

This article explains how to configure NSRP-Lite for a NS50 firewall to a single WAN.

Requirements:

When configuring NSRP-Lite for the NS-50, confirm the following necessary requirements:

- The NS-25 or NS-50 must be at ScreenOS-5.1.0 or higher.
- The NS-25 or NS-50 must have an Extended License key.
- The only connection between the NS-50s is for the interface being used for high-availability (HA). If the Trust interface is used for HA, and both NS-25s Trust interfaces are connected to the same hub, no other cable should be used to connect the Trust interfaces.
- Interfaces must be running in Route or NAT mode to support this functionality.

When configuring NSRP-Lite for the NS50s, there are two necessary requirements:

- The NS-25s supports NSRP Lite only when it has a HA License Key and
- The NS-25s must have an Extended License key.

Running HA configuration on a Juniper NS50 is straight forward. Setup is done by running NSRP service on two devices. First, you need to wire the devices. In our case, both firewalls are setup on a common hub on the TRUST, UNTRUST, and DMZ interfaces. Heartbeat information is shared across ethernet4 using websense.

Once wired, here's the few configuration lines necessary to setup NSRP. You First you define a cluster. Within that cluster, you define a group. This group is where you define which interfaces need to be operational. If any become inoperable, failover occurs to the standby unit.

On the master, you setup this:

If the untrust interface IP addresses are the same because Firewall-A and Firewall-B are connected to the same ISP, use VSD Group 0.

```
set interface ethernet1 ip 1.1.1.1/24
set interface ethernet1 manage-ip 1.1.1.2
set interface ethernet3 ip 10.1.1.2/24

set NSRP interface ethernet4
set NSRP cluster 1
set NSRP vsd id 0 priority 1
save
```

Here's the lines necessary on the slave firewall. Notice that it has a different IP for ethernet4 so there's no conflict. Also, notice that you need to synchronize the configuration from the master by doing the "exec" command:

```
set NSRP cluster 1
set NSRP vsd id 0 priority 100
set NSRP interface ethernet4
set int ethernet1 manage-ip 1.1.1.3      (ip address-different
than Firewall-A)
save
exec NSRP sync global save              (to sync config)
reset
```

Once completed, you should see status information similar to this indicating which is master and which is slave.

Here's how you get the master status:

```
ns50(M)-> get nsrp
nsrp version: 2.0
```

cluster info:

cluster id: 1, no name

local unit id: 8600528

active units discovered:

index: 0, unit id: 8600528, ctrl mac: 0010db833bd7, index: 1, unit id:

6414512, ctrl mac: 0010db61e0b7, data mac: ffffffff

total number of units: 2

VSD group info:

init hold time: 5

heartbeat lost threshold: 3

heartbeat interval: 1000(ms)

master always exist: disabled



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```
group priority preempt holddown inelig master PB other members
  0 100 no 3 no myself 6414512
total number of vsd groups: 1
Total
iteration=89029384,time=3367716118,max=78147,min=1461,average=37
```

```
RTO mirror info:
run time object sync: enabled
ping session sync: enabled
coldstart sync done
```

```
nsrp link info:
control channel: ethernet4 (ifnum: 7) mac: 0010db833bd7 state: up
ha data link not available
ha secondary path link not available
```

```
NSRP encryption: disabled
NSRP authentication: disabled
device based nsrp monitoring threshold: 255, weighted sum: 0, not failed
device based nsrp monitor interface:
device based nsrp monitor zone:
device based nsrp track ip: (weight: 255, enabled, not failed)
number of gratuitous arps: 20
config sync: enabled
```

```
track ip: enabled
```

Here's what the status looks on the standby device:

```
cljun50(B)-> get nsrp
nsrp version: 2.0
```

```
cluster info:
cluster id: 1, no name
local unit id: 6414512
active units discovered:
index: 0, unit id: 6414512, ctrl mac: 0010db61e0b7, index: 1, unit id:
8600528, ctrl mac: 0010db833bd7, data mac: ffffffff
```



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total number of units: 2

VSD group info:

init hold time: 5

heartbeat lost threshold: 3

heartbeat interval: 1000(ms)

master always exist: disabled

group priority preempt holddown inelig master PB other members

0 90 no 3 no 8600528 myself

total number of vsd groups: 1

Total

iteration=67747820,time=1789207172,max=52485,min=1608,average=26

RTO mirror info:

run time object sync: enabled

ping session sync: enabled

coldstart sync done

nsrp data packet forwarding is enabled

nsrp link info:

control channel: ethernet4 (ifnum: 7) mac: 0010db61e0b7 state: up

ha data link not available

ha secondary path link not available

NSRP encryption: disabled

NSRP authentication: disabled

device based nsrp monitoring threshold: 255, weighted sum: 0, not failed

device based nsrp monitor interface:

device based nsrp monitor zone:

device based nsrp track ip: (weight: 255, disabled)

number of gratuitous arps: 10

config sync: enabled

track ip: disabled

Here's the entire configuration of the firewall. IP, names, and passwords have been changed for sanitization.



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```
cljun50(B)->
cljun50(B)-> get config
Total Config size 25520:
set clock ntp
set clock timezone -8
set vrouter trust-vr sharable
set vrouter "untrust-vr"
exit
set vrouter "trust-vr"
unset auto-route-export
exit
set service "HTTP-81" protocol tcp src-port 0-65535 dst-port 81-81
set service "DB2" protocol tcp src-port 0-65535 dst-port 523-523
set service "SSO-7777" protocol tcp src-port 0-65535 dst-port 7777-7777
set service "HTTP-8081" protocol tcp src-port 0-65535 dst-port 8081-8081
set service "HTTP-8080" protocol tcp src-port 0-65535 dst-port 8080-8080
set auth-server "Local" id 0
set auth-server "Local" server-name "Local"
set auth default auth server "Local"
set auth radius accounting port 1646
set admin name "spk"
set admin password "abcdefghijklmnopqrstuvwxyz"
set admin http redirect
set admin mail alert
set admin mail server-name "10.0.1.55"
set admin mail mail-addr1 "andrew.mcleod@Company1.com"
set admin auth timeout 30
set admin auth server "Local"
set admin format dos
set zone "Trust" vrouter "trust-vr"
set zone "Untrust" vrouter "trust-vr"
set zone "DMZ" vrouter "trust-vr"
set zone "VLAN" vrouter "trust-vr"
set zone id 100 "VPN"
set zone "Untrust-Tun" vrouter "trust-vr"
set zone "Trust" tcp-rst
set zone "Untrust" block
unset zone "Untrust" tcp-rst
set zone "MGT" block
```



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```
set zone "DMZ" tcp-rst
set zone "VLAN" block
set zone "VLAN" tcp-rst
unset zone "VPN" tcp-rst
set zone "Untrust" screen alarm-without-drop
set zone "Untrust" screen icmp-flood
set zone "Untrust" screen udp-flood
set zone "Untrust" screen winnuke
set zone "Untrust" screen port-scan
set zone "Untrust" screen ip-sweep
set zone "Untrust" screen tear-drop
set zone "Untrust" screen syn-flood
set zone "Untrust" screen ip-spoofing
set zone "Untrust" screen ping-death
set zone "Untrust" screen ip-filter-src
set zone "Untrust" screen land
set zone "Untrust" screen syn-frag
set zone "Untrust" screen tcp-no-flag
set zone "Untrust" screen unknown-protocol
set zone "Untrust" screen ip-bad-option
set zone "Untrust" screen ip-record-route
set zone "Untrust" screen ip-timestamp-opt
set zone "Untrust" screen ip-security-opt
set zone "Untrust" screen ip-loose-src-route
set zone "Untrust" screen ip-strict-src-route
set zone "Untrust" screen ip-stream-opt
set zone "Untrust" screen icmp-fragment
set zone "Untrust" screen icmp-large
set zone "Untrust" screen syn-fin
set zone "Untrust" screen fin-no-ack
set zone "Untrust" screen limit-session source-ip-based
set zone "Untrust" screen syn-ack-ack-proxy
set zone "Untrust" screen block-frag
set zone "Untrust" screen limit-session destination-ip-based
set zone "Untrust" screen icmp-id
set zone "Untrust" screen ip-spoofing drop-no-rpf-route
set zone "V1-Untrust" screen tear-drop
set zone "V1-Untrust" screen syn-flood
set zone "V1-Untrust" screen ping-death
set zone "V1-Untrust" screen ip-filter-src
```

