Taller Juniper

ARIU

Asociación Redes de Interconexión Universitaria

Juniper SRX 345

Apariencia externa

- 8 Leds Indicadores
- 1 Puerto RJ45 Consola
- 1 Puerto mini-USB Consola
- 1 Puerto RJ45 MGMT
- 8 Puertos RJ45
- 8 SFP

Primeros pasos / primera conexión

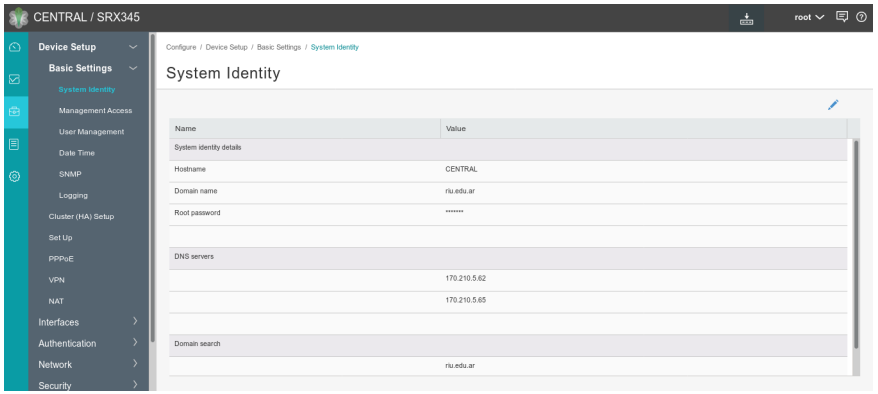
- Puerto consola:
  - Serial
  - USB
- Puerto de Management.
  DHCP
- Interfaces de Loopback / irb
- SSH / WEB

```
root@DUT02:RE:0% cli
{master:0}
root@Juniper_1> edit
Entering configuration mode

{master:0}[edit]
root@Juniper_1# set system root-authentication plain-text-password
New password:
Retype new password:

{master:0}[edit]
root@Juniper_1# commit
configuration check succeedscommit complete

{master:0}[edit]
root@Juniper_1#
```



