

项目 2-搭建并配置 Apache 服务器指导书 (2-4)

任务 7: 假设 Apache 服务器 IP 地址为 192.168.10.1。现需要创建基于 8088 和 8089 两个不同端口号的虚拟主机, 要求不同的虚拟主机对应的主目录不同, 默认文档的内容也不同, 如何配置?

准备工作:

1. 可恢复到快照 1 状态。



2. 单击 “Applications” → “System Tools” → “Settings” → “Network”, 这样可以在一块网卡上配置一个 IP 地址。如图完成配置后点击右上角的 “添加” 按钮。



2. 实训配置步骤

① 分别创建/var/www/8088 和/var/www/8089 两个主目录和默认文件。

▶ [root@RHEL7-1 ~]# mkdir /var/www/8088 /var/www/8089

▶ [root@RHEL7-1 ~]#

```
echo "8088 port 's web.">/var/www/8088/index.html
```

▶ [root@RHEL7-1 ~]#

```
echo "8089 port 's web.">/var/www/8089/index.html
```

② 修改/etc/httpd/conf/httpd.conf 主配置文件。该文件的修改内容如下：

▶ Listen 8088

▶ Listen 8089

▶ <Directory "/var/www">

```
AllowOverride None
```

```
Require all granted
```

▶ </Directory>

使用 `vim /etc/httpd/conf/httpd.conf` 命令，打开文件后，修改代码如下
图，主要 124 到 128 行内容如下：

```
124 <Directory "/var/www">
125     AllowOverride None
126     # Allow open access:
127     Require all granted
128 </Directory>
129
```

可在 vim 编辑器的命令行模式输入：? Listen，搜索到默认端口号，进行如下修改。

```
139 #
?Listen
```

可禁止默认的 80 端口，开启 8088 和 8089 两个端口。

```
40 #
41 #Listen 12.34.56.78:80
42 #Listen 80
43 Listen 8088
44 Listen 8089
45
```

③ 修改/etc/httpd/conf.d/vhost.conf 文件。该文件的内容如下（原来内容清空）：代码如下

```
<Virtualhost 192.168.10.1:8088>
```

```
    DocumentRoot    /var/www/8088
```

```
</Virtualhost>
```

```
<Virtualhost 192.168.10.1:8089>
```

```
    DocumentRoot    /var/www/8089
```

</Virtualhost>

使用 `vim /etc/httpd/conf.d/vhost.conf` 命令，打开文件后，输入代码如下图：

```
root@192:~
文件(F) 编辑(E) 查看(V) 搜索(S) 终端(T) 帮助(H)
<Virtualhost 192.168.10.1:8088>
DocumentRoot /var/www/8088
</Virtualhost>
<Virtualhost 192.168.10.1:8089>
DocumentRoot /var/www/8089
</Virtualhost>
```

注意：修改 `/etc/httpd/conf/httpd.conf` 主配置文件和 `/etc/httpd/conf.d/vhost.conf` 虚拟主机配置文件后，**必须重启 httpd 服务**。

执行语句：`systemctl restart httpd`

④ 关闭防火墙和允许 SELinux，重启 httpd 服务。

设置 SELinux 允许：`setenforce 0`

然后在客户端 Client1 上测试。测试结果大失所望！如图所示。



- ▶ ⑤ **处理故障**。这是因为 firewall 防火墙检测到 8088 和 8089 端口原本不属于 Apache 服务应该需要的资源，但现在却以 httpd 服务程序的名义监听使用了，所以防火墙会拒绝使用 Apache 服务使用这两个端口。

```
[root@RHEL7-1 ~]# firewall-cmd --list-all
```

- ▶ public (active)<略>

- ▶ services: ssh dhcpv6-client samba dns http

- ▶ **ports:**

- ▶<略>

```
[root@RHEL7-1 ~]# firewall-cmd --zone=public --add-port=8088/tcp
```

- ▶ Success

```
[root@RHEL7-1 ~]# firewall-cmd --zone=public --add-port=8089/tcp
```

- ▶ success

```
[root@RHEL7-1 ~]# firewall-cmd --permanent --zone=public --add-port=8089/tcp
```

```
[root@RHEL7-1 ~]# firewall-cmd --permanent --zone=public --add-port=8088/tcp
```

```
[root@RHEL7-1 ~]# firewall-cmd --reload
```

```
[root@RHEL7-1 ~]# firewall-cmd --list-all
```

