实验5-1 配置FTP业务

学习目标

* **理解建立FTP连接的过程**
* **掌握FTP服务器参数的配置**
* **掌握与FTP服务器传输文件的方法**

拓扑图

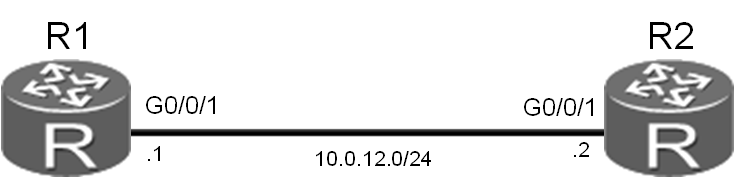


图5.1 配置FTP业务实验拓扑图

场景

您是公司的网络管理员，需要在公司网络上配置FTP业务。您需要把一台路由器配置为FTP服务器，客户端可以通过TCP连接与FTP服务器之间传输文件。

操作步骤

1. 实验环境准备

如果本任务中您使用的是空配置设备，那么请从步骤1开始配置。如果使用的设备包含上一个实验的配置，请直接从步骤2开始配置。

<Huawei>system-view

Enter system view, return user view with Ctrl+Z.

[Huawei]sysname R1

[R1]interface GigabitEthernet 0/0/1

[R1-GigabitEthernet0/0/1]ip address 10.0.12.1 24

<Huawei>system-view

Enter system view, return user view with Ctrl+Z.

[Huawei]sysname R2

[R2]interface GigabitEthernet 0/0/1

[R2-GigabitEthernet0/0/1]ip address 10.0.12.2 24

测试R1和R2之间的连通性。

[R1]ping 10.0.12.2

PING 10.0.12.2: 56 data bytes, press CTRL\_C to break

Reply from 10.0.12.2: bytes=56 Sequence=1 ttl=255 time=10 ms

Reply from 10.0.12.2: bytes=56 Sequence=2 ttl=255 time=1 ms

Reply from 10.0.12.2: bytes=56 Sequence=3 ttl=255 time=1 ms

Reply from 10.0.12.2: bytes=56 Sequence=4 ttl=255 time=10 ms

Reply from 10.0.12.2: bytes=56 Sequence=5 ttl=255 time=1 ms

--- 10.0.12.2 ping statistics ---

5 packet(s) transmitted

5 packet(s) received

0.00% packet loss

round-trip min/avg/max = 1/4/10 ms

1. 在路由器上启用FTP业务。

默认情况下，路由器的FTP功能并未启用。使用FTP业务之前，必须先启用FTP功能。配置R1为FTP服务器，R2为客户端。

[R1]ftp server enable

Info: Succeeded in starting the FTP server

[R1]set default ftp-directory flash:/

通过在AAA中设置用户名和密码，授权FTP合法用户连接到FTP服务器。这样，非法用户就无法连接FTP服务器，降低了安全风险。

[R1]aaa

[R1-aaa]local-user huawei password cipher huawei123

Info: Add a new user.

[R1-aaa]local-user huawei service-type ftp

Info: The cipher password has been changed to an irreversible-cipher password.

Warning: The user access modes include Telnet, FTP or HTTP, and so security risks exist.

Info: After you change the rights (including the password, access type, FTP directory, and level) of a local user, the rights of users already online do not change. The change takes effect to users who go online after the change.

[R1-aaa]local-user huawei privilege level 15

Info: After you change the rights (including the password, access type, FTP directory, and level) of a local user, the rights of users already online do not change. The change takes effect to users who go online after the change.

[R1-aaa]local-user huawei ftp-directory flash:

Info: After you change the rights (including the password, access type, FTP directory, and level) of a local user, the rights of users already online do not change. The change takes effect to users who go online after the change.

[R1]display ftp-server

FTP server is running

Max user number 5

User count 0

Timeout value(in minute) 30

Listening port 21

Acl number 0

FTP server's source address 0.0.0.0

配置完成后，可以看到R1为FTP服务器，默认情况下监听TCP 21号端口。

1. 建立FTP客户端与服务器的连接。

建立从客户端（R2）到FTP服务器（R1）的连接。

<R2>ftp 10.0.12.1

Trying 10.0.12.1 ...

