

Windows Router route commands:

-Vlan 10 PC-VLAN

```
route -p add 192.168.10.0 mask 255.255.255.0 192.168.137.2 metric 1
route -p add 192.168.10.1 mask 255.255.255.255 192.168.137.2 metric 1
```

-Vlan 20 MAC-VLAN

```
route -p add 192.168.20.0 mask 255.255.255.0 192.168.137.2 metric 1
route -p add 192.168.20.1 mask 255.255.255.255 192.168.137.2 metric 1
```

-Vlan 99 Management

```
route -p add 192.168.99.0 mask 255.255.255.0 192.168.137.2 metric 1
route -p add 192.168.99.1 mask 255.255.255.255 192.168.137.2 metric 1
route -p add 192.168.99.2 mask 255.255.255.255 192.168.137.2 metric 1
```

```
admin@FORD-JUN-SW1> show configuration
```

```
## Last commit: 2024-08-16 15:41:18 UTC by admin
```

```
version 20.4R3.8;
```

```
system {
```

```
    host-name FORD-JUN-SW1;
```

```
    root-authentication {
```

```
        encrypted-password "*****"; ## SECRET-DATA
```

```
    }
```

```
    login {
```

```
        retry-options {
```

```
            tries-before-disconnect 3;
```

```
            backoff-threshold 3;
```

```
            backoff-factor 5;
```

```
        }
```

```
        user admin {
```

```
            uid 2000;
```

```
            class super-user;
```

```
            authentication {
```

```
                encrypted-password
```

```
"$6$JaW2LOQd$t59nP2rTvONBqnx5v09r8jDSaox0PZ9778zDTt41rOMVRkXQOGWd9YjreHdS
Pd8YvT5jxqN35c5qn49oJqyIK/"; ## SECRET-DATA
```

```
            }
```

```
        }
```

```
        user viewer {
```

```
            uid 2001;
```

```
            class read-only;
```

```
            authentication {
```

```
                encrypted-password
```

```
"$6$o8qF6j9A$PjOFnrz.iJGVC50p3FGZtp/.g01P7MZBZbSdbbve8FR/XbaOrHmsitGPng7Ijy5av
BG7KEBHizZvvAQmp6MQ/"; ## SECRET-DATA
```

```
            }
```

```

    }
}
services {
    ssh {
        root-login deny;
        protocol-version v2;
    }
    dhcp-local-server {
        traceoptions { ## Warning: 'traceoptions' is deprecated
            file jdhcplog;
            flag all;
        }
        group ezsetup-ge0 {
            interface ge-0/0/0.0;
        }
        group ezsetup-me0 {
            interface me0.0;
        }
        group PC-GRP {
            interface irb.10;
        }
        group MAC-GRP {
            interface irb.20;
        }
    }
}
web-management {
    http;
    https {
        system-generated-certificate;
    }
}
}
syslog {
    user * {
        any emergency;
    }
    file messages {
        any notice;
        authorization info;
    }
}
}
chassis {
    aggregated-devices {

```

```
        ethernet {
            device-count 1;
        }
    }
}
interfaces {
    ge-0/0/0 {
        unit 0 {
            family ethernet-switching {
                interface-mode access;
                vlan {
                    members PC-VLAN;
                }
            }
        }
    }
}
ge-0/0/1 {
    unit 0 {
        family ethernet-switching {
            interface-mode access;
            vlan {
                members PC-VLAN;
            }
        }
    }
}
ge-0/0/2 {
    unit 0 {
        family ethernet-switching {
            interface-mode access;
            vlan {
                members PC-VLAN;
            }
        }
    }
}
xe-0/1/0 {
    enable;
    unit 0 {
        family inet;
    }
}
xe-0/1/1 {
    disable;
```

```

}
xe-0/1/2 {
    disable;
}
ge-0/2/0 {
    unit 0 {
        family inet {
            address 192.168.137.2/24;
        }
    }
}
ge-0/2/1 {
    ether-options {
        802.3ad ae0;
    }
}
ge-0/2/2 {
    ether-options {
        802.3ad ae0;
    }
}
ae0 {
    aggregated-ether-options {
        minimum-links 1;
        lacp {
            active;
            periodic fast;
        }
    }
    unit 0 {
        family ethernet-switching {
            interface-mode trunk;
            vlan {
                members [ 10 20 PC-VLAN MAC-VLAN Management ];
            }
        }
    }
}
irb {
    unit 10 {
        family inet {
            address 192.168.10.1/24;
        }
    }
}

