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# IES Services Command Reference

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## IES Service Configuration Commands

### Global Commands

```

config
  — service
    — ies service-id [customer customer-id] [vpn vpn-id] [create]
    — no ies service-id
      — description description-string
      — no description
      — igmp-host-tracking
        — expiry-time expiry-time
        — no expiry-time
        — [no] shutdown
      — service-name service-name
      — no service-name
      — [no] shutdown

```

Interface Commands

```

config
  — service
    — ies service-id [customer customer-id] [vpn vpn-id]
      — interface ip-int-name [create] [tunnel]
      — no interface ip-int-name
        — address {ip-address/mask | ip-address netmask} [broadcast [all-ones |
          host-ones][track-srrp srrp-instance]
        — no address [ip-address/mask | ip-address netmask]
        — [no] allow-directed-broadcasts
        — arp-limit limit [log-only] [threshold percent]
        — no arp-limit
        — arp-retry-timer timer-multiple
        — no arp-retry-timer
        — [no] arp-timeout
        — arp-timeout seconds
        — no arp-timeout
        — authentication-policy name
        — no authentication-policy name
        — bfd transmit-interval [receive receive-interval] [multiplier multi-
          plier][echo-receive echo-interval] [type cpm-np]
        — no bfd
        — cflowd-parameters
        — no cflowd-parameters
          — sampling {unicast | multicast} type {acl | interface} [direc-
            tion {ingress-only | egress-only|both}]
          — no sampling {unicast | multicast}
        — cpu-protection policy-id
        — no cpu-protection
        — delayed-enable seconds
        — no delayed-enable
        — description description-string
        — no description
        — dhcp
          — description description-string
          — no description
          — gi-address ip-address [src-ip-addr]
          — no gi-address
          — lease-populate [nbr-of-leases]
          — no lease-populate
          — [no] option
            — action {replace | drop | keep}
            — no action
            — circuit-id [ascii-tuple | ifindex | sap-id | vlan-ascii-
              tuple]
            — no circuit-id
            — remote-id [mac | string string]
            — no remote-id
            — [no] vendor-specific-option
              — [no] client-mac-address
              — [no] sap-id
              — [no] service-id
              — string text
              — no string
              — [no] system-id
          — proxy-server
  
```

- **emulated-server** *ip-address*
- **no emulated-server**
- **lease-time** [*days days*] [*hrs hours*] [*min minutes*] [*sec seconds*] [**radius-override**]
- **no lease-time**
- [**no**] **shutdown**
- **python-policy** *policy-name*
- **no python-policy**
- **relay-unicast-msg release-update-src-ip**
- **no relay-unicast-msg**
- **server** *server1* [*server2...*(up to 8 max)]
- **no server**
- [**no**] **shutdown**
- [**no**] **trusted**
- **dynamic-tunnel-redundant-next-hop** *ip-address*
- **no dynamic-tunnel-redundant-next-hop**
- [**no**] **enable-ingress-stats**
- [**no**] **enable-mac-accounting**
- [**no**] **flowspec**
- **host-connectivity-verify** [**source** {*vrrp* | *interface*}] [**interval** *interval*]
- [**action** {*remove* | *alarm*}]
- **icmp**
  - [**no**] **mask-reply**
  - **redirects** [*number seconds*]
  - **no redirects**
  - **ttl-expired** [*number seconds*]
  - **no ttl-expired**
  - **unreachables** [*number seconds*]
  - **no unreachables**
- **if-attribute**
  - [**no**] **admin-group** *group-name* [*group-name...*(up to 5 max)]
  - **no admin-group**
  - [**no**] **srlg-group** *group-name* [*group-name...*(up to 5 max)]
  - **no srlg-group**
- **ip-load-balancing** {*source* | *destination*}
- **no ip-load-balancing**
- **ip-mtu** *octets*
- **no ip-mtu**
- **ipcp**
  - **dns** *ip-address* [**secondary** *ip-address*]
  - **dns secondary** *ip-address*
  - **no dns** [*ip-address*] [**secondary** *ip-address*]
  - **peer-ip-address** *ip-address*
  - **no peer-ip-address**
- [**no**] **ipv6**
  - **address** *ipv6-address/prefix-length* [**eui-64**]
  - **no address** *ipv6-address/prefix-length*
  - **bfd** *transmit-interval* [**receive** *receive-interval*] [**multiplier multiplier**][**echo-receive** *echo-interval*] [**type** *cpm-np*]
  - **no bfd**
  - [**no**] **dad-disable**
  - [**no**] **dhcp6-relay**
    - **description** *description-string*

- **no description**
- **lease-populate** [*nbr-of-leases*] **route-populate** [**pd**]  
**na** [**ta**]
- **lease-populate** [*nbr-of-leases*] **route-populate pd**  
[**na**] [**ta**]
- **lease-populate** [*nbr-of-leases*] **route-populate** [**pd**]  
[**na**] **ta**
- **no lease-populate**
- [**no**] **neighbor-resolution**
- [**no**] **option**
  - **interface-id**
  - **interface-id** **ascii-tuple**
  - **interface-id** **ifindex**
  - **interface-id** **sap-id**
  - **interface-id** **string**
  - **no interface-id**
  - [**no**] **remote-id**
- **python-policy** *policy-name*
- **no python-policy**
- **server** *ipv6z-address* [*ipv6z-address...*(up to 8 max)]
- **no server** [*ipv6z-address...*(up to 8 max)]
- [**no**] **shutdown**
- **source-address** *ipv6-address*
- **no source-address**
- [**no**] **dhcp6-server**
  - **no lease-populate**
  - **max-nbr-of-leases** *max-nbr-of-leases*
  - **no max-nbr-of-leases**
  - [**no**] **prefix-delegation**
    - [**no**] **prefix** *ipv6-address/prefix-length*
    - **duid** *duid* [**iaid** *iaid*]
    - **no duid**
    - **preferred-lifetime** *seconds*
    - **preferred-lifetime** **infinite**
    - **no preferred-lifetime**
    - **valid-lifetime** *seconds*
    - **valid-lifetime** **infinite**
    - **no valid-lifetime**
  - [**no**] **shutdown**
- **icmp6**
  - **packet-too-big** [*number seconds*]
  - **no packet-too-big**
  - **param-problem** [*number seconds*]
  - **no param-problem**
  - **redirects** [*number seconds*]
  - **no redirects**
  - **time-exceeded** [*number seconds*]
  - **no time-exceeded**
  - **unreachables** [*number seconds*]
  - **no unreachables**
- **link-local-address** *ipv6-address* [**preferred**]
- **no link-local-address**
- [**no**] **local-proxy-nd**
- **neighbor** *ipv6-address mac-address*
- **no neighbor** *ipv6-address*
- **neighbor-limit**
- **no neighbor-limit** *limit* [**log-only**] [**threshold** *percent*]

