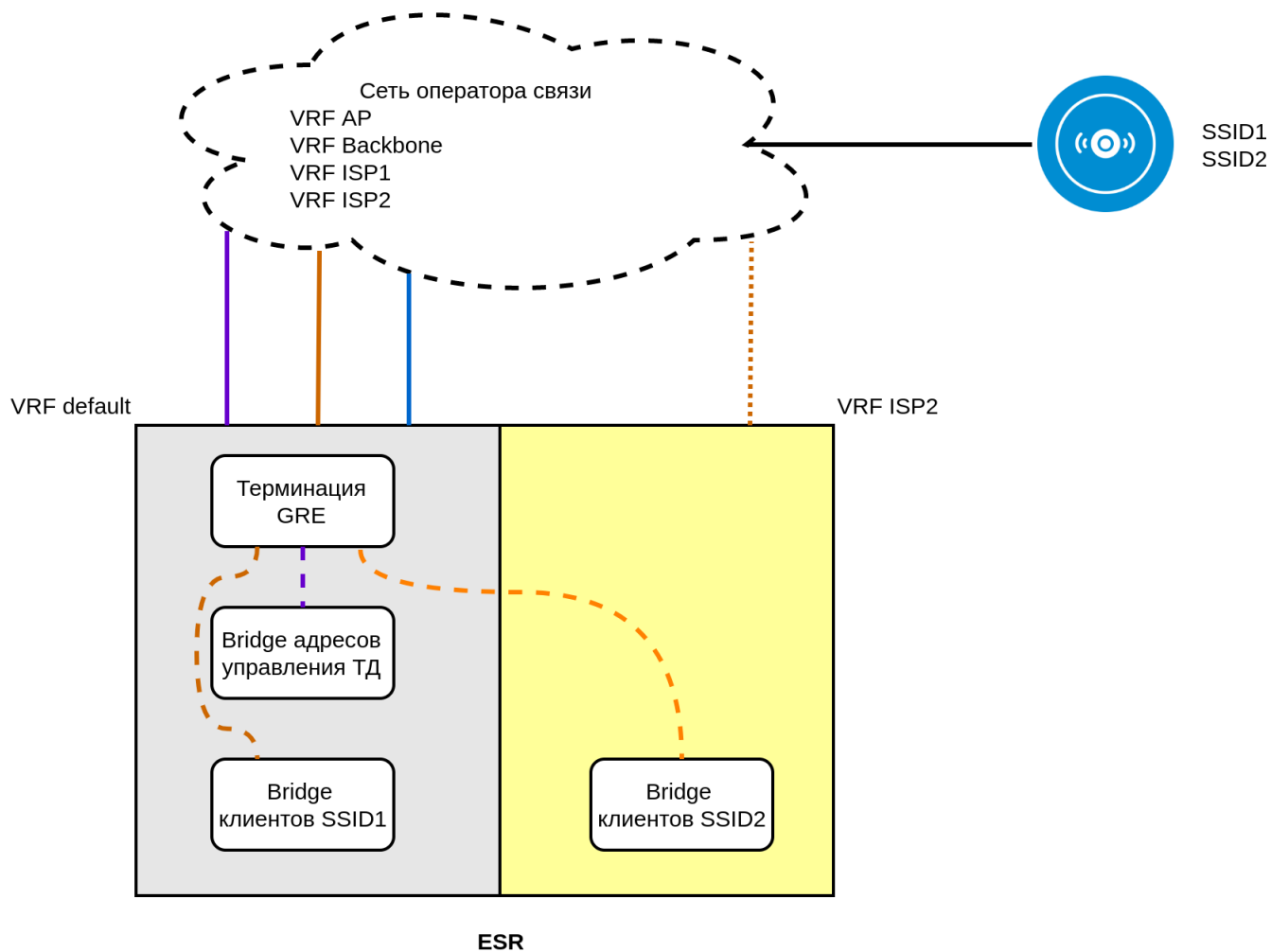


ESR - softgre Bridge VRF

-
-
-
- VRF
- VRF
- VRF
- VRF
- PCRF VRF
-
-
-
- ESR

ESR 1.6.5 - softgre /ESR Bridge, VRF. - PCRF. Bridge VRF PBR Bridge . , - softge Bridge VRF .1.