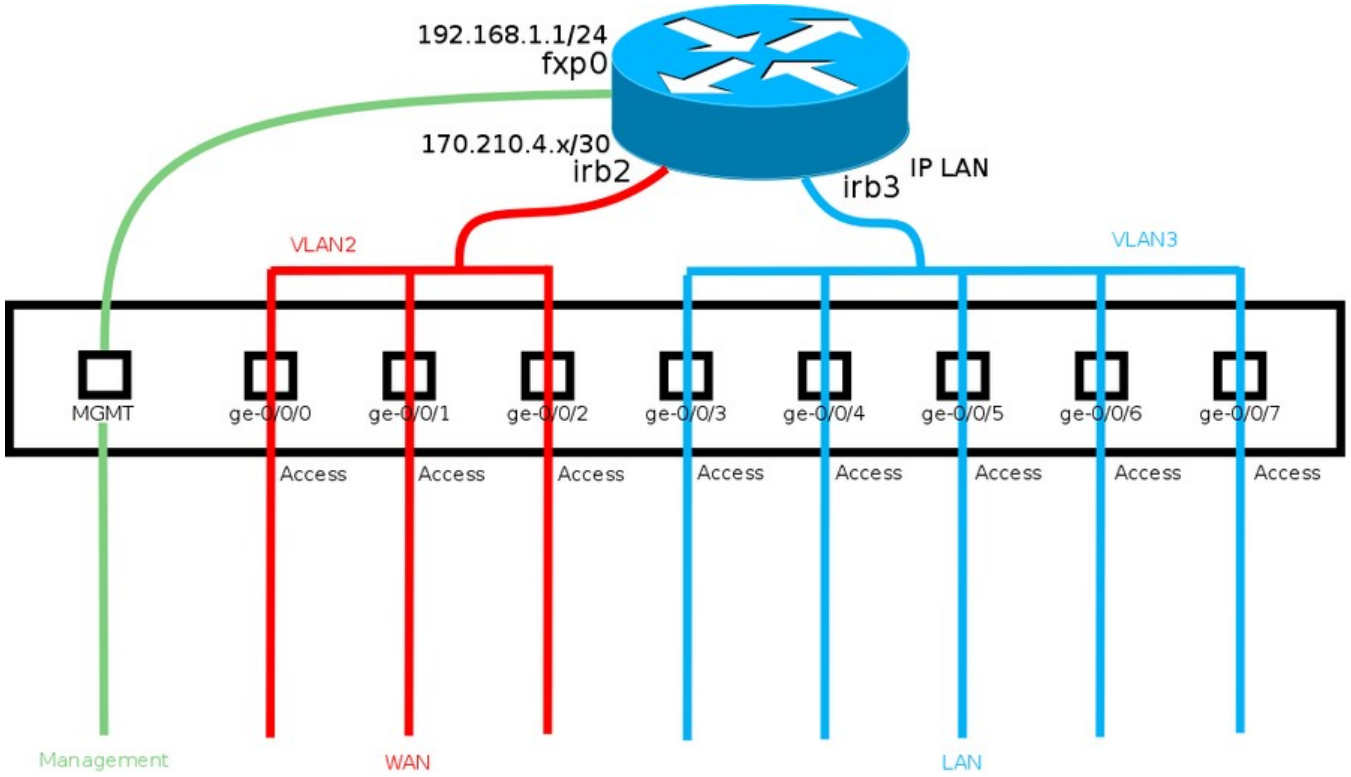
ssh root@vsrxXX.riu.edu.ar

https://vsrxXX.riu.edu.ar
Usuario: root

Password: ticar2019

Configuración genérica realizada desde ARIU

Gráfico esquemático



La idea de esta configuración es poder contar con una interfaz de WAN con reserva de otro puerto que permita, de ser necesario, configurar un Link Aggregation y otro puerto extra para conectar por ejemplo un equipo de monitoreo o para pruebas de ancho de banda. Por el lado de la LAN, la disponibilidad de puertos extra permite conectar distintos equipos sin necesidad de contar con un switch.

Configuración genérica realizada desde ARIU

Esta configuración pretende ser una base y la misma será modificada de acuerdo a las necesidades y complejidades de cada sitio. Los puertos pueden ser configurados como:

```
ge-0/0/3 {
        description "### Trunk LAN ###";
        unit 0 {
            family ethernet-switching {
                interface-mode trunk;
                vlan {
                    members [ vlan-LAN_60 vlan-LAN_88 vlan-LAN_702 ];
                }
            }
        }
    }

ge-0/0/6 {
        unit 0 {
            description "LAN - VLAN XX - access";
            family inet {
                address 170.210.x.x/24;
            }
            family inet6 {
                address 2800:110:xx::1/64;
            }
    }
```

Configuración genérica realizada desde ARIU

Usuarios:

```
login {
    class looking-glass {
        permissions [network view];
        allow-commands "^(show route protocol bgp .*|show bgp summary|ping .*|traceroute .*|quit|help .*)";
        deny-commands "^show [ac-qs-z].*|^show (backup-selection|bfd|r2cp|rip|ripng|rsvp)|^clear.*|^ssh|^telnet|^file|^op|^request|^set|^start|^test";
        allow-configuration show;
        deny-configuration all;
    }
    user adminuunn {
        full-name "Admin UUNN";
        uid 102;
        class super-user;
        authentication {
            encrypted-password "$5$/V9G/60w$YKCFUZzEPwfS2ttyF6NsIgmwD5cxJGT0dC59PUO7UGB"; ## SECRET-DATA
        }
    }
    user lgriu {
        uid 100;
        class looking-glass;
        authentication {
            encrypted-password "$5$zQrayw6d$i1JXzuG7di.ksAj3qWeeFfQg0JgQN144VjLXrKhMpx6"; ## SECRET-DATA
        }
    }
    user nocriu {
        full-name "NOC RIU";
        uid 101;
        class super-user;
        authentication {
            encrypted-password "$5$PQ9sHg7w$E1GcYE7Av.DYzDbmcHiAXsvP0NG4ZJzlwdp//UjG9pC"; ## SECRET-DATA
        }
    }
}
```