```
set zone "V1-Untrust" screen land
set zone "Untrust" screen limit-session source-ip-based 1000
set zone "DMZ" screen limit-session source-ip-based 2000
set zone "Untrust" screen limit-session destination-ip-based 2000
set zone "DMZ" screen limit-session destination-ip-based 2000
set interface ethernet1 phy full 100mb
set interface ethernet2 phy full 100mb
set interface ethernet3 phy full 100mb
set interface "ethernet1" zone "Trust"
set interface "ethernet2" zone "Untrust"
set interface "ethernet3" zone "DMZ"
set interface "tunnel.1" zone "VPN"
set interface "loopback.1" zone "VPN"
unset interface vlan1 ip
set interface ethernet1 ip 192.168.0.6/24
set interface ethernet1 nat
set interface ethernet3 ip 5.5.5.6/24
set interface ethernet3 route
set interface loopback.1 ip 172.31.251.1/24
set interface loopback.1 route
set interface tunnel.1 ip unnumbered interface loopback.1
unset interface vlan1 bypass-others-ipsec
unset interface vlan1 bypass-non-ip
set interface ethernet1 manage-ip 192.168.0.244
unset interface ethernet1 ip manageable
set interface ethernet2 ip manageable
set interface ethernet3 ip manageable
set interface loopback.1 ip manageable
set interface ethernet1 manage mtrace
set interface ethernet2 manage ping
set interface ethernet2 manage ssh
set interface loopback.1 manage ping
set interface loopback.1 manage ssh
set interface loopback.1 manage ssl
set interface ethernet2 vip untrust 5022 "SSH" 5.5.5.204 manual
set interface ethernet1 dhcp server service
set interface ethernet1 dhcp server enable
set interface ethernet1 dhcp server option lease 180
set interface ethernet1 dhcp server ip 192.168.0.225 to 192.168.0.228
unset interface ethernet1 dhcp server config next-server-ip
```

