

Midterm Report

1. Ip Addressing

- a. Starting Network 172.21.0.0 /16
- b. Daenerys Stormborn 172.21.64.0 /18
- c. Joffrey 172.21.192.0 /18
- d. Ned Stark 172.21.0.0 /19
- e. Brienne Tarth 172.21.128.0 /19
- f. Walder Frey 172.21.48.0 /20
- g. John Snow 172.21.32.0 /21
- h. White Walkers 172.21.180.0 /23
- i. Master Aemon 172.21.183.0 /24

2. VTP

- a. VTP mode ____ (client ,server, transparent)
- b. VTP domain ____
- c. VTP password ____
- d. VTP version 2

3. Vlan

- a. vlan ____ (number)
 - i. name ____

4. Etherchannel

- a. etherchannel on switch
 - 1. shut down all interfaces
 - 2. interface range _____
 - a. channel-group ____ (number) mode ____

b. switchport trunk encapsulation _____

c. switchport mode _____

3. interface port-channel _____ (number)

a. bandwidth _____ (in kbps)

b.

b. etherchannel on trunk

1. shut down all interfaces

2. interface range _____

a. no switchport

b. channel-group _____ (number) mode _____

3. interface port-channel _____ (number)

a. bandwidth _____ (in kbps)

5. Trunking

a. switchport trunk encapsulation _____

b. switchport mode trunk _____

c. switchport trunk allowed vlan _____ (number)

6. PVST

a. spanning-tree mode _____

i. interface _____

1. spanning-tree vlan _____ (number) cost _____ (to set which interfaces are root)

7. Port Security

a. interface _____

i. switchport mode access

- ii. switchport port-security
- iii. switchport port-security mac-address _____ (static) vlan access
- iv. switchport port-security mac-address sticky (dynamic mac association)
vlan access
- v. max-associations _____ (number of hosts associated with a port)
- vi. switchport port-security violation _____ (shutdown, restrict)
- b. errdisable recovery interval _____ (time to recover)
- c. errdisable recovery cause psecure-violation

8. Wireless

- a. interface _____
 - i. ssid _____
 - 1. vlan _____
 - 2. authentication _____ (for encryption of network traffic)
 - 3. guest-mode (to broadcast ssid)
- b. station-role root
- c. channel _____
- d. encryption vlan ____ key
- e. encryption vlan ____ mode
- f. bridge ____ protocol ieee
- g. bridge ____ route ip
 - i. interface bvi _____
 - 1. ip address

9. Default Gateways

- a. for default gateways

- i. interface vlan ____
 - 1. ip address ____

10. DHCP (assigning ip address to hosts)

- a. ip dhcp pool ____
 - i. network ____
 - ii. default-router ____ (ip address of gateway)
 - iii. dns-server ____

11. RIP (routes to internet and routes back)

- a. router rip
 - i. version 2
 - ii. network ____
 - iii. distribute list ____ (to not send out certain network routes)
 - iv. offset list ____ (to add hops to routes to make a preferable one)
 - v. no auto-summary
 - vi. default-information originate (send out default routes through rip)

12. NAT

- a. interface ____
 - i. nat ____ (outside or inside)
 - ii. ip address ____ (number or 'dhcp')
- b. ip nat inside source list ____ (access-list with network info) interface ____ (do natting for specified internal ip address) overload (for pat)

13. Access lists

- a. access-list ____ (number) ____ (permit or deny).....

14. SSH

a. Did not complete

Configurations

black#-----

hostname black

ip dhcp excluded-address 172.21.0.1 172.21.0.2

!

ip dhcp pool stark

network 172.21.0.0 255.255.224.0

default-router 172.21.0.2

dns-server 8.8.8.8

!

ip domain name westeros

ip ssh version 2

!

interface GigabitEthernet0/0

ip address dhcp

ip nat outside

ip virtual-reassembly

duplex auto

speed auto

media-type rj45

negotiation auto

!

interface GigabitEthernet0/1

no ip address

shutdown

duplex auto

speed auto

media-type rj45

negotiation auto

!

interface FastEthernet1/0

ip address dhcp

duplex auto

speed auto

!

interface FastEthernet1/1

no ip address

shutdown

duplex auto

speed auto

!

interface FastEthernet2/0

ip address 192.168.21.18 255.255.255.252

ip nat inside

ip virtual-reassembly

duplex auto

speed auto

!

interface FastEthernet2/1

ip address 192.168.21.1 255.255.255.252

ip nat inside

ip virtual-reassembly

duplex auto

speed auto

!

router rip

version 2

offset-list 6 out 5 GigabitEthernet0/0

offset-list 3 in 2 FastEthernet2/1

network 172.31.0.0

network 192.168.21.0

default-information originate

distribute-list 7 in

no auto-summary

!

ip route 0.0.0.0 0.0.0.0 172.31.0.254

!

