

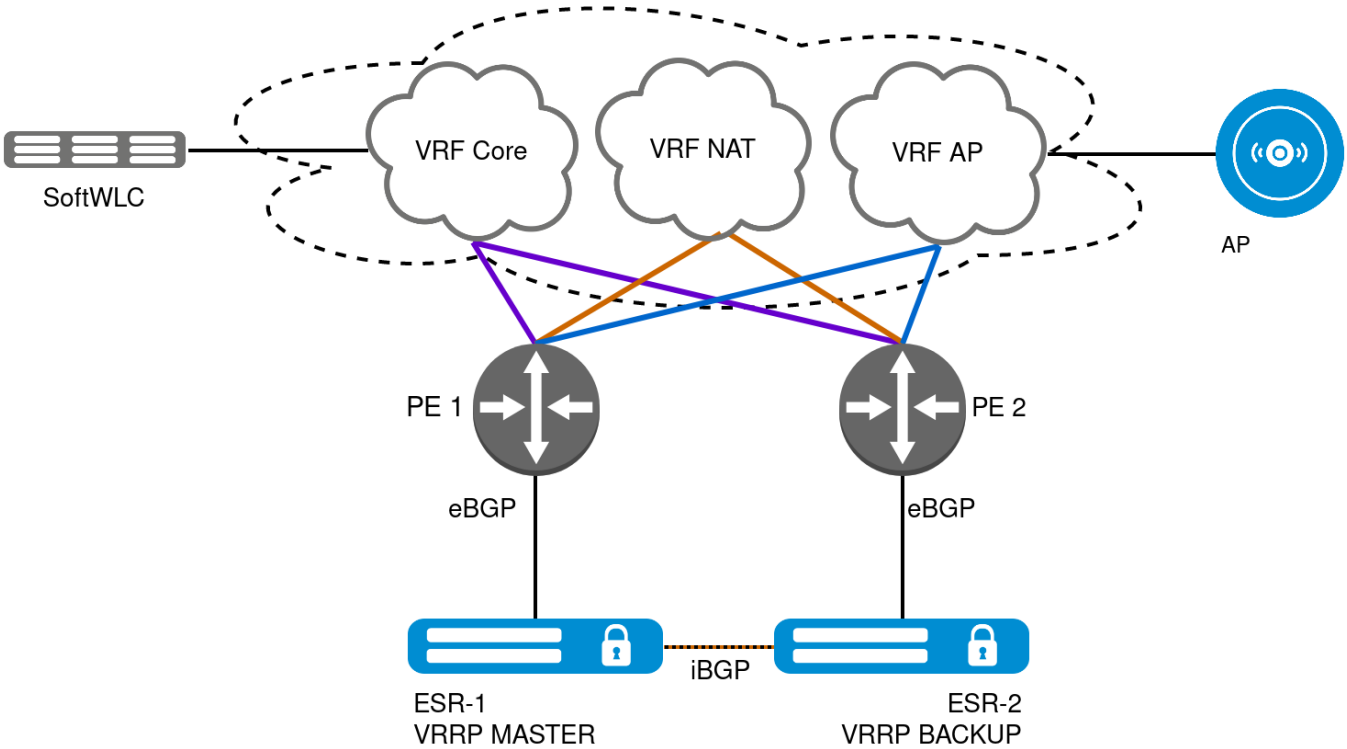
c VRRP+BGP

-
-
- ESR
 - VRRP
 - AS-path
 - Multi exit discriminator (MED)
 - local preference , ESR
 - VRRP PE, ESR VRRP MASTER
-
-
- ESR

ESR " " (PE 1 PE 2) .1. , , PoE , L3/ ().

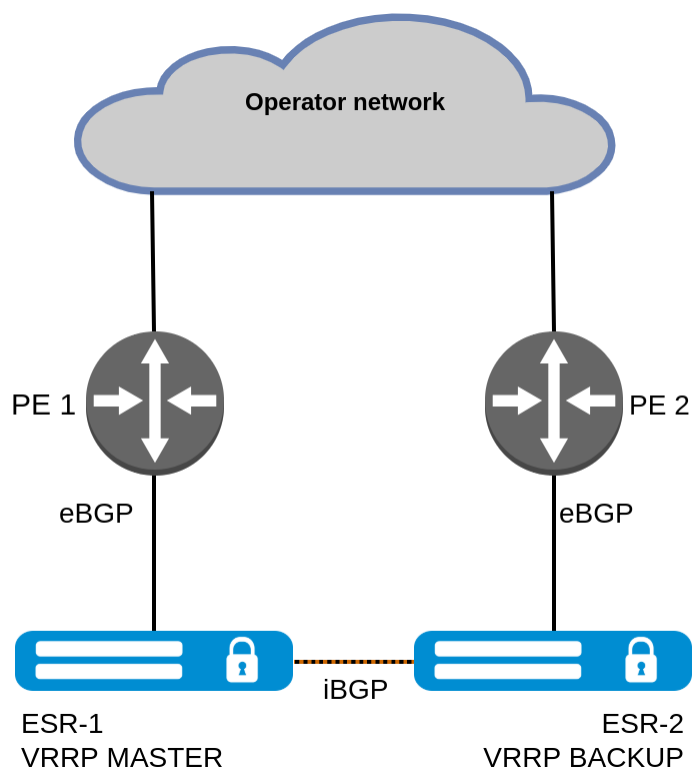
- VRF AP.
- VRF NAT, NAT.
- VRF core ESR SoftWLC.

ESR PE .ESR GRE . , PE ESR, , .



.1.

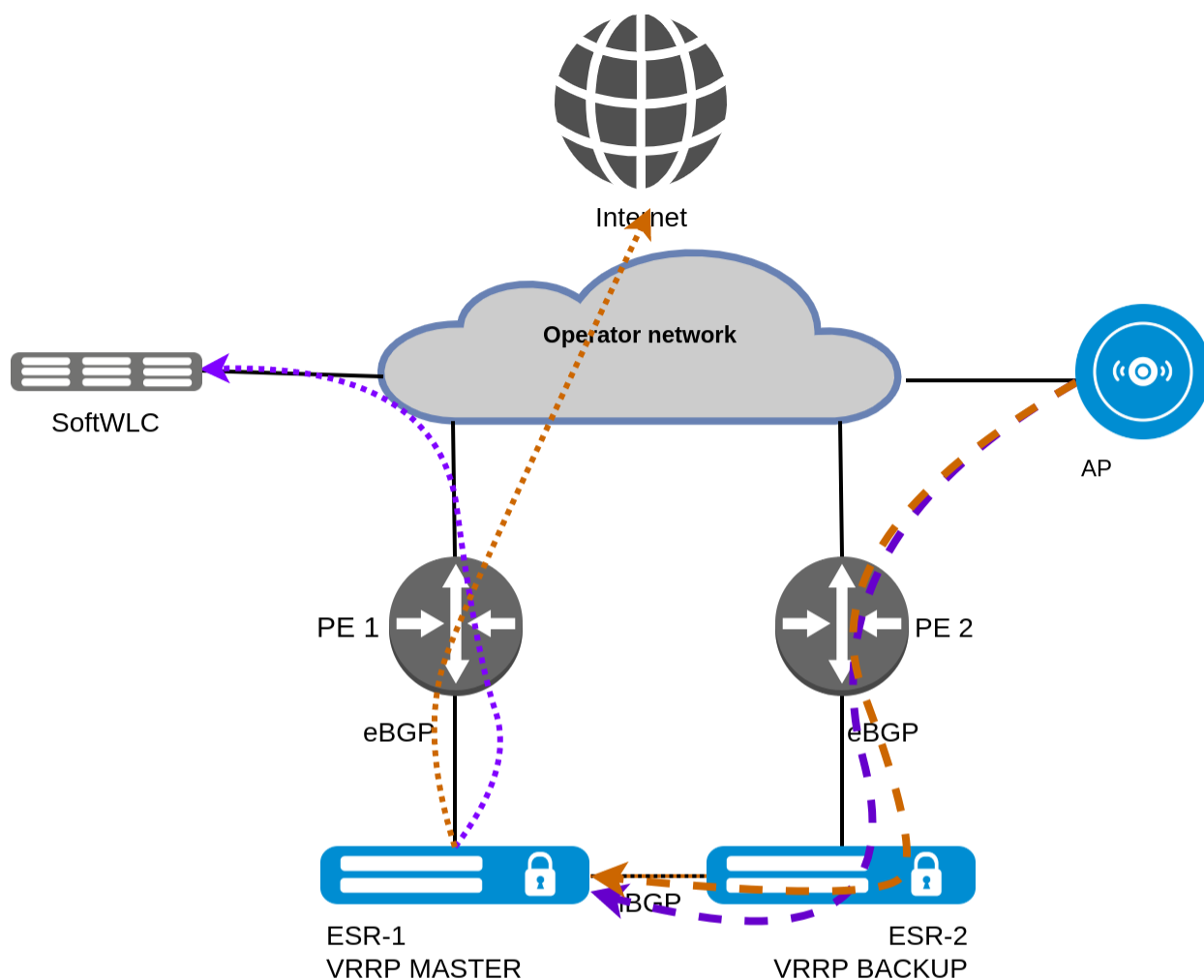
.2 , BGP .



. 2.

