
VLL Services Command Reference

Command Hierarchies

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Apipe Service Configuration Commands

```

config
  — service
    — apipe service-id [customer customer-id] [vpn vpn-id] [vc-type {atm-vcc | atm-sdu | atm-vpc
      | atm-cell}] [vc-switching] [test] [create]
    — no apipe service-id
      — description description-string
      — no description
      — [no] endpoint endpoint-name
        — active-hold-delay active-hold-delay
        — no active-hold-delay
        — description description-string
        — no description
        — revert-time revert-time
        — no revert-time
      — interworking {frf-5}
      — no interworking
      — sap {port-id|aps-id}[:vpi/vci|vpi|vpi1.vpi2|cp.conn-prof-id]
      — sap sap-id [no-endpoint]
      — sap sap-id [endpoint endpoint-name]
      — no sap sap-id
        — accounting-policy acct-policy-id
        — no accounting-policy
        — atm
          — egress
            — traffic-desc traffic-desc-profile-id
            — no traffic-desc
          — ingress
            — traffic-desc traffic-desc-profile-id
            — no traffic-desc
          — [no] llf
          — oam
            — [no] alarm-cells
            — [no] terminate
        — [no] collect-stats
  
```

- **cpu-protection** *policy-id* [**mac-monitoring**] | [**eth-cfm-monitoring** [**aggregate**][**car**]]
- **no cpu-protection**
- **description** *description-string*
- **no description**
- **dist-cpu-protection** *policy-name*
- **no dist-cpu-protection**
- **egress**
 - [**no**] **agg-rate**
 - **rate** {**max** | **rate**}
 - **no rate**
 - [**no**] **limit-unused-bandwidth**
 - [**no**] **queue-frame-based-accounting**
 - **policer-control-override** [**create**]
 - **no policer-control-override**
 - **max-rate** {*rate* | **max**}
 - **priority-mbs-thresholds**
 - **min-thresh-separation**
 - [**no**] **priority** *level*
 - **mbs-contribution** *size* [**bytes** | **kilobytes**]
 - **policer-control-policy** *policy-name*
 - **no policer-control-policy**
 - [**no**] **policer-override**
 - **policer** *policer-id* [**create**]
 - **no policer** *policer-id*
 - **cbs** *size* [**bytes** | **kilobytes**]
 - **no cbs**
 - **mbs** *size* [**bytes** | **kilobytes**]
 - **no mbs**
 - **packet-byte-offset** **add** *add-bytes* | **subtract** *sub-bytes*}
 - **percent-rate** *pir-percent* [**cir** *cir-percent*]
 - **no percent-rate**
 - **rate** {*rate* | **max**} [**cir** {**max** | *rate*}]
 - **stat-mode** *stat-mode*
 - **no stat-mode**
 - [**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** *adaptation-rule*] [**cir** *adaptation-rule*]
 - **no adaptation-rule**
 - **avg-frame-overhead** *percentage*
 - **no avg-frame-overhead**
 - **burst-limit** *size-in-kbytes*
 - **no burst-limit**
 - **high-prio-only** *percent*
 - **no high-prio-only**
 - **mbs** {*size-in-kbytes* | **default**}
 - **no mbs**
 - **monitor-depth**
 - [**no**] **monitor-depth**

- **parent** {[**weight** *weight*] [**cir-weight** *cir-weight*]}
- **no parent**
- **percent-rate** *pir-percent* [**cir** *cir-percent*]
- **no percent-rate**
- **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**
- **frame-relay**
 - **scheduling-class** *class-id*
 - **no scheduling-class**
- **ingress**
 - **policer-control-override** [**create**]
 - **no policer-control-override**
 - **max-rate** {*rate* | **max**}
 - **priority-mbs-thresholds**
 - **min-thresh-separation**
 - [**no**] **priority** *level*
 - **mbs-contribution** *size* [**bytes** | **kilobytes**]
 - [**no**] **policer-override**
 - **policer** *policer-id* [**create**]
 - **no policer** *policer-id*
 - **cbs** *size* [**bytes** | **kilobytes**]
 - **no cbs**
 - **mbs** *size* [**bytes** | **kilobytes**]
 - **no mbs**
 - **packet-byte-offset** **add** *add-bytes* | **subtract** *sub-bytes*}
 - **percent-rate** *pir-percent* [**cir** *cir-percent*]
 - **percent-rate**
 - **rate** {*rate* | **max**} [**cir** {**max** | *rate*}]
 - **stat-mode** *stat-mode*
 - **no stat-mode**
 - **qos** *policy-id* [**shared-queuing**] [**fp-redirect-group** *queue-group-name* **instance** *instance-id*]
 - **no qos**
 - [**no**] **queue-override**
 - [**no**] **queue** *queue-id*
 - **adaptation-rule** [**pir** *adaptation-rule*] [**cir** *adaptation-rule*]
 - **no adaptation-rule**
 - **burst-limit** *size-in-kbytes*
 - **no burst-limit**
 - **high-prio-only** *percent*
 - **no high-prio-only**
 - **mbs** {*size-in-kbytes* | **default**}
 - **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**
- **multi-service-site** *customer-site-name*
- **no multi-service-site**
- **[no] shutdown**
- **tod-suite** *tod-suite-name*
- **no tod-suite**
- **service-mtu** *octets*
- **no service-mtu**
- **service-name** *service-name*
- **no service-name**
- **[no] shutdown**
- **signaled-vc-type-override** {**atm-vcc**}
- **no signaled-vc-type-override**
- **spoke-sdp** [*sdp-id[:vc-id]*] [**no-endpoint**]
- **spoke-sdp** [*sdp-id[:vc-id]*] **endpoint** *endpoint-name* [**icb**]
- **no spoke-sdp** [*sdp-id[:vc-id]*]
 - **[no] bandwidth**
 - **bfd-enable**
 - **no bfd-enable**
 - **bfd-template** *name*
 - **no bfd-template**
 - **cell-concatenation**
 - **[no] aal5-frame-aware**
 - **[no] clp-change**
 - **max-cells** *cell-count*
 - **no max-cells** [*cell-count*>]
 - **max-delay** *delay-time*
 - **no max-delay** [*delay-time*]
- **[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**
- **egress**
 - **qos** *network-policy-id* **port-redirect-group** *queue-group-name* [**instance** *instance-id*]
 - **no qos**
 - **vc-label** *ingress-vc-label*
 - **no vc-label** [*ingress-vc-label*]
- **ingress**