```

```

unit 20 {
    family inet {
        address 192.168.20.1/24;
    }
}
unit 99 {
    family inet {
        address 192.168.99.1/24;
    }
}
}
me0 {
    unit 0 {
        family inet {
            address 192.168.2.1/24 {
                primary;
            }
        }
    }
}
}
access {
    address-assignment {
        pool ezsetup-ge0 {
            family inet {
                network 192.168.1.0/24;
                range limited {
                    low 192.168.1.2;
                    high 192.168.1.253;
                }
            }
        }
    }
    pool ezsetup-me0 {
        family inet {
            network 192.168.2.0/24;
            range limited {
                low 192.168.2.2;
                high 192.168.2.253;
            }
        }
    }
    pool PC-POOL {
        family inet {
            network 192.168.10.0/24;

```

```

    range PCs {
        low 192.168.10.100;
        high 192.168.10.200;
    }
    dhcp-attributes {
        name-server {
            8.8.8.8;
        }
        router {
            192.168.10.1;
        }
    }
}
pool MAC-POOL {
    family inet {
        network 192.168.20.0/24;
        range MACs {
            low 192.168.20.100;
            high 192.168.20.200;
        }
        dhcp-attributes {
            name-server {
                8.8.8.8;
            }
            router {
                192.168.20.1;
            }
        }
    }
}
}
routing-options {
    static {
        route 0.0.0.0/0 next-hop 192.168.137.1;
    }
}
protocols {
    rstp {
        interface ge-0/0/0 {
            edge;
        }
        interface ge-0/0/1 {

```

```

        edge;
    }
    interface ge-0/0/2 {
        edge;
    }
    interface ae0;
}
}
vllans {
    MAC-VLAN {
        vlan-id 20;
        l3-interface irb.20;
    }
    Management {
        vlan-id 99;
        l3-interface irb.99;
    }
    PC-VLAN {
        vlan-id 10;
        l3-interface irb.10;
    }
}
}

```

{master:0}

admin@FORD-JUN-SW1> show configuration | display set

set version 20.4R3.8

set system host-name FORD-JUN-SW1

set system root-authentication encrypted-password "*****"

set system login retry-options tries-before-disconnect 3

set system login retry-options backoff-threshold 3

set system login retry-options backoff-factor 5

set system login user admin uid 2000

set system login user admin class super-user

set system login user admin authentication encrypted-password

"\$6\$JaW2LOQd\$t59nP2rTvONBqnx5v09r8jDSaox0PZ9778zDTt41rOMVRkXQOGWd9YjreHdS
Pd8YvT5jxqN35c5qn49oJqyIK/"

set system login user viewer uid 2001

set system login user viewer class read-only

set system login user viewer authentication encrypted-password

"\$6\$o8qF6j9A\$PjOFnrz.iJGVC50p3FGZtp/.g01P7MZBZbSdbbve8FR/XbaOrHmsitGPng7ljy5av
BG7KEBHizZvvAQmp6MQ/"

