

第三个大题

报文分析

第一套：某客户机使用 DHCP 获取 IP 地址等信息，其获取 IP 地址过程中捕获的 4 条报文及第 2 条报文分析如下图所示。请分析其中的信息，补全内容。

编号 报文摘要

1 DHCP:Request, Type:DHCP discover

2 DHCP:Reply, Type:DHCP _____

3 DHCP:Request, Type:DHCP Request

4 DHCP:Reply, Type:DHCP ACK

DLC:-----DLCHeader-----

DLC: Destination = _____

DLC: Source =001122334455

DLC: Ethertype =0800(IP)

IP: D=_____, S=192.168.0.1

_____:D = 68,S = 67

DHCP: ----- DHCP Header -----

DHCP: Boot record type =2(Reply)

DHCP: Hardware address type =1(10M Ethernet)

DHCP: Hardware address length =6 bytes

DHCP: Hops =0

DHCP: Transaction id =6019121F

DHCP: Elapsed boot time =0 seconds

DHCP: Flags =0000

DHCP: 0 =no broadcast

DHCP: Client self-assigned address =[0.0.0.0]

DHCP: Client address =[192.168.0.180]

DHCP: Next Server to use in bootstrap =[0.0.0.0]

DHCP: Relay Agent =[0.0.0.0]

DHCP: Client hardware address = 001234567890

DHCP: Host name = “ ”

DHCP: Boot file name = “ ”

DHCP: Vendor Information tag = 53825276

DHCP: Message Type =2

DHCP: Address renewal interval = 345600(seconds)

DHCP: Address rebinding interval = 604800(seconds)

DHCP: Request IP Address leased time = 691200(seconds)

DHCP: Server IP Address = _____

DHCP: Subnet mask = 255.255.255.0

DHCP: Gateway address = [192.168.0.100]

DHCP: Domain Name Server address = [202.106.0.100]

第二套：用 DHCP 服务器对公司内部主机的 IP 地址进行管理。在 DHCP 客户机上执行“ipconfig/all”得到的部分信息如图（A）所示，该客户机在进行地址续约时捕获的其中 1 条报文及相关分析如图（B）所示。请分析其中的信息，补全图（B）中的内容。

Ethernet adapter 本地连接

```

Connection – specific DNS Suffix .:
Description.....: Broadcom 440x 10/100 Integrated Controller
Physical Address.....: 00-11-22-33-44-55
Dhcp Enabled.....: Yes
IP Address.....: 192.168.0.1
Subnet Mask.....: 255.255.255.0
Default Gateway.....: 192.168.0.100
DHCP Sever.....: 192.168.0.101
DNS Sever.....: 192.168.0.102
Lease Obtained.....: 2013 年 5 月 18 日 8:30:05
Lease Expires.....: 2013 年 5 月 26 日 8:30:05

```

图（A）在 DHCP 客户机执行 ipconfig/all 获取的部分信息

编号 源 IP 地址 目的 IP 地址 报文摘要

DHCP:Request, Type:DHCP

```

1 _____
DHCP: ----- DHCP Header -----
DHCP: Boot record type =1(Request)
DHCP: Hardware address type =1(10M Ethernet)
DHCP: Hardware address length =6 bytes
DHCP: Hops =0
DHCP: Transaction id =34191219
DHCP: Elapsed boot time =0 seconds
DHCP: Flags =0000
DHCP: 0 =no broadcast
DHCP: Client self-assigned address =_____
DHCP: Client address =_____
DHCP: Next Sever to use in bootstrap =[0.0.0.0]
DHCP: Relay Agent =[0.0.0.0]
DHCP: Client hardware address = 001122334455
DHCP: Host name = “ ”
DHCP: Boot file name = “ ”
DHCP: Vendor Information tag = 53825276
DHCP: Message Type =3
DHCP: Client identifier = 01001122334455
DHCP: Hostname = “Host1”
DHCP: Unidentified tag 81
DHCP: Class identifier =4D53465420352E30
DHCP: Parameter Request List: 11 entries

```

.....