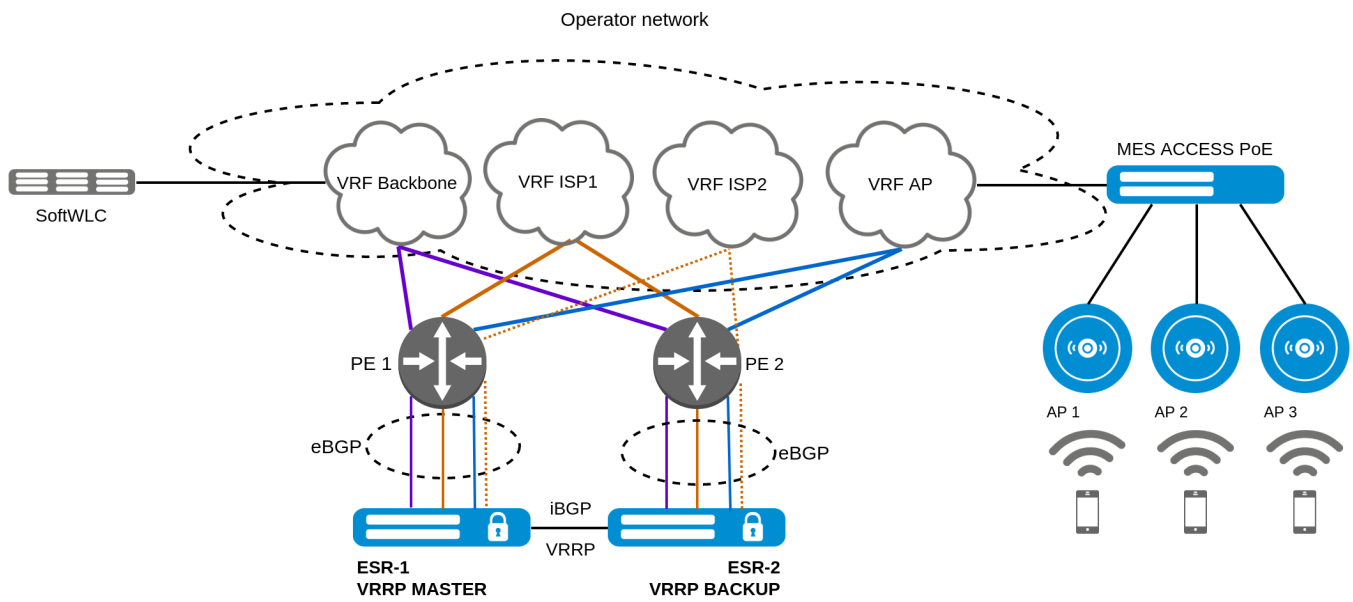


Условные обозначения

—	Стык с VRF AP
—	Стык с VRF Backbone
—	Стык с VRF ISP1
...	Стык с VRF ISP2
---	Саб туннель управления ТД
---	Саб туннель SSID1 ТД
---	Саб туннель SSID2 ТД

. 1.

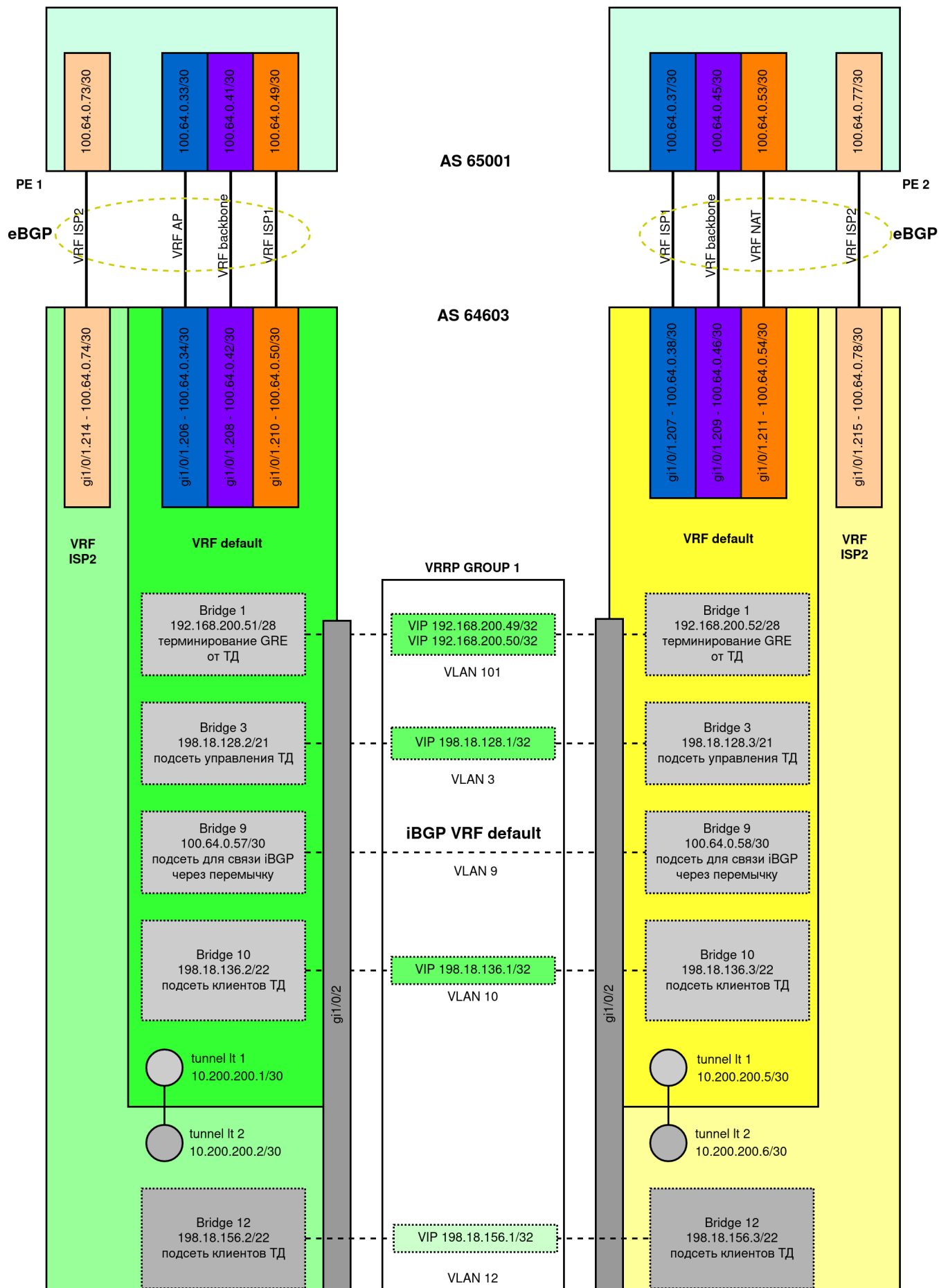
ESR . 2.

