Junos › OcNOS · CLI Cheat-Sheet

Engineer Reference · Side-by-side migration mapping for MX204, QFX5120-48Y, QFX5220-32CD, ACX7100, PTX10001-36MR

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OcNOS migration reference
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Every OcNOS snippet on this page is sourced from **`documentation.ipinfusion.com`**; every Junos snippet from **`juniper.net/documentation`**. Inline tags: `[SE-VALIDATE]` means the line was reconstructed from doc text and should be confirmed on a live image. `[SE-CONFIRM]` means SE sign-off is required (release minimum, feature gate, version-specific keyword). Pages are designed to Print-to-PDF clean on both A4 and Letter.

01 BGP IPv4/IPv6 unicast peering

JUNOS

```
set routing-options autonomous-system 100
set protocols bgp group internal-peers type internal
set protocols bgp group internal-peers local-address
1.1.1.1
set protocols bgp group internal-peers neighbor 11::1
set protocols bgp group internal-peers family inet6
unicast
```

OCNOS

```
router bgp 100
 bgp router-id 1.1.1.1
 neighbor IPV6_IBGP_PEER peer-group range 11::/16
 neighbor IPV6_IBGP_PEER remote-as 100
 neighbor IPV6_IBGP_PEER limit 1
 !
 address-family ipv6 unicast
  network 33::1/128
  neighbor IPV6_IBGP_PEER activate
  exit-address-family
```

Notes. Junos `group type internal|external` is implicit on OcNOS via per-neighbor `remote-as` (matching local-AS = iBGP). `local-address` → OcNOS `neighbor X update-source <iface>`. Policy attach: Junos `import/export` policy-statement vs OcNOS `neighbor X route-map <name> in|out`. Parity verdict: PARTIAL.

Junos: `juniper.net/documentation/us/en/software/junos/bgp/…/bgp-peering-sessions.html`

OcNOS: `documentation.ipinfusion.com/ocnos-sp-layer-3-7.0/…/dynamic-bgp-peering-ipv6-ibgp-config.htm`

02 OSPFv2 single-area + multi-area adjacency

JUNOS

```
set protocols ospf area 0.0.0.0 interface ge-0/0/0
set protocols ospf area 0.0.0.0 interface lo0.0
passive
# multi-area adjacency variant
set protocols ospf area 0.0.0.1 interface ge-0/0/0.0
secondary
```

OCNOS

```
! R2
router ospf 1
 network 2.2.2.0/24 area 0
!
interface eth1
 ip address 2.2.2.1/24
 ip ospf 1 multi-area 0.0.0.1 neighbor 2.2.2.2

! R3
router ospf 1
 network 2.2.2.0/24 area 0
!
interface eth1
 ip address 2.2.2.2/24
 ip ospf 1 multi-area 0.0.0.1 neighbor 2.2.2.1
```

> **Notes.** Multi-area adjacency (RFC 5185) requires the link to be point-to-point and FULL state on area 0 first. Parity verdict: EQUIVALENT.

Junos: juniper.net/documentation/us/en/software/junos/ospf/…/configuring-ospf-interfaces.html

OcNOS: documentation.ipinfusion.com/ocnos-sp-layer-3-7.0/…/multi-area-adjacency-config.htm

03 IS-IS Level-2 with MPLS-TE

JUNOS

```
set interfaces lo0 unit 0 family iso address
49.0001.0192.0168.0001.00
set protocols isis interface so-0/0/0.0 level 2
metric 10
set protocols isis interface lo0.0
set protocols isis level 1 disable
```

OCNOS

```
router isis ISIS-IGP
 is-type level-2-only          ! [SE-VALIDATE]
 metric-style wide
 mpls traffic-eng router-id <loopback-ip>
 mpls traffic-eng level-2       ! [SE-VALIDATE]
 capability cspf
 dynamic-hostname
 net 49.0000.0000.0001.00
!
interface lo
 ip router isis ISIS-IGP
!
interface xe1
 ip router isis ISIS-IGP
 isis network point-to-point
```

> **Notes.** Doc example uses `level-1`; L2-only swap and `mpls traffic-eng level-2` keyword are `[SE-VALIDATE]` against the target image (some OcNOS branches accept only `level-1-2`). Command ref: `isis-cmds/isis_metric.htm`. Parity verdict: PARTIAL.