- ▶ public (active)

▶〈略〉

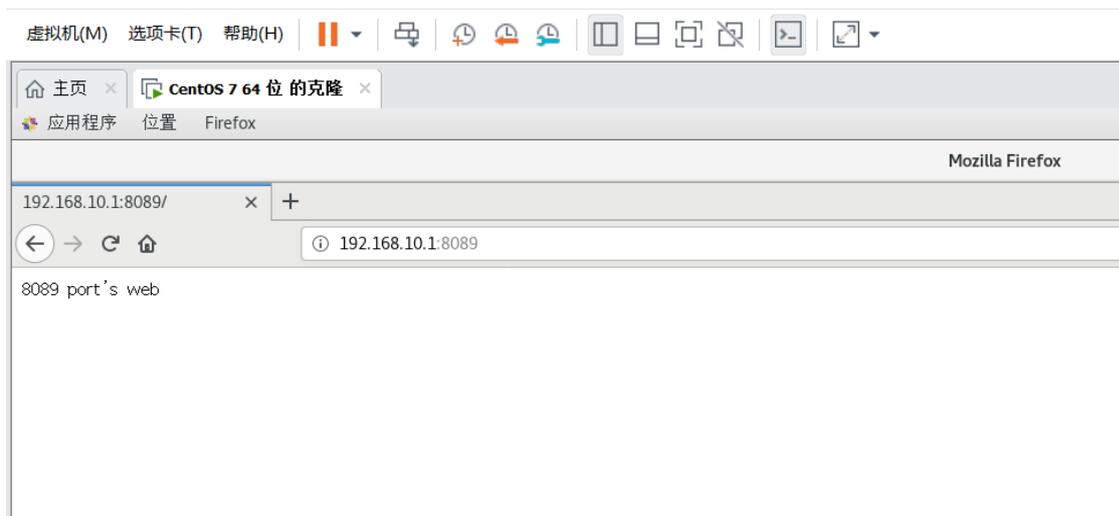
▶ services: ssh dhcpv6-client samba dns http

▶ ports: 8089/tcp 8088/tcp

▶〈略〉

▶ ⑥ 再次在 Client1 上测试，结果如图 9-12 所示。





任务 8：创建一个 PHP 的动态页面，显示 PHP 搭建环境。

准备工作：

1. 可恢复到快照 1 状态。



操作步骤：

1. 查找有关 PHP 的软件包并安装

▶ `[root@www ~]# yum search php`

▶ `php.x86_64 : PHP scripting language for creating dynamic web sites`

```

[root@192 ~]# vim /home/www/index.php
[root@192 ~]# yum search php
已加载插件：fastestmirror, langpacks
Loading mirror speeds from cached hostfile
 * base: mirrors.huaweicloud.com
 * extras: mirrors.bupt.edu.cn
 * updates: mirrors.bupt.edu.cn
===== N/S matched: php =====
emacs-php-mode.noarch : Major GNU Emacs mode for editing PHP code
graphviz-php.x86_64 : PHP extension for graphviz
php.x86_64 : PHP scripting language for creating dynamic web sites
php-bcmath.x86_64 : A module for PHP applications for using the bcmath library
php-cli.x86_64 : Command-line interface for PHP
php-common.x86_64 : Common files for PHP
php-dba.x86_64 : A database abstraction layer module for PHP applications
php-devel.x86_64 : Files needed for building PHP extensions
php-embedded.x86_64 : PHP library for embedding in applications
php-enchant.x86_64 : Enchant spelling extension for PHP applications
php-fpm.x86_64 : PHP FastCGI Process Manager
php-gd.x86_64 : A module for PHP applications for using the gd graphics library
php-intl.x86_64 : Internationalization extension for PHP applications
php-ldap.x86_64 : A module for PHP applications that use LDAP
php-mbstring.x86_64 : A module for PHP applications which need multi-byte string handling
php-mysql.x86_64 : A module for PHP applications that use MySQL databases
php-mysqldb.x86_64 : A module for PHP applications that use MySQL databases
php-odbc.x86_64 : A module for PHP applications that use ODBC databases
php-pdo.x86_64 : A database access abstraction module for PHP applications
php-pear.noarch : PHP Extension and Application Repository framework
php-pgsql.x86_64 : A PostgreSQL database module for PHP
php-process.x86_64 : Modules for PHP script using system process interfaces
php-pspell.x86_64 : A module for PHP applications for using pspell interfaces
php-recode.x86_64 : A module for PHP applications for using the recode library
php-snmp.x86_64 : A module for PHP applications that query SNMP-managed devices
php-soap.x86_64 : A module for PHP applications that use the SOAP protocol
php-xml.x86_64 : A module for PHP applications which use XML
php-xmlrpc.x86_64 : A module for PHP applications which use the XML-RPC protocol
rrdtool-php.x86_64 : PHP RRDtool bindings
uuid-php.x86_64 : PHP support for Universally Unique Identifier library
php-pecl-memcache.x86_64 : Extension to work with the Memcached caching daemon

名称和简介匹配 only, 使用 "search all" 试试。