!

ip http server

no ip http secure-server

ip nat inside source list 2 interface GigabitEthernet0/0 overload

```
ip nat inside source static tcp 192.168.21.13 22 interface GigabitEthernet0/0 8888
```

```
!
```

```
access-list 2 permit any
```

```
access-list 6 permit 172.21.183.0 0.0.0.255
```

```
access-list 7 deny 172.21.192.0 0.0.63.255
```

```
access-list 7 deny 172.21.180.0 0.0.1.255
```

```
access-list 7 permit any
```

```
access-list 7 deny 172.21.48.0 0.0.15.255
```

```
access-list 100 permit tcp host 172.31.0.170 host 172.31.0.160 eq 22
```

```
black#-----
```

```
eastwatch#-----
```

```
hostname eastwatch
```

```
!
```

```
ip dhcp excluded-address 172.21.128.1 172.21.128.10
```

```
!
```

```
ip dhcp pool brienne
```

```
network 172.21.128.0 255.255.224.0
```

```
default-router 172.21.128.1
```

```
dns-server 8.8.8.8
```

```
!
```

```
interface GigabitEthernet0/0
```

```
ip address dhcp
```

```
ip nat outside
```


duplex auto

speed auto

media-type rj45

!

interface GigabitEthernet0/1

no ip address

shutdown

duplex auto

speed auto

media-type rj45

!

interface Serial1/0

no ip address

shutdown

no fair-queue

serial restart-delay 0

!

interface Serial1/1

no ip address

shutdown

serial restart-delay 0

!

interface Serial1/2

no ip address

shutdown

serial restart-delay 0

!

interface Serial1/3

no ip address

shutdown

serial restart-delay 0

!

interface FastEthernet2/0

ip address 192.168.21.22 255.255.255.252

ip nat inside

duplex auto

speed auto

!

interface FastEthernet2/1

ip address 192.168.21.25 255.255.255.252

ip nat inside

duplex auto

speed auto

!

router rip

version 2

offset-list 3 out 5 GigabitEthernet0/0

offset-list 6 in 2 FastEthernet2/0

offset-list 3 out 5 FastEthernet2/0

network 172.31.0.0

network 192.168.21.0

default-information originate

distribute-list 7 in

no auto-summary

!

ip nat inside source list 4 interface GigabitEthernet0/0 overload

!

access-list 2 permit 172.21.0.0 0.0.31.255

access-list 3 permit 172.21.128.0 0.0.31.255

access-list 4 permit any

access-list 7 deny 172.21.192.0 0.0.63.255

access-list 7 deny 172.21.180.0 0.0.1.255

access-list 7 deny 172.21.48.0 0.0.15.255

access-list 7 permit any

eastwatch#-----

kings#-----

!

hostname kings

!

no aaa new-model

system mtu routing 1500

ip routing

ip domain-name westeros

!

errdisable recovery cause psecure-violation

errdisable recovery interval 45

!

spanning-tree mode pvst

spanning-tree extend system-id

spanning-tree vlan 7 priority 24576

!

!

ip ssh version 2

!