Configuración genérica realizada desde ARIU

Usuarios:

```
login {
    class looking-glass {
        permissions [network view];
```

```
class looking-glass {

    permissions [network view];

    allow-commands "^(show route protocol bgp .*|show bgp summary|ping .*|
traceroute .*|quit|help .*)";

    deny-commands "^show [ac-qs-z].*|^show (backup-selection|bfd|r2cp|rip|ripng|
rsvp)|^clear.*|^ssh|^telnet|^file|^op|^request|^set|^start|^test";

    allow-configuration show;

    deny-configuration all;

}
```

```
        encrypted-password "$5$PQ9sHg7w$E1GcYE7Av.DYzDbmcHiAXsvP0NG4ZJzlwdp//UjG9pC"; ## SECRET-DATA
    }
  }
}
```

Configuración genérica realizada desde ARIU

Usuarios:

```
login {
        class looking-glass {
user lgriu {
        uid 100;
        class looking-glass;
        authentication {
            encrypted-password
"$5$zQrayw6d$i1JXzuG7di.ksAj3qWeeFfQg0JgQN144VjLXrKhMpx6";
        }
}
                class super-user;
                authentication {
                    encrypted-password "$5$PQ9sHg7w$E1GcYE7Av.DYzDbmcHiAXsvP0NG4ZJzlwdp//UjG9pC"; ## SECRET-DATA
                }
            }
        }
```

Creación de Usuarios

usr@srx# **set system login user test authentication plain-text-password**
New password:
Retype new password:

usr@srx# **show system login**
```
user test {
    authentication {
        encrypted-password "$5$tyB27kHc$.EL1oCY3oYWCE42fiMHAFlHBSM2C/CsC/.9BCt68cBC"
    }
    ## Warning: missing mandatory statement(s): 'class'
}
```

usr@srx#**set system login user test class ?**
Possible completions:

<class>	Login class
looking-glass	
operator	permissions [clear network reset trace view]
read-only	permissions [view]
super-user	permissions [all]
unauthorized	permissions [none]

usr@srx#**set system login user test class read-only**
usr@srx#**commit**

Configuración genérica realizada desde ARIU

```
interfaces {
    ge-0/0/0 {
        unit 0 {
                    family ethernet-switching {
                        vlan {
                                members vlan-WAN;
                            }
                        }
                    }
    }
…
    ge-0/0/3 {
        unit 0 {
            family ethernet-switching {
                vlan {
                    members vlan-LAN;
                }
            }
        }
    }
…
    fxp0 {
        unit 0 {
            family inet {
                address 192.168.1.1/24;
            }
        }
    }
…
irb {
        unit 2 {
            description "WAN - RIU";
            family inet {
                address 170.210.4.X/30;
            }
            family inet6 {
                address 2800:110:ff:X::2/64;
            }
        }
        unit 3 {
            description "LAN - UUNN";
            family inet {
                address 170.210.X.1/21;
            }
            family inet6 {
            #     address xxxx:xxxx:xxxx::xxxx/xx;
            }
        }
    }
    lo0 {
        unit 0 {
            family inet {
                filter {
                    input ACLv4;
                }
                address 170.210.1.X/32;
            }
            family inet6 {
                filter {
                    input ACLv6;
                }
                address 2800:110:1:X::1/64;
            }
        }
    }
}
```

Configuración genérica realizada desde ARIU

Vlans:

```
vlans {
    vlan-LAN {
        vlan-id 3;
        l3-interface irb.3;
    }
    vlan-WAN {
        vlan-id 2;
        l3-interface irb.2;
    }
}
```

Rutas estáticas:

```
routing-options {
    rib inet6.0 {
        static {
            route ::0/0 next-hop 2800:110:ff:X::1;
            # route xxxx:xxxx:xxxx::xxxx/xx discard;
        }
    }
    static {
        route 170.210.X.0/21 discard;
        route 0.0.0.0/0 next-hop 170.210.X.X;
    }
    autonomous-system XXXXX;
}
```