```

► [root@www ~]# yum -y install php

```

[root@192 ~]# yum install php -y
已加载插件：fastestmirror, langpacks
Loading mirror speeds from cached hostfile
 * base: mirrors.huaweicloud.com
 * extras: mirrors.bupt.edu.cn
 * updates: mirrors.bupt.edu.cn
正在解决依赖关系
--> 正在检查事务
--> 软件包 php.x86_64.0.5.4.16-48.el7 将被 安装
--> 正在处理依赖关系 php-common(x86-64) = 5.4.16-48.el7, 它被软件包 php-5.4.16-48.el7.x86_64 需要
--> 正在处理依赖关系 php-cli(x86-64) = 5.4.16-48.el7, 它被软件包 php-5.4.16-48.el7.x86_64 需要
--> 正在检查事务
--> 软件包 php-cli.x86_64.0.5.4.16-48.el7 将被 安装
--> 软件包 php-common.x86_64.0.5.4.16-48.el7 将被 安装
--> 正在处理依赖关系 libzip.so.2()(64bit), 它被软件包 php-common-5.4.16-48.el7.x86_64 需要
--> 正在检查事务
--> 软件包 libzip.x86_64.0.0.10.1-8.el7 将被 安装
--> 解决依赖关系完成

依赖关系解决

=====
Package                                架构                                版本
-----
正在安装:
php                                      x86_64                               5.4.16-48.el7
为依赖而安装:
libzip                                  x86_64                               0.10.1-8.el7
php-cli                                  x86_64                               5.4.16-48.el7
php-common                               x86_64                               5.4.16-48.el7
=====
事务概要

安装 1 软件包 (+3 依赖软件包)

总下载量: 4.7 M
安装大小: 17 M
Downloading packages:
(1/4): libzip-0.10.1-8.el7.x86_64.rpm
(2/4): php-cli-5.4.16-48.el7.x86_64.rpm
(3/4): php-common-5.4.16-48.el7.x86_64.rpm
(4/4): php-5.4.16-48.el7.x86_64.rpm

```

```

(3/4): php-common-5.4.16-48.el7.x86_64.rpm
(4/4): php-5.4.16-48.el7.x86_64.rpm
-----
总计
Running transaction check
Running transaction test
Transaction test succeeded
Running transaction
 正在安装      : libzip-0.10.1-8.el7.x86_64
 正在安装      : php-common-5.4.16-48.el7.x86_64
 正在安装      : php-cli-5.4.16-48.el7.x86_64
 正在安装      : php-5.4.16-48.el7.x86_64
 验证中       : php-5.4.16-48.el7.x86_64
 验证中       : libzip-0.10.1-8.el7.x86_64
 验证中       : php-cli-5.4.16-48.el7.x86_64
 验证中       : php-common-5.4.16-48.el7.x86_64

已安装:
  php.x86_64 0:5.4.16-48.el7

作为依赖被安装:
  libzip.x86_64 0:0.10.1-8.el7                php-cli.x86_64 0:5.4.16-48.el7

完毕!