- **proxy-nd-policy** *policy-name* [*policy-name...*(up to 5 max)]
- **no proxy-nd-policy**
- **[no] qos-route-lookup**
- **[no] secure-nd**
  - **[no] allow-unsecured-msgs**
  - **link-local-modifier** *modifier*
  - **no link-local-modifier**
  - **public-key-min-bits** *bits*
  - **no public-key-min-bits**
  - **security-parameter** *sec*
  - **no security-parameter**
  - **[no] shutdown**
- **stale-time** *seconds*
- **no stale-time**
- **tcp-mss** *mss-value*
- **no tcp-mss**
- **[no] urpf-check**
  - **mode** {**strict** | **loose** | **strict-no-ecmp**}
  - **no mode**
- **load-balancing**
  - **egr-ip-load-balancing** {**source** | **destination** | **inner-ip**}
  - **no egr-ip-load-balancing**
  - **[no] spi-load-balancing**
  - **[no] teid-load-balancing**
- **[no] local-dhcp-server**
- **[no] local-proxy-arp**
- **[no] loopback**
- **[no] mac** *ieee-address*
- **monitor-oper-group** *name*
- **no monitor-oper-group**
- **multicast-network-domain** *multicast-network-domain*
- **no multicast-network-domain**
- **[no] proxy-arp-policy** *policy-name* [*policy-name...*(up to 5 max)]
- **[no] ptp-hw-assist**
- **qos-route-lookup** [**source** | **destination**]
- **no qos-route-lookup**
- **[no] remote-proxy-arp**
- **secondary** {*ip-address/mask* | *ip-address netmask*} [**broadcast all-ones** | **host-ones**] [**igp-inhibit**]
- **no secondary** *ip-address*
- **[no] shutdown**
- **static-arp** *ieee-mac-addr unnumbered*
- **no static-arp** *unnumbered*
- **static-tunnel-redundant-next-hop** *ip-address*
- **no static-tunnel-redundant-next-hop**
- **tcp-mss** *mss-value*
- **no tcp-mss**
- **tos-marking-state** {**trusted** | **untrusted**}
- **no tos-marking-state**
- **unnumbered** [*ip-int-name* | *ip-address*]
- **no unnumbered**
- **[no] urpf-check**
  - **mode** {**strict** | **loose** | **strict-no-ecmp**}

- **no mode**
- **vas-if-type** {to-from-access | to-from-network | to-from-both}
- **no vas-if-type**

## Routed VPLS Commands

For more information, refer to here.

```

config
  — service
    — ies service-id [customer customer-id] [vpn vpn-id]
      — interface ip-interface-name [create]
      — no interface interface-name
        — vpls service-name
        — no vpls
          — ingress
            — v4-routed-override-filter ipv4-filter-id
            — no v4-routed-override-filter
            — v6-routed-override-filter ipv6-filter-id
            — no v6-routed-override-filter
          — egress
            — reclassify-using-qos sap-egress-qos-id
            — no reclassify-using-qos

```

## Redundant Interface Commands

```

config
  — service
    — ies service-id [customer customer-id] [vpn vpn-id]
      — [no] redundant-interface ip-int-name
        — address {ip-address/mask | ip-address netmask} [remote-ip ip-address]
        — no address
        — description description-string
        — no description
        — [no] shutdown
        — no spoke-sdp sdp-id:vc-id
          — egress
            — filter [ip ip-filter-id] [ipv6 ipv6-filter-id]
            — no filter [ip ip-filter-id] [ipv6 ipv6-filter-id]
            — vc-label egress-vc-label
            — no vc-label [egress-vc-label]
          — ingress
            — filter [ip ip-filter-id] [ipv6 ipv6-filter-id]
            — no filter [ip ip-filter-id] [ipv6 ipv6-filter-id]
            — vc-label ingress-vc-label
            — no vc-label [ingress-vc-label]
        — [no] shutdown
  