Configuración genérica realizada desde ARIU

```
bgp {
        path-selection cisco-non-deterministic;
        log-updown;
        group IPv4 {
            type external;
            family inet {
                unicast;
            }
            neighbor 170.210.4.113 {
                description "BGP IPv4 contra RIU;";
                local-address 170.210.4.X;
                inactive: import from-RIU-v4;
                export to-RIU-v4;
                peer-as 4270;
            }
        }
        group IPv6 {
            type external;
            family inet6 {
                unicast;
            }
            neighbor 2800:110:ff:f112::1 {
                description "BGP IPv6 contra RIU";
                local-address 2800:110:ff:X::2;
                inactive: import from-RIU-v6;
                export to-RIU-v6;
                peer-as 4270;
            }
        }
        # group iBGP-IPv4 {
            #    type internal;
            #    neighbor 170.210.184.2 {
            #        description iBGP-v4;
            #        export ibgp-export;
            #        peer-as 14845;
            #    }
            # }
            # group iBGP-IPv6 {
            #     peer-as 14845;
            #     neighbor xxxx:xxxx:xxxx::xxxx/xx; {
            #         description iBGP-v6;
            #         export ibgp-export;
            #     }
            # }
        # }
        l2-learning {
            global-mode switching;
        }
}
```

Configuración genérica realizada desde ARIU

```
Policy-options {
    policy-statement to-RIU-v4 {
        term 10 {
            from {
                prefix-list redes-wan-riu-v4;
                prefix-list-filter redes-riu-universidad-v4 orlonger;
                prefix-list-filter redes-universidad-v4 orlonger;
            }
            then {
                inactive: community set to-RIU-todo;
                accept;
            }
        }
        term no-match {
            then reject;
        }
    }
    policy-statement to-RIU-v6 {
        term 10 {
            from {
                prefix-list redes-wan-riu-v6;
                prefix-list-filter redes-riu-universidad-v6 orlonger;
                prefix-list-filter redes-universidad-v6 orlonger;
            }
            then {
                inactive: community set to-RIU-todo;
                accept;
            }
        }
        term no-match {
            then reject;
        }
    }
    policy-statement pl-no-default {
        term 10 {
            from {
                route-filter 0.0.0.0/0 exact;
            }
            then reject;
        }
        term 20 {
            from {
                route-filter 0.0.0.0/0 orlonger;
            }
            then accept;
        }
    }
}
```

Configuración genérica realizada desde ARIU

Parches de configuraciones

```
root@CENTRAL# edit system login

root@CENTRAL# load replace relative terminal

[Type ^D at a new line to end input]

        class looking-glass {

            permissions [network view];

            allow-commands "^(show route protocol bgp .*|show bgp summary|ping .*|traceroute .*|quit|
help .*)";

            deny-commands "^show [ac-qs-z].*|^show (backup-selection|bfd|r2cp|rip|ripng|rsvp)|^clear.*|^ssh|
^telnet|^file|^op|^request|^set|^start|^test";

            allow-configuration show;

            deny-configuration all;

        }

load complete

root@CENTRAL# commit
```

Configuración genérica realizada desde ARIU

Parches de configuraciones

root@CENTRAL> show configuration system login | display set

set system login class looking-glass permissions network

set system login class looking-glass permissions view

set system login class looking-glass permissions view-configuration

set system login class looking-glass allow-commands "^(show route protocol bgp .*|show bgp summary| ping .*|traceroute .*|quit|help .*)"

set system login class looking-glass deny-commands "^show [ac-qs-z].*|^show (backup-selection|bfd| r2cp|rip|ripng|rsvp)|^clear.*|^ssh|^telnet|^file|^op|^request|^set|^start|^test"

set system login class looking-glass allow-configuration show

set system login class looking-glass deny-configuration all

Links de Interés

Actualización de SO

http://routers.riu.edu.ar/doku.php?id=firmwareupdate

Uso LG

http://lg.riu.edu.ar

Wiki

http://routers.riu.edu.ar/

Comandos Útiles

rollback 0
show | compare rollback 0
show | compare rollback n # (n=1 a 49)
show configuration [| display (set / detail)]
show system users
show route
show policy
commit [and-quit]
set system services
set max-configurations-on-flash
set max-configuration-rollbacks
traceroute <IP> as-number-lookup
show bgp summary
show bgp neighbor <NEIGHBOR>
show route receive-protocol bgp <NEIGHBOR> active-path
show route advertising-protocol bgp <NEIGHBOR>
show route protocol bgp <PREFIJO> exact detail all