图（B）在 DHCP 客户机上进行地址续约时捕获的一条报文及相关分析

第三套：公司使用 Windows 2003 DHCP 服务器对内部主机的 IP 地址进行还礼，DHCP 服务器的新建作用域及新建保留配置如图（A）和图（B）所示。



图(a) 新建作用域配置

图(b) 新建保留配置

某 DHCP 客户机从该 DHCP 服务器获取 IP 地址过程中，在客户机捕获的 4 条报文及对第 4 条报文的分析如下所示。请补充其中的信息。

编号	源 IP 地址	目的 IP 地址	报文摘要	报文捕获时间
1	0.0.0.0	_____	DHCP:Request, Type:DHCP discover	2013-06-02 9:07:00
2	59.64.188.201	255.255.255.255	DHCP:Reply, Type:DHCP offer	2013-06-02 9:07:00
3	0.0.0.0	255.255.255.255	DHCP:Request, Type:DHCP _____	2013-06-02 9:07:00
4	_____	255.255.255.255	DHCP:Reply, Type:DHCP ack	2013-06-02 9:07:00

DHCP: ----- DHCP Header -----

- DHCP: Boot record type =2(Reply)
- DHCP: Hardware address type =1(10M Ethernet)
- DHCP: Hardware address length =6 bytes
- DHCP: Hops =0
- DHCP: Transaction id =2219231D
- DHCP: Elapsed boot time =0 seconds
- DHCP: Flags =0000
- DHCP: 0 =no broadcast
- DHCP: Client self-assigned address =[0.0.0.0]
- DHCP: Client address =_____
- DHCP: Next Sever to use in bootstrap =[0.0.0.0]
- DHCP: Relay Agent =[0.0.0.0]
- DHCP: Client hardware address = 001122334455
- DHCP: Message Type =5(DHCP Ack)
- DHCP: Address renewel interval = 345600(seconds)
- DHCP: Address rebinding interval = 604800(seconds)
- DHCP: Request IP Address leased time = 691200(seconds)
- DHCP: Subnet mask =_____

第四套：某公司网络管理员使用 DHCP 服务器对公司内部主机的 IP 地址进行管理。在某 DHCP 客户机上执行“ipconfig/all”和“ipconfig/renew”命令，执行“ipconfig/all”得到的部分信息如图（a）所示，执行“ipconfig/renew”命令时，在客户机捕获的报文及相关分析如图（b）所示。请分析图中的信息，补全空白处的内容。

Ethernet adapter 本地连接

```
Description.....: Broadcom 440x 10/100 Integrated Controller
Physical Address.....: 00-16-18-F1-C5-68
Dhcp Enabled.....: Yes
IP Address.....: 192.168.0.50
Subnet Mask.....: 255.255.255.0
Default Gateway.....: 192.168.0.1
DHCP Sever.....: 192.168.0.100
DNS Sever.....: 192.168.0.100
Lease Obtained.....: 2013 年 7 月 18 日 8:29:03
Lease Expires.....: 2013 年 7 月 26 日 8:29:03
```

图（A）在 DHCP 客户机执行 ipconfig/all 获取的部分信息

编号 源 IP 地址 目的 IP 地址 报文摘要 报文捕获时间

```
1 192.168.0.50 _____ DHCP:Request, Type:DHCP Request 2013-07-18 09:10:00
2 192.168.0.100 _____ DHCP:Request, Type:DHCP ack 2013-07-18 09:10:00
```

DHCP: ----- DHCP Header -----

```
DHCP: Boot record type =2(Reply)
DHCP: Hardware address type =1(10M Ethernet)
DHCP: Hardware address length = _____ bytes
DHCP: Hops =0
DHCP: Transaction id =2219121F
DHCP: Elapsed boot time =0 seconds
DHCP: Flags =0000
DHCP: 0 =no broadcast
DHCP: Client self-assigned address =[0.0.0.0]
DHCP: Client address =[192.168.0.50]
DHCP: Next Sever to use in bootstrap =[0.0.0.0]
DHCP: Relay Agent =[0.0.0.0]
DHCP: Client hardware address = _____
DHCP: Host name = “ ”
DHCP: Boot file name = “ ”
DHCP: Vendor Information tag = 53825363
DHCP: Message Type =5(DHCP Ack)
DHCP: Address renewel interval = 345600(seconds)
DHCP: Address rebinding interval = 604800(seconds)
DHCP: Request IP Address leased time = 691200(seconds)
DHCP: Sever IP Address =[192.168.0.100]
```

DHCP: Subnet = 255.255.255.0

DHCP: Gateway address = [192.168.0.1]