VRRP :

1. ESR-1 ESR-2 GRE VRF AP. , GRE PE 2 ESR-2, VRRP BACKUP GRE . GRE ESR-1 ESR-2, VRF core () VRF NAT () PE 1, . 3.



— — — — — трафик управления ТД внутри GRE

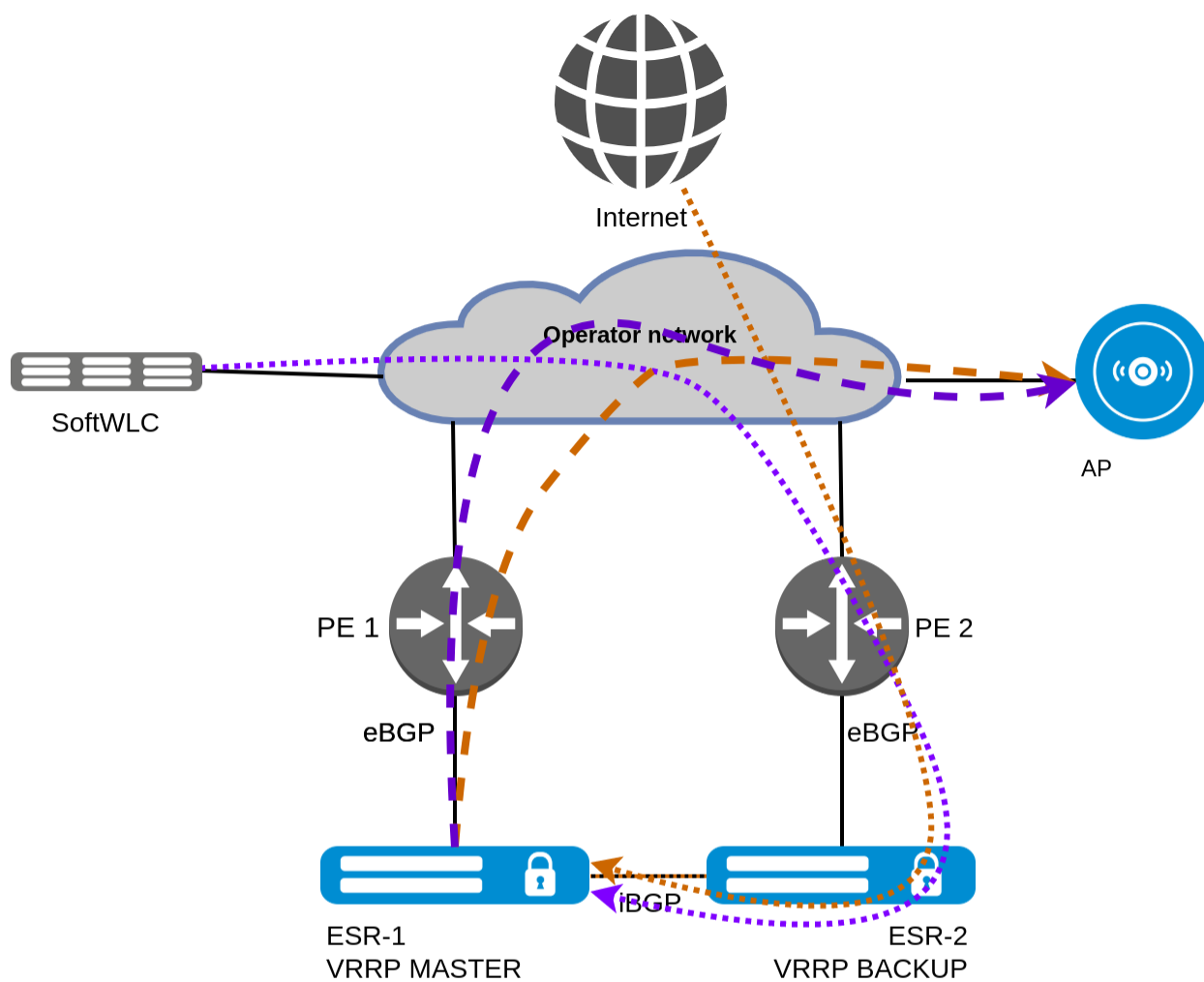
— — — — — трафик клиентов ТД внутри GRE

... .. трафик управления ТД после декапсуляции из GRE

... .. трафик клиентов ТД после декапсуляции из GRE

. 3.

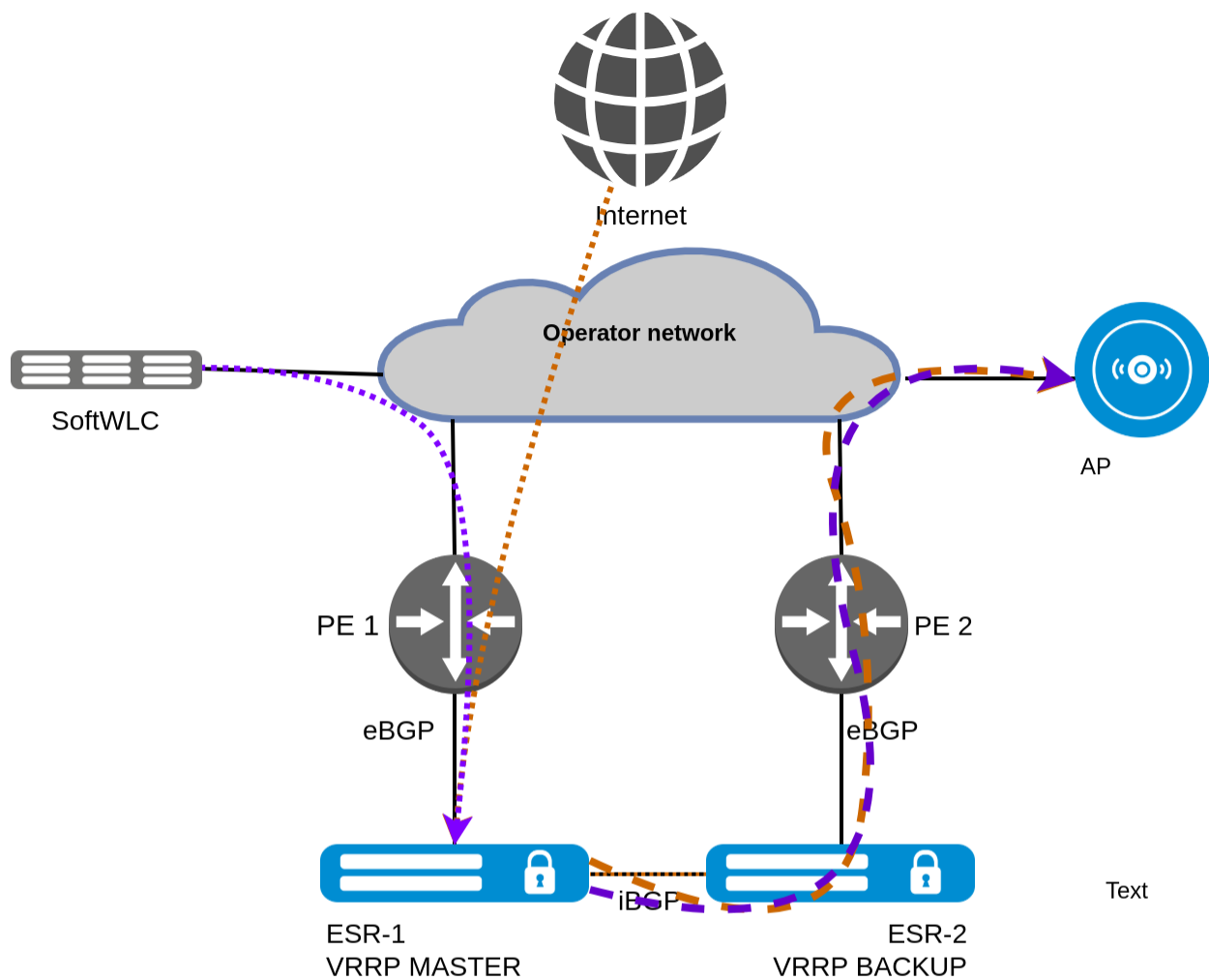
2. ESR-1 ESR-2 VRF core VRF NAT. ESR-2 PE 2. , SoftWLC, VRF NAT с ESR-2 ESR-1, VRRP MASTER GRE
PE 1, . 4.



- — — — — трафик управления ТД внутри GRE
- — — — — трафик клиентов ТД внутри GRE
- трафик управления ТД до инкапсуляции в GRE
- трафик клиентов ТД до инкапсуляции из GRE

. 4.