- **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*]
- **precedence** [*precedence-value*] **primary**]
- **no precedence**
- [**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**
- [**no**] **shutdown**

config

- **connection-profile** *conn-prof-id* [**create**]
- **no connection-profile** *conn-prof-id*

Related Apipe Commands

Connection Profile Commands

- ```

config
 — connection-profile conn-prof-id [create]
 — no connection-profile conn-prof-id
 — description description-string
 — no description
 — member encap-value [create]
 — no member encap-value

```

## Cpipe Service Configuration Commands

- ```

config
  — service
    — cpipe service-id [customer customer-id] [vpn vpn-id] [vc-type {satop-e1 | satop-t1 | satop-e3 | satop-t3 | cesopsn | cesopsn-cas}] [vc-switching] [test] [create]
    — no cpipe service-id
      — description description-string
      — no description [description-string]
      — endpoint endpoint-name [create]
      — no endpoint endpoint-name
        — active-hold-delay active-endpoint-delay
        — no active-hold-delay
        — description description-string
        — no description [description-string]
        — revert-time revert-time
        — no revert-time
      — sap sap-id [no-endpoint] [create]
      — sap sap-id endpoint endpoint-name [create]
      — no sap sap-id
        — accounting-policy acct-policy-id
        — no accounting-policy [acct-policy-id>]
        — cem
          — packet jitter-buffer milliseconds [payload-size bytes]
          — packet payload-size bytes
          — no packet
          — [no] report-alarm [stray] [malformed] [pktloss] [overrun]
            [underrun] [rpktloss] [rfault] [rrdi]
          — [no] rtp-header
        — [no] collect-stats
      — cpu-protection policy-id [mac-monitoring] | [eth-cfm-monitoring
        [aggregate][car]]
      — description description-string
      — no description [description-string]
      — dist-cpu-protection policy-name
      — no dist-cpu-protection
      — egress
        — [no] agg-rate
          — rate {max | rate}
          — no rate
          — [no] limit-unused-bandwidth
          — [no] queue-frame-based-accounting
        — [no] qinq-mark-top-only
  
```

- **[no] qos** *[policy-id]*
- **[no] queue-override**
 - **queue** *queue-id* **[create]**
 - **no queue** *queue-id*
 - **adaptation-rule** *[pir adaptation-rule}*] *[cir adaptation-rule}*]
 - **no adaptation-rule**
 - **avg-frame-overhead** *percent*
 - **no avg-frame-overhead**
 - **burst-limit** *size-in-kbytes*
 - **no burst-limit**
 - **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**
 - **scheduler** *scheduler-name* **[create]**
 - **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**
- **ingress**
 - **[no] qos** *[policy-id]*
 - **[no] queue-override**
 - **queue** *queue-id* **[create]**
 - **no queue** *queue-id*
 - **adaptation-rule** *[pir adaptation-rule}*] *[cir adaptation-rule}*]
 - **no adaptation-rule**
 - **avg-frame-overhead** *percent*
 - **no avg-frame-overhead**
 - **burst-limit** *size-in-kbytes*
 - **no burst-limit**
 - **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**
 - **scheduler** *scheduler-name* **[create]**
 - **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**
- **multi-service-site** *customer-site-name*
- **no multi-service-site**
- **tod-suite** *tod-suite-name*
- **no tod-suite**
- **service-mtu** *octets*
- **no service-mtu**
- **service-name** *service-name*
- **no service-name**
- **[no] shutdown**
- **spoke-sdp** *sdp-id[:vc-id]* **[no-endpoint]** **[create]**
- **spoke-sdp** *sdp-id:vc-id* **[create]** **endpoint** *endpoint-name* **[icb]**
- **no spoke-sdp** *sdp-id[:vc-id]*
 - **accounting-policy** *acct-policy-id*
 - **no accounting-policy**
 - **bandwidth** *bw-value*
 - **bandwidth max**
 - **no bandwidth**
 - **bfd-enable**
 - **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**
- **egress**
 - **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]**
- **ingress**
 - **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] 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**
- **precedence** **[precedence-value]** **primary**
- **no precedence**
- **[no] shutdown**

