ~ 11

<acl_field_name>: please refer Table 2-10 VACL field keyword list and Table 2-11 IACL field keyword list

<acl_field_type>: please refer Table 2-12 ACL template field list

<acl_forward_act_paras>:

"drop"

"state <admin_state>"

"cpu-packet-format original" or "cpu-packet-format modified"

"precedence select-drop" or "precedence select-forward"

"sa-learn" null or "sa-learn not-learn"

<acl_group_id>: available value is from 0 ~ 15

<acl_int_prio_act_paras>:

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"<vlan_priority>"

"state <admin_state>"

<acl_logic_id>: available value is from 0 ~ 15

<acl_meter_act_paras>:

"<meter_idx>"

"state <admin_state>"

<acl_mirror_act_paras>:

"<mirror_idx> original"

"<mirror_idx> modified" : VACL doesn't support

"state <admin_state>"

"cancel

<acl_remark_act>:

"dscp <dscp_value>"

"ip-precedence <ip_precedence_value>"

"state <admin_state>"

"tos <tos_value>"

<acl_redirect_act_paras>:

"portmask-index <pmask_idx>"

"dev <dev_id> port <port_id>"

"Trunk <trunk_id>"

<acl_stats_act_paras>:

"state <admin_state>"

"packet32"

"bytes64"

<acl_template_id>: available value is from 0 ~ 9

<acl_template_vlan_type>: available value is "inner", "outer" or "forward"

< acl_vlan_prio_act_paras>:

"state <admin_state>"

"assign <vlan_priority>"

"copy-from-outer" for inner-priority

"copy-from-inner" for outer-priority

"keep"

<acl_vlan_xlate_act_paras>:

"assign <vid>"

"shift <value>"

"shift-from-outer <value>" for inner-vid

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"shift-from-inner <value>" for outer-vid

<admin_state>: available value is "enable" or "disable"

<aging_time>: unit is second, the available value is 0 ~ 10.6M

<an_ability>: auto negotiation ability is multiple selection, the available parameters and sequence is "10h", "10f", "100h", "100f", "1000f", "2_5g", "5g", "flow-control" or "asy-flow-control"

<attack_prevent_event>: available value is "daeqsa-deny", "icmp-frag-pkts-deny", "icmpv4-ping-max-check", "icmpv6-ping-max-check", "ipv6-min-frag-size-check", "land-deny", "nullscan-deny", "pod-deny", "smurf-deny", "syn-sportl1024-deny", "synfin-deny", "synrst-deny", "tcp-frag-off-min-check", "tcpblat-deny", "tcphdr-min-check', "udpblat-deny', "xma-deny" or "ip4-invalid-len'

<attack_prevent_act>: available value is "drop", "forward" or "trap-to-cpu"

<begin_idx>: available value are "begin" or "<entry_idx>"

<block_template_idx>: available value is "template-index0" or "template-index1"

<combo-media_type>: the available parameter is "copper-force" or "fiber-force"

<cpu_queue_id>: cpu port queue id, available is 0-31

<cpu_reason_code>: available value is "arp", "dhcp", "igmp-mld", "bpdu", "ptp", "lldp", "eapol", "oam", "lacp", "usr-def-rma", "rma", "ip-hdr-err", "crc-err", "checksum-err", "ip-rsvd-addr", "ingr-vlan-filter", "cfi", "ivc", "invalid-sa", "mac-constraint", "new-sa", "pmv-forbid", "sttc-pmv", "dynm-pmv", "hash-full", "attack", "acl", "mirror", "ipuc-rpf", "ipmc-rpf", "l2-lookup-mis", "l3-bdg-lookup-mis", "router-mac-intf", "router-mac-non-ip", "except-routing-ip", "routing-dip-dmac-mis-match", "ip6uc-hop-by-hop", "ip6mc-router-header", "ip4-option", "ipmc-routing-lookup-miss", "ipuc-null-route", "ipuc-pbr-null-route", "ipuc-net-route", "ipmc-bdg-entry", "ipmc-route-entry", "route-nh-age-out", "icmp-redir", "ipuc-mtu", "ipmc-mtu", "ipuc-ttl", "ipmc-ttl", "normal-fwd", "rldp-rlpp", "ip6-nd"