DHCP: Domain Name Server address = _____

图（B）在 DHCP 客户机上执行 `ipconfig/renew` 时捕获的报文及第 2 条报文的分析

第五套：某网络中 DHCP 服务器地址为 10.0.0.1，MAC 地址为 00-12-34-56-78-90，可分配 IP 地址范围为 10.0.0.50-10.0.0.100，其中 10.0.0.50 保留给 MAC 地址是 00-11-22-33-44-55 的主机。网络中某客户从该服务器续约 IP 地址的过程在，在客户机捕获的 2 条报文及对第 1 条报文的分析如下图所示。请补充图纸空白处的信息。

编号 报文摘要

1 DHCP:Request, Type:DHCP _____

2 DHCP:Reply, Type:DHCP _____

DLC:-----DLC Header-----

DLC: Destination = 001234567890

DLC: Source =001122334455

DLC: Ethertype =0800(IP)

IP: Destination Address=_____, Source Address =_____

UDP:Destination Port = 67,Source Port = 68

DHCP: ----- DHCP Header -----

DHCP: Boot record type =1(Request)

DHCP: Hardware address type =1(10M Ethernet)

DHCP: Hardware address length =6 bytes

DHCP: Hops =0

DHCP: Transaction id =604D121F

DHCP: Elapsed boot time =0 seconds

DHCP: Flags =0000

DHCP: 0 =no broadcast

DHCP: Client self-assigned address =_____

DHCP: Client address =[0.0.0.0]

DHCP: Next Sever to use in bootstrap =[0.0.0.0]

DHCP: Relay Agent =[0.0.0.0]

DHCP: Client hardware address = 001122334455

DHCP: Host name = “ ”

DHCP: Boot file name = “ ”

DHCP: Vendor Information tag = 53825276

DHCP: Message Type =3

... ..

第六套：某公司网络管理员使用 DHCP 服务器对公司内部主机的 IP 地址进行管理。在某 DHCP 客户机上执行“ipconfig/all”得到的部分信息如图（a）所示，该客户机在进行地址续约时捕获的其中 1 条报文及相关分析如图（b）所示。请分析其中的信息，补全图（b）中的内容。

Ethernet adapter 本地连接

```

Connection – specific DNS Suffix .:
Description.....: Broadcom 440x 10/100 Integrated Controller
Physical Address.....: 11-22-33-44-55-66
Dhcp Enabled.....: Yes
IP Address.....: 192.168.0.20
Subnet Mask.....: 255.255.255.0
Default Gateway.....: 192.168.0.1
DHCP Sever.....: 192.168.0.100
DNS Sever.....: 192.168.0.101
Lease Obtained.....: 2013 年 11 月 18 日 9:30:05
Lease Expires.....: 2013 年 11 月 26 日 9:30:05

```

图（a）

编号	源 IP 地址	目的 IP 地址	报文摘要	摘要捕获时间
1	_____	255.255.255.255	DHCP:Request, Type:DHCP discover	2013-11-18 09:30:05
1	_____	_____	DHCP:Reply, Type:DHCP _____	2013-11-18 09:30:05

```

DHCP: ----- DHCP Header -----
DHCP: Boot record type      =2(Reply)
DHCP: Hardware address type  =1(10M Ethernet)
DHCP: Hardware address length =6 bytes
DHCP: Hops                  =0
DHCP: Transaction id        =3419121F
DHCP: Elapsed boot time     =0 seconds
DHCP: Flags                  =0000
DHCP: 0                      =no broadcast
DHCP: Client self-assigned address =[0.0.0.0]
DHCP: Client address        =_____
DHCP: Next Sever to use in bootstrap =[0.0.0.0]
DHCP: Relay Agent           =[0.0.0.0]
DHCP: Client hardware address = 112233445566
DHCP: Host name              = “ ”
DHCP: Boot file name        = “ ”
DHCP: Vendor Information tag = 53825276
DHCP: Message Type          =2
DHCP: Address renewel interval = 345600(seconds)
DHCP: Address rebinding interval = 604800(seconds)
DHCP: Request IP Address leased time = 691200(seconds)
DHCP: Sever IP Address       =[192.168.0.100]
DHCP: Subnet mask           = 255.255.255.0

```


DHCP: Gateway address = [192.168.0.1]

DHCP: Domain Name Server address = _____

第七套：某公司网络管理员使用 DHCP 服务器对公司内部主机的 IP 地址进行管理。在某 DHCP 客户机上执行“ipconfig/all”得到的部分信息如图（a）所示，该客户机在进行地址续约时捕获的其中 1 条报文及相关分析如图（b）所示。请分析其中的信息，补全图（b）中的内容。

