Εργαστήριο Δικτύων Υπολογιστών

Εντολές

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1 FreeBSD

1.1 sysrc

```
sysrc firewall_enable="YES"
sysrc firewall_nat_enable="YES"
sysrc firewall_logif="YES"
sysrc sshd_enable="YES"
sysrc hostname="PC.ntua.lab"
sysrc syslogd_flags="-scc"
sysrc defaultrouter="<IP address>"
sysrc gateway_enable="YES"
sysrc ifconfig_em0="DHCP"
sysrc -a
sysrc -d <variable>
sysrc <variable>
```

1.2 ifconfig

```
ifconfig <interface> up
ifconfig <interface> down
ifconfig <interface> delete
ifconfig <interface> <IPaddr>/<prefixlen>
ifconfig <interface> mtu <mtu_size>
ifconfig <interface> ether <MACaddr>

ifconfig bridgeX create
ifconfig bridgeX destroy
ifconfig bridgeX addm <iface1> addm <iface2> addm <iface3> up
ifconfig bridgeX deletem <interface>
ifconfig bridgeX addr
ifconfig bridgeX flush
ifconfig bridgeX stp <iface1> stp <iface2> stp <iface3>
ifconfig bridgeX -stp <iface1> -stp <iface2> -stp <iface3>
ifconfig bridgeX priority <value>
ifconfig bridgeX ifpriority <interface> <value>
```

```
ifconfig bridgeX ifpathcost <interface> <value>

ifconfig laggX create
ifconfig laggX up laggport <interface>
ifconfig laggX -laggport <interface>
ifconfig laggX laggproto <proto>
    Where:
        proto = failover | lacp | loadbalance | roundrobin | broadcast | none

ifconfig em0.5 create vlan 5 vlandev em0 inet <IPaddr>/<prefixlen>
ifconfig em0.5 create
```

1.3 route

```
route add [-net | -host] <dest> <gateway>
route add [-net | -host] <dest> -interface <interface>
route add default <gateway>
route change <dest> <gateway>
route show <dest>
route del <dest>
route flush
```

1.4 Other

```
netstat (-i | -a | -s)

sysctl net.inet.ip.forwarding=1

arp (-a | -d x.x.x.x | -da | -s | -s x.x.x.x yy:yy:yy:yy:yy:yy)

service netif restart

tcpdump (-s snaplen | -l | -w | -r) [ proto[expr:size] ]
```

1.5 IPFW

1.5.1 Kernel modules

```
kldload <module>
kldunload <module>
kldstat
```

1.5.2 Firewall

```
ipfw add <rule>
ipfw delete <number>
ipfw flush
ipfw list
```

```
ipfw show
ipfw zero
ipfw nat
ipfw add <rule_nr> <action> [log] <proto> \
    from <src> <src_port> to <dst> <dst_port> <options>
        Where:
            action = allow | deny | check-state | nat <nat_nr> | skipto <number>
            proto = ip/all | ip4/ipv4 | ip6/ipv6 | tcp | udp
            src/dst = any | me | <address>
            src_port/dst_port = <port_name> | <port_number>
            options = in/out | recv/xmit/via | icmptypes ...
                             | setup | established | keep-state
```

1.5.3 NAT

```
ipfw nat <nat_number> config <nat-configuration>
    Where <nat-configuration> options are:
        ip <ip_address>
        if <nic>
        same_ports
        reset
        deny_in
        unreg_only
        redirect_addr <localIP> <publicIP>
        redirect_proto <proto> <localIP> [<publicIP> [<remoteIP>]]
        redirect_port <proto> <targetIP>:<targetPort> \
            [<aliasIP>:]<aliasPort> [<remoteIP>[:<remotePort>]]
        ipfw nat <nat_number> show config
        ipfw nat show config
```

1.5.4 IPv6

```
ipfw nat64lsn <name> create <options>
ipfw nat64clat <name> create <options>

### STATEFUL NAT64 OPTIONS ###
prefix6 <ipv6_prefix>/<length>
prefix4 <ipv4_prefix>/<length>

### XLAT464 OPTIONS ###
clat_prefix <ipv6_prefix>/<length>
plat_prefix <ipv6_prefix>/<length>

### UNIVERSAL OPTIONS ###
allow_private
log

ipfw nat64lsn/nat64clat <name> show
ipfw nat64lsn <name> show states
```

2 Quagga

2.1 General

```
do show version
do show interface [iface]
do show ip forwarding
do show ip route

do show running-config / write terminal
do write memory / write file

hostname <host>
password <pass>
enable password <pass>
service password-encryption
ip forwarding
ip route <network> <gateway> [distance]
no <command>
interface <ifname>
router <protocol>

(config-if)# ip address
(config-if)# description
(config-if)# bandwidth
(config-if)# shutdown
(config-if)# link-detect
```

2.2 RIP

```
router rip

(config-router)# network <netaddr>
(config-router)# network <ifname>
(config-router)# version <1-2>
(config-router)# passive-interface <ifname>
(config-router)# neighbor <IPaddr>
(config-router)# timers basic <update> <timeout> <garbage>

do show ip rip
do show ip route rip
do show ip rip status
```

2.3 OSPF

```
router ospf

(config-router)# network <netaddr> area <areaID>
(config-router)# passive-interface <ifname>
```

```
(config-router)# router-id <id>
(config-router)# area <area-id> stub
(config-router)# ospf network <network>

do show ip ospf
do show ip ospf route
do show ip route ospf
do show ip ospf interface <ifname>
do show ip ospf neighbor <ifname>
do show ip ospf database
do show ip ospf database <LSAtype> [self-originate, adv-router <router-id>]
do show ip ospf border-routers
```

2.4 BGP

```
router bgp <ASnumber>

(config-router)# network <netaddr>
(config-router)# neighbor <IPaddr> remote-as <ASnumber>
(config-router)# neighbor <IPaddr> next-hop-self
(config-router)# neighbor <IPaddr> shutdown
(config-router)# bgp router-id <IPaddr>
(config-router)# redistribute <static|connected|rip|ospf>
(config-router)# aggregate-address

do show ip bgp
do show ip route bgp
do show ip bgp summary
do show ip bgp <netaddr>
do show ip bgp neighbors
do show ip bgp neighbors <IPaddr>
do show ip bgp neighbors <IPaddr> advertised-routes
do show ip bgp neighbors <IPaddr> routes
do clear ip bgp <IPaddr>

neighbor <IPaddr> prefix-list <PrefixListName> [in|out]
ip prefix-list <PrefixListName> (permit|deny) <prefix>

neighbor <IPaddr> route-map <RouteMapName> [in|out]
route-map <RouteMapName> (permit|deny) <order>
```