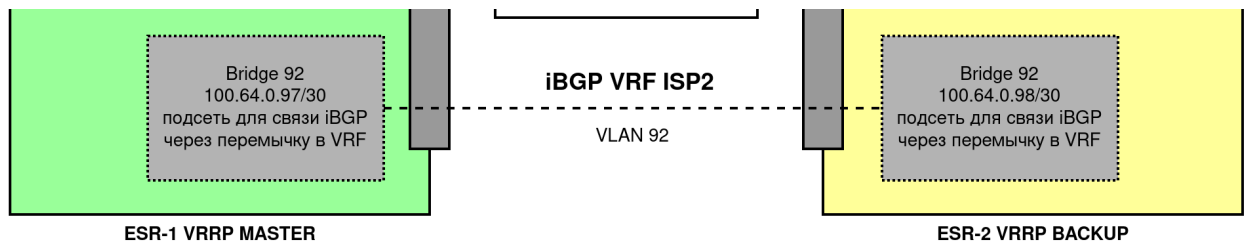


. 2.

- , , VRF AP;
- SoftWLC ESR VRF Backbone;
- VRF ISP1 ISP2;
- - softgre Bridge, VRF . , Bridge VRF (VRF ISP2), , VRF ISP1;
- DHCP- VRF backbone It (logical tunnel) VRF ESR;
- iBGP VRF, VRF ESR;
- VRF security zone, VRF ;
- Bridge, VRF BRAS.

. , c WIRELESS-CONTROLLER L2/L3 WiFi - .OLD. . 3.





. 3.

(1):

		ESR 1	ESR 1	VRRP	ESR 2	ESR 2
1	VRF AP	gi1/0/1.206	100.64.0.34/30		100.64.0.38/30	gi1/0/1.207
2	VRF Backbone	gi1/0/1.208	100.64.0.42/30		100.64.0.46/30	gi1/0/1.209
3	VRF IPS1	gi1/0/1.210	100.64.0.50/30		100.64.0.54/30	gi1/0/1.211
4	VRF ISP2	gi1/0/1.214	100.64.0.74/30		100.64.0.78/30	gi1/0/1.215
5	GRE (mgmt data)	Bridge 1	192.168.200.51/28	192.168.200.49 192.168.200.50	192.168.200.52/28	bridge 1
6		Bridge 3	198.18.128.2/21	198.18.128.1	198.18.128.3/21	bridge 3
7	iBGP ESR VRF	Bridge 9	100.64.0.57/30		100.64.0.58/30	bridge 9
8	VRF	Bridge 10	198.18.136.2/22	198.18.136.1	198.18.136.3/22	bridge 10
9	VRF ISP2 ESR	It 1	10.200.200.1/30		10.200.200.5/30	It 1
10	, VRF IPS2	Bridge 12	198.18.156.2/22	198.18.156.1	198.18.156.3/22	bridge 12
11	iBGP ESR VRF ISP2	Bridge 92	100.64.0.97/30		100.64.0.98/30	bridge 92
12	VRF default ESR	It 2	10.200.200.2/30		10.200.200.6/30	It 2

1.

, ESR VRF WIRELESS-CONTROLLER L2/L3 WiFi - .OLD. 1.

(ESR):

1. VRF (ISP2).
2. VRF.
3. VRF ISP2 (4 1).
4. VRF (10 1).
5. iBGP ESR VRF (11 1).
6. It VRF VRF ISP2 (9 1).
7. It VRF ISP2 VRF (12 1).
8. SoftWLC VRF ISP2.
9. VRF ISP2 VRF Backbone.
10. , - VRF (- PCRF).
11. .

VRF

ESR.

VRF "ISP2" :

```
ip vrf ISP2
ip protocols bgp max-routes 250
exit
```



! VRF BGP "ip protocols bgp max-routes", BGP , , .

, VRF:

```
security zone untrusted_ISP2
  ip vrf forwarding ISP2
exit
security zone user_ISP2
  ip vrf forwarding ISP2
exit
security zone sidelink_ISP2
  ip vrf forwarding ISP2
exit
security zone trusted_ISP2
  ip vrf forwarding ISP2
exit
```

, VRF. VRF .

VRF

ESR VRF ISP2.

ESR-1:

```
interface gigabitethernet 1/0/1.214
  ip vrf forwarding ISP2
  description "ISP2_vrf"
  security-zone untrusted_ISP2
  ip address 100.64.0.74/30
  ip tcp adjust-mss 1458
exit
```

ESR-2:

```
interface gigabitethernet 1/0/1.215
  ip vrf forwarding ISP2
  description "ISP2_vrf"
  security-zone untrusted_2
  ip firewall disable
  ip address 100.64.0.78/30
  ip tcp adjust-mss 1458
exit
```

VLAN Bridge, ESR-1/2:

```
vlan 12
  force-up
exit
vlan 92
exit
```

Bridge , - softgre VRF.

ESR-1:

```

bridge 12
  ip vrf forwarding ISP2
  vlan 12
  security-zone user_ISP2
  ip address 198.18.156.2/22
  ip helper-address 100.123.0.2
  ip helper-address vrrp-group 1
  vrrp id 12
  vrrp ip 198.18.156.1/32
  vrrp priority 200
  vrrp group 1
  vrrp preempt delay 150
  vrrp
  ip tcp adjust-mss 1458
  location data12
  protected-ports
  protected-ports exclude vlan
  ports vrrp filtering enable
  ports vrrp filtering exclude vlan
  enable
exit

```

ESR-2:

```

bridge 12
  ip vrf forwarding ISP2
  vlan 12
  security-zone users2
  ip firewall disable
  ip address 198.18.156.3/22
  ip helper-address 100.123.0.2
  ip helper-address vrrp-group 1
  vrrp id 12
  vrrp ip 198.18.156.1/32
  vrrp priority 190
  vrrp group 1
  vrrp preempt delay 150
  vrrp
  ip tcp adjust-mss 1458
  location data12
  protected-ports
  protected-ports exclude vlan
  ports vrrp filtering enable
  ports vrrp filtering exclude vlan
  enable
exit

```

Bridge iBPG ESR VRF.