Epipe Service Configuration Commands

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- Epipe SAP Configuration Commands on page 171
- Epipe Spoke SDP Configuration Commands on page 177

Epipe Global Commands

```

config
  — service
    — [no] epipe service-id [customer customer-id] [test] [create] [vpn vpn-id] [ve-switching]
      — [no] bgp
        — pw-template-binding policy-id [import-rt {ext-community,(upto 5 max)}]
        — no pw-template-binding policy-id
          — [no] bfd-enable
          — bfd-template name
          — no bfd-template
          — [no] shutdown
        — route-distinguisher auto-rd
        — no route-distinguisher
        — route-distinguisher rd
        — route-target {ext-community}[export ext-community][import ext-community]}
        — no route-target
      — [no] bgp-vpws
        — [no] remote-ve-name name
          — ve-id value
          — no ve-id
        — [no] shutdown
        — [no] ve-name name
          — ve-id value
          — no ve-id
        — description description-string
        — no description
      — [no] endpoint endpoint-name
        — active-hold-delay active-endpoint-delay
        — no active-hold-delay
        — description description-string
        — no description
        — revert-time [revert-time | infinite]
        — no revert-time
        — [no] standby-signaling-master
        — [no] standby-signaling-slave
      — load-balancing
        — [no] per-service-hashing
      — tunnel service-id backbone-dest-mac mac-name [ieee-address isid ISID]
      — no tunnel
      — service-mtu octets
      — no service-mtu
  
```

- **service-name** *service-name*
- **no service-name**
- **site** *name* [**create**]
- **no site**
 - **boot-timer** *seconds*
 - **no boot-timer**
 - **sap** *sap-id*
 - **no sap**
 - **site-activation-timer** *seconds*
 - **no site-activation-timer**
 - **site-min-down-timer** *min-down-time*
 - **no site-min-down-timer**
 - **site-id** *value*
 - **no site-id**
 - **site-preference** *preference-value*
 - **no site-preference**
- [**no**] **shutdown**
- **spoke-sdp** *sdp-id[:vc-id]* [**vc-type** {**ether** | **vlan**}] [**create**] [**no-endpoint**]
- **spoke-sdp** *sdp-id[:vc-id]* [**vc-type** {**ether** | **vlan**}] [**create**] **endpoint**
- **no spoke-sdp** *sdp-id[:vc-id]*
 - [**no**] **bfd-enable**
 - **bfd-template** *name*
 - **no bfd-template**
 - [**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**
 - **hash-label**
 - **no hash-label**
 - [**no**] **standby-signaling-slave**
 - [**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**

Epipe SAP Configuration Commands

```

config
  — service
    — epipe service-id
      — sap sap-id [create] [no-endpoint]
      — sap sap-id [create] endpoint endpoint-name
      — no sap sap-id
        — accounting-policy acct-policy-id
        — no accounting-policy acct-policy-id
        — 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
        — cem
          — local-ecid emulated circuit identifier
          — no local-ecid
          — packet jitter-buffer milliseconds [payload-size bytes]
          — packet payload-size bytes
          — no packet
          — remote-ecid emulated circuit identifier
          — no remote-ecid
          — remote-mac ieee-address
          — no remote-mac
          — [no] report-alarm [stray] [malformed] [pktloss] [overrun]
            [underrun] [rpktloss] [rfault] [rrdi]
          — [no] rtp-header
        — [no] cflowd
        — [no] collect-stats
        — cpu-protection policy-id [mac-monitoring] | [eth-cfm-monitoring
          [aggregate][car]]
        — no cpu-protection
        — description description-string
        — no description
        — dist-cpu-protection policy-name
        — no dist-cpu-protection
        — egress
          — [no] agg-rate
            — [no] limit-unused-bandwidth
            — [no] queue-frame-based-accounting
            — rate kilobits-per-second
            — no rate
          — filter [ip ip-filter-id]
          — filter [ipv6 ipv6-filter-id]
          — filter [mac mac-filter-id]