!

interface Port-channel1

switchport trunk encapsulation dot1q

switchport mode trunk

bandwidth 300000

spanning-tree vlan 9 cost 1

!

interface FastEthernet0/1

switchport trunk encapsulation dot1q

switchport trunk allowed vlan 2-5

switchport mode trunk

spanning-tree vlan 2-3 cost 1

!

interface FastEthernet0/2

switchport trunk encapsulation dot1q

switchport trunk allowed vlan 6-9

switchport mode trunk

!

interface FastEthernet0/3

switchport access vlan 6

switchport mode access

switchport port-security

switchport port-security mac-address 685b.35c0.fabe vlan access

!

interface FastEthernet0/4

no switchport

ip address 192.168.21.10 255.255.255.252

!

interface FastEthernet0/7

switchport trunk encapsulation dot1q

switchport mode dynamic desirable

spanning-tree vlan 7 cost 3

!

interface FastEthernet0/8

```
switchport trunk encapsulation dot1q
```

```
spanning-tree vlan 7 cost 2
```

```
!
```

```
interface FastEthernet0/9
```

```
switchport trunk encapsulation dot1q
```

```
switchport mode trunk
```

```
spanning-tree vlan 7 cost 1
```

```
!
```

```
interface FastEthernet0/10
```

```
no switchport
```

```
ip address 192.168.21.13 255.255.255.252
```

```
!
```

```
!
```

```
interface FastEthernet0/22
```

```
switchport trunk encapsulation dot1q
```

```
switchport mode trunk
```

```
channel-group 1 mode desirable
```

```
!
```

```
interface FastEthernet0/23
```

```
switchport trunk encapsulation dot1q
```

```
switchport mode trunk
```

```
channel-group 1 mode desirable
```

```
!
```

```
interface FastEthernet0/24
```

```
switchport trunk encapsulation dot1q
```

```
switchport mode trunk
```

```
channel-group 1 mode desirable
```

```
!
```

```
interface GigabitEthernet0/1
```

```
!
```

```
interface GigabitEthernet0/2
```

```
!
```

```
interface Vlan1
```

```
no ip address
```

```
!
```

```
router rip
```

```
version 2
```

```
network 192.168.21.0
```

```
distribute-list 8 in
```

```
no auto-summary
```

```
!
```

```
ip classless
```

```
!
```

```
access-list 8 deny 172.21.48.0 0.0.15.255
```

```
access-list 8 permit any
```

```
kings#-----
```

```
tarth# -----
```

```
!
```

```
hostname tarth

!

!

ip subnet-zero

ip routing

!

!

!

spanning-tree mode pvst

no spanning-tree optimize bpdu transmission

spanning-tree extend system-id

spanning-tree vlan 3 priority 24576

!

!

interface Port-channel2

    switchport trunk encapsulation dot1q

    switchport trunk allowed vlan 5

    switchport mode trunk

    bandwidth 150000

!

interface Port-channel3

    switchport trunk encapsulation dot1q

    switchport mode dynamic desirable

    bandwidth 550000
```


spanning-tree vlan 2 cost 1

!

interface Port-channel4

no switchport

bandwidth 250000

ip address 192.168.21.33 255.255.255.252

!

interface FastEthernet1/0/1

switchport trunk encapsulation dot1q

switchport mode trunk

spanning-tree vlan 9 cost 1

!

interface FastEthernet1/0/2

!

interface FastEthernet1/0/3

!

interface FastEthernet1/0/4

no switchport

ip address 192.168.21.5 255.255.255.252

!

interface FastEthernet1/0/5

switchport trunk encapsulation dot1q

switchport trunk allowed vlan 5

switchport mode trunk

```
channel-group 2 mode desirable
```

```
!
```

```
interface FastEthernet1/0/6
```

```
switchport trunk encapsulation dot1q
```

```
switchport trunk allowed vlan 5
```

```
switchport mode trunk
```

```
channel-group 2 mode desirable
```

```
!
```

```
interface FastEthernet1/0/7
```

```
switchport trunk encapsulation dot1q
```

```
switchport mode trunk
```

```
spanning-tree vlan 7 cost 1
```

```
!
```

```
interface FastEthernet1/0/8
```

```
switchport trunk encapsulation dot1q
```

```
switchport mode dynamic desirable
```

```
spanning-tree vlan 7 cost 2
```

```
!
```

```
interface FastEthernet1/0/9
```

```
switchport trunk encapsulation dot1q
```

```
spanning-tree vlan 7 cost 3
```

```
!
```

```
interface FastEthernet1/0/10
```

```
switchport trunk encapsulation dot1q
```

switchport mode dynamic desirable

channel-group 3 mode passive

!