3. PE 1 PE2 ESR-1/ESR-2 , SoftWLC NAT. ESR-1 ESR-2 , iBGP . , ESR, VRRP MASTER, , ESR VRRP BACKUP. ,
 . 5.



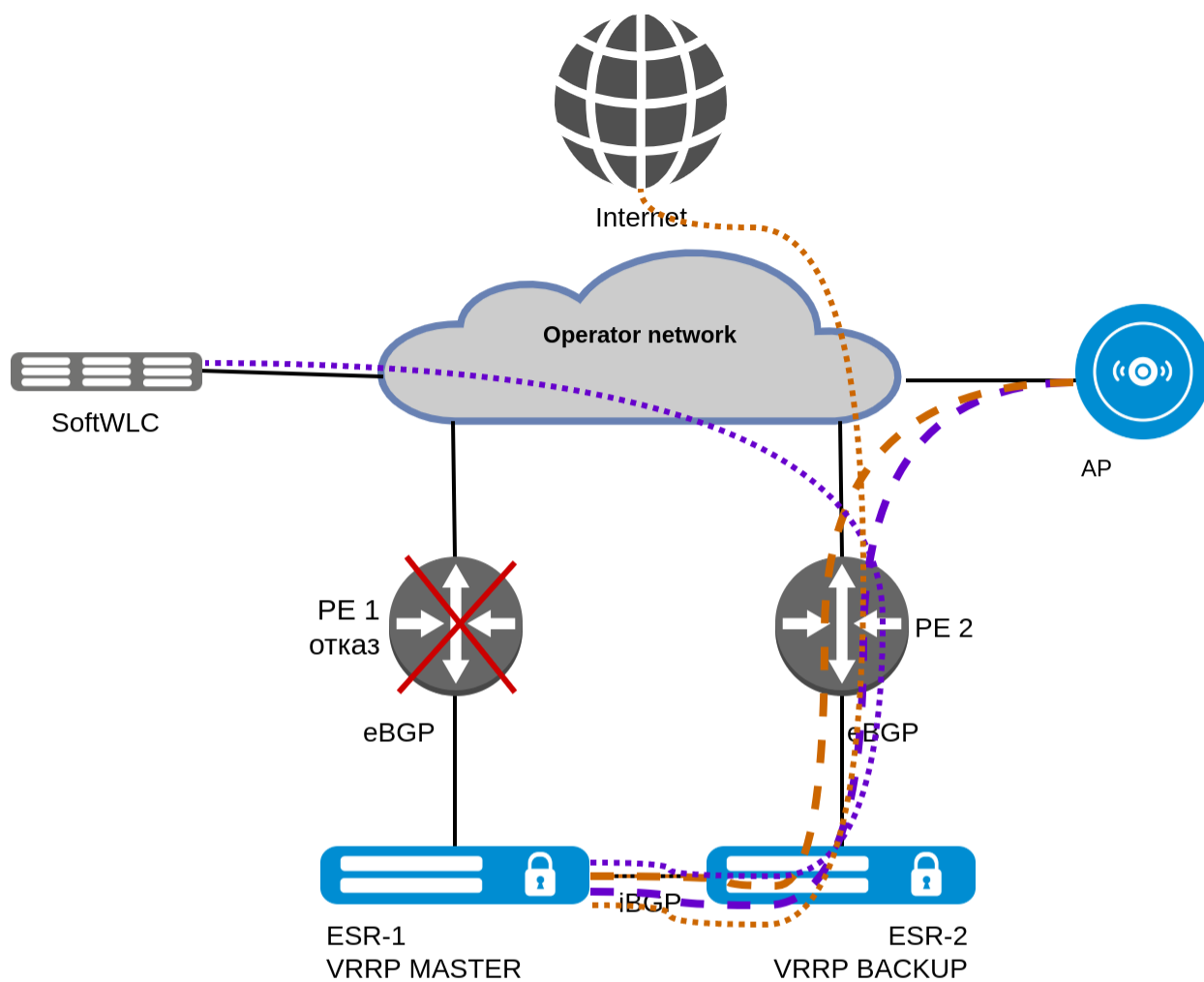
- — — — — трафик управления ТД внутри GRE
- — — — — трафик клиентов ТД внутри GRE
- ... трафик управления ТД до инкапсуляции в GRE
- ... трафик клиентов ТД до инкапсуляции из GRE

. 5.

:

- ;
- ,.. ESR ();
- ESR L2 VPN ;
- EoGRE (ESR100/200/1000) /SSID, .. (up/down) .

4. PE 1, ESR-1, VRRP MASTER , (. 6).



- — — — — трафик управления ТД внутри GRE
- — — — — трафик клиентов ТД внутри GRE
- трафик управления ТД до инкапсуляции в GRE
- трафик клиентов ТД до инкапсуляции из GRE

. 6.

:
 • ESR L2 VPN ;
 •

ESR. ESR, :

- L2 VRRP, GRE, ;
- , ;
- iBGP ESR-1 ESR-2.

1 2:

- BGP VRRP ESR. VRRP MASTER BGP, PE .

3:

- , ESR iBGP, BGP , , PE ESR.

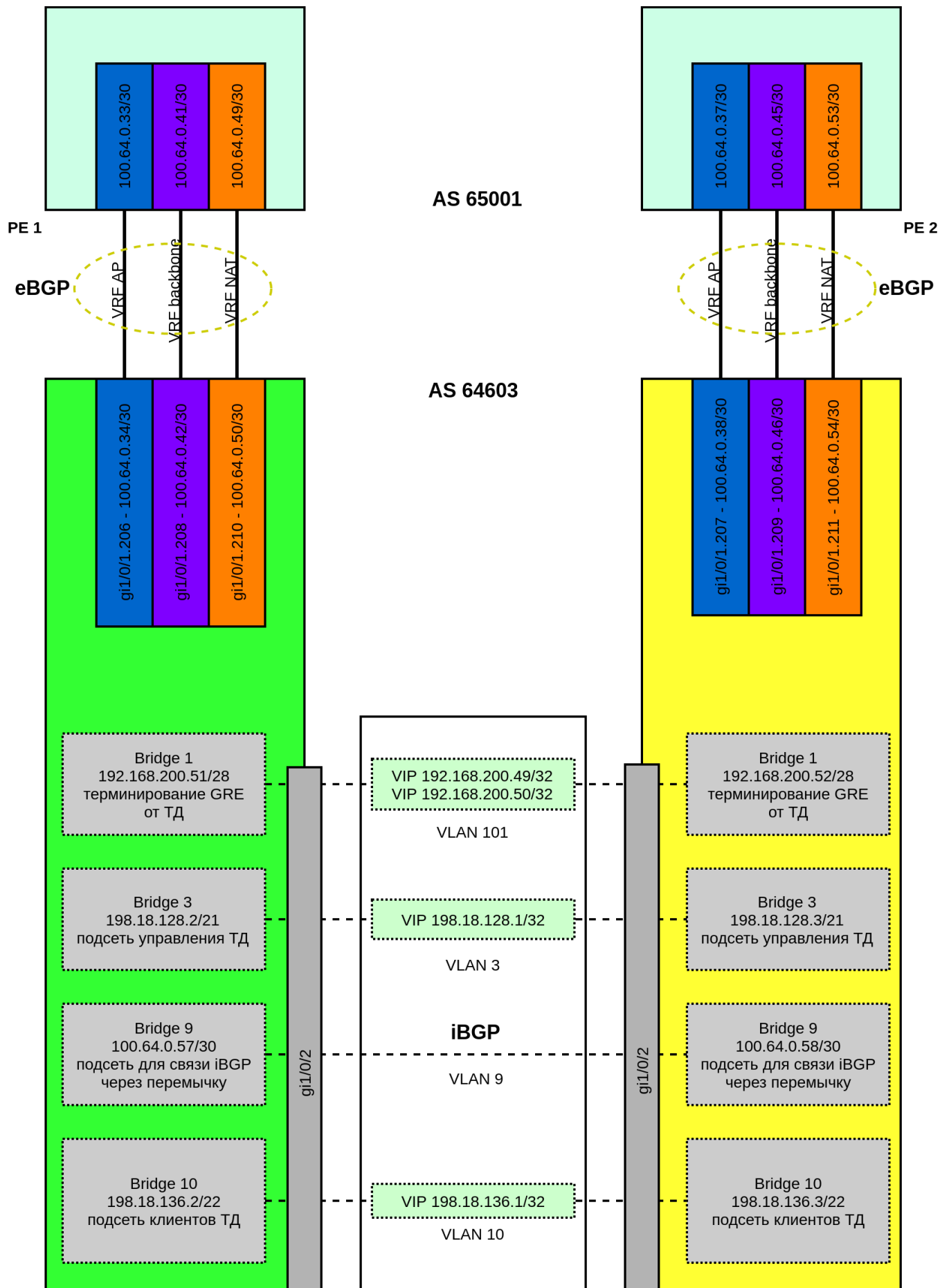
4:

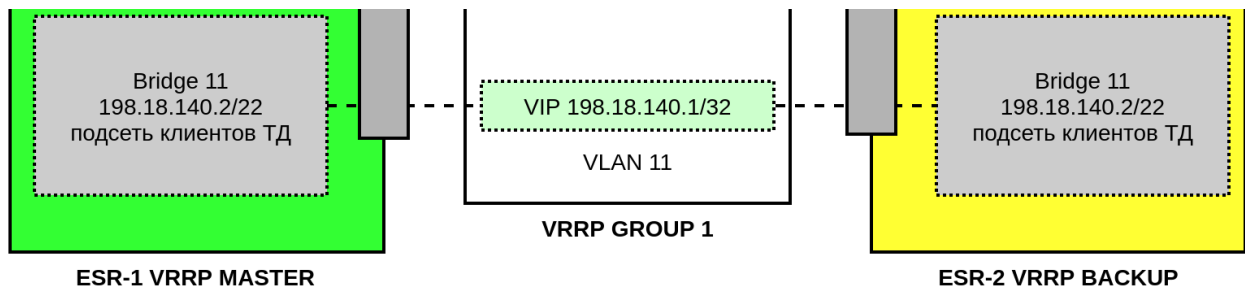
- VRRP PE ESR. PE, VRRP ESR, PE .

ESR

, . .

, ESR, , .7.





. 7.

:

ESR-1 (gi1/0/1) - PE 1. - eBGP VRF.

		IP
VRF AP	gi1/0/1.206	100.64.0.34/30
VRF core	gi1/0/1.208	100.64.0.42/30
VRF NAT	gi1/0/1.210	100.64.0.50/30

ESR-2 (gi1/0/1) - PE2. - eBGP VRF.