```



## Interface SAP Commands

```

config
  — service
    — ies service-id [customer customer-id] [vpn vpn-id]
      — [no] interface ip-int-name
        — [no] sap sap-id
          — aarp aarpId type type
          — no aarp
          — accounting-policy acct-policy-id
          — no accounting-policy [acct-policy-id]
          — anti-spoof {ip | ip-mac}
          — no anti-spoof
          — app-profile app-profile-name
          — no app-profile
          — atm
            — egress
              — traffic-desc traffic-desc-profile-id
              — no traffic-desc
            — encapsulation atm-encap-type
            — ingress
              — traffic-desc traffic-desc-profile-id
              — no traffic-desc
            — oam
              — [no] alarm-cells
              — [no] periodic-loopback
          — calling-station-id calling-station-id
          — no calling-station-id
          — [no] collect-stats
          — cpu-protection policy-id [mac-monitoring][eth-cfm-monitoring [aggregate] [car]] [ip-src-monitoring]
          — no cpu-protection
          — description description-string
          — no description
          — dist-cpu-protection policy-name
          — no dist-cpu-protection
          — egress
            — agg-rate-limit agg-rate [queue-frame-based-accounting]
            — no agg-rate-limit
            — [no] agg-rate
              — rate {max | rate}
              — no rate
            — [no] limit-unused-bandwidth
            — [no] queue-frame-based-accounting
            — [no] qinq-mark-top-only
            — filter [ip ip-filter-id]
            — filter [ipv6 ipv6-filter-id]
            — no filter [ip ip-filter-id] [ipv6 ipv6-filter-id]
            — [no] hsmda-queue-override
              — secondary-shaper secondary-shaper-name
              — no secondary-shaper
              — wrr-policy hsmda-wrr-policy-name

```

- **no wrr-policy**
  - **packet-byte-offset** {**add** *add-bytes* | **subtract** *sub-bytes*}
  - **no packet-byte-offset**
  - **queue** *queue-id*
  - **no queue** *queue-id*
  - **wrr-weight** *weight*
  - **no wrr-weight**
  - **mbs** *size* {[**bytes** | **kilobytes**] | **default**}
  - **no mbs**
  - **rate** *pir-rate*
  - **no rate**
  - **slope-policy** *hsmda-slope-policy-name* *allowable*
  - **no slope-policy**
  - **source** *ip-address*
  - **remote-ip** *ip-address*
  - **backup-remote-ip** *ip-address*
  - **[no] qinq-mark-top-only**
  - **qos** *policy-id* [**port-redirect-group** *queue-group-name* **instance** *instance-id*]
  - **no qos**
  - **[no] queue-override**
    - **[no] queue** *queue-id*
      - **adaptation-rule** [**pir** {**max** | **min** | **closest**}] [**cir** {**max** | **min** | **closest**}]
      - **no adaptation-rule**
      - **avg-frame-overhead** *percentage*
      - **no avg-frame-overhead**
      - **cbs** *size-in-kbytes*
      - **no cbs**
      - **high-prio-only** *percent*
      - **no high-prio-only**
      - **mbs** *size-in-kbytes*
      - **no mbs**
      - **monitor-depth**
      - **[no] monitor-depth**
      - **rate** *pir-rate* [**cir** *cir-rate*]
      - **no rate**
  - **[no] scheduler-override**
    - **[no] scheduler** *scheduler-name*
    - **parent** [**weight** *weight*] [**cir-weight** *cir-weight*]
    - **no parent**
    - **rate** *pir-rate* [**cir** *cir-rate*]
    - **no rate**
  - **scheduler-policy** *scheduler-policy-name*
  - **no scheduler-policy**
- **eth-cfm**
  - **[no] collect-lmm-stats**
  - **mep** *mep-id* **domain** *md-index* **association** *ma-index* [**direction** {**up** | **down**}]
  - **no mep** *mep-id* **domain** *md-index* **association** *ma-index*
    - **[no] ais-enable**
    - **[no] interface-support-enable**
    - **[no] ccm-enable**

- **ccm-ltm-priority** *priority*
- **no ccm-ltm-priority**
- **[no] ccm-padding-size** *ccm-padding*
- **[no] description**
- **[no] eth-test-enable**
  - **[no] test-pattern** {*all-zeros* | *all-ones*} [*crc-enable*]
- **fault-propagation-enable** {*use-if-tlv* | *suspend-ccm*}
- **no fault-propagation-enable**
- **low-priority-defect** {*allDef* | *macRemErrXcon* | *remErrXcon* | *errXcon* | *xcon* | *noXcon*}
- **one-way-delay-threshold** *seconds*
- **[no] shutdown**
- **[no] squelch-ingress-levels** [*md-level* [*md-level...*]]
- **tunnel-fault** [*accept* | *ignore*]
- **frame-relay**
  - **[no] frf-12**
    - **ete-fragment-threshold** *fragment-threshold*
    - **no ete-fragment-threshold**
    - **[no] interleave**
  - **[no] scheduling-class** *class-id*
- **host-lockout-policy** *policy-name*
- **no host-lockout-policy**
- **[no] host-shutdown**
- **ingress**
  - **filter** [*ip ip-filter-id*]
  - **filter** [*ipv6 ipv6-filter-id*]
  - **no filter** [*ip ip-filter-id*] [*ipv6 ipv6-filter-id*]
  - **[no] flowspec**
  - **[no] flowspec-ipv6**
  - **match-qinq-dot1p** {*top* | *bottom*}
  - **no match-qinq-dot1p**
  - **qos** *policy-id* [*shared-queuing* | *multipoint-shared*][*fp-redirect-group queue-group-name instance instance-id*]
  - **no qos** *policy-id*
  - **[no] queue-override**
    - **[no] queue** *queue-id*
      - **adaptation-rule** [*pir* {*max* | *min* | *closest*}] [*cir* {*max* | *min* | *closest*}]
      - **no adaptation-rule**
      - **avg-frame-overhead** *percentage*
      - **no avg-frame-overhead**
      - **cbs** *size-in-kbytes*
      - **no cbs**
      - **high-prio-only** *percent*
      - **no high-prio-only**
      - **mbs** *size-in-kbytes*
      - **no mbs**
      - **monitor-depth**
      - **[no] monitor-depth**