set system services ssh root-login deny

set system services ssh protocol-version v2

set system services dhcp-local-server traceoptions file jdhplog

```
set system services dhcp-local-server traceoptions flag all
set system services dhcp-local-server group ezsetup-ge0 interface ge-0/0/0.0
set system services dhcp-local-server group ezsetup-me0 interface me0.0
set system services dhcp-local-server group PC-GRP interface irb.10
set system services dhcp-local-server group MAC-GRP interface irb.20
set system services web-management http
set system services web-management https system-generated-certificate
set system syslog user * any emergency
set system syslog file messages any notice
set system syslog file messages authorization info
set chassis aggregated-devices ethernet device-count 1
set interfaces ge-0/0/0 unit 0 family ethernet-switching interface-mode access
set interfaces ge-0/0/0 unit 0 family ethernet-switching vlan members PC-VLAN
set interfaces ge-0/0/1 unit 0 family ethernet-switching interface-mode access
set interfaces ge-0/0/1 unit 0 family ethernet-switching vlan members PC-VLAN
set interfaces ge-0/0/2 unit 0 family ethernet-switching interface-mode access
set interfaces ge-0/0/2 unit 0 family ethernet-switching vlan members PC-VLAN
set interfaces xe-0/1/0 enable
set interfaces xe-0/1/0 unit 0 family inet
set interfaces xe-0/1/1 disable
set interfaces xe-0/1/2 disable
set interfaces ge-0/2/0 unit 0 family inet address 192.168.137.2/24
set interfaces ge-0/2/1 ether-options 802.3ad ae0
set interfaces ge-0/2/2 ether-options 802.3ad ae0
set interfaces ae0 aggregated-ether-options minimum-links 1
set interfaces ae0 aggregated-ether-options lacp active
set interfaces ae0 aggregated-ether-options lacp periodic fast
set interfaces ae0 unit 0 family ethernet-switching interface-mode trunk
set interfaces ae0 unit 0 family ethernet-switching vlan members 10
set interfaces ae0 unit 0 family ethernet-switching vlan members 20
set interfaces ae0 unit 0 family ethernet-switching vlan members PC-VLAN
set interfaces ae0 unit 0 family ethernet-switching vlan members MAC-VLAN
set interfaces ae0 unit 0 family ethernet-switching vlan members Management
set interfaces irb unit 10 family inet address 192.168.10.1/24
set interfaces irb unit 20 family inet address 192.168.20.1/24
set interfaces irb unit 99 family inet address 192.168.99.1/24
set interfaces me0 unit 0 family inet address 192.168.2.1/24 primary
set access address-assignment pool ezsetup-ge0 family inet network 192.168.1.0/24
set access address-assignment pool ezsetup-ge0 family inet range limited low 192.168.1.2
set access address-assignment pool ezsetup-ge0 family inet range limited high 192.168.1.253
set access address-assignment pool ezsetup-me0 family inet network 192.168.2.0/24
set access address-assignment pool ezsetup-me0 family inet range limited low 192.168.2.2
set access address-assignment pool ezsetup-me0 family inet range limited high 192.168.2.253
set access address-assignment pool PC-POOL family inet network 192.168.10.0/24
```



```
set access address-assignment pool PC-POOL family inet range PCs low 192.168.10.100
set access address-assignment pool PC-POOL family inet range PCs high 192.168.10.200
set access address-assignment pool PC-POOL family inet dhcp-attributes name-server 8.8.8.8
set access address-assignment pool PC-POOL family inet dhcp-attributes router 192.168.10.1
set access address-assignment pool MAC-POOL family inet network 192.168.20.0/24
set access address-assignment pool MAC-POOL family inet range MACs low 192.168.20.100
set access address-assignment pool MAC-POOL family inet range MACs high 192.168.20.200
set access address-assignment pool MAC-POOL family inet dhcp-attributes name-server
8.8.8.8
set access address-assignment pool MAC-POOL family inet dhcp-attributes router 192.168.20.1
set routing-options static route 0.0.0.0/0 next-hop 192.168.137.1
set protocols rstp interface ge-0/0/0 edge
set protocols rstp interface ge-0/0/1 edge
set protocols rstp interface ge-0/0/2 edge
set protocols rstp interface ae0
set vlans MAC-VLAN vlan-id 20
set vlans MAC-VLAN I3-interface irb.20
set vlans Management vlan-id 99
set vlans Management I3-interface irb.99
set vlans PC-VLAN vlan-id 10
set vlans PC-VLAN I3-interface irb.10
```

```
{master:0}
admin@FORD-JUN-SW1>
```

```
admin@FORD-JUN-SW2> show configuration
## Last commit: 2024-08-15 10:39:25 UTC by admin
version 20.4R3.8;
system {
    host-name FORD-JUN-SW2;
    root-authentication {
        encrypted-password
"$6$dxjltSlS$d4OyfHYvj6AMnJmTfuuHOVn3qPjVOzpJJpz.Gkr8Kbl2Pab.H3eY5Nq33skj0g0gsz
ldUtYyRfhl8fFZmEKfu1"; ## SECRET-DATA
    }
    login {
        user admin {
            uid 2008;
            class super-user;
            authentication {
```

```

        encrypted-password
"$6$xG9pyrz/$IS1nrjyEJAn5fNPdw.E39MQpeW5Z/jgiiZra37Kkv3wNzLapm9UHu4gWb3QlBCY
CBGQOjUuP4ID1bel5yiBz31"; ## SECRET-DATA
    }
}
user viewer {
    uid 2010;
    class read-only;
    authentication {
        encrypted-password
"$6$auFUwOWW$8P.9MiHaUQxK39Wd8K9b9Av7.SqAGK7wLzNcyUQfFfJJBc4pLDc0nfLqr01l
w1aJpEWEYPdfYPhzuVGJtWLrb/"; ## SECRET-DATA
    }
}
}
services {
    ssh {
        root-login deny;
        protocol-version v2;
    }
    web-management {
        http;
    }
}
syslog {
    user * {
        any emergency;
    }
    file messages {
        any notice;
        authorization info;
    }
}
}
chassis {
    aggregated-devices {
        ethernet {
            device-count 1;
        }
    }
}
}
interfaces {
    ge-0/0/0 {
        unit 0 {