		IP
VRF AP	gi1/0/1.207	100.64.0.38/30
VRF core	gi1/0/1.209	100.64.0.46/30
VRF NAT	gi1/0/1.211	100.64.0.54/30

ESR-1 (gi1/0/3) ESR-2 (gi1/0/3). VRRP Bridge 1, 3, 10, 11 vlan. iBGP ESR Bridge 9.

	/	VRRP IP	ESR-1 IP address	ESR-2 IP address
GRE	bridge 1 / 101	192.168.200.49/32	192.168.200.51/28	192.168.200.52/28
		192.168.200.50/32		
	bridge 3 / 3	198.18.128.1/32	198.18.128.2/21	198.18.128.3/21
ESR-1	bridge 9 / 9	n/a	100.64.0.57/30	100.64.0.58/30
	bridge 10 / 10	198.18.136.1/32	198.18.140.2/22	198.18.140.3/22
	bridge 11 / 11	198.18.140.1/32	198.18.140.2/22	198.18.140.3/22

VRRP

ESR, VRRP MASTER, BGP, PE . , VRRP , . VRRP VRRP, MASTER, ESR, VRRP MASTER, BGP. , - AS-path Multi exit discriminator (MED).

AS-path

AS-path , ESR, VRRP MASTER, AS-path , AS-path , . "tracking 1" (ESR):

```
tracking 1
  vrrp 3 not state master
  enable
exit
```

tracking 1 60. VRRP id 3. VRRP id, bridge 3, ESR. .. VRRP , . , VRRP MASTER. ,.. VRRP BACKUP FAULT. tracking BGP, ESR .

route-map, "track 1". BGP (AS-path prepend). AS .

```

route-map out_BGP_GRE
  rule 10
    match ip address object-group gre_termination
    action set as-path prepend 64603 track 1
    action permit
  exit
exit
route-map out_BGP_AP
  rule 10
    match ip address object-group mgmt_AP
    action set as-path prepend 64603 track 1
    action permit
  exit
exit
route-map out_BGP_NAT
  rule 10
    match ip address object-group clients_AP
    action set as-path prepend 64603 track 1
    action permit
  exit
exit

```

route-map ESR.

ESR-1:

```

router bgp 64603
  address-family ipv4
    redistribute connected
    neighbor 100.64.0.33
      remote-as 65001
      route-map out_BGP_GRE out
      update-source 100.64.0.34
      enable
    exit
    neighbor 100.64.0.41
      remote-as 65001
      route-map out_BGP_AP out
      update-source 100.64.0.42
      enable
    exit
    neighbor 100.64.0.49
      remote-as 65001
      route-map out_BGP_NAT out
      update-source 100.64.0.50
      enable
    exit
  enable
exit

```

ESR-2:

```

router bgp 64603
  address-family ipv4
    redistribute connected
    neighbor 100.64.0.37
      remote-as 65001
      route-map out_BGP_GRE out
      update-source 100.64.0.38
      enable
    exit
    neighbor 100.64.0.45
      remote-as 65001
      route-map out_BGP_AP out
      update-source 100.64.0.46
      enable
    exit
    neighbor 100.64.0.53
      remote-as 65001
      route-map out_BGP_NAT out
      update-source 100.64.0.54
      enable
    exit
  enable
exit
exit

```

, ESR-2,VRRP BACKUP, AS-path AS:

```

Beta# show ip bgp 64603 neighbors 100.64.0.37 advertise-routes
Status codes: u - unicast, b - broadcast, m - multicast, a - anycast
               * - valid, > - best
Origin codes: i - IGP, e - EGP, ? - incomplete

   Network          Next Hop           Metric  LocPrf    Weight Path
*> u 192.168.200.48/28  100.64.0.38                100      0    64603 64603 ?

Beta# show ip bgp 64603 neighbors 100.64.0.45 advertise-routes
Status codes: u - unicast, b - broadcast, m - multicast, a - anycast
               * - valid, > - best
Origin codes: i - IGP, e - EGP, ? - incomplete

   Network          Next Hop           Metric  LocPrf    Weight Path
*> u 198.18.140.0/22    100.64.0.46                100      0    64603 64603 ?
*> u 198.18.136.0/22    100.64.0.46                100      0    64603 64603 ?
*> u 198.18.128.0/21    100.64.0.46                100      0    64603 64603 ?
*> u 198.18.144.0/22    100.64.0.46                100      0    64603 64603 ?
*> u 100.64.0.56/30     100.64.0.46                100      0    64603 64603 ?

Beta# show ip bgp 64603 neighbors 100.64.0.53 advertise-routes
Status codes: u - unicast, b - broadcast, m - multicast, a - anycast
               * - valid, > - best
Origin codes: i - IGP, e - EGP, ? - incomplete

   Network          Next Hop           Metric  LocPrf    Weight Path
*> u 198.18.140.0/22    100.64.0.54                100      0    64603 64603 ?
*> u 198.18.136.0/22    100.64.0.54                100      0    64603 64603 ?
*> u 198.18.128.0/21    100.64.0.54                100      0    64603 64603 ?
*> u 198.18.144.0/22    100.64.0.54                100      0    64603 64603 ?

```

, BGP AS-path ESR, VRRP BACKUP, , VRRP MASTER.



! , ,... :

- AS-path prepend (AS-path);
- AS-path;
- , BGP.

Multi exit discriminator (MED)

Multi exit discriminator (MED) BGP .

"tracking 1" (ESR):

```
tracking 1
 vrrp 3 not state master
 enable
 exit
```

route-map, BGP, "track 1" MED = 1000. 0 4294967295.. ESR, VRRP MASTER, , , 0, .

```
route-map out_BGP_GRE
 rule 10
  match ip address object-group gre_termination
  action set metric bgp 1000 track 1
  action permit
 exit
exit
route-map out_BGP_AP
 rule 10
  match ip address object-group mgmt_AP
  action set metric bgp 1000 track 1
  action permit
 exit
exit
route-map out_BGP_NAT
 rule 10
  match ip address object-group clients_AP
  action set metric bgp 1000 track 1
  action permit
 exit
exit
```

route-map ESR.

ESR-1:

```

router bgp 64603
  address-family ipv4
    redistribute connected
    neighbor 100.64.0.33
      remote-as 65001
      route-map out_BGP_GRE out
      update-source 100.64.0.34
      enable
    exit
    neighbor 100.64.0.41
      remote-as 65001
      route-map out_BGP_AP out
      update-source 100.64.0.42
      enable
    exit
    neighbor 100.64.0.49
      remote-as 65001
      route-map out_BGP_NAT out
      update-source 100.64.0.50
      enable
    exit
  enable
exit
exit

```

ESR-2:

```

router bgp 64603
  address-family ipv4
    redistribute connected
    neighbor 100.64.0.37
      remote-as 65001
      route-map out_BGP_GRE out
      update-source 100.64.0.38
      enable
    exit
    neighbor 100.64.0.45
      remote-as 65001
      route-map out_BGP_AP out
      update-source 100.64.0.46
      enable
    exit
    neighbor 100.64.0.53
      remote-as 65001
      route-map out_BGP_NAT out
      update-source 100.64.0.54
      enable
    exit
  enable
exit
exit

```

, ESR-2, VRRP VRRP BACKUP, MED , :

```
Beta# show ip bgp 64603 neighbors 100.64.0.37 advertise-routes
Status codes: u - unicast, b - broadcast, m - multicast, a - anycast
               * - valid, > - best
Origin codes: i - IGP, e - EGP, ? - incomplete
```

Network	Next Hop	Metric	LocPrf	Weight	Path
*> u 192.168.200.48/28	100.64.0.38	1000	100	0	64603 ?

```
Beta# show ip bgp 64603 neighbors 100.64.0.45 advertise-routes
Status codes: u - unicast, b - broadcast, m - multicast, a - anycast
               * - valid, > - best
Origin codes: i - IGP, e - EGP, ? - incomplete
```

Network	Next Hop	Metric	LocPrf	Weight	Path
*> u 198.18.140.0/22	100.64.0.46	1000	100	0	64603 ?
*> u 198.18.136.0/22	100.64.0.46	1000	100	0	64603 ?
*> u 198.18.128.0/21	100.64.0.46	1000	100	0	64603 ?
*> u 198.18.144.0/22	100.64.0.46	1000	100	0	64603 ?
*> u 100.64.0.56/30	100.64.0.46	1000	100	0	64603 ?

```
Beta# show ip bgp 64603 neighbors 100.64.0.53 advertise-routes
Status codes: u - unicast, b - broadcast, m - multicast, a - anycast
               * - valid, > - best
Origin codes: i - IGP, e - EGP, ? - incomplete
```

Network	Next Hop	Metric	LocPrf	Weight	Path
*> u 198.18.140.0/22	100.64.0.54	1000	100	0	64603 ?
*> u 198.18.136.0/22	100.64.0.54	1000	100	0	64603 ?
*> u 198.18.128.0/21	100.64.0.54	1000	100	0	64603 ?
*> u 198.18.144.0/22	100.64.0.54	1000	100	0	64603 ?



! , , ... :

- MED;
- "" , , , Weight, local preference, AS-path origin code ;
- ... ,

route-map as-path prepend metric .

local preference , ESR

, SoftWLC , , iBGP ESR, PE. local preference - ESR BGP local preference iBGP 100, ESR PE (PE, iBGP).