ESR-1:

```

bridge 92
  ip vrf forwarding ISP2
  description "SideLink for VRF ISP2"
  vlan 92
  security-zone sidelink_ISP2
  ip address 100.64.0.97/30
  enable
exit

```

ESR-2:

```
bridge 92
  ip vrf forwarding ISP2
  description "SideLink for VRF ISP2"
  vlan 92
  security-zone sidelink12
  ip firewall disable
  ip address 100.64.0.98/30
  enable
exit
```

vlan ESR-1/2:

```
interface gigabitethernet 1/0/2
  description "SideLink"
  switchport general allowed vlan add 12,92 tagged
exit
```

eBGP VRF ISP2 iBGP ESR.

ESR-1:

```
object-group network clients_ISP2
  ip prefix 198.18.156.0/22
exit

route-map out_BGP_ISP2
  rule 1
    match ip address object-group clients_ISP2
    action permit
  exit
exit

router bgp 64603
  address-family ipv4 vrf ISP2
    redistribute connected
    neighbor 100.64.0.73
      remote-as 65001
    route-map out_BGP_ISP2 out
    update-source 100.64.0.74
    enable
  exit
  neighbor 100.64.0.98
    remote-as 64603
    route-map in_PREF in
    next-hop-self
    update-source 100.64.0.97
    enable
  exit
  enable
exit
exit
```

ESR-2:


```

object-group network clients_ISP2
  ip prefix 198.18.156.0/22
exit

route-map out_BGP_ISP2
  rule 1
    match ip address object-group clients_ISP2
    action permit
  exit
exit

router bgp 64603
  address-family ipv4 vrf ISP2
    redistribute connected
    neighbor 100.64.0.77
      remote-as 65001
    route-map out_BGP_ISP2 out
    update-source 100.64.0.78
    enable
  exit
  neighbor 100.64.0.97
    remote-as 64603
    route-map in_PREF in
    next-hop-self
    update-source 100.64.0.98
    enable
  exit
  enable
exit
exit

```

VRF

L3 VRF ESR lt. VRF VRF. ESR.

ESR-1:

```

tunnel lt 1
  peer lt 2
  security-zone trusted
  ip address 10.200.200.1/30
  enable
exit
tunnel lt 2
  peer lt 1
  ip vrf forwarding ISP2
  security-zone trusted_ISP2
  ip address 10.200.200.2/30
  enable
exit

```

, VRF default ISP2 10.200.200.0/30.

ESR-2:

```
tunnel lt 1
peer lt 2
security-zone trusted
ip firewall disable
ip address 10.200.200.5/30
enable
exit
tunnel lt 2
peer lt 1
ip vrf forwarding ISP2
ip firewall disable
ip address 10.200.200.6/30
enable
exit
```

ESR-2 10.200.200.4/30.

.. VRF ISP2 VRF Backbone SoftLWC - IP-, DNS, , VRF Backbone :

ESR-1:

```
ip route vrf ISP2 100.123.0.0/24 10.200.200.1
```

ESR-2:

```
ip route vrf ISP2 100.123.0.0/24 10.200.200.5
```

VRF VRF ISP2 VRF Backbone (object group, route-map prefix-list BGP):

ESR-1:

```
ip route 198.18.156.0/22 10.200.200.2

object-group network mgmt_AP
ip prefix 198.18.156.0/22
exit
```

ESR-2:

```
ip route 198.18.156.0/22 10.200.200.6

object-group network mgmt_AP
ip prefix 198.18.156.0/22
exit
```

VRF

-, - softgre, Bridge VRF, VRF, :

```
tunnel softgre 2.12
ip vrf forwarding ISP2
bridge-group 12
enable
exit
```

softgre wireless-controller .