```

```
        family ethernet-switching {
            interface-mode access;
            vlan {
                members MAC-VLAN;
            }
        }
    }
}
ge-0/0/1 {
    unit 0 {
        family ethernet-switching {
            interface-mode access;
            vlan {
                members MAC-VLAN;
            }
        }
    }
}
ge-0/0/2 {
    unit 0 {
        family ethernet-switching {
            interface-mode access;
            vlan {
                members MAC-VLAN;
            }
        }
    }
}
ge-0/2/1 {
    ether-options {
        802.3ad ae0;
    }
}
ge-0/2/2 {
    ether-options {
        802.3ad ae0;
    }
}
ae0 {
    aggregated-ether-options {
        minimum-links 1;
        lacp {
            active;
            periodic fast;
        }
    }
}
```

```

    }
}
unit 0 {
    family ethernet-switching {
        interface-mode trunk;
        vlan {
            members [ 10 20 PC-VLAN MAC-VLAN Management ];
        }
    }
}
}
irb {
    unit 99 {
        family inet {
            address 192.168.99.2/24;
        }
    }
}
me0 {
    unit 0 {
        family inet {
            address 192.168.2.2/24;
        }
    }
}
}
routing-options {
    static {
        route 0.0.0.0/0 next-hop 192.168.99.1;
    }
}
protocols {
    rstp {
        interface ge-0/0/0 {
            edge;
        }
        interface ge-0/0/1 {
            edge;
        }
        interface ge-0/0/2 {
            edge;
        }
        interface ae0;
    }
}

```

```

}
vlangs {
  MAC-VLAN {
    vlan-id 20;
  }
  Management {
    vlan-id 99;
    I3-interface irb.99;
  }
  PC-VLAN {
    vlan-id 10;
  }
}
{master:0}
admin@FORD-JUN-SW2> show configuration | display set
set version 20.4R3.8
set system host-name FORD-JUN-SW2
set system root-authentication encrypted-password
"$6$dXjltSIS$d4OyfHYvj6AMnJmTfuuHOVn3qPjVOzpJJpz.Gkr8Kbl2Pab.H3eY5Nq33skj0g0gsz
ldUtYyRfhl8fFZmEKfu1"
set system login user admin uid 2008
set system login user admin class super-user
set system login user admin authentication encrypted-password
"$6$XG9pyrz/$IS1nrjyEJAn5fNPdw.E39MQpeW5Z/jgiiZra37Kkv3wNzLapm9UHu4gWb3QIBCY
CBGQOjUuP4ID1bel5yiBz31"
set system login user viewer uid 2010
set system login user viewer class read-only
set system login user viewer authentication encrypted-password
"$6$auFUwOWW$8P.9MiHaUQxK39Wd8K9b9Av7.SqAGK7wLzNcyUQFFfJJBC4pLDc0nflqr01l
w1aJpEWEYPdfYPhzuVGJtWLrb/"
set system services ssh root-login deny
set system services ssh protocol-version v2
set system services web-management http
set system syslog user * any emergency
set system syslog file messages any notice
set system syslog file messages authorization info
set chassis aggregated-devices ethernet device-count 1
set interfaces ge-0/0/0 unit 0 family ethernet-switching interface-mode access
set interfaces ge-0/0/0 unit 0 family ethernet-switching vlan members MAC-VLAN
set interfaces ge-0/0/1 unit 0 family ethernet-switching interface-mode access
set interfaces ge-0/0/1 unit 0 family ethernet-switching vlan members MAC-VLAN
set interfaces ge-0/0/2 unit 0 family ethernet-switching interface-mode access
set interfaces ge-0/0/2 unit 0 family ethernet-switching vlan members MAC-VLAN
set interfaces ge-0/2/1 ether-options 802.3ad ae0