Junos: juniper.net/documentation/us/en/software/junos/is-is/…/routing-protocol-is-is-security-configuring-cli.html

OcNOS: documentation.ipinfusion.com/ocnos-sp-mpls-6.6/…/ldp-frr-isis-config.htm

04 MPLS LDP transit

JUNOS

```
set interfaces ge-5/0/5 unit 0 family mpls
set protocols mpls interface ge-5/0/5.0
set protocols ldp interface ge-5/0/5.0
set protocols ldp interface lo0.0
```

OCNOS

```
(config)#router ldp
(config-router)#router-id 192.168.0.1
(config-router)#transport-address ipv4 192.168.0.1
(config-router)#exit
(config)#interface xe1
(config-if)#label-switching
(config-if)#enable-ldp ipv4
(config-if)#commit
```

Notes. OcNOS requires `label-switching` on the interface under NSM (the equivalent of Junos `family mpls`). Use a loopback for `transport-address`. IGP must distribute the transport address. Parity verdict: EQUIVALENT.

Junos: juniper.net/documentation/us/en/software/junos/mpls/…/mpls-security-ldp-signaled-lsp-configuring.html

OcNOS: documentation.ipinfusion.com/ocnos-sp-mpls-6.6/…/configure-ldp.htm

05 SR-MPLS (segment routing MPLS)

JUNOS

```
set protocols isis source-packet-routing srgb start-
label 800000 index-range 8000
set protocols isis source-packet-routing node-segment
ipv4-index 100
```

OCNOS

```
(config)#segment-routing
(config-sr)#global block 30000 50000
!
(config)#router isis isis1
(config-router)#isis segment-routing global block
30000 50000
!
(config)#router ospf 1
(config-router)#ospf segment-routing global block
30000 50000
!
(config)#interface lo
(config-if)#prefix-sid index 100        ! or: prefix-
sid absolute 30100
```

Notes. OcNOS requires both a global SR block AND a per-IGP block. Default SRGB per doc = 16000-23999; snippet uses 30000-50000. Index values are SRGB-relative; absolute must fall inside the block. SR-TE policy / segment-list construction not demonstrated. Parity verdict: PARTIAL — basic prefix-SID parity; SR-TE expressiveness `[SE-CONFIRM]`.

Junos: juniper.net/documentation/us/en/software/junos/is-is/…/example-configuring-spring-srgb.html

OcNOS: documentation.ipinfusion.com/ocnos-sp-segment-routing-7.0/…/segment-routing-configuration.htm

06 EVPN-VXLAN Type-2 + Type-5 (DC fabric)

JUNOS

```
set protocols evpn encapsulation vxlan
set protocols evpn multicast-mode ingress-replication
set protocols evpn extended-vni-list 101
set protocols evpn vni-options vni 101 vrf-target
target:65000:101
set switch-options vtep-source-interface lo0.0
set switch-options route-distinguisher 10.0.0.10:1
```

OCNOS

```
nvo vxlan enable
nvo vxlan irb
nvo vxlan vtep-ip-global 1.1.1.1
nvo vxlan id 50 ingress-replication inner-vid-
disabled
 vxlan host-reachability-protocol evpn-bgp
vxlan_l2_elan_sh
 evpn irb50
!
mac vrf vxlan_l2_elan_sh
 rd 1.1.1.1:100
 route-target both 100:100
!
ip vrf vxlan_l3_elan_sh
 rd 1111:300
 route-target both 300:300
 l3vni 5053
!
interface irb50
 ip vrf forwarding vxlan_l3_elan_sh
 evpn irb-if-forwarding anycast-gateway-mac
 ip address 50.1.1.1/24
!
router bgp 1
 address-family l2vpn evpn
  neighbor 6.6.6.6 activate
```

Notes. Type-2 (MAC-IP) flows via L2 VNI (`mac vrf` + `vxlan id`); Type-5 (IP-prefix) flows via L3 VNI (`ip vrf` + `l3vni`). `anycast-gateway-mac` must match across all leafs for silent-host symmetry. Parity verdict: EQUIVALENT (Type-2/Type-5, single-homed).

Junos: juniper.net/documentation/us/en/software/junos/evpn/…/evpn-vxlan-irb-within-data-center.html

OcNOS: documentation.ipinfusion.com/ocnos-dc-sys-mgmt-7.0/…/acl-irb-vxlan-dc.htm

07 EVPN-MPLS (SP transport)

JUNOS

```
set protocols evpn encapsulation mpls
set routing-instances EVPN-1 instance-type evpn
set routing-instances EVPN-1 vlans v100 vlan-id 100
```