interface FastEthernet1/0/11

switchport trunk encapsulation dot1q

switchport mode dynamic desirable

channel-group 3 mode passive

!

interface FastEthernet1/0/12

switchport trunk encapsulation dot1q

switchport mode dynamic desirable

channel-group 3 mode passive

!

interface FastEthernet1/0/13

switchport trunk encapsulation dot1q

switchport mode dynamic desirable

channel-group 3 mode passive

!

interface FastEthernet1/0/14

switchport trunk encapsulation dot1q

switchport mode dynamic desirable

channel-group 3 mode passive

!

interface FastEthernet1/0/15

switchport trunk encapsulation dot1q

switchport mode dynamic desirable

channel-group 3 mode passive

!

interface FastEthernet1/0/16

!

interface FastEthernet1/0/17

no switchport

ip address 192.168.21.2 255.255.255.252

!

interface FastEthernet1/0/18

no switchport

ip address 192.168.21.26 255.255.255.252

!

interface FastEthernet1/0/19

no switchport

no ip address

channel-group 4 mode desirable

!

interface FastEthernet1/0/20

no switchport

no ip address

channel-group 4 mode desirable

!

```
interface FastEthernet1/0/21
```

```
no switchport
```

```
no ip address
```

```
channel-group 4 mode desirable
```

```
!
```

```
interface Vlan1
```

```
no ip address
```

```
!
```

```
interface Vlan2
```

```
ip address 172.21.0.5 255.255.224.0
```

```
ip helper-address 192.168.21.1
```

```
no ip redirects
```

```
standby 1 ip 172.21.0.2
```

```
standby 1 priority 105
```

```
standby 1 preempt
```

```
standby 1 track FastEthernet1/0/17
```

```
!
```

```
interface Vlan3
```

```
ip address 172.21.128.11 255.255.224.0
```

```
ip helper-address 192.168.21.25
```

```
no ip redirects
```

```
standby 1 priority 105
```

```
standby 2 ip 172.21.128.1
```

```
standby 2 priority 100
```

standby 2 preempt

standby 2 track FastEthernet1/0/17

!

interface Vlan4

ip address 172.21.32.1 255.255.248.0

!

interface Vlan6

ip address 172.21.183.12 255.255.255.0

no ip redirects

standby 6 ip 172.21.183.1

standby 6 priority 100

!

interface Vlan7

ip address 172.21.192.12 255.255.192.0

no ip redirects

standby 7 ip 172.21.192.2

standby 7 priority 100

!

interface Vlan9

ip address 172.21.180.11 255.255.254.0

!

router rip

version 2

offset-list 6 in 5 Vlan2

offset-list 6 in 5 Vlan7

offset-list 6 in 2 FastEthernet1/0/17

offset-list 3 out 5 FastEthernet1/0/17

offset-list 3 out 5 Port-channel4

network 172.21.0.0

network 192.168.21.0

distribute-list 8 in

no auto-summary

!

ip classless

access-list 2 permit 172.21.0.0 0.0.31.255

access-list 3 permit 172.21.128.0 0.0.31.255

access-list 6 permit 172.21.183.0 0.0.0.255

access-list 8 deny 172.21.48.0 0.0.15.255

access-list 8 permit any

tarth#-----

twins#-----

!

hostname twins

!

track 1 interface FastEthernet0/8 line-protocol

ip routing

ip dhcp excluded-address 172.21.192.1 172.21.192.10

ip dhcp excluded-address 172.21.183.1 172.21.183.10

!

ip dhcp pool joffrey

network 172.21.192.0 255.255.192.0

default-router 172.21.192.2

dns-server 8.8.8.8

lease 2

!

ip dhcp pool aemon

network 172.21.183.0 255.255.255.0

default-router 172.21.183.1

dns-server 8.8.8.8

!

spanning-tree mode pvst

spanning-tree extend system-id

spanning-tree vlan 9 priority 24576

!

interface Port-channel1

switchport trunk encapsulation dot1q

switchport mode trunk

bandwidth 300000

spanning-tree vlan 3 cost 1

!

interface Port-channel2

switchport trunk encapsulation dot1q

switchport trunk allowed vlan 5

switchport mode trunk

bandwidth 150000

!

interface Port-channel3

switchport trunk encapsulation dot1q

bandwidth 550000

spanning-tree vlan 2,7 cost 1

!