```

```

set interfaces ge-0/2/2 ether-options 802.3ad ae0
set interfaces ae0 aggregated-ether-options minimum-links 1
set interfaces ae0 aggregated-ether-options lacp active
set interfaces ae0 aggregated-ether-options lacp periodic fast
set interfaces ae0 unit 0 family ethernet-switching interface-mode trunk
set interfaces ae0 unit 0 family ethernet-switching vlan members 10
set interfaces ae0 unit 0 family ethernet-switching vlan members 20
set interfaces ae0 unit 0 family ethernet-switching vlan members PC-VLAN
set interfaces ae0 unit 0 family ethernet-switching vlan members MAC-VLAN
set interfaces ae0 unit 0 family ethernet-switching vlan members Management
set interfaces irb unit 99 family inet address 192.168.99.2/24
set interfaces me0 unit 0 family inet address 192.168.2.2/24
set routing-options static route 0.0.0.0/0 next-hop 192.168.99.1
set protocols rstp interface ge-0/0/0 edge
set protocols rstp interface ge-0/0/1 edge
set protocols rstp interface ge-0/0/2 edge
set protocols rstp interface ae0
set vlans MAC-VLAN vlan-id 20
set vlans Management vlan-id 99
set vlans Management I3-interface irb.99
set vlans PC-VLAN vlan-id 10

```

```

{master:0}
admin@FORD-JUN-SW2>

```

DHCP Verification

```

admin@FORD-JUN-SW1> show configuration access address-assignment

```

```

pool ezsetup-ge0 {
  family inet {
    network 192.168.1.0/24;
    range limited {
      low 192.168.1.2;
      high 192.168.1.253;
    }
  }
}
pool ezsetup-me0 {
  family inet {
    network 192.168.2.0/24;
    range limited {

```

```

        low 192.168.2.2;
        high 192.168.2.253;
    }
}
pool PC-POOL {
    family inet {
        network 192.168.10.0/24;
        range PCs {
            low 192.168.10.100;
            high 192.168.10.200;
        }
        dhcp-attributes {
            name-server {
                8.8.8.8;
            }
            router {
                192.168.10.1;
            }
        }
    }
}
pool MAC-POOL {
    family inet {
        network 192.168.20.0/24;
        range MACs {
            low 192.168.20.100;
            high 192.168.20.200;
        }
        dhcp-attributes {
            name-server {
                8.8.8.8;
            }
            router {
                192.168.20.1;
            }
        }
    }
}

```

```

{master:0}
admin@FORD-JUN-SW1>

```

Administrator: Command Prompt

```
C:\Windows\System32>ssh admin@192.168.99.1
The authenticity of host '192.168.99.1 (192.168.99.1)' can't be established.
ED25519 key fingerprint is SHA256:dHBQeOIxHLjEXuGMMQVaQKpoZ4a4455X9bwkssKyMX8.
This host key is known by the following other names/addresses:
  C:\Users\Terrance Ford/.ssh/known_hosts:1: 192.168.10.1
  C:\Users\Terrance Ford/.ssh/known_hosts:2: 192.168.137.2
  C:\Users\Terrance Ford/.ssh/known_hosts:3: 192.168.86.22
Are you sure you want to continue connecting (yes/no/[fingerprint])? yes
Warning: Permanently added '192.168.99.1' (ED25519) to the list of known hosts.
(admin@192.168.99.1) Password:
Last login: Fri Aug 16 13:58:06 2024
--- JUNOS 20.4R3.8 Kernel 32-bit  JNPR-11.0-20210618.f43645e_buil
At least one package installed on this device has limited support.
Run 'file show /etc/notices/unsupported.txt' for details.
{master:0}
admin@FORD-JUN-SW1> configure
Entering configuration mode

{master:0}[edit]
admin@FORD-JUN-SW1# exit
Exiting configuration mode

{master:0}
admin@FORD-JUN-SW1> exit

Connection to 192.168.99.1 closed.

C:\Windows\System32>ssh admin@192.168.99.2
(admin@192.168.99.2) Password:
Last login: Thu Aug 15 10:40:40 2024 from 192.168.137.1
--- JUNOS 20.4R3.8 Kernel 32-bit  JNPR-11.0-20210618.f43645e_buil
{master:0}
admin@FORD-JUN-SW2>

{master:0}
admin@FORD-JUN-SW2> configure
Entering configuration mode

{master:0}[edit]
admin@FORD-JUN-SW2# exit
eExiting configuration mode

{master:0}
admin@FORD-JUN-SW2> exit

Connection to 192.168.99.2 closed.

C:\Windows\System32>
```