- **rate** *pir-rate* [**cir** *cir-rate*]
- **no rate**
- **[no] scheduler-override**
  - **[no] scheduler** *scheduler-name*
  - **parent** [**weight** *weight*] [**cir-weight** *cir-weight*]
  - **no parent**
  - **rate** *pir-rate* [**cir** *cir-rate*]
  - **no rate**
- **scheduler-policy** *scheduler-policy-name*
- **no scheduler-policy**
- **ip-tunnel** [**create**]
- **no ip-tunnel** *name*
  - **backup-remote-ip**-*ip ip-address*
  - **no backup-remote-ip**
  - **[no] clear-df-bit**
  - **delivery-service** *service-id*
  - **no delivery-service**
  - **description** *description-string*
  - **no description**
  - **[no] dest-ip** *ip-address*
  - **dscp** *dscp-name*
  - **no dscp**
  - **[no] gre-header**
  - **ip-mtu** *octets*
  - **no ip-mtu**
  - **reassemble** [*wait-msecs*]
  - **no reassemble**
  - **remote-ip** *ip-address*
  - **no remote-ip**
  - **[no] shutdown**
  - **source** *ip-address*
  - **no source**
- **[no] ipsec-gw**
  - **cert**
    - **cert** *file-name*
    - **no cert**
    - **cert-profile** *name*
    - **no cert-profile**
    - **key** *file-name*
    - **no key**
    - **status-verify**
      - **default-result** {*revoked|good*}
      - **no default-result**
      - **primary** {*ocsp|crl*}
      - **no primary**
      - **secondary** {*ocsp|crl*}
      - **no secondary**
    - **trust-anchor** *ca-profile-name*
    - **no trust-anchor**
  - **default-secure-service** *service-id ipsec-interface ip-int-name*
  - **no default-secure-service**
  - **default-tunnel-template** *ipsec template identifier*
  - **no default-tunnel-template**
  - **local-gateway-address** *ip-address*
  - **no local-gateway-address**

- **local-id type** {**ipv4** <v4address> | **fqdn** <fqdn-value>}
- **no local-gateway-address**
- **pre-shared-key** *key*
- **no pre-shared-key**
- **[no] shutdown**
- **lag-link-map-profile** *lag-link-map-profile-id*
- **no lag-link-map-profile**
- **lag-per-link-hash class** {**1** | **2** | **3**} **weight** [**1..1024**]
- **no lag-per-link-hash**
- **multi-service-site** *customer-site-name*
- **no multi-service-site**
- **static-host ip** *ip/did-address* [**mac** *ieee-address*] [**create**]
- **static-host mac** *ieee-address* [**create**]
- **no static-host** [**ip** *ip-address*] **mac** *ieee-address*
- **no static-host all** [**force**]
- **no static-host ip** *ip-address*
  - **ancp-string** *ancp-string*
  - **no ancp-string**
  - **app-profile** *app-profile-name*
  - **no app-profile**
  - **inter-dest-id** *intermediate-destination-id*
  - **no inter-dest-id**
  - **[no] shutdown**
  - **sla-profile** *sla-profile-name*
  - **no sla-profile**
  - **sub-profile** *sub-profile-name*
  - **no sub-profile**
  - **subscriber** *sub-ident*
  - **no subscriber**
  - **[no] subscriber-sap-id**
- **tod-suite** *tod-suite-name*
- **no tod-suite**
- **transit-policy** *ip-aasub-policy-id*
- **no transit-policy**
- **[no] shutdown**

## VRRP Commands

```

config
  — service
    — ies service-id [customer customer-id] [vpn vpn-id]
      — [no] interface ip-int-name
        — [no] ipv6
          — vrrp virtual-router-id [owner]
          — no vrrp virtual-router-id
            — [no] backup ip-address
            — [no] bfd-enable service-id interface interface-name
              dst-ip ip-address
            — [no] bfd-enable interface interface-name dst-ip ip-address
            — init-delay seconds
            — no init-delay
            — mac mac-address
            — no mac
            — [no] master-int-inherit
            — message-interval {[seconds] [milliseconds milliseconds]}
            — no message-interval
            — [no] ping-reply
            — policy vrrp-policy-id
            — no policy
            — [no] preempt
            — priority base-priority
            — no priority
            — [no] shutdown
            — [no] standby-forwarding
            — [no] telnet-reply
            — [no] traceroute-reply
          — vrrp virtual-router-id [owner]
          — no vrrp virtual-router-id
            — authentication-key {authentication-key | hash-key} [hash |
              hash2]
            — no authentication-key
            — [no] backup ip-address
            — [no] bfd-enable [service-id] interface interface-name dst-ip ip-address
            — init-delay seconds
            — no init-delay
            — mac ieee-address
            — no mac
            — [no] master-int-inherit
            — message-interval {[seconds] [milliseconds milliseconds]}
            — no message-interval
            — [no] ping-reply
            — policy vrrp-policy-id
            — no policy
            — [no] preempt
            — priority priority
            — no priority
            — [no] shutdown
            — [no] ssh-reply

```

- [no] **standby-forwarding**
- [no] **telnet-reply**
- [no] **traceroute-reply**