```
set interface ethernet3 dip 4 5.5.5.34 5.5.5.34 fix-port
set interface "ethernet3" mip 5.5.5.14 host 192.168.0.155 netmask 255.255.255.255
vr "trust-vr"
set interface "ethernet3" mip 5.5.5.15 host 192.168.0.110 netmask 255.255.255.255
vr "trust-vr"
set interface "ethernet3" mip 5.5.5.19 host 192.168.0.105 netmask 255.255.255.255
vr "trust-vr"
set interface "ethernet3" mip 5.5.5.21 host 192.168.0.135 netmask 255.255.255.255
vr "trust-vr"
set interface "ethernet3" mip 5.5.5.29 host 192.168.0.125 netmask 255.255.255.255
vr "trust-vr"
set interface "ethernet3" mip 5.5.5.204 host 192.168.0.201 netmask
255.255.255.255 vr "trust-vr"
set interface "ethernet3" mip 5.5.5.22 host 192.168.0.137 netmask 255.255.255.255
vr "trust-vr"
set interface "ethernet3" mip 5.5.5.32 host 192.168.0.50 netmask 255.255.255.255
vr "trust-vr"
set interface "ethernet3" mip 5.5.5.23 host 192.168.0.138 netmask 255.255.255.255
vr "trust-vr"
set interface "ethernet3" mip 5.5.5.24 host 192.168.0.139 netmask 255.255.255.255
vr "trust-vr"
set interface "ethernet3" mip 5.5.5.35 host 192.168.0.215 netmask 255.255.255.255
vr "trust-vr"
set interface "ethernet3" mip 5.5.5.44 host 192.168.0.156 netmask 255.255.255.255
vr "trust-vr"
set interface "ethernet3" mip 5.5.5.46 host 192.168.0.147 netmask 255.255.255.255
vr "trust-vr"
set interface "ethernet3" mip 5.5.5.47 host 192.168.0.143 netmask 255.255.255.255
vr "trust-vr"
set interface "ethernet3" mip 5.5.5.53 host 10.10.1.43 netmask 255.255.255.255 vr
"trust-vr"
set interface "ethernet3" mip 5.5.5.51 host 192.168.0.132 netmask 255.255.255.255
vr "trust-vr"
set interface "ethernet3" mip 5.5.5.52 host 192.168.0.133 netmask 255.255.255.255
vr "trust-vr"
set interface "ethernet3" mip 5.5.5.57 host 192.168.0.47 netmask 255.255.255.255
vr "trust-vr"
set interface "ethernet3" mip 5.5.5.58 host 192.168.0.48 netmask 255.255.255.255
vr "trust-vr"
set flow tcp-mss 1340
```




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```
set flow path-mtu
unset flow tcp-syn-check
set console timeout 180
set console page 0
set domain Company1.com
set hostname cljun50
set pki authority default scep mode "auto"
set pki x509 default cert-path partial
set pki x509 dn state-name "CA"
set pki x509 dn org-name "Foo"
set pki x509 dn name "Company1"
set pki x509 dn email "spk@Company1.com"
set dns host dns1 10.10.1.201
set dns host dns2 10.10.1.202
set dns host schedule 06:28 interval 4
set address "Trust" "5.5.5.201/24" 5.5.5.201 255.255.255.0
set address "Trust" "5.5.5.28/24" 5.5.5.28 255.255.255.0
set address "Trust" "5.5.5.29/24" 5.5.5.29 255.255.255.0
set address "Trust" "192.168.0.0/24" 192.168.0.0 255.255.255.0 "192.168.0.0/24"
set address "Trust" "192.168.0.142 serv1" 192.168.0.142 255.255.255.255
set address "Trust" "192.168.0.146 serv2" 192.168.0.146 255.255.255.255
set address "Trust" "192.168.0.159 serv3" 192.168.0.159 255.255.255.255
set address "Trust" "192.168.0.221 serv4" 192.168.0.221 255.255.255.255
set address "Trust" "192.168.0.75/24" 192.168.0.75 255.255.255.0
set address "Trust" "serv5" 192.168.0.60 255.255.255.0
set address "Trust" "serv5.foo.bar " 192.168.0.60 255.255.255.255
set address "Untrust" "10.10.10.0/24" 10.10.10.0 255.255.255.0
set address "DMZ" "F5 BigIP 5.5.5.10" 5.5.5.10 255.255.255.255 "F5 Rack 3"
set address "DMZ" "F5 BigIP 5.5.5.11/32" 5.5.5.11 255.255.255.255
set address "DMZ" "rp1" 5.5.5.203 255.255.255.255
set address "DMZ" "rp2" 5.5.5.202 255.255.255.255
set address "DMZ" "rp3" 5.5.5.206 255.255.255.255
set address "DMZ" "www.Company1.com - 5.5.5.25/32" 5.5.5.25 255.255.255.255
"www.Company1.com F5 VIP"
set address "DMZ" "Company1.com Maintenance VIP" 5.5.5.125 255.255.255.255
set address "DMZ" "TechWeb" 5.5.5.59 255.255.255.255
set address "DMZ" "test VIP 5.5.5.31" 5.5.5.31 255.255.255.255
set address "VPN" "sos3kiis02.howost.Company1corp.com" 10.41.15.63
255.255.255.255
```



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```
set address "VPN" "sos3kiis03.howost.Company1corp.com" 10.41.15.74
255.255.255.255
```