interface Port-channel4

no switchport

bandwidth 250000

ip address 192.168.21.34 255.255.255.252

!

interface FastEthernet0/1

switchport trunk encapsulation dot1q

switchport mode trunk

spanning-tree vlan 2 cost 1

!

interface FastEthernet0/2

!

interface FastEthernet0/3

switchport access vlan 8

switchport mode access

switchport port-security maximum 2

switchport port-security

switchport port-security violation restrict

switchport port-security mac-address sticky

!

interface FastEthernet0/4

!

interface FastEthernet0/5

switchport trunk encapsulation dot1q

switchport trunk allowed vlan 5

switchport mode trunk

channel-group 2 mode desirable

!

interface FastEthernet0/6

switchport trunk encapsulation dot1q

switchport trunk allowed vlan 5

switchport mode trunk

channel-group 2 mode desirable

!

interface FastEthernet0/7

no switchport

ip address 192.168.21.17 255.255.255.252

!

interface FastEthernet0/8

no switchport

ip address 192.168.21.21 255.255.255.252

!

interface FastEthernet0/9

no switchport

ip address 192.168.21.14 255.255.255.252

!

interface FastEthernet0/10

switchport trunk encapsulation dot1q

channel-group 3 mode active

!

interface FastEthernet0/11

switchport trunk encapsulation dot1q

channel-group 3 mode active

!

interface FastEthernet0/12

switchport trunk encapsulation dot1q

channel-group 3 mode active

!

interface FastEthernet0/13

switchport trunk encapsulation dot1q

channel-group 3 mode active

!

interface FastEthernet0/14

```
switchport trunk encapsulation dot1q
```

```
channel-group 3 mode active
```

```
!
```

```
interface FastEthernet0/15
```

```
switchport trunk encapsulation dot1q
```

```
channel-group 3 mode active
```

```
!
```

```
interface FastEthernet0/19
```

```
no switchport
```

```
no ip address
```

```
channel-group 4 mode auto
```

```
!
```

```
interface FastEthernet0/20
```

```
no switchport
```

```
no ip address
```

```
channel-group 4 mode auto
```

```
!
```

```
interface FastEthernet0/21
```

```
no switchport
```

```
no ip address
```

```
channel-group 4 mode auto
```

```
!
```

```
interface FastEthernet0/22
```

```
switchport trunk encapsulation dot1q
```

switchport mode trunk

channel-group 1 mode desirable

!

interface FastEthernet0/23

switchport trunk encapsulation dot1q

switchport mode trunk

channel-group 1 mode desirable

!

interface FastEthernet0/24

switchport trunk encapsulation dot1q

switchport mode trunk

channel-group 1 mode desirable

!

interface Vlan1

no ip address

!

interface Vlan2

ip address 172.21.0.6 255.255.224.0

standby 1 ip 172.21.0.2

standby 1 priority 101

!

interface Vlan3

ip address 172.21.128.12 255.255.224.0

standby 2 ip 172.21.128.1

standby 2 priority 101

!

interface Vlan6

ip address 172.21.183.11 255.255.255.0

standby 6 ip 172.21.183.1

standby 6 priority 105

standby 6 preempt

standby 6 track 1 decrement 10

!

interface Vlan7

ip address 172.21.192.11 255.255.192.0

standby 7 ip 172.21.192.2

standby 7 priority 105

standby 7 preempt

standby 7 track 1 decrement 10

!

interface Vlan8

ip address 172.21.48.11 255.255.240.0

!

router rip

version 2

offset-list 3 in 5 Vlan2

offset-list 4 in 5 Vlan3

offset-list 4 in 5 Vlan6

```
offset-list 5 in 3 Vlan7
offset-list 2 in 2 FastEthernet0/8
offset-list 6 out 4 FastEthernet0/8
offset-list 6 in 2 FastEthernet0/17
offset-list 2 in 2 Port-channel4
offset-list 6 out 3 Port-channel4
network 172.21.0.0
network 192.168.21.0
default-information originate
distribute-list 8 out
no auto-summary
!
ip classless
ip route 0.0.0.0 0.0.0.0 192.168.21.22
ip http server
ip http secure-server
!
ip sla enable reaction-alerts
access-list 2 permit 172.21.0.0 0.0.31.255
access-list 3 permit 172.21.128.0 0.0.31.255
access-list 4 permit 172.21.32.0 0.0.7.255
access-list 5 permit 172.21.64.0 0.0.63.255
access-list 6 permit 172.21.183.0 0.0.0.255
access-list 8 deny 172.21.48.0 0.0.15.255
```

access-list 8 permit any

access-list 9 permit 172.21.180.0 0.0.1.255

access-list 10 permit 192.168.21.0 0.0.0.25

twins#-----

winterfell#-----

!