Ethernet adapter 本地连接

```
Connection – specific DNS Suffix .:
Description.....: Broadcom 440x 10/100 Integrated Controller
Physical Address.....: 00-11-22-33-44-55
Dhcp Enabled.....: Yes
IP Address.....: 192.168.0.1
Subnet Mask.....: 255.255.255.0
Default Gateway.....: 192.168.0.100
DHCP Sever.....: 192.168.0.101
DNS Sever.....: 192.168.0.102
```

图（a）

编号 报文摘要

```
1 DHCP:Reply, Type:DHCP _____
IP: -----IP Header -----
IP: Protocol = _____
IP: Source address = _____
IP: Destination address = _____
DHCP: ----- DHCP Header -----
DHCP: Boot record type      =2(Reply)
DHCP: Hardware address type  =1(10M Ethernet)
DHCP: Hardware address length =6 bytes
DHCP: Hops                  =0
DHCP: Transaction id        =3BDB064C
DHCP: Elapsed boot time     =0 seconds
DHCP: Flags                  =0000
DHCP: 0                      =no broadcast
DHCP: Client self-assigned address =[192.168.0.1]
DHCP: Client address         =[192.168.0.1]
DHCP: Next Sever to use in bootstrap =[0.0.0.0]
DHCP: Relay Agent           =_____
DHCP: Client hardware address = 001122334455
DHCP: Host name              = “ ”
DHCP: Boot file name         = “ ”
DHCP: Vendor Information tag = 63825363
DHCP: Message Type          =5
DHCP: Client identifier     = 01001122334455
DHCP: Address renewel interval = 345600(seconds)
DHCP: Address rebinding interval = 604800(seconds)
DHCP: Request IP Address leased time = 691200(seconds)
```

DHCP: Sever IP Address =[192.168.0.101]

DHCP: Subnet mask = 255.255.255.0

... ..

第八套：某公司网络中 DHCP 服务器可动态分配 IP 地址范围为 192.168.0.100-192.168.0.200，其中 192.168.0.100 保留给 MAC 地址是 00-11-22-33-44-55 的主机。网络中某客户从该服务器获取 IP 地址的过程中，在客户机捕获的 4 条报文及对第 4 条报文的分析如下图所示。请分析其中的信息，补全内容。

编号 报文摘要

1 DHCP:Request, Type:DHCP discover

2 DHCP:Reply, Type:DHCP offer

3 DHCP:Request, Type:DHCP Request

4 DHCP:Reply, Type:DHCP _____

IP: Destination Address=_____ , Source Address=_____

UDP:Destination Port = 67,Source Port = 68

DHCP: ----- DHCP Header -----

DHCP: Boot record type =2(Reply)

DHCP: Hardware address type =1(10M Ethernet)

DHCP: Hardware address length =6 bytes

DHCP: Hops =0

DHCP: Transaction id =604d121F

DHCP: Elapsed boot time =1024 seconds

DHCP: Flags =0000

DHCP: 0 =no broadcast

DHCP: Client self-assigned address =[0.0.0.0]

DHCP: Client address =_____

DHCP: Next Sever to use in bootstrap =[0.0.0.0]

DHCP: Relay Agent =_____

DHCP: Client hardware address = 001122334455

DHCP: Host name = “ ”

DHCP: Boot file name = “ ”

DHCP: Vendor Information tag = 53825276

DHCP: Message Type =5

DHCP: Address renewel interval = 345600(seconds)

DHCP: Address rebinding interval = 604800(seconds)

DHCP: Request IP Address leased time = 691200(seconds)

DHCP: Sever IP Address = _____ = 192.168.0.1

DHCP: Subnet mask = 255.255.255.0

... ..