```

- **no filter** [**ip** *ip-filter-id*] [**ipv6** *ipv6-filter-id*] [**mac** *mac-filter-id*]
- [**no**] **hsmda-queue-override**
 - **packet-byte-offset** {add *add-bytes* | subtract *sub-bytes*}
 - **no packet-byte-offset**
 - **queue** *queue-id*
 - **no queue** *queue-id*
 - **mbs** *size* {[**bytes** | **kilobytes**] | **default**}
 - **no mbs**
 - **rate** *pir-rate*
 - **no rate**
 - **slope-policy** *hsmda-slope-policy-name* *allowable*
 - **no slope-policy**
 - **wrr-weight** *weight*
 - **no wrr-weight**
 - **secondary-shaper** *secondary-shaper-name*
 - **no secondary-shaper**
 - **wrr-policy** *hsmda-wrr-policy-name*
 - **no wrr-policy**
 - **policer-control-override** [**create**]
 - **no policer-control-override**
 - **max-rate** {*rate* | **max**}
 - **priority-mbs-thresholds**
 - **min-thresh-separation**
 - [**no**] **priority** *level*
 - **mbs-contribution** *size* [**bytes** | **kilobytes**]
 - **policer-control-policy** *policy-name*
 - **no policer-control-policy**
 - [**no**] **policer-override**
 - **policer** *policyer-id* [**create**]
 - **no policer** *policyer-id*
 - **cbs** *size* [**bytes** | **kilobytes**]
 - **no cbs**
 - **mbs** *size* [**bytes** | **kilobytes**]
 - **no mbs**
 - **packet-byte-offset** **add** *add-bytes* | **subtract** *sub-bytes*}
 - **percent-rate** *pir-percent* [**cir** *cir-percent*]
 - **no percent-rate**
 - **rate** {*rate* | **max**} [**cir** {**max** | *rate*}]
 - **stat-mode** *stat-mode*
 - **no stat-mode**
 - [**no**] **qinq-mark-top-only**
 - **qos** *policy-id* [**port-redirect-group** *queue-group-name* **instance** *instance-id*]
 - **no qos**
 - [**no**] **queue-override**
 - **queue** *queue-id* [**create**]
 - **no queue** *queue-id*
 - **adaptation-rule** [**pir** *adaptation-rule*] [**cir** *adaptation-rule*]
 - **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 [bytes|kilobytes]*
- **no mbs**
- **[no] monitor-depth**
- **parent** {[**weight** *weight*] [**cir-weight** *cir-weight*]}
- **percent-rate** *pir-percent* [**cir** *cir-percent*]
- **no percent-rate**
- **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] ais-enable**
 - **[no] collect-lmm-stats**
 - **[no] mep** *mep-id domain md-index association ma-index*
[**direction** {**up** | **down**}] [**primary-vlan-enable** [**vlan** *vlan-id*]]
 - **[no] ais-enable**
 - **[no] client-meg-level** [[**level** [*level ...*]]]
 - **low-priority-defect** {**allDef**|**macRemErrXcon**}
 - **[no] interface-support-enable**
 - **[no] interval** {**1** | **60**}
 - **[no] priority** *priority-value*
 - **[no] ccm-enable**
 - **[no] ccm-ltm-priority** *priority*
 - **ccm-padding-size** *ccm-padding*
 - **no ccm-padding-size** *ccm-padding*
 - **[no] csf-enable**
 - **multiplier** *multiplier-value*
 - **no multiplier**
 - **[no] description** *description-string*
 - **[no] eth-test-enable**
 - **[no] bit-error-threshold** *bit-errors*
 - **test-pattern** {**all-zeros** | **all-ones**} [**crc-enable**]
 - **no test-pattern**
 - **[no] fault-propagation-enable** {**use-if-tlv** | **suspend-ccm**}
 - **low-priority-defect** {**allDef** | **macRemErrXcon** | **remErrXcon** | **errXcon** | **xcon** | **noXcon**}
 - **mac-address** *mac-address*
 - **no mac-address**
 - **one-way-delay-threshold** *seconds*
 - **[no] shutdown**
 - **mip** [**mac** *mac-address*] [**primary-vlan-enable** [**vlan** *vlan-id*]]
 - **mip** **default-mac**