Press CTRL+K to abort

Connected to 10.0.12.1.

220 FTP service ready.

User(10.0.12.1:(none)):huawei

331 Password required for huawei.

Enter password:

230 User logged in.

[R2-ftp]

输入正确的用户名和密码后，可以成功登陆FTP服务器。

下载文件前或者上传文件后，执行**dir**命令查看文件的详细信息。

[R2-ftp]dir

200 Port command okay.

150 Opening ASCII mode data connection for \*.

drwxrwxrwx 1 noone nogroup 0 May 03 18:03 .

-rwxrwxrwx 1 noone nogroup 114552448 Jan 19 2012 AR2220E-V200R006C10SPC300.cc

-rwxrwxrwx 1 noone nogroup 159858 May 03 17:59 mon\_file.txt

-rwxrwxrwx 1 noone nogroup 304700 Mar 03 11:11 sacrule.dat

-rwxrwxrwx 1 noone nogroup 783 Mar 03 11:12 default\_local.cer

-rwxrwxrwx 1 noone nogroup 0 Dec 20 2015 brdxpon\_snmp\_cfg.efs

-rwxrwxrwx 1 noone nogroup 777 May 03 18:03 vrpcfg.zip

drwxrwxrwx 1 noone nogroup 0 Mar 10 11:14 update

drwxrwxrwx 1 noone nogroup 0 May 03 18:03 localuser

drwxrwxrwx 1 noone nogroup 0 Mar 17 10:45 dhcp

-rwxrwxrwx 1 noone nogroup 460 May 03 18:03 private-data.txt

-rwxrwxrwx 1 noone nogroup 126352896 Mar 10 11:09 AR2220E-V200R007C00SPC600.cc

drwxrwxrwx 1 noone nogroup 0 Mar 10 11:15 shelldir

-rwxrwxrwx 1 noone nogroup 11606 May 03 18:00 mon\_lpu\_file.txt

drwxrwxrwx 1 noone nogroup 0 Mar 18 14:45 huawei

-rwxrwxrwx 1 noone nogroup 120 Mar 18 15:02 text.txt

226 Transfer complete.

FTP: 1112 byte(s) received in 0.134 second(s) 8.29Kbyte(s)/sec.

配置文件的传输模式。

[R2-ftp]binary

200 Type set to I.

在FTP服务器上下载文件。

[R2-ftp]get vrpcfg.zip vrpnew.zip

200 Port command okay.

150 Opening BINARY mode data connection for vrpcfg.zip.

226 Transfer complete.

FTP: 120 byte(s) received in 0.678 second(s) 176.99byte(s)/sec.

从FTP服务器上下载文件后，执行**bye**命令关闭连接。

[R2-ftp]bye

221 Server closing.

<R2>dir

Directory of flash:/

Idx Attr Size(Byte) Date Time(LMT) FileName

0 -rw- 114,552,448 Jan 19 2012 15:32:52 AR2220E-V200R006C10SPC300.cc

1 -rw- 270,176 Apr 30 2016 03:17:08 mon\_file.txt

2 -rw- 304,700 Mar 03 2016 11:11:44 sacrule.dat

3 -rw- 783 Mar 03 2016 11:12:22 default\_local.cer

4 -rw- 0 Dec 20 2015 00:06:14 brdxpon\_snmp\_cfg.efs

5 -rw- 775 Apr 29 2016 17:51:48 vrpcfg.zip

6 drw- - Mar 10 2016 11:28:46 update

7 drw- - Apr 23 2016 17:33:38 localuser

8 drw- - Mar 21 2016 20:59:46 dhcp

9 -rw- 394 Apr 29 2016 17:51:50 private-data.txt

10 -rw- 126,352,896 Mar 10 2016 11:14:40 AR2220E-V200R007C00SPC600.cc

11 drw- - Mar 10 2016 11:29:20 shelldir

12 -rw- 23,950 Apr 27 2016 16:06:06 mon\_lpu\_file.txt

13 -rw- 120 Mar 24 2016 11:45:44 huawei.zip

14 -rw- 777 May 10 2016 14:23:43 vrpnew.zip

可以通过**put**命令把一个文件上传到FTP服务器，上传的同时也可以为该文件配置新的文件名。

[R2-ftp]put vrpnew.zip vrpnew2.zip

200 Port command okay.

150 Opening BINARY mode data connection for vrpnew2.zip.

226 Transfer complete.

FTP: 120 byte(s) sent in 0.443 second(s) 270.88byte(s)/sec.