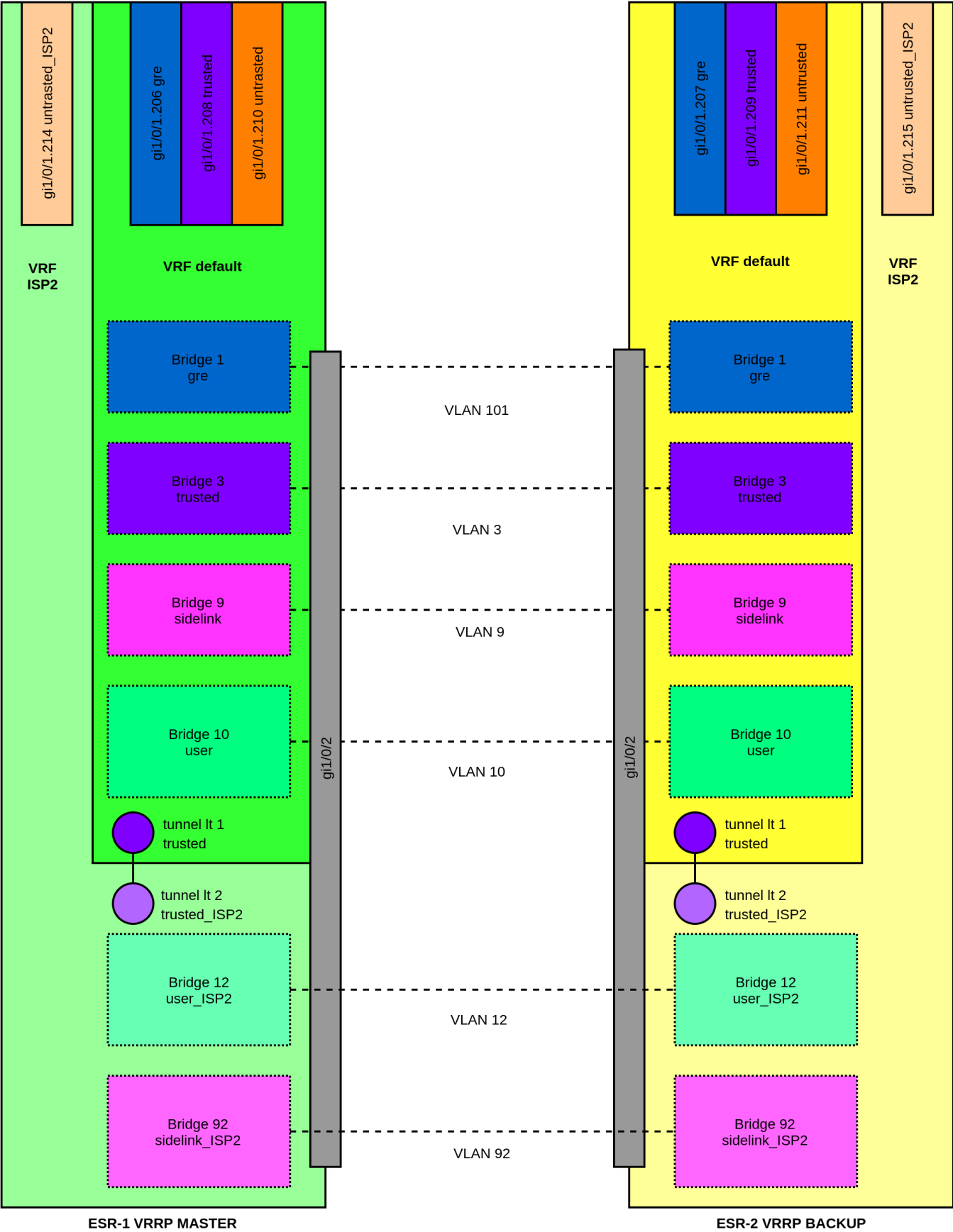
PCRF VRF

- PCRF wireless-controller. VRF . - softgre Bridge location. Bridge VRF - .

```
bridge 12
  ip vrf forwarding ISP2
  location data12
exit
```

,, location ESR, VRF Bridge.

VRF , VRF. (security zone-pair) VRF . . It . .4 ESR.



1. user_ISP2 untrusted_ISP2;
2. user_ISP2 trusted_ISP2 DHCP (DNS);
3. user_ISP2 sidelink_ISP2 DNS , (,);
4. untrusted_ISP2 self ICMP ;
5. ICMP untrusted_ISP2 user_ISP2;
6. sidelink_ISP2 self BGP;
7. sidelink_ISP2 untrusted_ISP2

```
security zone-pair user_ISP2 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_ISP2 untrusted_ISP2
rule 10
    action permit
    enable
exit
exit
security zone-pair user_ISP2 trusted_ISP2
rule 10
    action permit
    match protocol udp
    match source-port dhcp_client
    match destination-port dhcp_server
    enable
exit
rule 11
    action permit
    match protocol udp
    match source-port dhcp_server
    match destination-port dhcp_server
    enable
exit
exit
security zone-pair user_ISP2 sidelink_ISP2
rule 10
    action permit
    match protocol udp
    match destination-port dns
    enable
exit
rule 20
    action permit
```

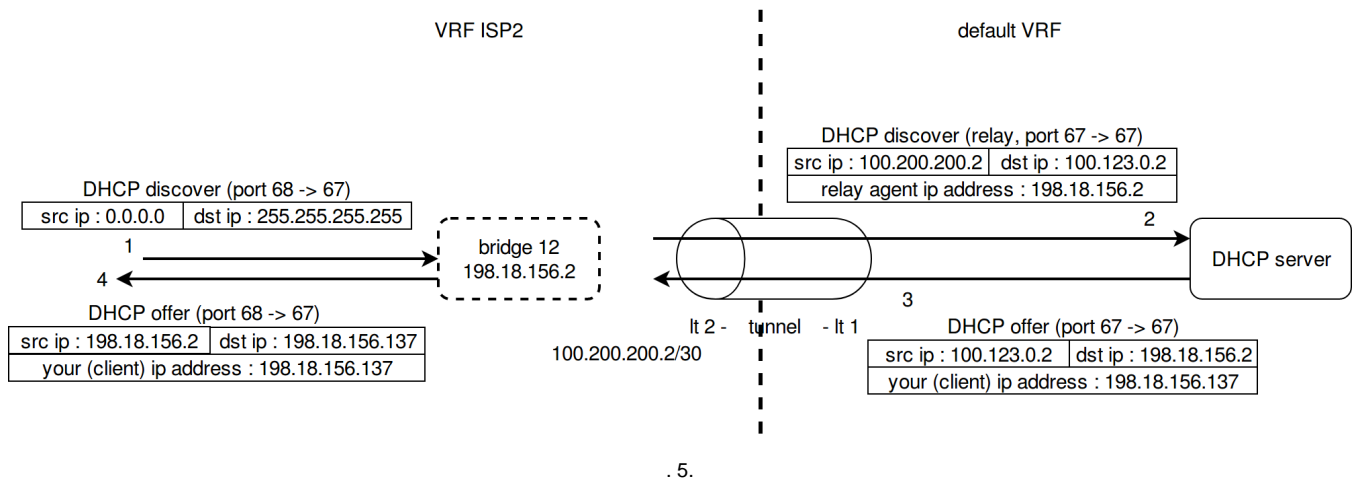
```

        match not source-address PrivateNets
        enable
    exit
exit
security zone-pair trusted_ISP2 self
    rule 10
        action permit
        enable
    exit
exit
security zone-pair trusted_ISP2 user_ISP2
    rule 10
        action permit
        enable
    exit
exit
security zone-pair untrusted_ISP2 self
    rule 10
        action permit
        match protocol icmp
        enable
    exit
exit
security zone-pair untrusted_ISP2 user_ISP2
    rule 10
        action permit
        match protocol icmp
        enable
    exit
    rule 100
        action permit
        enable
    exit
exit
security zone-pair sidelink_ISP2 self
    rule 2
        action permit
        match protocol tcp
        match destination-port bgp
        enable
    exit
exit
security zone-pair sidelink_ISP2 untrusted_ISP2
    rule 10
        action permit
        enable
    exit
exit

```



! ESR, DHCP-discover DHCP-request, source-address , DHCP . Bridge VRF source It VRF. DHCP DHCP-offer DHCP-ack , relay agent ip address DHCP-discover/request. . , ESR DHCP- , source/destination ip address. ip , , .5, discover offer.