```

2. 编写一个 PHP 动态页面

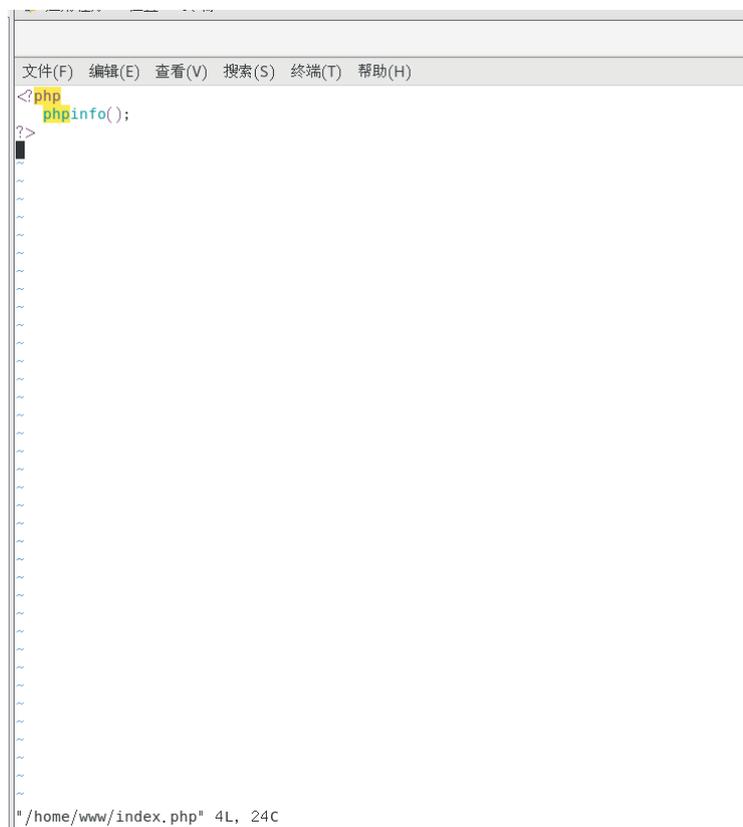
```
[root@www ~]#vim /home/www/index.php
```

```

<?php
    phpinfo();
?>

```

如下图:



3. 编写/etc/httpd/conf/httpd.conf 为主配置文件（修改 119、124 和 164s 三行）如下图。

119 行：主目录 DocumentRoot 设为/home/www

124 行：修改主目录参数<Directory “/home/www” >

164 行：把默认主页 DirectoryIndex index.html 更改为 DirectoryIndex index.php

```
119 # documents. By default, all requests are taken from this directory, but
117 # symbolic links and aliases may be used to point to other locations.
118 #
119 DocumentRoot "/home/www"
120
121 #
122 # Relax access to content within /var/www.
123 #
124 <Directory "/home/www">
125     AllowOverride None
126     # Allow open access:
127     Require all granted
128 </Directory>
162 #
163 <IfModule dir_module>
164     DirectoryIndex index.php
165 </IfModule>
166
167 #
```