## Spoke SDP Commands

```

config
  — service
    — ies service-id [customer customer-id] [vpn vpn-id]
      — [no] interface ip-int-name
        — [no] spoke-sdp sdp-id:vc-id [vc-type {ether | ipipe}] [create]
          — aarp aarpId type type
          — no aarp
          — accounting-policy acct-policy-id
          — no accounting-policy
          — app-profile app-profile-name
          — no app-profile
          — [no] bfd-enable
          — bfd-template name
          — no bfd-template
          — [no] collect-stats
          — [no] control-channel-status
            — [no] acknowledgment
            — refresh-timer value
            — no refresh-timer
            — request-timer timer1 retry-timer timer2 [timeout-multiplier multiplier]
            — no request-timer
          — [no] control-word
          — eth-cfm
            — [no] collect-lmm-stats
            — mep mep-id domain md-index association ma-index [direction {up | down}]
            — no mep mep-id domain md-index association ma-index
              — [no] ais-enable
              — [no] interface-support-enable
              — [no] ccm-enable
              — ccm-ltm-priority priority
              — no ccm-ltm-priority
              — [no] description
              — [no] eth-test-enable
                — [no] test-pattern {all-zeros | all-ones} [crc-enable]
              — fault-propagation-enable {use-if-tlv | suspend-ccm}
              — no fault-propagation-enable
              — low-priority-defect {allDef|macRemErrXcon|remErrXcon|errXcon|xcon|noXcon}
              — low-priority-defect seconds
              — [no] shutdown
            — [no] snmp-ingress-levels [md-level [md-level...]]
          — egress
            — filter [ip ip-filter-id]
            — filter [ipv6 ipv6-filter-id]
            — no filter [ip ip-filter-id] [ipv6 ipv6-filter-id]
            — qos network-policy-id port-redirect-group queue-group-name [instance instance-id]
            — no qos
            — vc-label egress-vc-label
            — no vc-label [egress-vc-label]
  
```



- **[no] flowspec**
- **[no] flowspec-ipv6**
- **[no] hash-label**
- **ingress**
  - **filter** {**ip** *ip-filter-id*}
  - **filter** [**ipv6** *ipv6-filter-id*]
  - **no filter**
  - **[no] flowspec**
  - **qos** *network-policy-id* **fp-redirect-group** *queue-group-name* **instance** *instance-id*
  - **no qos**
  - **vc-label** *ingress-vc-label*
  - **no vc-label** [*ingress-vc-label*]
- **[no] shutdown**
- **transit-policy** *ip-aasub-policy-id*
- **no transit-policy**
- **[no] pw-path-id**
  - **agi** *agi*
  - **no agi**
  - **saii-type2** *global-id:node-id:ac-id*
  - **no saii-type2**
  - **taii-type2** *global-id:node-id:ac-id*
  - **no taii-type2**

## Subscriber Interface Commands

```

config
  — service
    — ies service-id [customer customer-id] [vpn vpn-id]
      — [no] subscriber-interface ip-int-name
        — [no] address {ip-address/mask | ip-address netmask} [gw-ip-address ip-address] [populate-host-routes]
        — delayed-enable seconds [init-only]
        — no delayed-enable
        — description description-string
        — no description
        — dhcp
          — gi-address ip-address [src-ip-addr]
          — no gi-address
          — relay-unicast-msg release-update-src-ip
          — no relay-unicast-msg
        — group-interface ip-int-name [create]
        — group-interface ip-int-name [create] lns
        — group-interface ip-int-name [create] softgre
        — no group-interface ip-int-name
          — arp-host
            — host-limit max-num-hosts
            — no host-limit
            — min-auth-interval min-auth-interval
            — no min-auth-interval
            — sap-host-limit max-num-hosts-sap
            — no sap-host-limit
            — [no] shutdown
          — [no] arp-populate
          — arp-timeout seconds
          — no arp-timeout
          — authentication-policy name
          — no authentication-policy
          — cpu-protection policy-id [mac-monitoring] | [eth-cfm-monitoring [aggregate][car]]
          — no cpu-protection
          — description description-string
          — no description
          — dhcp
            — client-applications dhcp
            — client-applications pppoe
            — client-applications dhcp pppoe
            — no client-applications
            — description description-string
            — no description
            — [no] enable-ingress-stats
            — filter filter-id
            — no filter
            — gi-address ip-address [src-ip-addr]
            — no gi-address
            — lease-populate nbr-of-leases
            — no lease-populate
            — [no] match-circuit-id
            — [no] option
              — action {replace | drop | keep}
              — no action

```

- **circuit-id** [ascii-tuple | ifindex | sap-id | vlan-ascii-tuple]
- **no circuit-id**
- **remote-id** [mac | string *string*]
- **no remote-id**
- [no] **vendor-specific-option**
  - [no] **client-mac-address**
  - [no] **sap-id**
  - [no] **service-id**
  - **string** *text*
  - **no string**
  - [no] **system-id**
- **proxy-server**
  - **emulated-server** *ip-address*
  - **no emulated-server**
  - **lease-time** [days *days*] [hrs *hours*] [min *minutes*] [sec *seconds*] [radius-override]
  - **no lease-time**
  - [no] **lease-time**
  - [no] **shutdown**
- **relay-unicast-msg release-update-src-ip**
- **no relay-unicast-msg**
- **server** *server1* [*server2*...(up to 8 max)]
- **no server**
- [no] **shutdown**
- [no] **trusted**
- **user-db** *local-user-db-name*
- **no user-db**
- **host-connectivity-verify** [interval *interval*] [action {remove | alarm}]
- **icmp**
  - [no] **mask-reply**
  - **redirects** [*number seconds*]
  - **no redirects**
  - **ttl-expired** [*number seconds*]
  - **no ttl-expired**
  - **unreachables** [*number seconds*]
  - **no unreachables**
- **ip-mtu** *octets*
- **no ip-mtu**
- [no] **ipv6**
  - [no] **allow-unmatching-prefixes**
  - **delegated-prefix-length** *bits*
  - **delegated-prefix-length** **variable**
  - **no delegated-prefix-length**
  - [no] **router-advertisements**
    - **current-hop-limit** *hop-count*
    - **no current-hop-limit**
    - [no] **managed-configuration**
    - **max-advertisement-interval** *seconds*
    - **no max-advertisement-interval**
    - **min-advertisement-interval** *seconds*
    - **no min-advertisement-interval**

