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Звіт

з лабораторної роботи

за темою: **"Налаштування зон безпеки на Juniper SRX"**

з дисципліни «Кібербезпека комп'ютерних мереж»
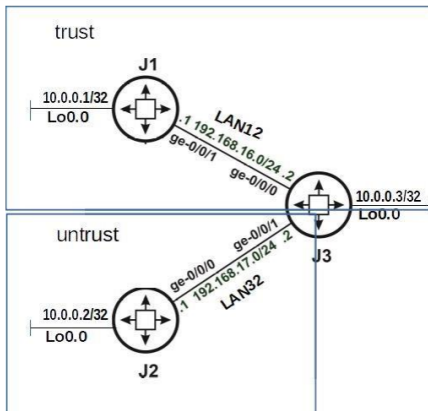
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Київ - 2023

ВИКОНАННЯ

Топологія:

Вимкнемо ge-0/0/0 на J1

```
root@J1# set interfaces ge-0/0/0 disable

[edit]
root@J1# commit
commit complete

[edit]
```

Поставимо режим packet-based на J1 та J2

```
[edit]
root@J2# set security forwarding-options family mpls mode packet-based

[edit]
root@J2# commit
commit complete

[edit]
root@J2# run re

               ^
're' is ambiguous.
Possible completions:
  request                Make system-level requests
  restart                Restart software process
[edit]
root@J2# run request system reboot
```

```
[edit]
root@J1# delete security

[edit]
root@J1# set security forwarding-options family mpls mode packet-based

[edit]
root@J1# commit
commit complete

[edit]
root@J1# run request system reboot
Reboot the system ? [yes,no] (no) yes
```

Скинемо до заводських налаштувань J3

```
[edit]
root@J3# load factory-default
warning: activating factory configuration

[edit]
root@J3#

[edit]
root@J3# commit
[edit]
  'system'
    Missing mandatory statement: 'root-authentication'
error: commit failed: (missing statements)

[edit]
root@J3# set system root-authentication plain-text-password
New password:
Retype new password:

[edit]
root@J3# commit
```

Налаштуємо топологію

```
root@J3# set interfaces ge-0/0/0 unit 0 family inet address 192.168.16.2/24

[edit]
root@J3# set interfaces ge-0/0/1 unit 0 family inet address 192.168.17.2/24

[edit]
root@J3# set interfaces lo0 unit 0 family inet address 10.0.0.3/32

[edit]
root@J3# commit
commit complete

[edit]
```

Налаштуємо інтерфейси J3 на trust, untrust

```
[edit]
root@J3# delete security zones

[edit]
root@J3# set security zones security-zone trust interfaces ge-0/0/0.0

[edit]
root@J3# set security zones security-zone untrust interfaces ge-0/0/1.0

[edit]
root@J3# commit
commit complete

[edit]
```

Налаштуємо протокол маршрутизації OSPF

```
root@J3# set protocols ospf area 0 interface ge-0/0/0.0

[edit]
root@J3# set protocols ospf area 0 interface ge-0/0/1.0

[edit]
root@J3# set protocols ospf area 0 interface lo0.0
```

```
root@J3# ...st interfaces ge-0/0/1.0 host-inbound-traffic protocols ospf

[edit]
```

```
security-zone trust {
    interfaces {
        ge-0/0/0.0 {
            host-inbound-traffic {
                protocols {
                    ospf;
                }
            }
        }
    }
}
security-zone untrust {
    interfaces {
        ge-0/0/1.0 {
            host-inbound-traffic {
                protocols {
                    ospf;
                }
            }
        }
    }
}
```

Перевіримо сусідів

```
root@J1> show ospf neighbor
Address          Interface      State    ID         Pri  Dead
192.168.16.2     ge-0/0/1.0     Full     10.0.0.3   128   38
```

```
root@J2> show ospf neighbor
Address          Interface      State    ID         Pri  Dead
192.168.17.2     ge-0/0/0.0     Full     10.0.0.3   128   34
```

```
root@J3> show ospf neighbor
Address          Interface      State    ID         Pri  Dead
192.168.16.1     ge-0/0/0.0     Full     10.0.0.1   128   37
192.168.17.1     ge-0/0/1.0     Full     10.0.0.2   128   35
```

Додаємо пінг до host inbound traffic на J3

```
root@J3# ...rfaces ge-0/0/0.0 host-inbound-traffic system-services ping

[edit]
```

```
root@J3# ...terfaces ge-0/0/1.0 host-inbound-traffic system-services ping

[edit]
```

```
security-zone trust {
    interfaces {
        ge-0/0/0.0 {
            host-inbound-traffic {
                system-services {
                    ping;
                }
                protocols {
                    ospf;
                }
            }
        }
    }
}
security-zone untrust {
    interfaces {
        ge-0/0/1.0 {
            host-inbound-traffic {
                system-services {
                    ping;
                }
```

```
                protocols {
                    ospf;
                }
            }
        }
    }
}
```