- **no mip**
- **[no] squelch-ingress-levels** [*md-level* [*md-level...*]]
- **tunnel-fault** [**accept** | **ignore**]
- **eth-tunnel**
 - **path** *path-index tag qtag* [*.qtag*]
 - **no path** *path-index*
- **ethernet**
 - **[no] llf**
- **frame-relay**
 - **[no] frf-12**
 - **ete-fragment-threshold** *threshold*
 - **no ete-fragment-threshold**
 - **[no] interleave**
 - **scheduling-class** *class-id*
 - **no scheduling-class**
- **[no] ignore-oper-down**
- **ingress**
 - **agg-rate-limit** *agg-rate*
 - **no agg-rate-limit**
 - **filter** [**ip** *ip-filter-id*]
 - **filter** [**ipv6** *ipv6-filter-id*]
 - **filter** [**mac** *mac-filter-id*]
 - **no filter** [**ip** *ip-filter-id*] [**ipv6** *ipv6-filter-id*] [**mac** *mac-filter-id*]
 - **qos** *network-policy-id fp-redirect-group* *queue-group-name* *instance* *instance-id*
 - **no qos**
 - **[no] hsmda-queue-override**
 - **packet-byte-offset** {**add** *add-bytes* | **subtract** *sub-bytes*}
 - **no packet-byte-offset**
 - **[no] queue** *queue-id*
 - **rate** *pir-rate*
 - **no rate**
 - **slope-policy** *hsmda-slope-policy-name* *allowable*
 - **no slope-policy**
 - **match-qinq-dot1p** {**top** | **bottom**}
 - **no match-qinq-dot1p**
 - **policer-control-override** [**create**]
 - **no policer-control-override**
 - **max-rate** {*rate* | **max**}
 - **priority-mbs-thresholds**
 - **min-thresh-separation**
 - **[no] priority** *level*
 - **mbs-contribution** *size* [**bytes** | **kilobytes**]
 - **policer-control-policy** *policy-name*
 - **no policer-control-policy**
 - **[no] policer-override**
 - **policer** *policyer-id* [**create**]
 - **no policer** *policyer-id*
 - **cbs** *size-in-kilobytes*
 - **no cbs**
 - **mbs** *size* [**bytes** | **kilobytes**]
 - **no mbs**

- **packet-byte-offset** **add** *add-bytes* | **subtract** *sub-bytes*}
- **percent-rate** *pir-percent* [**cir** *cir-percent*]
- **no percent-rate**
- **rate** {*rate* | **max**} [**cir** {**max** | *rate*}]
- **stat-mode** *stat-mode*
- **no stat-mode**
- **qos** *policy-id* [**shared-queuing**] [**fp-redirect-group** *queue-group-name* **instance** *instance-id*]
- **no qos**
- [**no**] **queue-override**
 - [**no**] **queue** *queue-id*
 - **adaptation-rule** [**pir** *adaptation-rule*] [**cir** *adaptation-rule*]
 - **no adaptation-rule**
 - **cbs** *size-in-kilobytes*
 - **no cbs**
 - **high-prio-only** *percent*
 - **no high-prio-only**
 - **mbs** *size* [**bytes** | **kilobytes**]
 - **no mbs**
 - [**no**] **monitor-depth**
 - **parent** {[**weight** *weight*] [**cir-weight** *cir-weight*]}
 - **no parent**
 - **percent-rate** *pir-percent* [**cir** *cir-percent*]
 - **no percent-rate**
 - **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**
- **vlan-translation** {**vlan-id** | **copy-outer**}
- **no vlan-translation**
- **lag-link-map-profile** *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**
- **monitor-oper-group** *group-name*
- **no monitor-oper-group**
- **multi-service-site** *customer-site-name*
- **no multi-service-site**
- **oper-group** *group-name*
- **no oper-group**
- **ring-node** *ring-node-name*
- **no ring-node**
- [**no**] **shutdown**
- **tod-suite** *tod-suite-name*
- **no tod-suite**
- **transit-policy** **prefix** *prefix-aasub-policy-id*

— **no transit-policy**

Epipe Spoke SDP Configuration Commands

```

config
  — service
    — epipe service-id
      — spoke-sdp sdp-id[:vc-id] [vc-type {ether | vlan}] [create] [no-endpoint]
      — spoke-sdp sdp-id[:vc-id] [vc-type {ether | vlan}] [create] endpoint [icb]
      — no spoke-sdp sdp-id[:vc-id]
        — accounting-policy acct-policy-id
        — no accounting-policy
        — app-profile app-profile-name
        — no app-profile
        — bandwidth bandwidth
        — no bandwidth
        — [no] bfd-enable
        — bfd-template name
        — no bfd-template
        — [no] collect-stats
        — [no] control-word
        — cpu-protection policy-id [mac-monitoring] | [eth-cfm-monitoring
          [aggregate][car]]
        — no cpu-protection
        — [no] description
        — [no] egress
          — filter [ip ip-filter-id]
          — filter [ipv6 ipv6-filter-id]
          — filter [mac mac-filter-id]
          — no filter [ip ip-filter-id] [ipv6 ipv6-filter-id][mac mac-filter-id]
          — l2tpv3
            — cookie cookie
            — no cookie
          — qos network-policy-id port-redirect-group queue-group-name
            [instance instance-id]
          — no qos
          — [no] vc-label egress-vc-label
    — eth-cfm
      — [no] ais-enable
        — [no] client-meg-level [[level [level ...]]]
        — [no] interface-support-enable
        — [no] interval {1 | 60}
        — low-priority-defect {allDef[macRemErrXcon]}
        — [no] priority priority-value
      — [no] ccm-enable
      — [no] ccm-ltm-priority priority
      — ccm-padding-size ccm-padding
      — no ccm-padding-size ccm-padding
      — [no] collect-lmm-stats
      — [no] csf-enable
        — multiplier multiplier-value
        — no multiplier
      — [no] description
      — [no] eth-test-enable
        — [no] test-pattern {all-zeros | all-ones} [crc-enable]
      — [no] fault-propagation-enable {use-if-tlv | suspend-ccm}