上传文件后，执行**dir**命令查看文件是否存在于FTP服务器上。

<R1>dir

Directory of flash:/

Idx Attr Size(Byte) Date Time(LMT) FileName

0 -rw- 286,620 Mar 14 2016 09:22:20 sacrule.dat

1 -rw- 512,000 Mar 28 2016 14:39:16 mon\_file.txt

2 -rw- 1,738,816 Mar 17 2016 12:05:36 web.zip

3 -rw- 48,128 Mar 10 2016 14:16:56 ar2220E\_v200r001sph001.pat

4 -rw- 120 Mar 28 2016 10:09:50 iascfg.zip

5 -rw- 699 Mar 28 2016 17:52:38 vrpcfg.zip

6 -rw- 93,871,872 Mar 14 2016 09:13:26 ar2220E-V200R007C00SPC600.cc

7 -rw- 512,000 Mar 28 2016 14:40:20 mon\_lpu\_file.txt

8 -rw- 699 Mar 02 2016 15:44:16 vrpnew2.zip

分别在R1和R2上删除创建的vrpnew.zip和vrpnew2.zip文件。

<R1>delete flash:/vrpnew2.zip

Delete flash:/vrpnew2.zip? (y/n)[n]:y

Info: Deleting file flash:/vrpnew2.zip...succeed.

<R2>delete flash:/vrpnew.zip

Delete flash:/vrpnew.zip? (y/n)[n]:y

Info: Deleting file flash:/vrpnew.zip...succeed.

注意：删除配置文件时，请慎重执行，避免删除R1和R2上的整个flash:/目录。

## **配置文件**

<R1>display current-configuration

[V200R007C00SPC600]

#

sysname R1

ftp server enable

set default ftp-directory flash:

#

aaa

authentication-scheme default

authorization-scheme default

accounting-scheme default

domain default

domain default\_admin

local-user admin password cipher %$%$=i~>Xp&aY+\*2cEVcS-A23Uwe%$%$

local-user admin service-type http

local-user huawei password cipher %$%$f+~&ZkCn]NUX7m.t;tF9R48s%$%$

local-user huawei privilege level 15

local-user huawei ftp-directory flash:/

local-user huawei service-type ftp

#

interface GigabitEthernet0/0/1

ip address 10.0.12.1 255.255.255.0

#

user-interface con 0

authentication-mode password

set authentication password cipher %$%$+L'YR&IZt'4,)>-\*#lH",}%K-oJ\_M9+'lOU~bD (\WTqB}%N,%$%$

user-interface vty 0 4

#

return

<R2>display current-configuration

[V200R007C00SPC600]

#

sysname R2

ftp server enable

set default ftp-directory flash:

#

aaa

authentication-scheme default

authorization-scheme default

accounting-scheme default

domain default

domain default\_admin

local-user admin password cipher %$%$=i~>Xp&aY+\*2cEVcS-A23Uwe%$%$

local-user admin service-type http

local-user huawei password cipher %$%$<;qM3D/O;ZLqy/"&6wEESdg$%$%$

local-user huawei privilege level 15

local-user huawei ftp-directory flash:/

local-user huawei service-type ftp

#

interface GigabitEthernet0/0/1

ip address 10.0.12.2 255.255.255.0

#

user-interface con 0

authentication-mode password

set authentication password cipher %$%$1=cd%b%/O%Id-8X:by1N,+s}'4wD6TvO<I|/pd# #44C@+s#,%$%$

user-interface vty 0 4

#

return