OCNOS

```
evpn mpls enable
evpn mpls vtep-ip-global 22.22.22.22
!
router bgp 65010
 neighbor 10.10.10.2 remote-as 65010
 neighbor 10.10.10.2 update-source lo
 neighbor 10.10.10.3 remote-as 65010
 neighbor 10.10.10.3 update-source lo
 address-family l2vpn evpn
  neighbor 10.10.10.2 activate
  neighbor 10.10.10.3 activate
!
mac vrf vpls1001
 rd 10.10.10.1:1001
 route-target both 1001:1001
!
interface po1
 evpn multi-homed system-mac 0000.1111.7777 load-
balancing port-active
 service-carving auto
```

Notes. Global toggles `evpn mpls enable` / `evpn mpls vtep-ip-global` cited from the EVPN-MPLS anycast-IRB doc (OcNOS SP 7.0.0). Single-active variant replaces `port-active` with `single-active` and uses an explicit ESI string.

Junos: juniper.net/documentation/us/en/software/junos/evpn/…/evpn-vxlan-wan-evpn-mpls-configuring.html

OcNOS: documentation.ipinfusion.com/ocnos-sp-mpls-6.6/…/as-mh-pe1-config.htm

08 MPLS-TE with RSVP and FRR

JUNOS

```
set protocols mpls interface ge-0/0/0.0
set protocols rsvp interface lo0.0
set protocols rsvp interface ge-0/0/0.0
set protocols mpls label-switched-path PE1-to-PE2 to
10.0.0.2
set protocols mpls label-switched-path PE1-to-PE2
bandwidth 10g
set protocols mpls label-switched-path PE1-to-PE2
fast-reroute
```

OCNOS

```
(config)#rsvp-path p21
(config-path)#21.21.21.43 strict
(config-path)#38.38.38.42 strict
(config-path)#69.69.69.30 strict
(config)#exit
!
(config)#rsvp-trunk to_30 ipv4
(config-trunk)#primary fast-reroute protection one-
to-one
(config-trunk)#primary fast-reroute node-protection
(config-trunk)#primary path p21
(config-trunk)#to 30.30.30.30
(config-trunk)#exit
!
(config)#interface xe1
(config-if)#label-switching
(config-if)#enable-rsvp
```

Notes. BFD provides fast failure detection that, combined with pre-computed FRR backup paths, supports sub-50 ms protection; achievable times depend on the BFD interval/multiplier, hardware offload, and platform (OcNOS BFD minimum 3 ms hardware, 10 ms software; 250 ms default). Auto-bandwidth uses `primary path <name> auto-bandwidth <profile>`. Facility-bypass (link-protection) parity not in this snippet. Parity verdict: PARTIAL.

Junos: juniper.net/documentation/us/en/software/junos/mpls/…/mpls-traffic-engineering-configuration.html

OcNOS: documentation.ipinfusion.com/ocnos-sp-mpls-6.6/…/rsvp-te-fast-reroute-configuration-_one-to-one_method_.htm

09 ACL / firewall filter (ingress IPv4)

JUNOS

```
set firewall family inet filter PROTECT-RE term mgmt
from source-address 10.0.0.0/24
set firewall family inet filter PROTECT-RE term mgmt
from protocol tcp
set firewall family inet filter PROTECT-RE term mgmt
from port ssh
set firewall family inet filter PROTECT-RE term mgmt
then accept
set firewall family inet filter PROTECT-RE term
default then discard
set interfaces lo0 unit 0 family inet filter input
PROTECT-RE
```

OCNOS

```
#configure terminal
(config)#ip access-list T1
(config-ip-acl)#deny any host 1.1.1.1 any
(config-ip-acl)#permit any host 1.1.1.2 any
(config-ip-acl)#exit
(config)#hardware-profile filter ingress-ipv4 enable
(config)#commit
(config)#interface xe10
(config-if)#no switchport
(config-if)#ip address 1.1.1.3/24
(config-if)#ip access-group T1 in
(config-if)#commit
```

Notes. OcNOS TCAM group `ingress-ipv4` must be enabled via `hardware-profile filter` before the access-group binding takes effect on hardware – omitting that step leaves the ACL software-only. Implicit deny at end on both NOSes. RE/CoPP protect on OcNOS uses `class-map type copp` / `policy-map type copp`. Parity verdict: PARTIAL — most divergent topic; policy expressiveness gap real.