ESR-1:

route-map, action set local-preference 20:

```
route-map in_PREF
rule 10
action set local-preference 20
action permit
exit
exit
```

route-map ESR-1 iBGP (ESR-2):

```

router bgp 64603
  address-family ipv4
    redistribute connected
    neighbor 100.64.0.58
      remote-as 64603
      route-map in_PREF in
      next-hop-self
      update-source 100.64.0.57
    enable
  exit
enable
exit
exit

```

, , ESR-2, BGP local-preference 20:

```

Alfa# sh ip bgp 64603 neighbors 100.64.0.58 routes
Status codes: u - unicast, b - broadcast, m - multicast, a - anycast
               * - valid, > - best
Origin codes: i - IGP, e - EGP, ? - incomplete

```

	Network	Next Hop	Metric	LocPrf	Weight	Path
* u	0.0.0.0/0	100.64.0.58		20	0	65001 64602 i
* u	198.18.140.0/22	100.64.0.58		20	0	?
* u	198.18.136.0/22	100.64.0.58		20	0	?
* u	198.18.128.0/21	100.64.0.58		20	0	?
* u	10.10.60.0/24	100.64.0.58		20	0	65001 ?
* u	198.18.144.0/22	100.64.0.58		20	0	?
* u	100.64.0.16/28	100.64.0.58		20	0	65001 ?
* u	192.168.200.48/28	100.64.0.58		20	0	?
* u	100.64.0.56/30	100.64.0.58		20	0	?
* u	100.123.0.0/24	100.64.0.58		20	0	65001 ?
* u	192.168.250.0/24	100.64.0.58		20	0	65001 64602 ?
*> u	100.64.0.52/30	100.64.0.58		20	0	?
*> u	100.64.0.44/30	100.64.0.58		20	0	?
* u	100.110.0.0/23	100.64.0.58		20	0	?
*> u	100.64.0.36/30	100.64.0.58		20	0	?

ESR-2:

```

route-map in_PREF
  rule 10
    action set local-preference 20
    action permit
  exit
exit

router bgp 64603
  address-family ipv4
    redistribute connected
    neighbor 100.64.0.57
      remote-as 64603
      route-map in_PREF in
      next-hop-self
      update-source 100.64.0.58
    enable
  exit
enable
exit
exit

```

, :

```
Beta# sh ip bgp 64603 neighbors 100.64.0.57 routes
Status codes: u - unicast, b - broadcast, m - multicast, a - anycast
               * - valid, > - best
Origin codes: i - IGP, e - EGP, ? - incomplete
```

	Network	Next Hop	Metric	LocPrf	Weight	Path
*	u 0.0.0.0/0	100.64.0.57		20	0	65001 64602 i
*	u 198.18.140.0/22	100.64.0.57		20	0	?
*>	u 198.18.136.1/32	100.64.0.57		20	0	?
*	u 198.18.136.0/22	100.64.0.57		20	0	?
*>	u 198.18.140.1/32	100.64.0.57		20	0	?
*>	u 198.18.128.1/32	100.64.0.57		20	0	?
*	u 198.18.128.0/21	100.64.0.57		20	0	?
*>	u 198.18.144.1/32	100.64.0.57		20	0	?
*	u 10.10.60.0/24	100.64.0.57		20	0	65001 ?
*	u 198.18.144.0/22	100.64.0.57		20	0	?
*	u 100.64.0.16/28	100.64.0.57		20	0	65001 ?
*>	u 192.168.200.50/32	100.64.0.57		20	0	?
*	u 192.168.200.48/28	100.64.0.57		20	0	?
*>	u 192.168.200.49/32	100.64.0.57		20	0	?
*	u 100.64.0.56/30	100.64.0.57		20	0	?
*	u 100.123.0.0/24	100.64.0.57		20	0	65001 ?
*	u 192.168.250.0/24	100.64.0.57		20	0	65001 64602 ?
*>	u 100.64.0.48/30	100.64.0.57		20	0	?
*>	u 100.64.0.40/30	100.64.0.57		20	0	?
*	u 100.110.0.0/23	100.64.0.57		20	0	?
*>	u 100.64.0.32/30	100.64.0.57		20	0	?

VRRP PE, ESR VRRP MASTER

PE VRRP track IP. IP PE VRRP FAULT . , VRRP.

Bridge 3 (, VRRP) vrrp track-ip 100.64.0.45 (IP PE VRF core).

```
bridge 3
description "mgmt_AP"
vlan 3
security-zone trusted
ip address 198.18.128.3/21
ip helper-address 100.123.0.2
ip helper-address vrrp-group 1
vrrp id 3
vrrp ip 198.18.128.1/32
vrrp priority 190
vrrp group 1
vrrp preempt disable
vrrp track-ip 100.64.0.45
vrrp
protected-ports
protected-ports exclude vlan
ports vrrp filtering enable
ports vrrp filtering exclude vlan
enable
exit
```

: vrrp track-ip 100.64.0.45 PE 100.64.0.45, VRF core. IP , PE.

ping probe, 5 (vrrp track-ip packets 1 5), 10 (vrrp track-ip interval 3 60). VRRP :

1. , vrrp track-ip, ping probe - ;
2. , , , ping probe;
3. ping probe , VRRP (bridge 3) FAULT - VRRP MASTER ESR, BACKUP.
4. Ping probe ;
5. PE , VRRP FAULT Initialize, VRRP BACKUP, vrrp preempt disable vrrp priority ESR, , vrrp priority, ESR. , vrrp preempt delay .

, PE ESR, , VRRP FAULT, VRRP ESR.

, , ESR PE .

ESR

ESR-1:

```
hostname ESR-1

ip firewall sessions counters
ip firewall sessions classification enable
ip firewall sessions allow-unknown
object-group service telnet
    port-range 23
exit
object-group service ssh
    port-range 22
exit
object-group service dhcp_server
    port-range 67
exit
object-group service dhcp_client
    port-range 68
exit
object-group service ntp
    port-range 123
exit
object-group service snmp
    port-range 161-162
exit
object-group service COA
    port-range 3799
    port-range 31812-31813
exit
object-group service bgp
    port-range 179
exit
object-group service dns
    port-range 53
exit
object-group service firewall_failover
    port-range 3333
exit

object-group network SoftWLC
    ip prefix 100.123.0.0/24
exit
object-group network gre_termination
    ip prefix 192.168.200.48/28
exit
object-group network mgmt_AP
    ip prefix 198.18.128.0/21
    ip prefix 198.18.136.0/22
    ip prefix 198.18.140.0/22
    ip prefix 100.64.0.56/30
exit
object-group network clients_AP
    ip prefix 198.18.136.0/22
    ip prefix 198.18.140.0/22
exit
object-group network Admnet
```

```
ip prefix 100.123.0.0/24
ip prefix 100.64.0.40/30
exit
object-group network nets
ip prefix 10.0.0.0/8
ip prefix 192.168.0.0/16
ip prefix 172.16.0.0/12
exit
object-group network cross
ip prefix 100.64.0.32/30
ip prefix 100.64.0.40/30
ip prefix 100.64.0.48/30
ip prefix 100.64.0.56/30
exit
object-group network DNS
ip prefix 100.123.0.0/24
exit
object-group network CoA_servers
ip prefix 100.123.0.0/24
exit
object-group network VRF_AP
ip prefix 100.64.0.32/30
exit
object-group network VRF_CORE
ip prefix 192.168.200.48/28
ip prefix 100.64.0.56/30
ip prefix 198.18.128.0/21
ip prefix 198.18.136.0/22
ip prefix 198.18.140.0/22
exit
object-group network VRF_NAT
ip prefix 100.64.0.48/30
exit

radius-server timeout 10
radius-server retransmit 5
radius-server host 100.123.0.2
key ascii-text testing123
timeout 11
priority 20
source-address 198.18.128.2
auth-port 31812
acct-port 31813
retransmit 10
dead-interval 10
exit
aaa radius-profile PCRF
radius-server host 100.123.0.2
exit
das-server COA
key ascii-text testing123
port 3799
clients object-group SoftWLC
exit
aaa das-profile COA
das-server COA
exit

vlan 3
force-up
exit
vlan 10
force-up
exit
vlan 11
force-up
exit
vlan 101
force-up
exit
vlan 3101
```

```
    force-up
exit
vlan 3102
    force-up
exit
vlan 9
exit

security zone trusted
exit
security zone untrusted
exit
security zone gre
exit
security zone neighbour
exit
security zone user
exit

route-map out_BGP_GRE
    rule 10
        match ip address object-group gre_termination
        action set as-path prepend 64603 track 1
        action set metric bgp 1000 track 1
        action permit
    exit
exit
route-map out_BGP_AP
    rule 10
        match ip address object-group mgmt_AP
        action set as-path prepend 64603 track 1
        action set metric bgp 1000 track 1
        action permit
    exit
exit
route-map out_BGP_NAT
    rule 10
        match ip address object-group clients_AP
        action set as-path prepend 64603 track 1
        action set metric bgp 1000 track 1
        action permit
    exit
exit
route-map in_PREF
    rule 10
        action set local-preference 20
        action permit
    exit
exit
tracking 1
    vrrp 3 not state master
    enable
exit
router bgp 64603
    address-family ipv4
        redistribute connected
        neighbor 100.64.0.33
            remote-as 65001
            route-map out_BGP_GRE out
            update-source 100.64.0.34
            enable
        exit
        neighbor 100.64.0.41
            remote-as 65001
            route-map out_BGP_AP out
            update-source 100.64.0.42
            enable
        exit
        neighbor 100.64.0.49
            remote-as 65001
            route-map out_BGP_NAT out
```

```

        update-source 100.64.0.50
        enable
    exit
neighbor 100.64.0.58
    remote-as 64603
    route-map in_PREF in
    next-hop-self
    update-source 100.64.0.57
    enable
exit
enable
exit
exit

snmp-server
snmp-server system-shutdown
snmp-server community "public11" ro
snmp-server community "private1" rw

snmp-server host 100.123.0.2
exit

snmp-server enable traps
snmp-server enable traps config
snmp-server enable traps config commit
snmp-server enable traps config confirm
snmp-server enable traps environment
snmp-server enable traps environment pwrin
snmp-server enable traps environment pwrin-insert
snmp-server enable traps environment fan
snmp-server enable traps environment fan-speed-changed
snmp-server enable traps environment fan-speed-high
snmp-server enable traps environment memory-flash-critical-low
snmp-server enable traps environment memory-flash-low
snmp-server enable traps environment memory-ram-critical-low
snmp-server enable traps environment memory-ram-low
snmp-server enable traps environment cpu-load
snmp-server enable traps environment cpu-critical-temp
snmp-server enable traps environment cpu-overheat-temp
snmp-server enable traps environment cpu-supercooling-temp
snmp-server enable traps environment board-overheat-temp
snmp-server enable traps environment board-supercooling-temp
snmp-server enable traps environment sfp-overheat-temp
snmp-server enable traps environment sfp-supercooling-temp
snmp-server enable traps environment switch-overheat-temp
snmp-server enable traps environment switch-supercooling-temp
snmp-server enable traps wifi
snmp-server enable traps wifi wifi-tunnels-number-in-bridge-high
snmp-server enable traps file-operations
snmp-server enable traps file-operations successful
snmp-server enable traps file-operations failed
snmp-server enable traps file-operations canceled
snmp-server enable traps interfaces
snmp-server enable traps interfaces rx-utilization-high
snmp-server enable traps interfaces tx-utilization-high
snmp-server enable traps interfaces number-high
snmp-server enable traps screen
snmp-server enable traps screen dest-limit
snmp-server enable traps screen source-limit
snmp-server enable traps screen icmp-threshold
snmp-server enable traps screen udp-threshold
snmp-server enable traps screen syn-flood
snmp-server enable traps screen land
snmp-server enable traps screen winnuke
snmp-server enable traps screen icmp-frag
snmp-server enable traps screen udp-frag
snmp-server enable traps screen icmp-large
snmp-server enable traps screen syn-frag
snmp-server enable traps screen unknown-proto
snmp-server enable traps screen ip-frag
snmp-server enable traps screen port-scan