ESR

(PCRF) - softgre.

ESR-1

```
#!/usr/bin/clish
#14
hostname ESR-1

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 sunctun
  port-range 1337
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
    ip prefix 198.18.144.0/22
    ip prefix 198.18.156.0/22
exit
object-group network clients_AP
    ip prefix 198.18.136.0/22
    ip prefix 198.18.140.0/22
    ip prefix 198.18.128.0/21
    ip prefix 198.18.144.0/22
exit
object-group network Admnet
    ip prefix 100.123.0.0/24
    ip prefix 100.110.0.0/23
    ip prefix 192.168.200.48/28
    ip prefix 100.64.0.40/30
exit
object-group network PrivateNets
    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 BGPneighbours
    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 clients_ISP2
    ip prefix 198.18.156.0/22
exit

ip vrf ISP2
    ip protocols bgp max-routes 250
exit

radius-server timeout 10
radius-server retransmit 5
radius-server host 100.123.0.2
    key ascii-text encrypted 88B11079B9014FAAF7B9
    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 encrypted 88B11079B9014FAAF7B9
    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 12
    force-up
exit
vlan 101
    force-up
exit
vlan 9,92
exit

security zone trusted
exit
security zone untrusted
exit
security zone gre
exit
security zone sidelink
exit
security zone user
exit
security zone untrusted_ISP2
    ip vrf forwarding ISP2
exit
security zone user_ISP2
    ip vrf forwarding ISP2
exit
security zone sidelink_ISP2
    ip vrf forwarding ISP2
exit
security zone trusted_ISP2
    ip vrf forwarding ISP2
exit

route-map out_BGP_GRE
    rule 10
        match ip address object-group gre_termination
        action permit
    exit
exit
route-map out_BGP_AP
    rule 10
        match ip address object-group mgmt_AP
        action permit
    exit
exit
route-map out_BGP_NAT
    rule 10
        match ip address object-group clients_AP
        action permit
    exit
exit
route-map in_PREF
    rule 10
        action permit
    exit
exit
route-map out_BGP_ISP2
    rule 1
        match ip address object-group clients_ISP2
        action permit
    exit
exit
```

```
router bgp 64603
  address-family ipv4
    redistribute connected
    redistribute static
    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
  address-family ipv4 vrf ISP2
    redistribute connected
    neighbor 100.64.0.73
      remote-as 65001
      route-map out_BGP_ISP2 out
      update-source 100.64.0.74
      enable
    exit
    neighbor 100.64.0.98
      remote-as 64603
      route-map in_PREF in
      next-hop-self
      update-source 100.64.0.97
      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-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 bras
snmp-server enable traps bras sessions-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 delay 150
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 198.18.128.2/21
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 delay 150
vrrp
ip tcp adjust-mss 1458
protected-ports
protected-ports exclude vlan
ports vrrp filtering enable
ports vrrp filtering exclude vlan
enable
exit
bridge 9
description "SideLink"
vlan 9
security-zone sidelink
ip address 100.64.0.57/30
enable
exit
bridge 10
description "data1_AP"
vlan 10
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 delay 150
vrrp
location data10
protected-ports
protected-ports exclude vlan
ports vrrp filtering enable
ports vrrp filtering exclude vlan
enable
exit
bridge 12
ip vrf forwarding ISP2
vlan 12
security-zone user_ISP2
ip address 198.18.156.2/22
ip helper-address 100.123.0.2
ip helper-address vrrp-group 1
vrrp id 12
vrrp ip 198.18.156.1/32
vrrp priority 200
```

```
vrrp group 1
vrrp preempt delay 150
vrrp
ip tcp adjust-mss 1458
location data12
protected-ports
protected-ports exclude vlan
ports vrrp filtering enable
ports vrrp filtering exclude vlan
enable
exit
bridge 92
ip vrf forwarding ISP2
description "SideLink for VRF ISP2"
vlan 92
security-zone sidelink_ISP2
ip address 100.64.0.97/30
enable
exit

interface gigabitethernet 1/0/1.206
description "VRF_AP"
security-zone gre
ip address 100.64.0.34/30
exit
interface gigabitethernet 1/0/1.208
description "VRF_BACKBONE"
security-zone trusted
ip address 100.64.0.42/30
exit
interface gigabitethernet 1/0/1.210
description "VRF_NAT"
security-zone untrusted
ip address 100.64.0.50/30
exit
interface gigabitethernet 1/0/1.214
ip vrf forwarding ISP2
description "ISP2_vrf"
security-zone untrusted_ISP2
ip address 100.64.0.74/30
ip tcp adjust-mss 1458
exit
interface gigabitethernet 1/0/2
description "SideLink"
mode hybrid
switchport forbidden default-vlan
switchport general acceptable-frame-type tagged-only
switchport general allowed vlan add 3,9-12,92,101 tagged
exit
tunnel lt 1
peer lt 2
security-zone trusted
ip address 10.200.200.1/30
enable
exit
tunnel lt 2
peer lt 1
ip vrf forwarding ISP2
security-zone trusted_ISP2
ip address 10.200.200.2/30
enable
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 sunctun
enable
exit
rule 4
action permit
match protocol icmp
enable
exit
rule 10
action permit
match protocol tcp
match source-address BGPneighbours
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 BGPneighbours
    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 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 sidelink 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 sunctun
    enable
exit
rule 100
    action permit
    match protocol tcp
    match destination-port telnet
    enable
exit
exit
security zone-pair sidelink trusted
    rule 10
        action permit
        enable
    exit
exit
security zone-pair sidelink untrusted
    rule 10
        action permit
        enable
    exit
exit
security zone-pair sidelink gre
    rule 10
        action permit
        enable
    exit
exit
security zone-pair sidelink 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 sidelink
    rule 10
        action permit
        enable
    exit
exit
security zone-pair gre sidelink
    rule 10
        action permit
        enable
    exit
exit
security zone-pair user sidelink
    rule 10
        action permit
```

```
        match protocol udp
        match destination-port dns
        enable
    exit
rule 20
    action permit
    match not source-address PrivateNets
    enable
    exit
exit
security zone-pair untrusted self
    rule 10
        action permit
        match protocol tcp
        match source-address BGPneighbours
        match source-port bgp
        match destination-port bgp
        enable
    exit
exit
security zone-pair user_ISP2 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 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_ISP2 untrusted_ISP2
    rule 10
        action permit
        enable
    exit
exit
security zone-pair user_ISP2 trusted_ISP2
    rule 10
        action permit
        match protocol udp
        match source-port dhcp_client
        match destination-port dhcp_server
        enable
    exit
    rule 11
        action permit
        match protocol udp
        match source-port dhcp_server
        match destination-port dhcp_server
        enable
    exit
exit
security zone-pair user_ISP2 sidelink_ISP2
    rule 10
        action permit
```

```
        match protocol udp
        match destination-port dns
        enable
    exit
rule 20
    action permit
    match not source-address PrivateNets
    enable
exit
exit
security zone-pair trusted_ISP2 self
    rule 10
        action permit
        enable
    exit
exit
security zone-pair trusted_ISP2 user_ISP2
    rule 10
        action permit
        enable
    exit
exit
security zone-pair untrusted_ISP2 self
    rule 10
        action permit
        match protocol icmp
        enable
    exit
exit
security zone-pair untrusted_ISP2 user_ISP2
    rule 10
        action permit
        match protocol icmp
        enable
    exit
    rule 100
        action permit
        enable
    exit
exit
security zone-pair sidelink_ISP2 self
    rule 2
        action permit
        match protocol tcp
        match destination-port bgp
        enable
    exit
exit
security zone-pair sidelink_ISP2 untrusted_ISP2
    rule 10
        action permit
        enable
    exit
exit

security passwords history 0
ip firewall failover sync-type unicast
ip firewall failover source-address 100.64.0.57
ip firewall failover destination-address 100.64.0.58
ip firewall failover port 3333
ip firewall failover vrrp-group 1
ip firewall failover

ip dhcp-relay

ip route vrf ISP2 100.123.0.0/24 10.200.200.1
ip route 198.18.156.0/22 10.200.200.2

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

clock timezone gmt +7

ntp enable
ntp server 100.123.0.2
exit
```