- **mtu** *bytes*
- **no mtu**
- **[no] other-stateful-configuration**
- **[no] prefix-options**
  - **[no] autonomous**
  - **preferred-lifetime** [*seconds* | **infinite**]
  - **no preferred-lifetime**
  - **valid-lifetime** [*seconds* | **infinite**]
  - **no valid-lifetime**
- **reachable-time** *milliseconds*
- **no reachable-time**
- **retransmit-time** *milliseconds*
- **no retransmit-time**
- **router-lifetime** *seconds*
- **router-lifetime no-default-router**
- **no router-lifetime**
- **[no] urpf-check**
  - **mode** {**strict** | **loose** | **strict-no-ecmp**}
  - **no mode**
- **[no] dhcp6**
  - **[no] proxy-server**
    - **renew-timer** *seconds*
    - **no renew-timer**
    - **rebind-timer** *seconds*
    - **no rebind-timer**
    - **preferred-lifetime** [*seconds* | **infinite**]
    - **no preferred-lifetime**
    - **valid-lifetime** [*seconds* | **infinite**]
    - **no valid-lifetime**
    - **client-applications** [**dhcp**] [**pppoe**]
    - **no client-applications**
    - **[no] shutdown**
- **lag-per-link-hash** **class** {**1** | **2** | **3**} **weight** [**1..1024**]
- **no lag-per-link-hash**
- **[no] mac** *ieee-address*
- **[no] oper-up-while-empty**
- **[no] pppoe**
  - **description** *description-string*
  - **no description**
  - **dhcp-client**
    - **[no] ccag-use-origin-sap**
  - **pap-chap-user-db** *local-user-db-name*
  - **no pap-chap-user-db**
  - **pppoe-policy** *pppoe-policy-name*
  - **no pppoe-policy**
  - **sap-session-limit** *sap-session-limit*
  - **no sap-session-limit**
  - **session-limit** *session-limit*
  - **no session-limit**
  - **user-db** *local-user-db-name*
  - **no user-db**
  - **[no] shutdown**
- **redundant-interface** *red-ip-int-name*
- **no redundant-interface**
- **[no] ipv6**
  - **[no] allow-unmatching-prefixes**
  - **[no] delegated-prefix-length** *prefix-length*

- [no] **subscriber-prefixes**
  - **prefix** *ipv6-address/prefix-length* [**pd**|wan-host]
  - **no prefix** *ipv6-address/prefix-length*
- [no] **unnumbered** {*ip-address* | *inf-name*}
- [no] **wpp**
  - **initial-app-profile** *profile-name*
  - **no initial-app-profile**
  - **initial-sla-profile** *profile-name*
  - **no initial-sla-profile**
  - **initial-sub-profile** *profile-name*
  - **no initial-sub-profile**
  - **portal router** *router-instance* **name** *wpp-portal-name*
  - **no portal**
  - [no] **restore-disconnected**
  - [no] **shutdown**

## Group Interface SAP Commands

```

config
  — service
    — ies service-id [customer customer-id] [vpn vpn-id]
      — [no] subscriber-interface ip-int-name
        — group-interface ip-int-name [create]
        — no group-interface ip-int-name
          — [no] sap sap-id
            — accounting-policy acct-policy-id
            — no accounting-policy [acct-policy-id]
            — anti-spoof {ip | ip-mac | nh-mac}
            — no anti-spoof
            — app-profile app-profile-name
            — no app-profile
            — atm
              — egress
                — traffic-desc traffic-desc-profile-id
                — no traffic-desc
                — encapsulation atm-encap-type
                — ingress
                  — traffic-desc traffic-desc-profile-id
                  — no traffic-desc
                — oam
                  — [no] alarm-cells
                  — [no] periodic-loopback
            — calling-station-id calling-station-id
            — no calling-station-id
            — [no] collect-stats
            — cpu-protection policy-id [mac-monitoring][eth-
              cfm-monitoring [aggregate][car]] [[ip-src-monitor-
              ing]
            — no cpu-protection
            — default-host ip-address/mask next-hop next-hop-ip
            — no default-host ip-address/mask
            — description description-string
            — no description
            — dist-cpu-protection policy-name
            — no dist-cpu-protection
            — egress
              — agg-rate-limit agg-rate [queue-frame-
                based-accounting]
              — no agg-rate-limit agg-rate
              — [no] agg-rate
                — rate {max | rate}
                — no rate
                — [no] limit-unused-bandwidth
                — [no] queue-frame-based-accounting
              — filter ip ip-filter-id
              — no filter
              — filter ipv6 ipv6-filter-id
              — no filter [ip ip-filter-id] [ipv6 ipv6-filter-id]
              — [no] qinq-mark-top-only
              — qos policy-id [port-redirect-group queue-
                group-name instance instance-id]
              — no qos