<cross_over_mode>: the available parameter is "auto", "mdi" or "mdix"

<dei_remarking_src>: available value is "internal-priority" or "drop-precedence"

<dei_remark_vlan_tag>: available value is "inner-tag" or "outer-tag"

<dei_value>: available value is from 0-1

<dev_id>: device id, available value from 0-15

<dev_intf>: include device ID and port(trunk) ID, the format would be "devID <device_id> port <port_id>" or "devId <device_id> trunk <trunk_id>"

<dp_value>: available value is from 0-2

<dp_weight>: available value is from 0-3, 0 mean ignore the DP source

<dscp_list>: dscp list, the format cloud be "1,3" or "6-8"

<dscp_remarking_src>: available value is "internal-priority", "inner-priority", "outer-priority", "dscp", "drop-precedence" or "drop-precedence-and-internal-priority"

<dscp_value>: available value is from 0–63

<dp_src_paras>: available value is "inner-tag", "outer-tag" or "dscp"

<dying_gasp_packet_payload>: the format is hex value and start with "0x", ex: 0x12345677

<dying_gasp_pkt_count>: available value is is from 0-7

<egr_assure_mode>: available value is "shared-bandwidth" or "fixed-bandwidth"

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<egr_rate>: the unit is 16Kbps, available value 0-0xFFFF, 0 means blocking

<egr_xlat_compare_paras>:

"<vlan_type> vid <vid> state <admin_state>"

"<vlan_type> priority <priority> state <admin_state>"

"<vlan_type> tag-status <frame_type>"

"port <port_id> state <admin_state>"

"trunk <trunk_id> state <admin_state>"

"range-check <vid_range_check_data> mask <vid_range_check_mask>"

<egr_xlat_entry_id>: available value from 0-511

<fid> : available value from 1-4094

<frame_type>: available value is "all", "tagged", or "untagged"

<fwd_act>: available value is "drop", "forward", trap-to-cpu" and "copy-to-cpu"

<fwd_act_all>: available value are "drop", "forward", trap-to-cpu", "copy-to-cpu", "trap-to-master" and "copy-to-master"

<header_error_act>: available value is "drop", "trap-to-cpu", "trap-to-master" or"hard-drop"

<ifg_type>: available value is "exclude" or "include"

<igr_rate>: the unit is 16Kbps, available value 0-0xFFFF, 0 means blocking

<igr_bypass_pkt>: available value is "arp-request", "rma", "bpdu", "rtk-ctrl-pkt", "igmp", "rip" or "dhcp"

<igr_block_mode>: available value is "conversion", "mac-based", or "ip-subnet-based"

<igr_xlat_block_id>: available value from 0-7

<igr_xlat_compare_paras>:

"<vlan_type> vid <vid> state <admin_state>"

"<vlan_type> priority <priority> state <admin_state>"

"<vlan_type> tag-status <frame_type>"

"port <port_id> state <admin_state>"

"trunk <trunk_id> state <admin_state>"

"range-check <vid_range_check_data> mask <vid_range_check_mask>"

<igr_xlat_entry_id>: available value from 0-1023

<inner_prio_remarking_src>: available value is "internal-priority", "inner-priority", "outer-priority" or "dscp"

<ip_addr>: ip address string format is A.B.C.D

<ipsubnet_vlan_compare_paras>:

"port <port_id> state <admin_state>"

"trunk <trunk_id> state <admin_state>"

"inner frame-type <frame_type>"

"outer frame-type <frame_type>"

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"src-ip <ip_addr> mac-mask <ip_addr_mask>"

<ip6mc_route_exception_event>: available value is "zero-sip", "dmac-mismatch", "hl-fail", "mtu-fail", "bad-sip", "header-router", "hbh-error" or "hbh"

<ip6uc_route_exception_event>: available value is "bad-sip", "bad-dip", "zero-sip", "hbh-err", "header-route", "hbh", "hl-fail", "mtu-fail" or "dmac-mismatch"

<ipmc_lookup_miss_act>: available value is "drop", "trap-to-cpu" or "trap-to-master"