```

```
snmp-server enable traps screen ip-sweep
snmp-server enable traps screen syn-fin
snmp-server enable traps screen fin-no-ack
snmp-server enable traps screen no-flag
snmp-server enable traps screen spoofing
snmp-server enable traps screen reserved
snmp-server enable traps screen quench
snmp-server enable traps screen echo-request
snmp-server enable traps screen time-exceeded
snmp-server enable traps screen unreachable
snmp-server enable traps screen tcp-all-flags
snmp-server enable traps entity
snmp-server enable traps entity config-change
snmp-server enable traps entity-sensor
snmp-server enable traps entity-sensor threshold
snmp-server enable traps envmon
snmp-server enable traps envmon fan
snmp-server enable traps envmon shutdown
snmp-server enable traps envmon supply
snmp-server enable traps envmon temperature
snmp-server enable traps flash
snmp-server enable traps flash insertion
snmp-server enable traps flash removal
snmp-server enable traps snmp
snmp-server enable traps snmp authentication
snmp-server enable traps snmp coldstart
snmp-server enable traps snmp linkdown
snmp-server enable traps snmp linkup
snmp-server enable traps syslog
```

```
bridge 1
  description "GRE_termination"
  vlan 101
  security-zone gre
  ip address 192.168.200.51/28
  vrrp id 1
  vrrp ip 192.168.200.49/32
  vrrp ip 192.168.200.50/32 secondary
  vrrp priority 200
  vrrp group 1
  vrrp preempt disable
  vrrp
  ipv6 enable
  protected-ports
  protected-ports exclude vlan
  ports vrrp filtering enable
  ports vrrp filtering exclude vlan
  enable
```

```
exit
```

```
bridge 3
  description "mgmt_AP"
  vlan 3
  security-zone trusted
  ip address 198.18.128.2/21
  ip helper-address 100.123.0.2
  ip helper-address vrrp-group 1
  vrrp id 3
  vrrp ip 198.18.128.1/32
  vrrp priority 200
  vrrp group 1
  vrrp preempt disable
  vrrp track-ip 100.64.0.41
  vrrp
  protected-ports
  protected-ports exclude vlan
  ports vrrp filtering enable
  ports vrrp filtering exclude vlan
  enable
```

```
exit
```

```
bridge 9
  description "neighbour"
```

```
vlan 9
security-zone neighbour
ip address 100.64.0.57/30
enable
exit
bridge 10
description "data1_AP"
vlan 3101
ports firewall enable
security-zone user
ip address 198.18.136.2/22
ip helper-address 100.123.0.2
ip helper-address vrrp-group 1
vrrp id 10
vrrp ip 198.18.136.1/32
vrrp priority 200
vrrp group 1
vrrp preempt disable
vrrp
ip policy route-map Fltr_PBR
location data10
enable
exit
bridge 11
description "data2_AP"
vlan 3102
ports firewall enable
security-zone user
ip firewall disable
ip address 198.18.140.2/22
ip helper-address 100.123.0.2
ip helper-address vrrp-group 1
vrrp id 11
vrrp ip 198.18.140.1/32
vrrp priority 200
vrrp group 1
vrrp preempt disable
vrrp
location data11
protected-ports
protected-ports exclude vlan
ports vrrp filtering enable
ports vrrp filtering exclude vlan
enable
exit

interface port-channel 1
mode hybrid
switchport general pvid 2334
switchport general allowed vlan add 2334 untagged
security-zone untrusted
exit
interface gigabitethernet 1/0/1
description "UpLink"
mode hybrid
exit
interface gigabitethernet 1/0/1.206
description "VRF_AP"
security-zone gre
ip address 100.64.0.34/30
ipv6 enable
exit
interface gigabitethernet 1/0/1.208
description "VRF_CORE"
security-zone trusted
ip address 100.64.0.42/30
ipv6 enable
exit
interface gigabitethernet 1/0/1.210
description "VRF_NAT"
security-zone untrusted
```

```
ip address 100.64.0.50/30
ipv6 enable
exit

interface gigabitethernet 1/0/2
description "neighbour"
mode hybrid
switchport forbidden default-vlan
switchport general acceptable-frame-type tagged-only
switchport general allowed vlan add 3,9-11,101 tagged
exit
interface service-port 1
service-policy dynamic
exit
tunnel softgre 1
description "mgmt"
mode management
local address 192.168.200.49
default-profile
enable
exit
tunnel softgre 1.1
bridge-group 3
enable
exit
tunnel softgre 2
description "data"
mode data
local address 192.168.200.50
default-profile
enable
exit

security zone-pair gre self
rule 1
action permit
match protocol gre
enable
exit
rule 2
action permit
match protocol vrrp
enable
exit
rule 3
action permit
match protocol tcp
match destination-port aptd
enable
exit
rule 4
action permit
match protocol icmp
enable
exit
rule 10
action permit
match protocol tcp
match source-address cross
match source-port bgp
match destination-port bgp
enable
exit
exit
security zone-pair trusted self
rule 1
action permit
match protocol vrrp
enable
exit
rule 2
```

```
    action permit
    match protocol udp
    match source-port dhcp_server
    match destination-port dhcp_server
    enable
exit
rule 3
    action permit
    match protocol udp
    match source-port dhcp_client
    match destination-port dhcp_server
    enable
exit
rule 4
    action permit
    match protocol icmp
    enable
exit
rule 10
    action permit
    match source-address SoftWLC
    enable
exit
rule 11
    action permit
    match source-address Admnet
    enable
exit
rule 20
    action permit
    match protocol tcp
    match source-address cross
    match source-port bgp
    match destination-port bgp
    enable
exit
exit
security zone-pair trusted trusted
    rule 1
        action permit
        enable
    exit
exit
security zone-pair user untrusted
    rule 1
        action permit
        enable
    exit
exit
security zone-pair user self
    rule 1
        action permit
        match protocol icmp
        enable
    exit
    rule 2
        action permit
        match protocol udp
        match source-port dhcp_client
        match destination-port dhcp_server
        enable
    exit
    rule 3
        action permit
        match protocol tcp
        match destination-port redirect
        enable
    exit
    rule 4
        action permit
        match protocol vrrp
```



```
    enable
exit
rule 5
    action permit
    match protocol udp
    match source-port dhcp_server
    match destination-port dhcp_server
    enable
exit
exit
security zone-pair user trusted
    rule 1
        action permit
        match protocol udp
        match source-port dhcp_client
        match destination-port dhcp_server
        enable
    exit
    rule 2
        action permit
        match protocol udp
        match destination-address DNS
        match destination-port dns
        enable
    exit
exit
security zone-pair trusted user
    rule 1
        action permit
        match protocol udp
        match source-port dhcp_server
        match destination-port dhcp_client
        enable
    exit
    rule 2
        action permit
        match protocol udp
        match source-port dhcp_server
        match destination-port dhcp_server
        enable
    exit
    rule 3
        action permit
        match protocol icmp
        enable
    exit
exit
security zone-pair trusted untrusted
    rule 1
        action permit
        enable
    exit
exit
security zone-pair gre gre
    rule 1
        action permit
        enable
    exit
exit
security zone-pair neighbour self
    rule 2
        action permit
        match protocol tcp
        match destination-port bgp
        enable
    exit
    rule 3
        action permit
        match protocol udp
        match destination-port firewall_failover
        enable
```

```
exit
rule 4
    action permit
    match protocol udp
    match source-port dhcp_server
exit
rule 10
    action permit
    match protocol gre
    enable
exit
rule 20
    action permit
    match protocol icmp
    enable
exit
rule 30
    action permit
    match protocol vrrp
    enable
exit
rule 40
    action permit
    match protocol udp
    match source-port dhcp_server
    match destination-port dhcp_server
    enable
exit
rule 50
    action permit
    match protocol udp
    match source-port dhcp_client
    match destination-port dhcp_server
    enable
exit
rule 60
    action permit
    match source-address SoftWLC
    enable
exit
rule 80
    action permit
    match source-address Admnet
    enable
exit
rule 90
    action permit
    match protocol tcp
    match destination-port aptd
    enable
exit
rule 100
    action permit
    match protocol tcp
    match destination-port telnet
    enable
exit
exit
security zone-pair neighbour trusted
    rule 10
        action permit
        enable
    exit
exit
security zone-pair neighbour untrusted
    rule 10
        action permit
        enable
    exit
exit
security zone-pair neighbour gre
```

```
rule 10
    action permit
    enable
exit
exit
security zone-pair neighbour user
    rule 10
        action permit
        match protocol udp
        match source-port dhcp_server
        match destination-port dhcp_client
        enable
    exit
exit
security zone-pair trusted neighbour
    rule 10
        action permit
        enable
    exit
exit
security zone-pair gre neighbour
    rule 10
        action permit
        enable
    exit
exit
security zone-pair user neighbour
    rule 10
        action permit
        match protocol udp
        match destination-port dns
        enable
    exit
    rule 20
        action permit
        match not source-address nets
        enable
    exit
exit
security zone-pair untrusted self
    rule 10
        action permit
        match protocol tcp
        match source-address cross
        match source-port bgp
        match destination-port bgp
        enable
    exit
exit

security passwords history 0
ip firewall failover sync-type unicast
ip firewall failover source-address 198.18.128.2
ip firewall failover destination-address 100.64.0.58
ip firewall failover port 3333
ip firewall failover

ip dhcp-relay

wireless-controller
    peer-address 100.64.0.58
    nas-ip-address 198.18.128.2
    vrrp-group 1
    data-tunnel configuration radius
    aaa das-profile COA
    aaa radius-profile PCRF
    enable
exit
ip telnet server
ip ssh server
```