```
set nsrp cluster id 1
set nsrp rto-mirror sync
set nsrp vsd-group id 0 priority 90
set nsrp arp 10
set nsrp vsd-group id 0 monitor interface ethernet1
set nsrp vsd-group id 0 monitor interface ethernet2
set nsrp vsd-group id 0 monitor interface ethernet3
set url protocol websense
exit
set policy id 32 name "XDM-services" from "VPN" to "Trust" "Any" "Any" "XDM"
deny
set policy id 32
exit
```

```
set dst-address "csccon1.Company1.com"
set dst-address "csccon2.Company1.com"
exit
set policy id 1 from "Trust" to "Untrust" "Any" "Any" "ANY" nat src permit log count
set policy id 1
exit
set policy id 6 name "Default" from "Trust" to "DMZ" "Any" "Any" "ANY" permit log
set policy id 6
exit
set policy id 7 name "Inbound web" from "Untrust" to "DMZ" "209.76.214.0/24"
"spweb30" "HTTP" permit log
set policy id 7 disable
set policy id 7
set service "PING"
set service "SSH"
exit
set policy id 35 from "Untrust" to "DMZ" "Any" "DAM Maintenance VIP" "HTTP"
permit
set policy id 35
set dst-address "dam.Company1.com"
set dst-address "damtest.Company1.com"
set service "HTTPS"
```



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```
set service "PING"
exit
set src-address "rp2"
set src-address "rp3"
set dst-address "MIP(5.5.5.15)"
set dst-address "MIP(5.5.5.19)"
set dst-address "MIP(5.5.5.21)"
set dst-address "MIP(5.5.5.22)"
set dst-address "MIP(5.5.5.23)"
set dst-address "MIP(5.5.5.24)"
set dst-address "MIP(5.5.5.35)"
set dst-address "MIP(5.5.5.44)"
set dst-address "MIP(5.5.5.46)"
set dst-address "MIP(5.5.5.47)"
set dst-address "MIP(5.5.5.51)"
set dst-address "MIP(5.5.5.52)"
set dst-address "MIP(5.5.5.57)"
set dst-address "MIP(5.5.5.58)"
set service "HTTP-8080"
set service "HTTP-8081"
set service "PING"
set service "WebSphere-33344"
set service "WebspherePortal-10035"
exit
set policy id 16 name "Company1.com" from "Untrust" to "DMZ" "Any"
"dcm.Company1.com" "HTTP" permit
set policy id 16
set dst-address "Company1.com - 5.5.5.25/32"
set dst-address "test VIP 5.5.5.31"
set service "HTTPS"
exit
set policy id 17 name "GlobalSource service" from "Untrust" to "DMZ" "Any" "SSO
DR VIP 5.5.5.34" "HTTP" permit
set policy id 17
set dst-address "SSO VIP 5.5.5.27"
set service "HTTPS"
exit
set policy id 18 from "DMZ" to "Trust" "Any" "MIP(5.5.5.29)" "HTTP" permit log
set policy id 18
set dst-address "MIP(5.5.5.57)"
```

```
set dst-address "MIP(5.5.5.58)"
exit
set policy id 22 from "Untrust" to "DMZ" "Any" "MIP(5.5.5.204)" "SSH-2222" nat dst
ip 192.168.0.201 port 22 permit log
set policy id 22 disable
set policy id 22
exit
set policy id 23 from "DMZ" to "Trust" "Any" "MIP(5.5.5.204)" "HTTP" permit
set policy id 23
set service "SSH"
set service "SYSLOG"
exit
set policy id 26 name "GlobalSource-Staging" from "DMZ" to "Trust" "F5 BigIP
5.5.5.10" "5.5.5.201/24" "HTTP" permit
set policy id 26 disable
set policy id 26
set src-address "F5 BigIP 5.5.5.11/32"
set service "HTTP-8081"
exit
set policy id 27 from "DMZ" to "Trust" "spweb30" "MIP(5.5.5.29)" "HTTP" permit
set policy id 27
set dst-address "MIP(5.5.5.32)"
set service "WebSphere-90xx"
exit
set policy id 29 name "GlobalSource" from "Untrust" to "DMZ" "Any" "GSProd
5.5.5.30/32" "HTTP" permit
set policy id 29
set dst-address "GSProd2 5.5.5.45"
set dst-address "GSStage 5.5.5.28/32"
set dst-address "GSUAT 5.5.5.36"
set dst-address "test VIP 5.5.5.31"
exit
set policy id 33 from "Untrust" to "DMZ" "Any" "rp1" "SSH" permit
set policy id 33
exit
set policy id 34 from "DMZ" to "Trust" "spweb30" "MIP(5.5.5.15)" "HTTP" permit
set policy id 34
set service "PING"
exit
```