<ipmc_route_exception_event>: available value is "zero-sip", "dmac-mismatch", "ttl-fail", "mtu-fail", "bad-sip" or "header-option"

<ipsubnet_vlan_action_paras>:

"fwd-action <fwd_action> "or "fwd-action <fwd_action> bypass-ingress-vlan-filter"

"vlan-type <vlan_type> vid <vid> state <admin_state> priority <priority> state <admin_state> tpid <tpid_idx> state <admin_state>"

"vlan-tag-status untag", "vlan-tag-status tag" or "vlan-tag-status none"

<ipuc_route_exception_event>: available value is "bad-sip", "bad-dip", "zero-sip", "dmac-bc", "ttl-fail", "mtu-fail", "dmac-mc" or "header-opt"

<jumbo_speed>: the available parameter is "fe", or "ge"

<l2_block_id>: available value is 0 ~ 1

<l2_flush_paras>: available value is "dynamic-only" or "include-static"

<l2_hash_argo>: available value is "algo0" or "algo1"

<l2_paras>: l2 parameters is multiple selection, the available parameters and sequence is "sa-block", "da-block", "static", "nexthop" or "suspend"

<l2_replace_intf>: available value is "<dev_intf>" , "<port_id>", "<trunk_id>" or "<vid>"

<l2_replace_paras>: available value is "replace-port" or "replace-trunk"

<l3_intf>: by created L3 interface ID

<l4_port>: L4 port 0~65535

<learn_count>: mac learn count value. Learn count = 0 mean never learning and learn count = 0x7ffff mean unlimited

<learn_full_action>: available value is "copy-to-cpu", "drop", "forward", "trap-to-cpu", "copy-to-master" or "trap-to-master"

<lookup_miss_action>: available value is "copy-to-cpu", "drop", "forward", "trap-to-cpu", "copy-to-master" or "trap-to-master"

<lookup_phase>: available value is "vacl" or "iacl"

<lookup_phase_id>: 0 mean vacl, 1 mean iacl

<loopback_par_act>: available value is "drop", "forward", "loopback" or "trap"

<loopback_mux_act>: available value is "drop" or "forward

<mac_addr>: mac address string format is XX:XX:XX:XX:XX:XX

<mac_constraint_act>: available value is "copy-to-cpu", "drop", "forward", "trap-to-cpu", "copy-to-master" or "trap-to-master"

<mac_learning_mode>: available value is "asic-learn", "software-learn" or "not-learn"

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<mac_vlan_compare_paras>:

"port <port_id> state <admin_state>"

"trunk <trunk_id> state <admin_state>"

"inner frame-type <frame_type>"

"outer frame-type <frame_type>"

"mac-address <mac_addr> mac-mask <mac_addr_mask>"

<mac_vlan_action_paras>:

"fwd-action <fwd_action> "or "fwd-action <fwd_action> bypass-ingress-vlan-filter"

"vlan-type <vlan_type> vid <vid> state <admin_state> priority <priority> state <admin_state> tpid <tpid_idx> state <admin_state>"

"vlan-tag-status untag", "vlan-tag-status tag" or "vlan-tag-status none"

<max_icmp_len>: available value is from 0-65535

<max_pkt_len>: the max jumbo frame size is 12288

<meter_idx>: available value is from 0 ~ 255

<meter_type_paras>:

"dlb lb0-rate <rate> lb0-burst <burst_size> lb1-rate <rate> lb1-burst <burst_size>"

"srtcm color-aware cir <commintted_rate> cbs <committed_burst_size> ebs <exceed burst " or "srtcm color-blind cir <commint_rate> cbs <committed_burst_size> eb <exceed burst "

"trtcm color-aware cir <commintted_rate> cbs <committed_burst_size> pir <peak_rate> pbs <peak_burst_size>" or "trtcm color-blind cir <commintted_rate> cbs <committed_burst_size> pir <peak_rate> pbs <peak_burst_size>"

"mode byte" or "mode packet"

<min_ipv6_frag_len>: available value is from 0-65535

<min_tcp_hdr>: available value is from 0-31

<mirror_id>: available value is is from 0-3

<mirror_option>: mirror_option is multiple selection, the available parameters and sequence is "igr-and-egr", "mirrored-only", "original-pkt", "duplicate-filter", "self-filter", mtp-vlan"