ESR-2:

```
hostname ESR-2

ip firewall sessions counters
ip firewall sessions classification enable
ip firewall sessions allow-unknown
object-group service telnet
    port-range 23
exit
object-group service ssh
    port-range 22
exit
object-group service dhcp_server
    port-range 67
exit
object-group service dhcp_client
    port-range 68
exit
object-group service ntp
    port-range 123
exit
object-group service snmp
    port-range 161-162
exit
object-group service COA
    port-range 3799
    port-range 31812-31813
exit
object-group service bgp
    port-range 179
exit
object-group service dns
    port-range 53
exit
object-group service firewall_failover
    port-range 3333
exit

object-group network SoftWLC
    ip prefix 100.123.0.0/24
exit
object-group network gre_termination
    ip prefix 192.168.200.48/28
exit
object-group network mgmt_AP
    ip prefix 198.18.128.0/21
    ip prefix 198.18.136.0/22
    ip prefix 198.18.140.0/22
    ip prefix 100.64.0.56/30
exit
object-group network clients_AP
    ip prefix 198.18.136.0/22
    ip prefix 198.18.140.0/22
exit
object-group network Admnet
    ip prefix 100.123.0.0/24
    ip prefix 100.64.0.44/30
exit
object-group network nets
    ip prefix 10.0.0.0/8
    ip prefix 192.168.0.0/16
    ip prefix 172.16.0.0/12
exit
object-group network cross
    ip prefix 100.64.0.36/30
    ip prefix 100.64.0.44/30
    ip prefix 100.64.0.52/30
    ip prefix 100.64.0.56/30
```

```
exit
object-group network DNS
  ip prefix 100.123.0.0/24
exit
object-group network CoA_servers
  ip prefix 100.123.0.0/24
exit
object-group network VRF_AP
  ip prefix 100.64.0.36/30
exit
object-group network VRF_CORE
  ip prefix 192.168.200.48/28
  ip prefix 100.64.0.44/30
  ip prefix 198.18.128.0/21
  ip prefix 198.18.136.0/22
  ip prefix 198.18.140.0/22
exit
object-group network VRF_NAT
  ip prefix 100.64.0.56/30
exit

radius-server timeout 10
radius-server retransmit 5
radius-server host 100.123.0.2
  key ascii-text testing123
  timeout 11
  priority 20
  source-address 198.18.128.3
  auth-port 31812
  acct-port 31813
  retransmit 10
  dead-interval 10
exit
aaa radius-profile PCRF
  radius-server host 100.123.0.2
exit
das-server COA
  key ascii-text testing123
  port 3799
  clients object-group SoftWLC
exit
aaa das-profile COA
  das-server COA
exit

vlan 3
  force-up
exit
vlan 10
  force-up
exit
vlan 11
  force-up
exit
vlan 101
  force-up
exit
vlan 9
exit

security zone trusted
exit
security zone untrusted
exit
security zone gre
exit
security zone neighbour
exit
security zone user
exit
```

```

route-map out_BGP_GRE
  rule 10
    match ip address object-group gre_termination
    action set as-path prepend 64603 track 1
    action set metric bgp 1000 track 1
    action permit
  exit
exit
route-map out_BGP_AP
  rule 10
    match ip address object-group mgmt_AP
    action set as-path prepend 64603 track 1
    action set metric bgp 1000 track 1
    action permit
  exit
exit
route-map out_BGP_NAT
  rule 10
    match ip address object-group clients_AP
    action set as-path prepend 64603 track 1
    action set metric bgp 1000 track 1
    action permit
  exit
exit
route-map in_PREF
  rule 10
    action set local-preference 20
    action permit
  exit
exit
tracking 1
  vrrp 3 not state master
  enable
exit
router bgp 64603
  address-family ipv4
    redistribute connected
    neighbor 100.64.0.37
      remote-as 65001
      route-map out_BGP_GRE out
      update-source 100.64.0.38
      enable
    exit
    neighbor 100.64.0.45
      remote-as 65001
      route-map out_BGP_AP out
      update-source 100.64.0.46
      enable
    exit
    neighbor 100.64.0.53
      remote-as 65001
      route-map out_BGP_NAT out
      update-source 100.64.0.54
      enable
    exit
    neighbor 100.64.0.57
      remote-as 64603
      route-map in_PREF in
      next-hop-self
      update-source 100.64.0.58
      enable
    exit
  enable
exit
exit

snmp-server
snmp-server community "public11" ro
snmp-server community "private1" rw

snmp-server host 100.123.0.2