```

- [no] **queue-override**
- [no] **queue** *queue-id*
  - **adaptation-rule** [**pir** {**max** | **min** | **closest**}] [**cir** {**max** | **min** | **closest**}]
  - **no adaptation-rule**
  - **avg-frame-overhead** *percentage*
  - **no avg-frame-overhead**
  - **cbs** *size-in-kbytes*
  - **no cbs**
  - **high-prio-only** *percent*
  - **no high-prio-only**
  - **mbs** {*size-in-kbytes* | **default**}
  - **no mbs**
  - **rate** *pir-rate* [**cir** *cir-rate*]
  - **no rate**
- **scheduler-policy** *scheduler-policy-name*
- **scheduler-policy**
- **eth-cfm**
  - [no] **collect-lmm-stats**
  - **mep** *mep-id* **domain** *md-index* **association** *ma-index* [**direction** {**up** | **down**}]
  - **no mep** *mep-id* **domain** *md-index* **association** *ma-index*
  - [no] **ais-enable**
  - [no] **ccm-enable**
  - **ccm-ltm-priority** *priority*
  - **no ccm-ltm-priority**
  - [no] **description**
  - [no] **eth-test-enable**
    - [no] **test-pattern** {**all-zeros** | **all-ones**} [**crc-enable**]
  - **fault-propagation-enable** {**use-if-tlv** | **suspend-ccm**}
  - **no fault-propagation-enable**
  - **low-priority-defect** {**allDef** | **mac-RemErrXcon** | **remErrXcon** | **errXcon** | **xcon** | **noXcon**}
  - **low-priority-defect** *seconds*
  - [no] **shutdown**
  - [no] **snmp-ingress-levels** [*md-level* [*md-level...*]]
  - **tunnel-fault** [**accept** | **ignore**]
- **host ip** *ip-address* [**mac** *ieee-address*] [**subscriber** *sub-ident-string*] [**sub-profile** *sub-profile-name*] [**sla-profile** *sla-profile-name*] [**ancp-string** *ancp-string*]
- **no host** {[**ip** *ip-address*] [**mac** *ieee-address*]}
- **no host all**
- **igmp-host-tracking**
  - [no] **disable-router-alert-check**
  - **expiry-time** *expiry-time*
  - **no expiry-time**
  - **import** *policy-name*
  - **no import**

- **max-num-group** *max-num-groups*
- **no max-num-group**
- **max-num-sources** *max-num-sources*
- **no max-num-sources**
- **max-num-grp-sources** [1..32000]
- **no max-num-grp-sources**
- **[no] shutdown**
- **ingress**
  - **filter ip** *ip-filter-id*
  - **no filter**
  - **filter ipv6** *ipv6-filter-id*
  - **no filter** [**ip** *ip-filter-id*] [**ipv6** *ipv6-filter-id*]
  - **match-qinq-dot1p** {**top**|**bottom**}
  - **no match-qinq-dot1p**
  - **qos** *policy-id* [**shared-queuing** | **multipoint-shared**][**fp-redirect-group** *queue-group-name* **instance** *instance-id*]
  - **no qos**
  - **scheduler-policy** *scheduler-policy-name*
  - **no scheduler-policy**
- **lag-link-map-profile** *lag-ink-map-profile-id*
- **no lag-link-map-profile**
- **multi-service-site** *customer-site-name*
- **no multi-service-site**
- **static-host ip** *ip/did-address* [**mac** *ieee-address*] [**create**]
- **static-host mac** *ieee-address* [**create**]
- **no static-host** [**ip** *ip-address*] **mac** *ieee-address*
- **no static-host all** [**force**]
- **no static-host ip** *ip-address*
  - **ancp-string** *ancp-string*
  - **no ancp-string**
  - **app-profile** *app-profile-name*
  - **no app-profile**
  - **inter-dest-id** *intermediate-destination-id*
  - **no inter-dest-id**
  - **managed-routes**
    - **route** {*ip-prefix/length* | *ip-prefix net-mask*} [**create**]
    - **no route** {*ip-prefix/length* | *ip-prefix net-mask*}
  - **[no] shutdown**
  - **sla-profile** *sla-profile-name*
  - **no sla-profile**
  - **sub-profile** *sub-profile-name*
  - **no sub-profile**
  - **subscriber** *sub-ident*
  - **no subscriber**
  - **[no] subscriber-sap-id**
- **[no] shutdown**
- **[no] sub-sla-mgmt**
  - **def-sla-profile** *default-sla-profile-name*
  - **no def-sla-profile**
  - **def-sub-profile** *default-subscriber-profile-name*
  - **no def-sub-profile**
  - **multi-sub-sap** *subscriber-limit*



- **no multi-sub-sap**
- **[no] shutdown**
- **single-sub-parameters**
  - **non-sub-traffic sub-profile** *sub-profile-name* **sla-profile** *sla-profile-name* [**subscriber** *sub-ident-string*]
  - **no non-sub-traffic**
  - **[no] profiled-traffic-only**
  - **sub-ident-policy** *sub-ident-policy-name*
  - **no sub-ident-policy**
  - **tod-suite** *tod-suite-name*
  - **no tod-suite**
- **[no] shutdown**
- **[no] srrp** *srrp-id*
  - **[no] bfd-enable** [*service-id*] **interface** *interface-name* **dst-ip** *ip-address*
  - **description** *description-string*
  - **no description**
  - **gw-mac** *mac-address*
  - **no gw-mac**
  - **keep-alive-interval** *interval*
  - **no keep-alive-interval**
  - **message-path** *sap-id*
  - **no message-path**
  - **[no] policy** *vrrp-policy-id*
  - **priority** *priority*
  - **no priority**
  - **[no] shutdown**

## Threat Managment Service Interface Commands

```
config
  — service
    — ies service-id [customer customer-id]
    — no ies service-id
      — tms-interface interface-name [create] [off-ramp-vprn off-ramp-svc] [mgmt-vprn
        mgmt-svc]
      — no tms-interface interface-name
        — address {ip-address/mask|ip-address netmask}
        — no address
        — description long-description-string
        — no description
        — [no] ipv6
        — password [password]
        — no password
        — port mda-id
        — no port
        — [no] shutdown
```