hostname winterfell

!

ip dhcp excluded-address 172.21.64.1 172.21.64.10

!

ip dhcp pool dannerys

network 172.21.64.0 255.255.192.0

default-router 172.21.64.1

dns-server 8.8.8.8

!

!

spanning-tree vlan 2 priority 8192

!

bridge irb

!

!

interface Dot11Radio0

no ip address

!

encryption vlan 2 key 2 size 128bit 0 12345678901234567890123456 transmit-key

encryption vlan 2 mode ciphers tkip wep128

!

ssid 1b_joffrey

vlan 7

authentication open

guest-mode

!

ssid 1b_stark

vlan 2

max-associations 2

authentication open

authentication key-management wpa optional

wpa-psk ascii 0 batman01

!

speed basic-1.0 basic-2.0 basic-5.5 6.0 9.0 basic-11.0 12.0 18.0 24.0 36.0 48.0 54.0

channel 2427

!

interface Dot11Radio0.2

encapsulation dot1Q 2

no cdp enable

bridge-group 2

bridge-group 2 subscriber-loop-control

bridge-group 2 spanning-disabled

bridge-group 2 block-unknown-source

no bridge-group 2 source-learning

no bridge-group 2 unicast-flooding

!

interface Dot11Radio0.7

encapsulation dot1Q 7

no cdp enable

bridge-group 7

bridge-group 7 subscriber-loop-control

bridge-group 7 spanning-disabled

bridge-group 7 block-unknown-source

no bridge-group 7 source-learning

no bridge-group 7 unicast-flooding

!

interface Dot11Radio1

no ip address

shutdown

speed basic-6.0 9.0 basic-12.0 18.0 basic-24.0 36.0 48.0 54.0

station-role root

!

interface FastEthernet0

ip address 192.168.21.6 255.255.255.252

duplex auto

speed auto

!

interface FastEthernet1

ip address 192.168.21.9 255.255.255.252

duplex auto

speed auto

!

interface FastEthernet2

switchport mode trunk

no ip address

spanning-tree vlan 3 cost 1

!

interface FastEthernet3

switchport mode trunk

no ip address

spanning-tree vlan 2 cost 1

!

interface FastEthernet4

switchport mode trunk

no ip address

spanning-tree vlan 2 cost 1

!

interface FastEthernet5

switchport mode trunk

no ip address

spanning-tree vlan 7 cost 1

spanning-tree vlan 9 cost 1

!

interface FastEthernet6

no ip address

shutdown

!

interface FastEthernet7

no ip address

shutdown

!

interface FastEthernet8

no ip address

shutdown

!

interface FastEthernet9

switchport access vlan 2

no ip address

shutdown

!

interface Vlan1

no ip address

!

interface Vlan2

no ip address

bridge-group 2

!

interface Vlan5

ip address 172.21.64.1 255.255.192.0

!

interface Vlan7

no ip address

bridge-group 7

!

interface BVI2

ip address 172.21.0.1 255.255.224.0

!

interface BVI7

ip address 172.21.192.1 255.255.192.0

!

router rip

version 2

offset-list 3 in 2 BVI2

offset-list 3 in 2 BVI7

offset-list 3 in 2 FastEthernet0

network 172.21.0.0

network 192.168.21.0

distribute-list 8 in

no auto-summary

!

ip classless

!

!

access-list 2 permit 172.21.0.0 0.0.31.255

access-list 8 deny 172.21.48.0 0.0.15.255

access-list 8 permit any

!

!

bridge 2 protocol ieee

bridge 2 route ip

bridge 7 protocol ieee

bridge 7 route ip

!

winterfell#-----