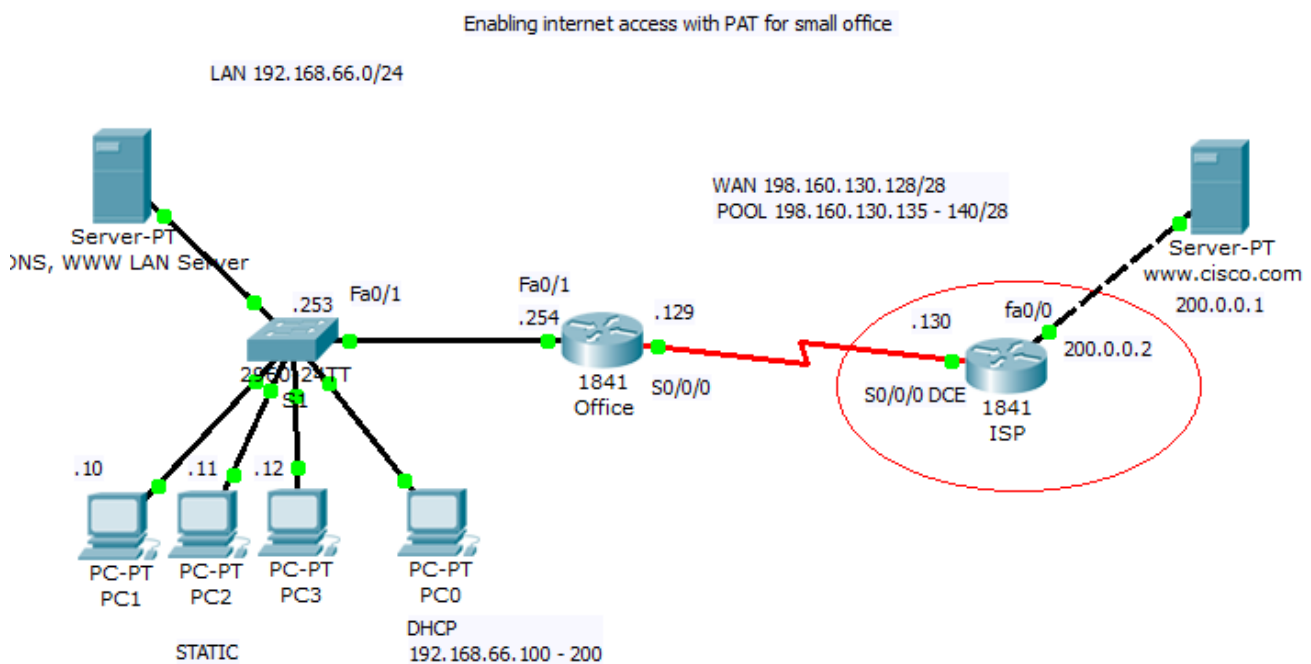


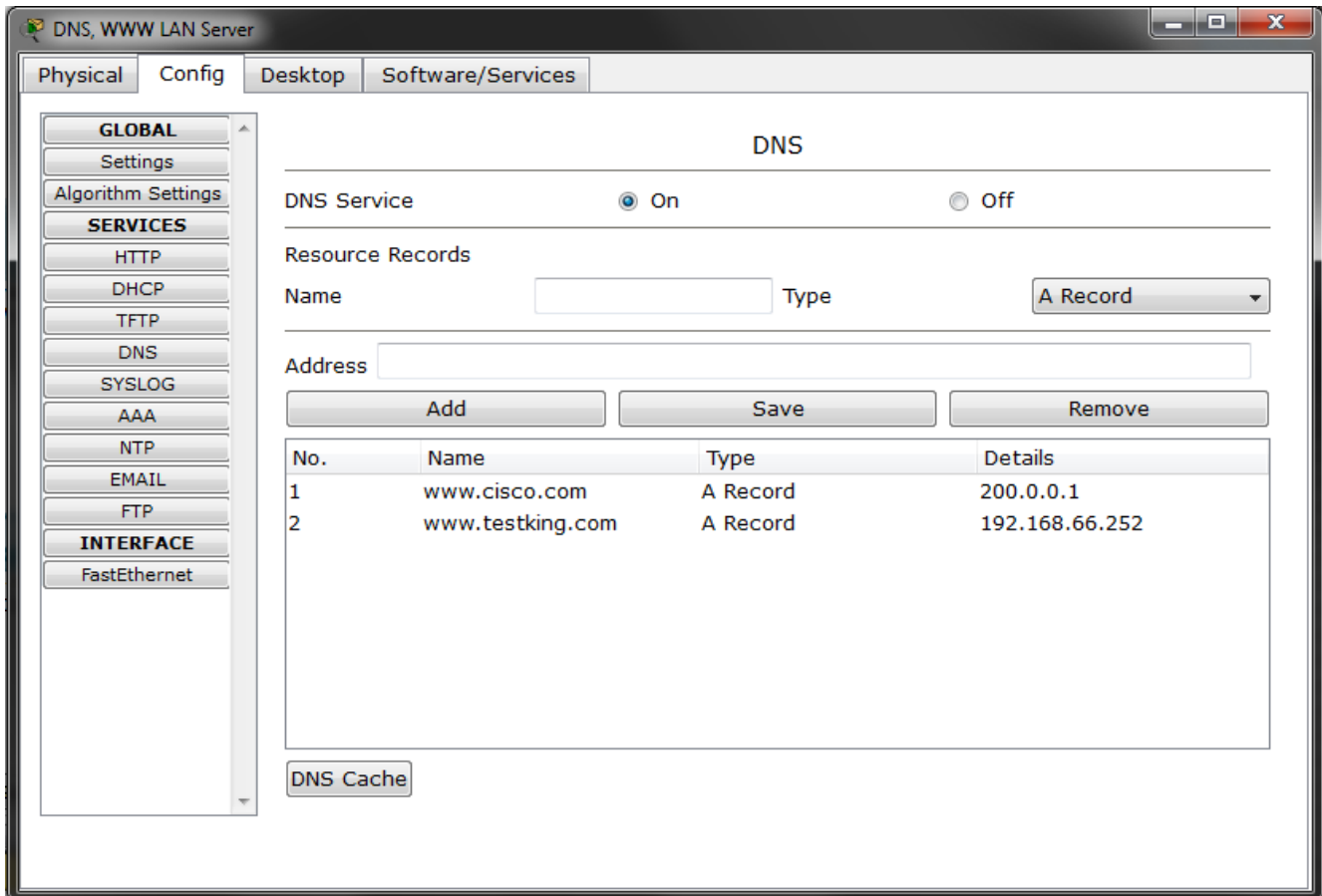
1. Enabling internet access with PAT for small office