## Show Commands

```

show
  — service
    — customer [customer-id] [site customer-site-name]
    — egress-label start-label [end-label]
    — ingress-label end-label [end-label]
    — sap-using [sap sap-id]
    — sap-using interface [ip-address | ip-int-name]
    — sap-using [ingress | egress] atm-td-profile id-profile-id
    — sap-using [ingress | egress] filter filter-id
    — sap-using [ingress | egress] qos-policy qos-policy-id
    — sap-using authentication-policy policy-name
    — service-using [ies] [customer customer-id]
    — subscriber-using [service-id service-id] [sap-id sap-id] [interface ip-int-name] [ip ip-
address[/mask]] [mac ieee-address] [sub-profile sub-profile-name] [sla-profile sla-profile-
name]
    — sdp
      — sdp sdp-id pw-port [pw-port-id]
      — sdp sdp-id pw-port
      — sdp sdp-id pw-port [pw-port-id] [statistics]
      — sdp [consistent | inconsistent | na] egressifs
      — sdp sdp-id keep-alive-history
      — sdp far-end ip-address | ipv6-address keep-alive-history
      — sdp [sdp-id] detail
      — sdp far-end ip-address | ipv6-address detail
    — id service-id
      — all
      — arp [ip-address][mac ieee-address][sap sap-id][interface ip-int-name] [sdp sdp-
id:vc-id]
      — arp-host [wholesaler service-id] [sap sap-id | interface interface-name | ip-address
ip-address[/mask] | mac ieee-address | {[port port-id] [no-inter-dest-id | inter-
dest-id inter-dest-id]}] [detail]
      — arp-host statistics [sap sap-id | interface interface-name]
      — arp-host summary [interface interface-name]
      — authentication
        — statistics [policy name] [sap sap-id]
      — base
      — dhcp
        — lease-state [[sap sap-id] | [sdp sdp-id:vc-id] | [interface interface-name] |
[ip-address ip-address]] [detail]
        — statistics [sap sap-id]
        — statistics [sdp sdp-id:vc-id]
        — statistics [interface interface-name]
        — summary
      — gsm
        — neighbors group [name] [ip-address]
        — sessions [group name] neighbor ip-address [port port-number] [associa-
tion] [statistics]
      — host
      — host-connectivity-verify statistics [sap sap-id]
      — interface [ip-address | ip-int-name] [interface-type] [detail] [family]
      — interface

```

- **retailers**
- **sap** *sap-id* [**detail**]
- **sap** *sap-id* **queue-depth** [**queue** *queue-id*][**ingress**|**egress**]
- **sdp** [ {*sdp-id* | **far-end** *ip-address* } ] [**detail**]
- **subscriber-hosts** [**sap** *sap-id* ] [**ip** *ip-address*[/*mask*]] [**mac** *ieee-address*] [**sub-profile** *sub-profile-name*] [**sla-profile** *sla-profile-name*] [**detail**]
- **wholesalers**
- **pw-port**
  - **pw-port** [*pw-port-id*] [**detail**]
  - **pw-port** **sdp** [*sdp-id*]
  - **pw-port** **sdp** **none**
- **router**
  - **dhcp**
    - **statistics** [*ip-int-name* | *ip-address*]
    - **summary**
  - **vrrp**
    - **instance**
    - **instance** **interface** *interface-name* [**vrid** *virtual-router-id*]
    - **instance** **interface** *interface-name* **vrid** *virtual-router-id* **ipv6**
    - **statistics**

## Clear Commands

- clear**
  - **router**
    - **dhcp**
      - **statistics** [*ip-int-name* | *ip-address*]
    - **interface** [*ip-int-name* | *ip-address*] [**icmp**]
    - **vrrp**
    - **interface** *interface-name* [**vrid** *virtual-router-id*]
    - **interface** *interface-name* **vrid** *virtual-router-id* **ipv6**
    - **statistics**
    - **statistics** **interface** *interface-name* [**vrid** *virtual-router-id*]
    - **statistics** **interface** *interface-name* **vrid** *virtual-router-id* **ipv6**
- clear**
  - **service**
    - **id** *service-id*
      - **arp-host**
      - **arp-host** { **mac** *ieee-address* | **sap** *sap-id* | **ip-address** *ip-address*[/*mask*] }
      - **arp-host** [**port** *port-id*] [**inter-dest-id** *intermediate-destination-id* | **no-inter-dest-id**]
      - **arp-host** **statistics** [**sap** *sap-id* | **interface** *interface-name*]
      - **fdb** {**all** | **mac** *ieee-address* | **sap** *sap-id* | **mesh-sdp** *sdp-id*[:*vc-id*] | **spoke-sdp** *sdp-id*[:*vc-id*]}]
      - **dhcp**
        - **lease-state**
        - **lease-state** **ip-address** *ip-address*
        - **lease-state** **mac** *ieee-address*
        - **lease-state** **sap** *sap-id*
        - **lease-state** **sdp** *sdp-id*[:*vc-id*]
      - **dhcp6**
        - **lease-state** [**ip-address** *ipv6-address*[/*prefix-length*] [**mac** *ieee-address*]
        - **lease-state** [**interface** *ip-int-name* | *ipv6-address*]
      - **sap** *sap-id* **queue-depth** [**queue** *queue-id*][**ingress**|**egress**]

- **site** *service-id*
- **spoke-sdp** *sdp-id:vc-id ingress-vc-label*
- **stp**

## Command Hierarchies

### Debug Commands

```
debug
  — service
    — id service-id
    — [no] arp-host
      — [no] host-connectivity-verify
        — [no] ip ip-address
        — [no] mac ieee-address
        — [no] sap sap-id
    — router
      — vrrp
        — [no] events
        — events interface-name [vrid virtual-router-id]
        — events interface-name vrid virtual-router-id ipv6
        — [no] packets
        — packets interface-name [vrid virtual-router-id]
        — packets interface-name vrid virtual-router-id ipv6
```

### Monitor Commands

```
monitor
  — router
    — vrrp
      — instance interface interface-name vr-id virtual-router-id [ipv6] [interval seconds]
        [repeat repeat] [absolute | rate]
```