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```
set policy id 36 name "Iperf testing" from "Untrust" to "DMZ" "Any" "rp1" "Iperf"  
permit  
set policy id 36 disable  
set policy id 36  
exit  
set policy id 39 name "QualysAppliance" from "VPN" to "Trust" "Any" "Any" "ANY"  
deny  
set policy id 39  
exit  
set policy id 42 from "Untrust" to "DMZ" "209.76.214.0/24" "cspknag2" "HTTP"  
permit  
set policy id 42  
exit  
set policy id 43 from "VPN" to "DMZ" "Any" "rp1" "ANY" permit  
set policy id 43  
exit  
set policy id 44 from "Untrust" to "DMZ" "Any" "spweb30"  
"ApplicationVantageAgent" permit  
set policy id 44 disable  
set policy id 44  
exit  
set policy id 45 from "Untrust" to "DMZ" "69.36.240.241/29" "cspknag2" "HTTP"  
permit  
set policy id 45  
exit  
set policy id 47 name "Nagios-VIP" from "Untrust" to "DMZ" "Any" "5.5.5.54/32"  
"HTTPS" permit  
set policy id 47  
exit  
set policy id 48 from "DMZ" to "Trust" "F5 BigIP 5.5.5.11/32" "MIP(5.5.5.53)"  
"HTTP" permit  
set policy id 48  
set dst-address "MIP(5.5.5.57)"  
set dst-address "MIP(5.5.5.58)"  
exit  
set policy id 49 name "TechWeb_Production" from "Untrust" to "DMZ" "Any"  
"TechWeb" "HTTP" permit  
set policy id 49  
set service "HTTPS"  
set service "PING"
```



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```
exit
set monitor cpu 100
set syslog config "192.168.0.201"
set syslog config "192.168.0.201" facilities local2 local2
set syslog config "192.168.0.201" log traffic
set syslog enable
unset log module system level notification destination syslog
unset log module system level information destination syslog
unset log module system level debugging destination syslog
set nsmgmt bulkcli reboot-timeout 60
set ssh version v2
set ssh enable
set ssh pka-dsa user-name XXX pka-key-id 12345678901234567890
set config lock timeout 5
set ssl cert-hash "6F219A5E6FAD2F8C18E10B9AC20EF4DF0C9A314F"
set ssl encrypt 3des sha-1
set ntp server "192.43.244.18"
set ntp server backup1 "206.111.81.7"
set ntp server backup2 "us.pool.ntp.org"
set ntp interval 1
set ntp max-adjustment 3600
set snmp community "spkmrtg" Read-Only Trap-on version any
set snmp host "spkmrtg" 192.168.0.0 255.255.255.0
set snmp location "Lundy"
set snmp contact "spk@Company1.com"
set snmp name "cljun50"
set snmp port listen 161
set snmp port trap 162
set vrouter "untrust-vr"
exit
set vrouter "trust-vr"
unset add-default-route
set route 0.0.0.0/0 interface ethernet2 gateway 209.157.68.113 preference 20
set route 10.0.0.0/8 interface tunnel.1 preference 20
set route 192.168.0.0/16 interface tunnel.1 preference 20
set route 172.23.0.0/16 interface tunnel.1 preference 20
set route 172.24.0.0/16 interface tunnel.1 preference 20
exit
set vrouter "untrust-vr"
exit
```



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```
set vrouter "trust-vr"  
exit
```