第九套：某公司使用 DHCP 服务器对公司内部主机的 IP 地址进行管理。已知该公司共有 40 个可用 IP 地址为：59.64.22.11~59.64.22.50，DHCP 服务器选用 Windows 2003 Sever，其 IP 地址为：59.64.22.12，DHCP 客户机使用的操作系统是 Windows XP。请回答下列问题：

(1) DHCP 客户机得到下图所示信息使用的命令是：_____

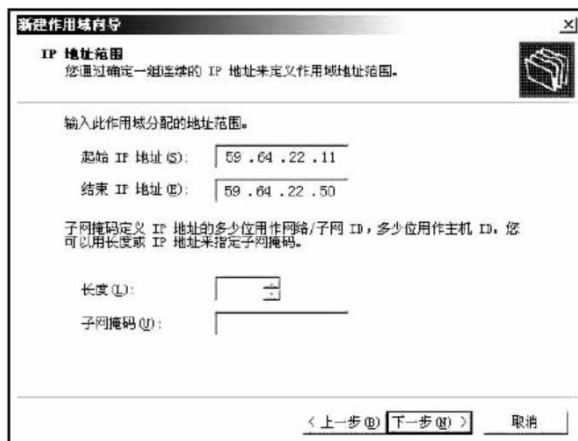
Ethernet adapter 本地连接

```

Connection - specific DNS Suffix  :
Description.....: Broadcom 440x 10/100 Integrated Controller
Physical Address.....: 00-0F-1F-52-EF-F6
Dhcp Enabled.....: Yes
Autoconfiguration Enabled...: Yes
IP Address.....: 59.64.22.50
Subnet Mask.....: 255.255.255.192
Default Gateway.....: 59.64.22.11
DHCP Sever.....: 59.64.22.12
DNS Sever.....: 59.64.22.13
Lease Obtained.....: 2007 年 12 月 14 日  14:29:03
Lease Expires.....: 2007 年 12 月 22 日  14:29:03
    
```

图 DHCP 客户机得到的信息

(2) 如下图所示 DHCP 服务器作用域的配置界面中，长度域输入的数值应是_____



DHCP服务器作用域的配置界面

(3) 在能为客户机分配地址之前，还必须执行的操作是_____

(4) DHCP 服务器要为一个客户机分配固定的 IP 地址时，需要执行的操作是_____

(5) DHCP 客户机要释放已获取的 IP 地址时，使用的命令是_____

第十套：如图 2 所示，在某 DHCP 客户机上捕获了 5 条报文，并对第 5 条报文进行了解析，图 3 是在该客户机捕获上述报文后执行 ipconfig/all 命令后得到的部分信息。分析图中信息，并补全图中空白处的内容。

编号	源 IP 地址	目的 IP 地址	报文摘要	摘要捕获时间
1	192.168.1.1	192.168.1.36	DHCP:Request, Type:DHCP release	09:06:55
2	0.0.0.0	255.255.255.255	DHCP:Request, Type:DHCP discover	09:07:00
3	192.168.1.36	_____	DHCP:Reply, Type:DHCP offer	09:07:00
4	0.0.0.0	255.255.255.255	DHCP:Request, Type:DHCP request	09:07:00
5	192.168.1.36	_____	DHCP:Reply, Type:DHCP ack	09:07:00

```

DHCP: ----- DHCP Header -----
DHCP: Boot record type      =2(Reply)
DHCP: Hardware address type =1(10M Ethernet)
DHCP: Hardware address length =6 bytes
DHCP: Hops                  =0
DHCP: Transaction id       =2219131D
DHCP: Elapsed boot time    =0 seconds
DHCP: Flags                 =0000
DHCP: 0                     =no broadcast
DHCP: Client self-assigned address =[0.0.0.0]
DHCP: Client address        =[192.168.1.1]
DHCP: Next Sever to use in bootstrap =[0.0.0.0]
DHCP: Relay Agent          =[0.0.0.0]
DHCP: Client hardware address = 000F1F2F3F4F
DHCP: Vendor Information tag = 63825363
DHCP: Message Type         =5(DHCP Ack)
DHCP: Address renewel interval = 345600(seconds)
DHCP: Address rebinding interval = 604800(seconds)
DHCP: Request IP Address leased time = 691200(seconds)
DHCP: Subnet mask          = 255.255.255.0
DHCP: Gateway address      = [192.168.1.100]
DHCP: Domain Name Server address [202.106.46.151]
DHCP: Domain Name Server address [202.106.195.68]

```

图 2 在 DHCP 客户机上捕获的 IP 报文及相关分析

```

Ethernet adapter 本地连接
Connection - specific DNS Suffix .:
Description.....: Broadcom 440x 10/100 Integrated Controller
Physical Address.....: _____
Dhcp Enabled.....: _____
Autoconfiguration Enabled...: Yes
IP Address.....:192.168.1.1
Subnet Mask.....: 255.255.255.0
Default Gateway.....: _____

```

图 3 在 DHCP 客户机执行 `ipconfig/all` 获得的信息

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