Small office need acces to internet. Internal office network use 192.168.66.0/24 network rane and contain four clients with static preconfigured IP and DHCP range 192.168.66.100-200 (ip dhcp excluded-address 192.168.66.1 – .99 and 201. – 254). Switching topology is without redundancy with Office 1841 router ast in router on a stick scenario. ISP is simulated by ISP router with remote www.cisco.com server.

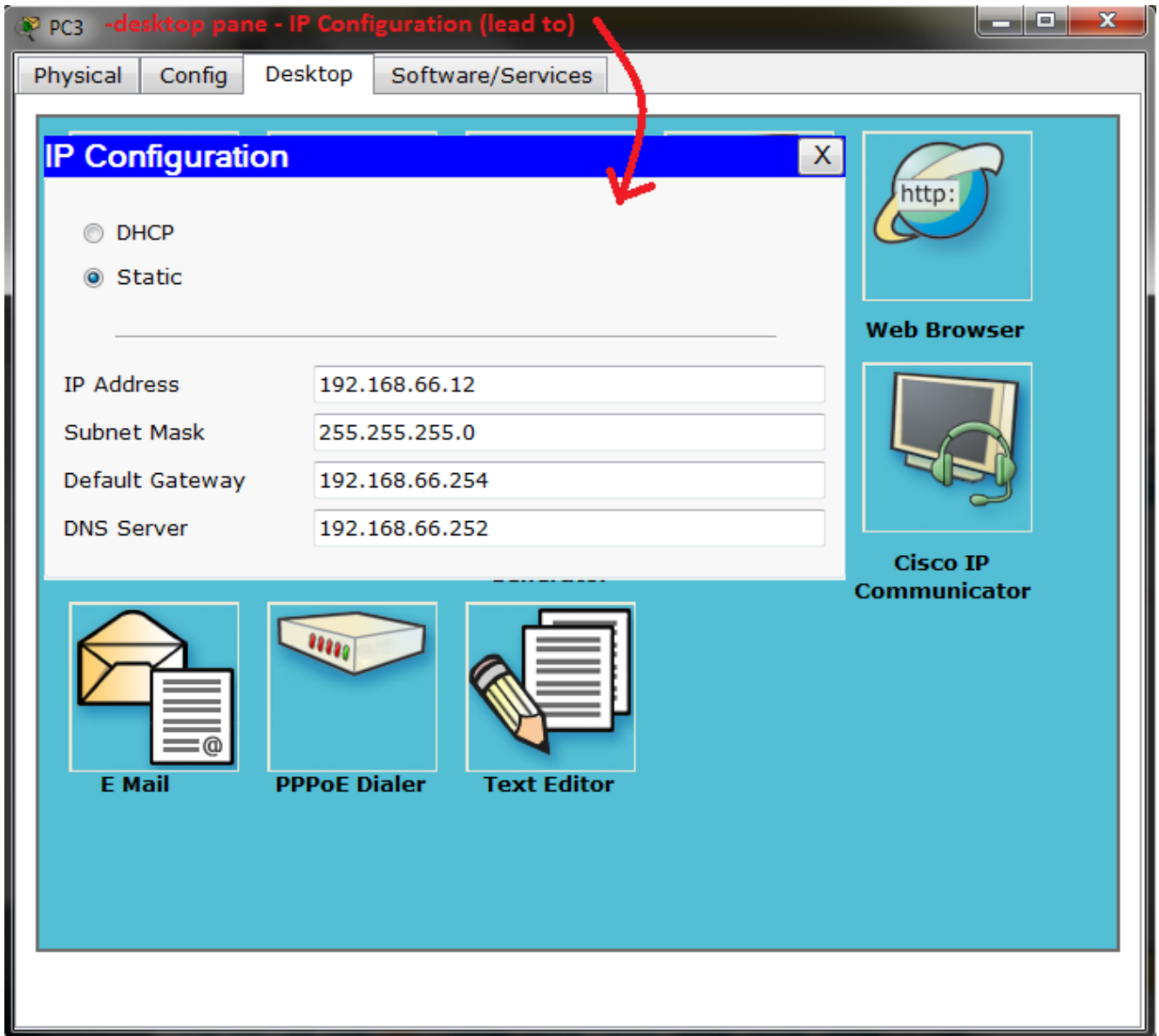
Network topology:



Office server dns configuration that resolve name www.testking.com and www.cisco.com is configured:



Pc with static ip are configured:



Device configs are: (!!! Some ! was ommited from config!!!)

1) Switch S1

```
hostname S1
!  
!  
!  
interface FastEthernet0/1  
!  
interface FastEthernet0/2  
!  
interface FastEthernet0/3  
!
```

```
interface FastEthernet0/4
!
interface FastEthernet0/5
!
interface FastEthernet0/6
!
interface FastEthernet0/7
!
interface FastEthernet0/8
!
interface FastEthernet0/9
!
interface FastEthernet0/10
!
interface FastEthernet0/11
!
interface FastEthernet0/12
!
interface FastEthernet0/13
!
interface FastEthernet0/14
!
interface FastEthernet0/15
!
interface FastEthernet0/16
!
interface FastEthernet0/17
!
interface FastEthernet0/18
!
interface FastEthernet0/19
!
interface FastEthernet0/20
!
interface FastEthernet0/21
!
interface FastEthernet0/22
!
interface FastEthernet0/23
!
interface FastEthernet0/24
```

```

!
interface GigabitEthernet1/1
!
interface GigabitEthernet1/2
!
interface Vlan1
  no ip address
  shutdown
!
interface Vlan99
  ip address 192.168.66.253 255.255.255.0
ip default-gateway 192.168.66.254
line con 0
line vty 0 4
  login
line vty 5 15
  login
end

```

There are no VLAN configured – convenient only in very small network with full trustworthy environment.

2) Router Office

```

hostname Office
ip dhcp excluded-address 192.168.66.1 192.168.66.99
ip dhcp excluded-address 192.168.66.201 192.168.66.254
ip dhcp pool Office_LAN
  network 192.168.66.0 255.255.255.0
  default-router 192.168.66.254
  dns-server 192.168.66.252
username ISP password 0 pppcisco
interface FastEthernet0/0
  no ip address
  duplex auto
  speed auto
  shutdown
!
interface FastEthernet0/1
  ip address 192.168.66.254 255.255.255.0
  duplex auto
  speed auto

```

```
!  
interface Serial0/0/0  
  ip address 198.160.130.129 255.255.255.240  
  encapsulation ppp  
  ppp authentication pap  
  ppp pap sent-username Office password 0 pppcisco  
!  
interface Serial0/0/1  
  no ip address  
  shutdown  
!  
interface Vlan1  
  no ip address  
  shutdown  
!  
ip nat pool PATforLAN 198.160.130.135 198.160.130.140 netmask  
255.255.255.240  
ip nat inside source list PATenabled pool PATforLAN overload  
ip classless  
ip route 0.0.0.0 0.0.0.0 Serial0/0/0  
!  
ip access-list standard PATenabled  
  permit 192.168.66.0 0.0.0.255  
  deny any  
!  
line con 0  
line vty 0 4  
  login  
!  
end
```

3) ISP router

```
hostname ISP  
!  
username Office password 0 pppcisco  
!  
interface FastEthernet0/0  
  ip address 200.0.0.2 255.255.255.252  
  duplex auto  
  speed auto
```

```
!  
interface FastEthernet0/1  
  no ip address  
  duplex auto  
  speed auto  
  shutdown  
!  
interface Serial0/0/0  
  ip address 198.160.130.130 255.255.255.240  
  encapsulation ppp  
  ppp authentication pap  
  ppp pap sent-username ISP password 0 pppcisco  
  clock rate 250000  
!  
interface Serial0/0/1  
  no ip address  
  shutdown  
!  
interface Vlan1  
  no ip address  
  shutdown  
!  
ip classless  
ip route 192.168.66.0 255.255.255.0 Serial0/0/0  
!  
line con 0  
line vty 0 4  
  login  
!  
end
```

Link between ISP and Office router is serial PPP line with older PAP authentication.

(!!! Some ! was ommited from config!!!)