ESR-2

```
#!/usr/bin/clish
#14
hostname ESR-2

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 sunctun
  port-range 1337
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
```

```
ip prefix 198.18.144.0/22
ip prefix 198.18.156.0/22
exit
object-group network clients_AP
ip prefix 198.18.136.0/22
ip prefix 198.18.140.0/22
ip prefix 198.18.128.0/21
ip prefix 198.18.144.0/22
exit
object-group network Admnet
ip prefix 100.123.0.0/24
ip prefix 100.110.0.0/23
ip prefix 192.168.200.48/28
ip prefix 100.64.0.44/30
exit
object-group network PrivateNets
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 BGPneighbours
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 address-range 8.8.8.8
ip prefix 100.123.0.0/24
exit
object-group network CoA_servers
ip prefix 100.123.0.0/24
exit
object-group network clients_ISP2
ip prefix 198.18.156.0/22
exit

ip vrf ISP2
ip protocols bgp max-routes 250
exit

radius-server timeout 10
radius-server retransmit 5
radius-server host 100.123.0.2
key ascii-text encrypted 88B11079B9014FAAF7B9
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 encrypted 88B11079B9014FAAF7B9
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 12
    force-up
exit
vlan 101
    force-up
exit
vlan 9,92
exit

security zone trusted
exit
security zone untrusted
exit
security zone gre
exit
security zone sidelink
exit
security zone user
exit
security zone untrusted_ISP2
    ip vrf forwarding ISP2
exit
security zone user_ISP2
    ip vrf forwarding ISP2
exit
security zone sidelink_ISP2
    ip vrf forwarding ISP2
exit
security zone trusted_ISP2
    ip vrf forwarding ISP2
exit

route-map out_BGP_GRE
    rule 10
        match ip address object-group gre_termination
        action permit
    exit
exit
route-map out_BGP_AP
    rule 10
        match ip address object-group mgmt_AP
        action permit
    exit
exit
route-map out_BGP_NAT
    rule 10
        match ip address object-group clients_AP
        action permit
    exit
exit
route-map in_PREF
    rule 10
        action permit
    exit
exit
route-map out_BGP_ISP2
    rule 1
        match ip address object-group clients_ISP2
        action permit
    exit
exit
router bgp 64603
    address-family ipv4
        redistribute connected
        redistribute static
        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
address-family ipv4 vrf ISP2
    redistribute connected
    neighbor 100.64.0.77
        remote-as 65001
        route-map out_BGP_ISP2 out
        update-source 100.64.0.78
        enable
    exit
    neighbor 100.64.0.97
        remote-as 64603
        route-map in_PREF in
        next-hop-self
        update-source 100.64.0.98
        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-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 bras
snmp-server enable traps bras sessions-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 delay 150
```



```
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 preempt delay 150
vrrp
protected-ports
protected-ports exclude vlan
ports vrrp filtering enable
ports vrrp filtering exclude vlan
enable
exit
bridge 9
description "SideLink"
vlan 9
security-zone sidelink
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 delay 150
vrrp
location data10
protected-ports
protected-ports exclude vlan
ports vrrp filtering enable
ports vrrp filtering exclude vlan
enable
exit
bridge 12
ip vrf forwarding ISP2
vlan 12
security-zone user_ISP2
ip address 198.18.156.3/22
ip helper-address 100.123.0.2
ip helper-address vrrp-group 1
vrrp id 12
vrrp ip 198.18.156.1/32
vrrp priority 190
vrrp group 1
vrrp preempt delay 150
vrrp
ip tcp adjust-mss 1458
location data12
protected-ports
protected-ports exclude vlan
ports vrrp filtering enable
ports vrrp filtering exclude vlan
```

```
    enable
exit
bridge 92
    ip vrf forwarding ISP2
    description "SideLink for VRF ISP2"
    vlan 92
    security-zone sidelink_ISP2
    ip address 100.64.0.98/30
    enable
exit

interface gigabitethernet 1/0/1.207
    description "VRF_AP"
    security-zone gre
    ip address 100.64.0.38/30
    ip tcp adjust-mss 1458
exit
interface gigabitethernet 1/0/1.209
    description "VRF_BACKBONE"
    security-zone trusted
    ip address 100.64.0.46/30
    ip tcp adjust-mss 1458
exit
interface gigabitethernet 1/0/1.211
    description "VRF_NAT"
    security-zone untrusted
    ip address 100.64.0.54/30
    ip tcp adjust-mss 1458
exit
interface gigabitethernet 1/0/1.215
    ip vrf forwarding ISP2
    description "ISP2_vrf"
    security-zone untrusted_ISP2
    ip address 100.64.0.78/30
    ip tcp adjust-mss 1458
exit
interface gigabitethernet 1/0/2
    description "SideLink"
    mode hybrid
    switchport forbidden default-vlan
    switchport general acceptable-frame-type tagged-only
    switchport general allowed vlan add 3,9-12,92,101 tagged
exit
tunnel lt 1
    peer lt 2
    security-zone trusted
    ip address 10.200.200.5/30
    enable
exit
tunnel lt 2
    peer lt 1
    ip vrf forwarding ISP2
    security-zone trusted_ISP2
    ip address 10.200.200.6/30
    enable
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 sunctun
    enable
exit
rule 4
    action permit
    match protocol icmp
    enable
exit
rule 10
    action permit
    match protocol tcp
    match source-address BGPneighbours
    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 BGPneighbours
        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 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 sidelink 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 sunctun
    enable
exit
rule 100
    action permit
    match protocol tcp
    match destination-port telnet
    enable
exit
exit
security zone-pair sidelink trusted
    rule 10
        action permit
        enable
    exit
exit
security zone-pair sidelink untrusted
    rule 10
        action permit
        enable
    exit
exit
security zone-pair sidelink gre
    rule 10
        action permit
        enable
    exit
exit
security zone-pair sidelink 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 sidelink
    rule 10
        action permit
        enable
    exit
exit
security zone-pair gre sidelink
    rule 10
        action permit
        enable
    exit
exit
security zone-pair user sidelink
    rule 10
        action permit
        match protocol udp
        match destination-port dns
        enable
    exit
rule 20
    action permit
```

```

        match not source-address PrivateNets
        enable
    exit
exit
security zone-pair untrusted self
    rule 10
        action permit
        match protocol tcp
        match source-address BGPneighbours
        match source-port bgp
        match destination-port bgp
        enable
    exit
exit
security zone-pair user_ISP2 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 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_ISP2 untrusted_ISP2
    rule 10
        action permit
        enable
    exit
exit
security zone-pair user_ISP2 trusted_ISP2
    rule 10
        action permit
        match protocol udp
        match source-port dhcp_client
        match destination-port dhcp_server
        enable
    exit
    rule 11
        action permit
        match protocol udp
        match source-port dhcp_server
        match destination-port dhcp_server
        enable
    exit
exit
security zone-pair user_ISP2 sidelink_ISP2
    rule 10
        action permit
        match protocol udp
        match destination-port dns
        enable
    exit
    rule 20
        action permit