```

- [no] **one-way-delay-threshold** *seconds*
- [no] **mip** [{**mac** *mac-address* | *default-mac*}]
- **mep** *mep-id* **domain** *md-index* **association** *ma-index* [**direction** {**up** | **down**}]
- **no mep** *mep-id* **domain** *md-index* **association** *ma-index*
 - [no] **ccm-enable**
 - **ccm-ltm-priority** *priority*
 - **no ccm-ltm-priority**
 - [no] **description**
 - [no] **eth-test-enable**
 - **ccm-padding-size** *ccm-padding*
 - **noccm-padding-size** *ccm-padding*
 - **fault-propagation-enable** {**use-if-tlv** | **suspend-ccm**}
 - **no fault-propagation-enable**
 - **low-priority-defect** {**allDef** | **macRemErrXcon** | **remErrXcon** | **errXcon** | **xcon** | **noXcon**}
 - **mac-address** *mac-address*
 - **no mac-address**
 - [no] **shutdown**
- [no] **snelch-ingress-levels** [*md-level* [*md-level...*]]
- [no] **force-qinq-vc-forwarding**
- [no] **force-vlan-vc-forwarding**
- [no] **hash-label**
- [no] **ingress**
 - **filter** [**ip** *ip-filter-id*]
 - **filter** [**ipv6** *ipv6-filter-id*]
 - **filter** [**mac** *mac-filter-id*]
 - **no filter** [**ip** *ip-filter-id*] [**ipv6** *ipv6-filter-id*][**mac** *mac-filter-id*]
 - **l2tpv3**
 - **cookie** [*cookie1*][*cookie2*]
 - **no cookie**
 - **qos** *network-policy-id* **fp-redirect-group** *queue-group-name* **instance** *instance-id*
 - **no qos**
 - [no] **vc-label** *egress-vc-label*
- **monitor-oper-group** *group-name*
- **no monitor-oper-group**
- **precedence** [*precedence-value*] **primary**
- **no precedence**
- [no] **pw-status-signaling**
- [no] **shutdown**
- [no] **standby-signaling-slave**
- [no] **use-sdp-bmac**
- **vlan-vc-tag** *0..4094*
- **no vlan-vc-tag** [*0..4094*]
- **spoke-sdp-fec** *spoke-sdp-fec-id* [**fec** *fec-type*] [**aii-type** *aii-type*] [**create**]
- **spoke-sdp-fec** *spoke-sdp-fec-id* **no-endpoint**
- **spoke-sdp-fec** *spoke-sdp-fec-id* [**fec** *fec-type*] [**aii-type** *aii-type*] [**create**] **endpoint** *name* [**icb**]
- **no spoke-sdp-fec** *spoke-sdp-fec-id*
 - [no] **auto-config**
 - **path** *name*
 - **no path**
 - **precedence** *prec-value*

- **precedence** *primary*
- **no precedence**
- **pw-template-bind** *policy-id*
- **no pw-template-bind**
- **retry-count** *retry-count*
- **no retry-count**
- **retry-timer** *retry-timer*
- **no retry-timer**
- **saii-type2** *global-id:prefix:ac-id*
- **no saii-type2**
- **[no] shutdown**
- **signaling** *signaling*
- **[no] standby-signaling-slave**
- **taii-type2** *global-id:prefix:ac-id*
- **no taii-type2**

Template Commands

```
configure
  — service
    — template
      — epipe-sap-template name [create]
      — no epipe-sap-template name
        — egress
          — [no] filter
            — ip filter-id
            — no ip
            — ipv6 filter-id
            — no ipv6
            — mac filter-id
            — no mac
          — qos policy-id
          — no qos
        — ingress
          — [no] filter
            — ip filter-id
            — no ip
            — ipv6 filter-id
            — no ipv6
            — mac filter-id
            — no mac
          — qos policy-id {shared-queuing|multipoint-shared}
          — qos policy-id
          — no qos
```

