

综合辅导：网络地址转换(NAT)基础知识 PDF转换可能丢失图片或格式，建议阅读原文

[https://www.100test.com/kao\\_ti2020/237/2021\\_2022\\_\\_E7\\_BB\\_BC\\_E5\\_90\\_88\\_E8\\_BE\\_85\\_E5\\_c101\\_237140.htm](https://www.100test.com/kao_ti2020/237/2021_2022__E7_BB_BC_E5_90_88_E8_BE_85_E5_c101_237140.htm) NAT简介 NAT

( Network Address Translation ) 的功能，就是指在一个网络内部，根据需要可以随意自定义的IP地址，而不需要经过申请。在网络内部，各计算机间通过内部的IP地址进行通讯。而当内部的计算机要与外部internet网络进行通讯时，具有NAT功能的设备（比如：路由器）负责将其内部的IP地址转换为合法的IP地址（即经过申请的IP地址）进行通信。 NAT 的应用环境：

情况1：一个企业不想让外部网络用户知道自己的网络内部结构，可以通过NAT将内部网络与外部Internet 隔离开，则外部用户根本不知道通过NAT设置的内部IP地址。

CISCO NAT经典基础配置 全部采用端口：ISP分配

```
的IP202.99.160.129interface fastethernet0/0ip address 192.168.1.1
255.255.255.0duplex autospeed autoin nat insideno
```

```
shutdowninterface fastethernet0/1ip address 192.168.2..1
```

```
255.255.255.0duplex autospeed autoin nat outsideno shutdownip
```

```
nat pool OnlyYou 202.99.160.130 202.99.160.130 netmask
```

```
255.255.255.252//OnlyYou代表地址池的名称。 2
```

```
个202.99.160.130是代表只用一个ip做转换后ip.access-list 1
```

```
permit 192.168.1.0 0.0.0.255access-list 1 permit 192.168.2.0
```

```
0.0.0.255ip nat inside source list1 pool OnlyYou overload 动态地
```

址转换 端口：ISP分配的IP 有：202.99.160.130~190

```
255.255.255.192Interface fastethernet0/1Ip address 192.168.1.1
```

```
255.255.255.0Ip address 192.168.2.1 255.255.255.0 secondaryDuplex
```

```
autoSpeed autoIp nat insideNo shutdown Interface serial 0/0Ip
address 202.99.160.129 255.255.255.192Duplex autoSpeed autoIp
nat outsideNo shutdwonIp nat pool OutPort 202.99.160.190
202.99.160.190 netmask 255.255.255.192Ip nat pool OutPool
202.99.160.130 202.99.160.190 netmask 255.255.255.192Ip nat inside
source list1 pool OutPort //192.168.1.0段主机全部转
成202.99.160.190Ip nat inside source list2 pool OutPool//出于访
问ftp站点等考虑：192.168.2.0和192.168.3.0段主机全部//转
成202.99.160.130到202.99.160.189中的所有地址。Access-list1
permit 192.168.1.0 0.0.0.255Access-list2 permit 192.168.2.0
0.0.0.255Access-list2 permit 192.168.3.0 0.0.0.255 静态地址转换
：ISP分配的IP地址是：211.82.220.80~211.82.220.87
、211.82.220.81 255.255.255.248.要求Intranet上
的Web.E-mail.Ftp.Media可以被外部访问。Interface
fastethernet0/0Ip address 192.168.1.1 255.255.255.0Duplex
autoSpeed autoIp nat insideNo shutdownInterface fastethernet0/1Ip
address 211.82.220.81 255.255.255.248Speed autoDuplex autoIp nat
outsideNo shutdownIp nat pool Outpool 211.82.220.86
211.82.20.86 netmask 255.255.255.248Access-list 1 permit
192.168.1.2 0.0.0.255Access-list 1 permit 192.168.1.3
0.0.0.255Access-list 1 permit 192.168.1.4 0.0.0.255Access-list 1
permit 192.168.1.5 0.0.0.255Ip nat inside source list1 pool Outpool
overloadIp nat inside source static 192.168.1.2 211.82.220.82Ip nat
inside source static 192.168.1.3 211.82.220.83Ip nat inside source
static 192.168.1.4 211.82.220.84Ip nat inside source static 192.168.1.5
211.82.220.85 NAT映射：如果ISP提供的IP地址比较多还可
```

以，但如果不是的时候（如就两个小时），一个用于内网地址转换，另一个用于对外网提供服务。ISP提供的内网上网IP.

```
Interface ethernet0 Ip address 192.168.1.1 255.255.255.0
Duplex auto Speed auto Ip nat inside No shutdown Interface
fastethernet0/0 Ip address 211.82.220.129 255.255.255.248 Duplex
auto Speed auto Ip nat outside No shutdown Access-list 1 permit
192.168.1.0 0.0.0.255 Ip nat pool Everybody 211.82.220.130
211.82.220.130 network 255.255.255.252 Ip nat inside source list1
pool Everybody overload Ip nat inside source static tcp 192.168.1.2
80 202.99.220.130 80 Ip nat inside source static tcp 192.168.1.3 21
202.99.220.130 21 Ip nat inside source static tcp 192.168.1.4 25
202.99.220.130 25 Ip nat inside source static tcp 192.168.1.5 110
202.99.220.130 110
```

利用地址转换实现负载均衡：当有如象腾讯公司似的多服务器时，使用路由器实现负载平衡，可以使它们有平等的访问机会。

```
Interface fastethernet0/1 Ip address
192.168.1.1 255.255.255.0 Duplex auto Speed auto Ip nat inside No
shutdown Interface fastethernet0/0 Ip address 202.110.198.81
255.255.255.248 Duplex auto Speed auto Ip nat outside Access-list
1 permit 202.110.198.82 Access-list 2 permit 202.110.198.83
Access-list 3 permit 192.168.1.0 0.0.0.255 Ip nat pool Webser
192.168.1.2 192.168.1.3 255.255.255.248 type rotary Ip nat pool
Ftpser 192.168.1.4 192.168.1.5 255.255.255.248 type rotary Ip nat
pool normal 202.110.198.84 202.110.198.84 netmask
255.255.255.248 Ip nat inside destination list 1 pool Webser Ip nat
inside destination list 2 pool Ftpser 100Test
```

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