Junos: juniper.net/documentation/us/en/software/junos/routing-policy/…/firewall-filter-stateless-example-trusted-source-block-telnet-and-ssh-access.html

OcNOS: documentation.ipinfusion.com/ocnos-sp-sys-mgmt-6-6/…/ACL-config.htm

10 QoS – class-map / policy-map (DSCP remark)

JUNOS

```
set class-of-service classifiers dscp CLASS1
forwarding-class best-effort loss-priority low code-
points 011000
set class-of-service interfaces ge-0/0/0 unit 100
classifiers dscp CLASS1
set firewall family inet filter REMARK term t1 from
dscp 24
set firewall family inet filter REMARK term t1 then
dscp 32 accept
set interfaces ge-0/0/0 unit 100 family inet filter
input REMARK
```

OCNOS

```
PE1(config)#class-map type qos match-any class1
PE1(config-qos-match-any)#match dscp 24
PE1(config-qos-match-any)#commit
PE1(config-qos-match-any)#exit
PE1(config)#policy-map type qos pmap1
PE1(config-pmap-qos)#class type qos class1
PE1(config-pmap-qos)#set dscp 32
PE1(config-pmap-qos)#commit
PE1(config-pmap-qos)#exit
PE1(config)#interface xe0.100
PE1(config-if)#service-policy type qos input pmap1
PE1(config-if)#commit
```

Notes. `service-policy type qos input` is ingress; egress uses `output`. CoPP is a separate `type copp` tree. Doc image strings show OcNOS SP-PLUS 6.5.3.80-Alpha and SP-MPLS 6.6.0.104-Alpha.

Junos: juniper.net/documentation/us/en/software/junos/cos/…/cos-configuration.html

OcNOS: documentation.ipinfusion.com/ocnos-sp-mpls-6.6/…/configuration-dscp-preserve-global.htm

11 NetConf / YANG enable

JUNOS

```
set system services netconf ssh
set system services netconf ssh port 830
# OpenConfig models installed as Junos OS packages
# verify: show configuration system services netconf
```

OCNOS

```
configure terminal
 feature netconf-ssh
 feature netconf-ssh vrf management
 feature netconf-tls
 feature netconf-tls vrf management
 commit
!
! optional custom ports (must disable feature first):
 netconf server ssh-port 1060
 netconf server ssh-port 2000 vrf management
 netconf server tls-port 5000
 netconf server tls-port 60000 vrf management
 commit
```

Notes. OcNOS defaults SSH 830, TLS 6513. From OcNOS 6.2.0 onwards, data models cover all features automatically once NetConf is enabled. OpenConfig translation is a separate toggle (`cml netconf translation`, disabled by default). Junos NetConf port reference `[SE-VALIDATE]` against target release.

Junos: juniper.net/documentation/us/en/software/junos/netconf/…/netconf-session.html

OcNOS: documentation.ipinfusion.com/ocnos-sp-sys-mgmt-6-6/…/netconf-config.htm

12 Interface – L3 LACP bundle + port breakout

JUNOS

```
# L3 LACP bundle
set chassis aggregated-devices ethernet device-count
10
set interfaces ae10 unit 0 family inet address
1.1.1.1/24
set interfaces xe-0/0/1 ether-options 802.3ad ae10
set interfaces ae10 aggregated-ether-options lacp
active
# breakout (PIC-level)
set chassis fpc 0 pic 0 port 2 speed 100g
set chassis fpc 0 pic 0 port 3 channel-speed 25g
```

OCNOS

```
! L3 LACP bundle
configure terminal
 interface po10
  ip address 1.1.1.1/24
  commit
  exit
 interface xe1
  no switchport
  channel-group 10 mode active
  commit
  exit
!
! port breakout (config-mode, platform port name like
cd2):
OcNOS(config)#port cd2 breakout 1X100g
OcNOS(config)#port cd3 breakout 4X25g
OcNOS(config)#port cd4 breakout 2X50g
OcNOS(config)#port cd15 breakout 1X100g serdes 25g
OcNOS(config)#no port cd5 breakout
```

> **Notes.** 100g (ce) ports support 4X10g, 4X25g, and 2X50g breakout modes only. Serdes keyword applies only to 1X100g / 1X200g. Sub-port naming after breakout (xe<n>/<m> vs ce<n>/<m>) varies by platform – `[SE-VALIDATE]` against `show interface brief` on live image. Junos breakout syntax `[SE-VALIDATE]` for target platform (MX vs QFX vs PTX differ).

Junos: juniper.net/documentation/us/en/software/junos/interfaces-ethernet-switches/…/aggregated-ethernet-interfaces.html

OcNOS (LACP): documentation.ipinfusion.com/ocnos-sp-layer-3-7.0/…/l3-lag/Configuration.htm

OcNOS (breakout): documentation.ipinfusion.com/ocnos-sp-sys-mgmt-6-6/…/port-breakout.htm

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