<mirror_type>: available value is "port-based", "rspan-based" or "flow-based"

<msti_instance>: available value is from 0-63

<msti_mode>: available value is "normal" or "cist"

<multicast_group_id>: by created multicast group ID

<multicast_type>: available value is "l2-mcast", "ip4-mcast" or "ip6-mcast"

<next_hop_act>: available value is "forward", "drop", "trap-to-cpu", or "trap-to-master"

<outer_prio_remarking_src>: available value is "internal-priority", "inner-priority", "outer-priority" or "dscp"

<path_id>: by created next hop ID

<pkt_counting_mode>: available value is "byte" or "packet"

<pmask_idx>: forwarding table index, the available index is from 0 ~ 1023

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<port_id>: port ID, the available port ID is from 0 ~ 28

<port_or_trunk_id>: “port <port_id>” or “trunk <trunk_id>”

<port_list>: port list , the format cloud be “1,3” or “6-8”

<prefix_len>: available value is from 0~32

<**priority_xlat_action>:** available value is “force” or “none”

<prio_group_id>: available value is from 0-3

<prio_src_paras>: available value is “port”, “dscp”, “inner-tag”, “outer-tag”, “vlan-acl”, “mac-based-vlan”, “protocol-based-vlan” or “routing”

<prio_weight>: available value is from 0-8 and 0 mean ignore the priority source

<protocol_frame_type>: available value is “ethernet”, “snap” or “llc-other”

<protocol_vlan_group_id>: available value from 0-8

<pvid>: available value from 1-4094

<phy_force_ability>: phy force ability is single selection, the available parameter is “10h”, “10f”, “100h”, “100f” or “1000f”

<queue_id>: normal port queue id, available is 0-7

<rma_action>: available value is “drop”, “forward”, “forward-and-flood”, “trap-to-cpu” or “trap-to-master”

<rma_tail>: tail of RMA MAC address <0-0x2f>

<rma_user_define_entry_id>: available value is from 0-3

<rma_user_define_compare_key>: available value is “mac”, “ethertype” or “both”

<route_exception_act>: available value is “drop”, “forward”, “trap-to-cpu”, “copy-to-cpu”, “trap-to-master” or “copy-to-master”.

<sample_rate>: available value is from 0-65535, 0 mean disabled.

<schedule_type>: available value is “wrr” or “wfq”

<sflow_sample_type>: available value is “ingress” or “egress”

<smurf_netmask_len>: available value is from 0-32

<stacking_trunk_id>: available id is from 0 ~ 1

<stack_port_list>: stacking port list , available port id range is 24-27, the format cloud be “24,25” or “24-25”

<stack_queue_id>: stacking port queue id, available is 0-11

<stack_trunk_id>: stacking trunk ID, available value is from 0-2

<storm_bypass_pkt>: available value is “arp-request”, “bpdu”, “igmp”, “rma”, “rtk-ctrl-pkt”, “dhcp” or “rip-ospf”

<storm_pkt_type>: available value is “unknown-only” or “both”

<storm_protocol_pkt>: available value is “arp-request”, “bpdu”, “igmp” or “dhcp”

<storm_rate>: the unit is 16kbps for byte mode, 1 pps for packet mode; available value 0-0xFFFF, 0 means blocking

<tag_status_xlat_action>: available value is “untag”, “tag” or “none”

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<end_idx>: available value are “end” or “<entry_idx>”

<tpid_idx>: available value from 0-3

<tpid_idx_mask>: TPID index mask, this is hex format and available value is bit 0 ~ bit 3

<tpid_value>: TPID value

<tpid_xlat_action>: available value is “force” or “none”

<trap_target>: available value is “local” or “master”

<trunk_algo_id>: available id is from 0 ~ 1

<trunk_egress_port_list>: format: devID:port, ex: 0:1, 2:2

<trunk_distribute_paras>:

This parameters is multiple selection, all available parameters and sequence is “src-port”, “src-mac”, “dst-mac”, “vlan”, “src-ip”, “dst-ip”, “src-l4-port”, “dst-l4-port” “proto” or “flow-label”