Fpipe Service Configuration Commands

```

config
  — service
    — fpipe service-id [customer customer-id] [vpn vpn-id] [vc-type {fr-dlci}] [vc-switching]
    — no fpipe service-id
      — description description-string
      — no description
      — [no] endpoint endpoint-name
        — active-hold-delay active-endpoint-delay
        — no active-hold-delay
        — description description-string
        — no description
        — revert-time revert-time
        — no revert-time
      — sap sap-id [no-endpoint]
      — sap sap-id endpoint endpoint-name
      — no sap sap-id
        — accounting-policy acct-policy-id
        — no accounting-policy
        — [no] collect-stats
        — cpu-protection policy-id [mac-monitoring] | [eth-cfm-monitoring
          [aggregate][car]]
        — description description-string
        — no description
        — dist-cpu-protection policy-name
        — no dist-cpu-protection
        — egress
          — [no] agg-rate
            — rate {max | rate}
            — no rate
            — [no] limit-unused-bandwidth
            — [no] queue-frame-based-accounting
          — filter [ip ip-filter-id]
          — filter [ipv6 ipv6-filter-id]
          — no filter [ip ip-filter-id] [ipv6 ipv6-filter-id]
          — policer-control-override [create]
          — no policer-control-override
            — max-rate {rate | max}
            — priority-mbs-thresholds
              — min-thresh-separation
              — [no] priority level
              — mbs-contribution size [bytes | kilobytes]
            — policer-control-policy policy-name
            — no policer-control-policy
          — [no] policer-override
            — policer policer-id [create]
            — no policer policer-id
              — cbs size [bytes | kilobytes]
              — no cbs
              — mbs size [bytes | kilobytes]
              — no mbs
              — packet-byte-offset add add-bytes | subtract sub-bytes}

```

- **percent-rate** *pir-percent* [*cir cir-percent*]
- **no percent-rate**
- **rate** {*rate* | *max*} [*cir* {*max* | *rate*}]
- **stat-mode** *stat-mode*
- **no stat-mode**
- **[no] qinq-mark-top-only**
- **qos** *policy-id*
- **no qos**
- **[no] queue-override**
 - **[no] queue** *queue-id*
 - **adaptation-rule** [**pir** *adaptation-rule*] [**cir** *adaptation-rule*]
 - **no adaptation-rule**
 - **avg-frame-overhead** *percent*
 - **no avg-frame-overhead**
 - **burst-limit** *size-in-kbytes*
 - **no burst-limit**
 - **high-prio-only** *percent*
 - **no high-prio-only**
 - **mbs** {*size-in-kbytes* | **default**}
 - **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**
- **frame-relay**
 - **scheduling-class** *class-id*
 - **no scheduling-class**
- **ingress**
 - **filter** [**ip** *ip-filter-id*]
 - **filter** [**ipv6** *ipv6-filter-id*]
 - **no filter** [**ip** *ip-filter-id*] [**ipv6** *ipv6-filter-id*]
 - **qos** *policy-id* [**shared-queuing**]
 - **no qos**
 - **[no] queue-override**
 - **[no] queue** *queue-id*
 - **adaptation-rule** [**pir** *adaptation-rule*] [**cir** *adaptation-rule*]
 - **no adaptation-rule**
 - **avg-frame-overhead** *percent*
 - **no avg-frame-overhead**
 - **burst-limit** *size-in-kbytes*
 - **no burst-limit**
 - **high-prio-only** *percent*
 - **no high-prio-only**
 - **mbs** {*size-in-kbytes* | **default**}
 - **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**
- **scheduler-policy** *scheduler-policy-name*
- **no scheduler-policy**
- **multi-service-site** *customer-site-name*
- **no multi-service-site**
- **[no] shutdown**
- **tod-suite** *tod-suite-name*
- **no tod-suite**
- **service-mtu** *octets*
- **no service-mtu**
- **service-name** *service-name*
- **no service-name**
- **[no] shutdown**
- **spoke-sdp** *sdp-id[:vc-id]* [**no-endpoint**]
- **spoke-sdp** *sdp-id[:vc-id]* **endpoint** *endpoint-name* [**icb**]
- **no spoke-sdp** *sdp-id[:vc-id]*
 - **bandwidth** *bandwidth*
 - **no bandwidth**
 - **bfd-enable**
 - **no bfd-enable**
 - **bfd-template** *name*
 - **no bfd-template**
 - **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** *ingress-vc-label*
 - **no vc-label** [*ingress-vc-label*]
- **hash-label**
- **no hash-label**
- **ingress**
 - **filter** [**ip** *ip-filter-id*]
 - **filter** [**ipv6** *ipv6-filter-id*]
 - **no filter** [**ip** *ip-filter-id*] [**ipv6** *ipv6-filter-id*]
 - **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*]
- **precedence** [*precedence-value*] **primary**