```

```

        match not source-address PrivateNets
        enable
    exit
exit
security zone-pair trusted_ISP2 self
    rule 10
        action permit
        enable
    exit
exit
security zone-pair trusted_ISP2 user_ISP2
    rule 10
        action permit
        enable
    exit
exit
security zone-pair untrusted_ISP2 self
    rule 10
        action permit
        match protocol icmp
        enable
    exit
exit
security zone-pair untrusted_ISP2 user_ISP2
    rule 10
        action permit
        match protocol icmp
        enable
    exit
    rule 100
        action permit
        enable
    exit
exit
security zone-pair sidelink_ISP2 self
    rule 2
        action permit
        match protocol tcp
        match destination-port bgp
        enable
    exit
exit
security zone-pair sidelink_ISP2 untrusted_ISP2
    rule 10
        action permit
        enable
    exit
exit

security passwords history 0
ip firewall failover sync-type unicast
ip firewall failover source-address 100.64.0.58
ip firewall failover destination-address 100.64.0.57
ip firewall failover port 3333
ip firewall failover vrrp-group 1
ip firewall failover

ip dhcp-relay

ip route vrf ISP2 100.123.0.0/24 10.200.200.5
ip route 198.18.156.0/22 10.200.200.6

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
```

```
clock timezone gmt +7
```

```
ntp enable  
ntp server 100.123.0.2  
exit
```