For l2 packet type, the available parameters is “dst-mac”, “src-mac”, “src-port” or “vlan”

For l3 packet type, the available parameters is “dst-ip”, “dst-l4-port”, “dst-mac”, “flow-label”, “protocol”, “src-ip”, “src-l4-port”, “src-mac”, “src-port” or “vlan”

<trunk_id>: available id is from 0 ~ 63

<trunk_list>: trunk list, the format cloud be “1,3” or “6-8”

<trunk_mode>: available value is “stand-alone” or “stacking”

<trunk_pkt_type>: available value is “l2” or “l3”

<trunk_shift_value>: available id is from 0 ~ 5

<tunnel_chk_fail_action>: “drop”, “trap-to-cpu” and “trap-to-master”

<tunnel_decap_check_opt>: “ip-sip-fail”, “ip6-sip-fail”, “isatap-sip-fail”, “6to4-sip-fail”, “6to4-dip-fail” and “6rd-dip-fail”

<tunnel_decap_ip_check_opt>: “ip6-sip-ip4compatible-check”, “ip6-sip-ip4mapped-check”, “isatap-sip-type-check”, “isatap-sip-mapping-check” ,“6to4-sip-check”, “6to4-dip-check” and “6rd-dip-check”

<tunnel_ecap_check_opt>: “mtu-fail”, “ttl-fail” and “route-to-tunnel”

<tunnel_intf_id>: tunnel interface id

<tunnel_inf_type>: available value are “ip-in-ip”, “ip6-in-ip”, “ipany-in-ip”, “ip-in-ip6”, ip6-in-ip6”, “ipany-in-ip6”, “isatap”, “6to4”, “6rd”, “gre-ip-in-ip”, “gre-ip6-in-ip”, “gre-ipany-in-ip”, “gre-ip-in-ip6”, “gre-ip6-in-ip6” or “gre-ipany-in-ip6”

<tunnel_ip_header_ident>: available value is 0~65535

<tunnel_opt>: available value are “decap-disable”, “decap-use-carrier-ttl”, “decap-use-carrier-dscp”, “decap-keep-passenger-dscp”, “encap-disable”, “encap-ttl-dec-ignore”, “encap-ttl-assgin” and “encap-dont-frag-inherit”

<urpf_fail_act>: available value is “drop”, “forward”, “trap-to-cpu”, “copy-to-cpu”, “trap-to-master” or “copy-to-master”

<vid>: available value from 1-4094

<vid_lower>: available value from 1-4094

<vid_upper>: available value from 1-4094

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<vid_xlat_action>: available value is “force”, “shift”, “copy-from-outer”, “copy-from-inner” or “none”

<vlan_accept_mode>: available value is “all” , “tag-only” or “untag-only”

<vlan_apply_mode>: available value is “all” , “untag-only” or “untag-and-priority-tag”

<vlan_constraint_entry_id>: available value is from 0 - 7

<vlan_filter_action>: available value is “forward” , “drop” or “trap”

<vlan_hash_packet_type>: available value is “unicast” , “multicast”

<vlan_isolation_entry_id>: available value from 0-15

<vlan_isolation_trust_port_list>: trust port list, other ports are forbidden ports , the format cloud be “1,3” or “6-8”

<vlan_profile_idx>: available value from 0 ~ 7

<vlan_range_check_id>: available value from 0-1

<vlan_range_check_entry_id>: available value from 0-31

<vlan_tpid_idx>: available value is from 0 ~ 3

<vlan_traffic_type>: available value are “untag”, untag-pri”, and “all”.ntag-pri”, and “all”

<vlan_type>: available value is “inner”, or “outer”

<vni_id>: 0~16777215

<vrf_id>: No used on RTL9300, please input 0

<vxlan_tunnel_intf_id>: VxLAN tunnel interface id

<vxlan_tunnel_type>: “vxlan-in-ip”, “vxlan-in-ip6”, “vxlan-gpe-in-ip” and “vxlan-gpe-in-ip6”

<xlat_lookup_miss_act>: available value is “forward”, or “drop”

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