Запустимо пінг з J1 на J3

```
root@J1> ping 10.0.0.3

PING 10.0.0.3 (10.0.0.3): 56 data bytes
64 bytes from 10.0.0.3: icmp_seq=0 ttl=64 time=17.211 ms
64 bytes from 10.0.0.3: icmp_seq=1 ttl=64 time=9.856 ms
64 bytes from 10.0.0.3: icmp_seq=2 ttl=64 time=12.575 ms
64 bytes from 10.0.0.3: icmp_seq=3 ttl=64 time=11.596 ms
64 bytes from 10.0.0.3: icmp_seq=4 ttl=64 time=25.904 ms
^C
--- 10.0.0.3 ping statistics ---
5 packets transmitted, 5 packets received, 0% packet loss
round-trip min/avg/max/stddev = 9.856/15.428/25.904/5.776 ms
```

Запустимо пінг з J2 на J3

```
root@J2> ping 10.0.0.3
PING 10.0.0.3 (10.0.0.3): 56 data bytes
64 bytes from 10.0.0.3: icmp_seq=0 ttl=64 time=24.321 ms
64 bytes from 10.0.0.3: icmp_seq=1 ttl=64 time=4.940 ms
64 bytes from 10.0.0.3: icmp_seq=2 ttl=64 time=5.612 ms
64 bytes from 10.0.0.3: icmp_seq=3 ttl=64 time=10.673 ms
64 bytes from 10.0.0.3: icmp_seq=4 ttl=64 time=10.871 ms
64 bytes from 10.0.0.3: icmp_seq=5 ttl=64 time=5.236 ms
64 bytes from 10.0.0.3: icmp_seq=6 ttl=64 time=5.176 ms
64 bytes from 10.0.0.3: icmp_seq=7 ttl=64 time=15.797 ms
^C
--- 10.0.0.3 ping statistics ---
8 packets transmitted, 8 packets received, 0% packet loss
round-trip min/avg/max/stddev = 4.940/10.328/24.321/6.421 ms
```

Налаштування безпеки trust/untrust

```
root@J3# show security policies from-zone untrust to-zone trust
policy default-deny {
    match {
        source-address any;
        destination-address any;
        application any;
    }
    then {
        deny;
    }
}

[edit]
```

```
root@J3# show security policies from-zone trust to-zone untrust
policy default-permit {
    match {
        source-address any;
        destination-address any;
        application any;
    }
    then {
        permit;
    }
}

[edit]
```

Пінг з J1 на J2

```
root@J1> ping 10.0.0.2
PING 10.0.0.2 (10.0.0.2): 56 data bytes
64 bytes from 10.0.0.2: icmp_seq=0 ttl=63 time=25.349 ms
64 bytes from 10.0.0.2: icmp_seq=1 ttl=63 time=15.296 ms
64 bytes from 10.0.0.2: icmp_seq=2 ttl=63 time=16.424 ms
64 bytes from 10.0.0.2: icmp_seq=3 ttl=63 time=15.762 ms
^C
--- 10.0.0.2 ping statistics ---
4 packets transmitted, 4 packets received, 0% packet loss
round-trip min/avg/max/stddev = 15.296/18.208/25.349/4.142 ms
```

Пінг з J2 на J1

```
root@J2> ping 10.0.0.1
PING 10.0.0.1 (10.0.0.1): 56 data bytes
^C
--- 10.0.0.1 ping statistics ---
5 packets transmitted, 0 packets received, 100% packet loss

root@J2>
```

SSH з J1 на J2

```
root@J1> ssh root@10.0.0.2
Password:
--- JUNOS 12.1X47-D20.7 built 2015-03-03 21:53:50 UTC
root@J2%
```

SSH з J1 на J3

```
root@J1> ssh root@10.0.0.3
^C
root@J1>
```

SSH з J2 на J1

```
root@J2> ssh root@10.0.0.1
^C
root@J2>
```

Дозволимо ssh з J1 на J3

```
root@J3# show security zones security-zone trust
tcp-rst;
interfaces {
    ge-0/0/0.0 {
        host-inbound-traffic {
            system-services {
                ping;
                ssh;
            }
            protocols {
                ospf;
            }
        }
    }
}
```

SSH з J1 на J3

```
root@J1> ssh root@10.0.0.3
Password:
--- JUNOS 12.1X47-D20.7 built 2015-03-03 21:53:50 UTC
```

Роботу завершено.