```

exit

```
snmp-server enable traps
snmp-server enable traps config
snmp-server enable traps config commit
snmp-server enable traps config confirm
snmp-server enable traps environment
snmp-server enable traps environment pwrin
snmp-server enable traps environment pwrin-insert
snmp-server enable traps environment fan
snmp-server enable traps environment fan-speed-changed
snmp-server enable traps environment fan-speed-high
snmp-server enable traps environment memory-flash-critical-low
snmp-server enable traps environment memory-flash-low
snmp-server enable traps environment memory-ram-critical-low
snmp-server enable traps environment memory-ram-low
snmp-server enable traps environment cpu-load
snmp-server enable traps environment cpu-dp-critical-temp
snmp-server enable traps environment cpu-dp-overheat-temp
snmp-server enable traps environment cpu-dp-supercooling-temp
snmp-server enable traps environment cpu-mgmt-critical-temp
snmp-server enable traps environment cpu-mgmt-overheat-temp
snmp-server enable traps environment cpu-mgmt-supercooling-temp
snmp-server enable traps environment board-overheat-temp
snmp-server enable traps environment board-supercooling-temp
snmp-server enable traps environment sfp-overheat-temp
snmp-server enable traps environment sfp-supercooling-temp
snmp-server enable traps environment switch-overheat-temp
snmp-server enable traps environment switch-supercooling-temp
snmp-server enable traps wifi
snmp-server enable traps wifi wifi-tunnels-number-in-bridge-high
snmp-server enable traps file-operations
snmp-server enable traps file-operations successful
snmp-server enable traps file-operations failed
snmp-server enable traps file-operations canceled
snmp-server enable traps interfaces
snmp-server enable traps interfaces rx-utilization-high
snmp-server enable traps interfaces tx-utilization-high
snmp-server enable traps interfaces number-high
snmp-server enable traps screen
snmp-server enable traps screen dest-limit
snmp-server enable traps screen source-limit
snmp-server enable traps screen icmp-threshold
snmp-server enable traps screen udp-threshold
snmp-server enable traps screen syn-flood
snmp-server enable traps screen land
snmp-server enable traps screen winnuke
snmp-server enable traps screen icmp-frag
snmp-server enable traps screen udp-frag
snmp-server enable traps screen icmp-large
snmp-server enable traps screen syn-frag
snmp-server enable traps screen unknown-proto
snmp-server enable traps screen ip-frag
snmp-server enable traps screen port-scan
snmp-server enable traps screen ip-sweep
snmp-server enable traps screen syn-fin
snmp-server enable traps screen fin-no-ack
snmp-server enable traps screen no-flag
snmp-server enable traps screen spoofing
snmp-server enable traps screen reserved
snmp-server enable traps screen quench
snmp-server enable traps screen echo-request
snmp-server enable traps screen time-exceeded
snmp-server enable traps screen unreachable
snmp-server enable traps screen tcp-all-flags
snmp-server enable traps entity
snmp-server enable traps entity config-change
snmp-server enable traps entity-sensor
snmp-server enable traps entity-sensor threshold
snmp-server enable traps envmon
snmp-server enable traps envmon fan
```

```
snmp-server enable traps envmon shutdown
snmp-server enable traps envmon supply
snmp-server enable traps envmon temperature
snmp-server enable traps flash
snmp-server enable traps flash insertion
snmp-server enable traps flash removal
snmp-server enable traps snmp
snmp-server enable traps snmp authentication
snmp-server enable traps snmp coldstart
snmp-server enable traps snmp linkdown
snmp-server enable traps snmp linkup
snmp-server enable traps syslog
```

```
bridge 1
  description "GRE_termination"
  vlan 101
  security-zone gre
  ip address 192.168.200.52/28
  vrrp id 1
  vrrp ip 192.168.200.49/32
  vrrp ip 192.168.200.50/32 secondary
  vrrp priority 190
  vrrp group 1
  vrrp preempt disable
  vrrp
  protected-ports
  protected-ports exclude vlan
  ports vrrp filtering enable
  ports vrrp filtering exclude vlan
  enable
```

```
exit
```

```
bridge 3
  description "mgmt_AP"
  vlan 3
  security-zone trusted
  ip address 198.18.128.3/21
  ip helper-address 100.123.0.2
  ip helper-address vrrp-group 1
  vrrp id 3
  vrrp ip 198.18.128.1/32
  vrrp priority 190
  vrrp group 1
  vrrp preempt disable
  vrrp track-ip 100.64.0.45
  vrrp track-ip interval 9
  vrrp
  protected-ports
  protected-ports exclude vlan
  ports vrrp filtering enable
  ports vrrp filtering exclude vlan
  enable
```

```
exit
```

```
bridge 9
  description "neighbour"
  vlan 9
  security-zone neighbour
  ip address 100.64.0.58/30
  enable
```

```
exit
```

```
bridge 10
  description "data1_AP"
  vlan 10
  security-zone user
  ip address 198.18.136.3/22
  ip helper-address 100.123.0.2
  ip helper-address vrrp-group 1
  vrrp id 10
  vrrp ip 198.18.136.1/32
  vrrp priority 190
  vrrp group 1
  vrrp preempt disable
```



```
vrrp
ip policy route-map pbr_rule_1
location data10
protected-ports
protected-ports exclude vlan
ports vrrp filtering enable
ports vrrp filtering exclude vlan
enable
exit
bridge 11
description "data2_AP"
vlan 11
security-zone user
ip address 198.18.140.3/22
ip helper-address 100.123.0.2
ip helper-address vrrp-group 1
vrrp id 11
vrrp ip 198.18.140.1/32
vrrp priority 190
vrrp group 1
vrrp preempt disable
vrrp
ip policy route-map pbr_rule_1
location data11
protected-ports
protected-ports exclude vlan
ports vrrp filtering enable
ports vrrp filtering exclude vlan
enable
exit

interface gigabitethernet 1/0/1.207
description "VRF_AP"
security-zone gre
ip address 100.64.0.38/30
ipv6 enable
exit
interface gigabitethernet 1/0/1.209
description "VRF_CORE"
security-zone trusted
ip address 100.64.0.46/30
ipv6 enable
exit
interface gigabitethernet 1/0/1.211
description "VRF_NAT"
security-zone untrusted
ip address 100.64.0.54/30
ipv6 enable
exit
interface gigabitethernet 1/0/2
description "neighbour"
mode hybrid
switchport forbidden default-vlan
switchport general acceptable-frame-type tagged-only
switchport general allowed vlan add 3,9-11,101 tagged
exit
interface service-port 1
service-policy dynamic
exit
tunnel softgre 1
description "mgmt"
mode management
local address 192.168.200.49
default-profile
enable
exit
tunnel softgre 1.1
bridge-group 3
enable
exit
tunnel softgre 2
```

```
description "data"
mode data
local address 192.168.200.50
default-profile
enable
exit

security zone-pair gre self
rule 1
    action permit
    match protocol gre
    enable
exit
rule 2
    action permit
    match protocol vrrp
    enable
exit
rule 3
    action permit
    match protocol tcp
    match destination-port aptd
    enable
exit
rule 4
    action permit
    match protocol icmp
    enable
exit
rule 10
    action permit
    match protocol tcp
    match source-address cross
    match source-port bgp
    match destination-port bgp
    enable
exit
exit
security zone-pair trusted self
rule 1
    action permit
    match protocol vrrp
    enable
exit
rule 2
    action permit
    match protocol udp
    match source-port dhcp_server
    match destination-port dhcp_server
    enable
exit
rule 3
    action permit
    match protocol udp
    match source-port dhcp_client
    match destination-port dhcp_server
    enable
exit
rule 4
    action permit
    match protocol icmp
    enable
exit
rule 10
    action permit
    match source-address SoftWLC
    enable
exit
rule 11
    action permit
    match source-address Admnet
```

```
    enable
exit
rule 20
    action permit
    match protocol tcp
    match source-address cross
    match source-port bgp
    match destination-port bgp
    enable
exit
exit
security zone-pair trusted trusted
    rule 1
        action permit
        enable
    exit
exit
security zone-pair user untrusted
    rule 1
        action permit
        enable
    exit
exit
security zone-pair user self
    rule 1
        action permit
        match protocol icmp
        enable
    exit
    rule 2
        action permit
        match protocol udp
        match source-port dhcp_client
        match destination-port dhcp_server
        enable
    exit
    rule 3
        action permit
        match protocol tcp
        match destination-port redirect
        enable
    exit
    rule 4
        action permit
        match protocol vrrp
        enable
    exit
    rule 5
        action permit
        match protocol udp
        match source-port dhcp_server
        match destination-port dhcp_server
        enable
    exit
exit
security zone-pair user trusted
    rule 1
        action permit
        match protocol udp
        match source-port dhcp_client
        match destination-port dhcp_server
        enable
    exit
    rule 2
        action permit
        match protocol udp
        match destination-address DNS
        match destination-port dns
        enable
    exit
exit
```

```
security zone-pair trusted user
rule 1
    action permit
    match protocol udp
    match source-port dhcp_server
    match destination-port dhcp_client
    enable
exit
rule 2
    action permit
    match protocol udp
    match source-port dhcp_server
    match destination-port dhcp_server
    enable
exit
rule 3
    action permit
    match protocol icmp
    enable
exit
exit
security zone-pair trusted untrusted
rule 1
    action permit
    enable
exit
exit
security zone-pair gre gre
rule 1
    action permit
    enable
exit
exit
security zone-pair neighbour self
rule 2
    action permit
    match protocol tcp
    match destination-port bgp
    enable
exit
rule 3
    action permit
    match protocol udp
    match destination-port firewall_failover
    enable
exit
rule 4
    action permit
    match protocol udp
    match source-port dhcp_server
exit
rule 10
    action permit
    match protocol gre
    enable
exit
rule 20
    action permit
    match protocol icmp
    enable
exit
rule 30
    action permit
    match protocol vrrp
    enable
exit
rule 40
    action permit
    match protocol udp
    match source-port dhcp_server
    match destination-port dhcp_server
```

```
        enable
    exit
    rule 50
        action permit
        match protocol udp
        match source-port dhcp_client
        match destination-port dhcp_server
        enable
    exit
    rule 60
        action permit
        match source-address SoftWLC
        enable
    exit
    rule 80
        action permit
        match source-address Admnet
        enable
    exit
    rule 90
        action permit
        match protocol tcp
        match destination-port aptd
        enable
    exit
    rule 100
        action permit
        match protocol tcp
        match destination-port telnet
        enable
    exit
exit
security zone-pair neighbour trusted
    rule 10
        action permit
        enable
    exit
exit
security zone-pair neighbour untrusted
    rule 10
        action permit
        enable
    exit
exit
security zone-pair neighbour gre
    rule 10
        action permit
        enable
    exit
exit
security zone-pair neighbour user
    rule 10
        action permit
        match protocol udp
        match source-port dhcp_server
        match destination-port dhcp_client
        enable
    exit
exit
security zone-pair trusted neighbour
    rule 10
        action permit
        enable
    exit
exit
security zone-pair gre neighbour
    rule 10
        action permit
        enable
    exit
exit
```

```
security zone-pair user neighbour
  rule 10
    action permit
    match protocol udp
    match destination-port dns
    enable
  exit
  rule 20
    action permit
    match not source-address nets
    enable
  exit
exit
security zone-pair untrusted self
  rule 10
    action permit
    match protocol tcp
    match source-address cross
    match source-port bgp
    match destination-port bgp
    enable
  exit
exit

security passwords history 0
ip firewall failover sync-type unicast
ip firewall failover source-address 198.18.128.3
ip firewall failover destination-address 100.64.0.57
ip firewall failover port 3333
ip firewall failover

ip dhcp-relay

wireless-controller
  peer-address 100.64.0.57
  nas-ip-address 198.18.128.3
  vrrp-group 1
  data-tunnel configuration radius
  aaa das-profile COA
  aaa radius-profile PCRF
  enable
exit
ip telnet server
ip ssh server
```