Command Hierarchies

- **no precedence**
- **[no] shutdown**

Ipipe Service Configuration Commands

```

config
  — service
    — ipipe service-id [customer customer-id] [vpn vpn-id] [vc-switching]
    — no ipipe service-id
      — ce-address-discovery [ipv6] [keep]
      — [no] ce-address-discovery
      — description description-string
      — no description
      — [no] endpoint endpoint-name
        — active-hold-delay active-endpoint-delay
        — no active-hold-delay
        — description description-string
        — no description
        — revert-time revert-time
        — no revert-time
      — eth-legacy-fault-notification
        — recovery-timer timer-value
        — [no] recovery-timer
        — [no] shutdown
      — sap sap-id [no-endpoint]
      — sap sap-id endpoint endpoint-name
      — [no] sap eth-tunnel-tunnel-id [:eth-tunnel-sap-id] [create]
      — no sap sap-id
        — accounting-policy acct-policy-id
        — no accounting-policy
        — 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
        — ce-address ip-address
        — no ce-address
        — collect-stats
        — no collect-stats
        — cpu-protection policy-id [mac-monitoring] | [eth-cfm-monitoring
          [aggregate][car]]
        — no cpu-protection
        — description description-string
        — no description
        — dist-cpu-protection policy-name
        — no dist-cpu-protection
        — egress
          — agg-rate-limit agg-rate
          — no agg-rate-limit
          — [no] agg-rate
            — rate {max | rate}
            — no rate

```

- [no] **limit-unused-bandwidth**
- [no] **queue-frame-based-accounting**
- **filter** {**ip** *ip-filter-id* | **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**
- [no] **qinq-mark-top-only**
- **qos** *policy-id*
- **no qos**
- [no] **queue-override**
 - [no] **queue** *queue-id*
 - **adaptation-rule** [**pir** *adaptation-rule*] [**cir** *adaptation-rule*]
 - **no adaptation-rule**
 - **avg-frame-overhead** *percent*
 - **no avg-frame-overhead**
 - **burst-limit** *size-in-kbytes*
 - **no burst-limit**
 - **high-prio-only** *percent*
 - **no high-prio-only**
 - **mbs** {*size-in-kbytes* | **default**}
 - **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**
 - [no] **mep** *mep-id* **domain** *md-index* **association** *ma-index* [**direction** {**up** | **down**}]

- [no] **ccm-enable**
- [no] **ccm-ltm-priority** *priority*
- [no] **description**
- [no] **eth-test-enable**
 - [no] **bit-error-threshold** *bit-errors*
 - [no] **test-pattern** {*all-zeros* | *all-ones*} [*cre-enable*]
- [no] **fault-propagation-enable** {*use-if-tlv* | *suspend-ccm*}
- **low-priority-defect** {*allDef* | *macRemErrXcon* | *remErrXcon* | *errXcon* | *xcon* | *noXcon*}
- [no] **mac-address** *mac-address*
- [no] **one-way-delay-threshold** *<seconds>*
- [no] **shutdown**
- [no] **mip** [{*mac mac-address* | *default-mac*}]
- [no] **squelch-ingress-levels** [*md-level* [*md-level...*]]
- **tunnel-fault** [*accept* | *ignore*]
- **eth-tunnel**
 - **path** *path-index* **tag** *qtag* [*.qtag*]
 - **no path** *path-index*
- **ingress**
 - **filter** {*ip ip-filter-id* | *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*]
 - **no qos**
 - [no] **queue-override**
 - [no] **queue** *queue-id*
 - **adaptation-rule** [*pir adaptation-rule*] [*cir adaptation-rule*]
 - **no adaptation-rule**
 - **burst-limit** *size-in-kbytes*
 - **no burst-limit**
 - **high-prio-only** *percent*
 - **no high-prio-only**
 - **mbs** {*size-in-kbytes* | *default*}
 - **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**
- **lag-link-map-profile** *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**

- **mac** [*ieee-address*]
- **no mac**
- **mac-refresh** [*refresh interval*]
- **no mac-refresh**
- **multi-service-site** *customer-site-name*
- **no multi-service-site**
- **[no] shutdown**
- **tod-suite** *tod-suite-name*
- **no tod-suite**
- **[no] use-broadcast-mac**
- **service-mtu** *octets*
- **no service-mtu**
- **service-name** *service-name*
- **no service-name**
- **[no] shutdown**
- **spoke-sdp** [*sdp-id[:vc-id]*] [**no-endpoint**]
- **spoke-sdp** [*sdp-id[:vc-id]*] **endpoint** *endpoint-name* [**icb**]
- **no spoke-sdp** *sap-id*
 - **bandwidth** *bandwidth*
 - **no bandwidth**
 - **bfd-enable**
 - **no bfd-enable**
 - **bfd-template** *name*
 - **no bfd-template**
 - **ce-address** *ip-address*
 - **no ce-address**
 - **[no] control-word**
 - **egress**
 - **filter** {**ip** *ip-filter-id* | **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**
 - **[no] vc-label** *vc-label*
- **hash-label**
- **no hash-label**
- **ingress**
 - **filter** {**ip** *ip-filter-id* | **ipv6** *ipv6-filter-id*}
 - **no filter** {**ip** *ip-filter-id* | **ipv6** *ipv6-filter-id*}
 - **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*]
- **precedence** [*precedence-value*] **primary**
- **no precedence**
- **[no] shutdown**
- **[no] stack-capability-signaling**