4. 重启 httpd 服务

```
[root@localhost ~]# systemctl restart httpd
```

5. 设置 SELinux 为允许模式

```
Setenforce 0
```

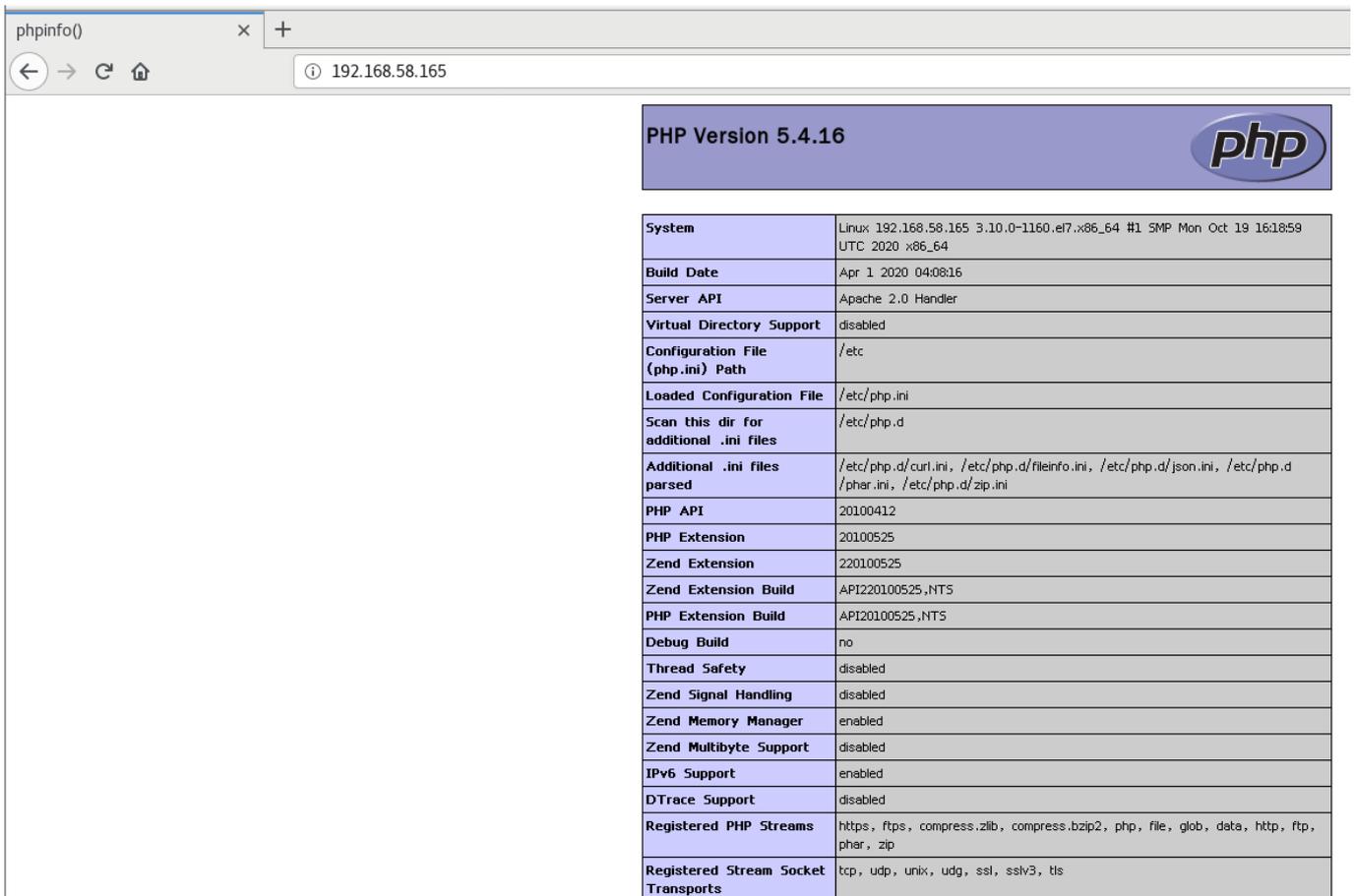
6. 若防火墙已配置 HTTP 协议放行，此处可不用再配置。

6. 测试浏览

```
[root@192 ~]# ifconfig
ens33: flags=4163<UP,BROADCAST,RUNNING,MULTICAST> mtu 1500
    inet 192.168.58.165 netmask 255.255.255.0 broadcast 192.168.58.255
    inet6 fe80::b9bc:46be:e31d:dd38 prefixlen 64 scopeid 0x20<link>
    ether 00:0c:29:32:c1:32 txqueuelen 1000 (Ethernet)
    RX packets 111690 bytes 161770481 (154.2 MiB)
    RX errors 0 dropped 0 overruns 0 frame 0
    TX packets 36604 bytes 2375867 (2.2 MiB)
    TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0

lo: flags=73<UP,LOOPBACK,RUNNING> mtu 65536
    inet 127.0.0.1 netmask 255.0.0.0
    inet6 ::1 prefixlen 128 scopeid 0x10<host>
    loop txqueuelen 1000 (Local Loopback)
    RX packets 214 bytes 111799 (109.1 KiB)
    RX errors 0 dropped 0 overruns 0 frame 0
    TX packets 214 bytes 111799 (109.1 KiB)
    TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0

virbr0: flags=4099<UP,BROADCAST,MULTICAST> mtu 1500
    inet 192.168.122.1 netmask 255.255.255.0 broadcast 192.168.122.255
    ether 52:54:00:a9:86:13 txqueuelen 1000 (Ethernet)
    RX packets 0 bytes 0 (0.0 B)
    RX errors 0 dropped 0 overruns 0 frame 0
    TX packets 0 bytes 0 (0.0 B)
    TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0
```



System	Linux 192.168.58.165 3.10.0-1160.el7.x86_64 #1 SMP Mon Oct 19 16:18:59 UTC 2020 x86_64
Build Date	Apr 1 2020 04:08:16
Server API	Apache 2.0 Handler
Virtual Directory Support	disabled
Configuration File (php.ini) Path	/etc
Loaded Configuration File	/etc/php.ini
Scan this dir for additional .ini files	/etc/php.d
Additional .ini files parsed	/etc/php.d/curl.ini, /etc/php.d/fileinfo.ini, /etc/php.d/json.ini, /etc/php.d/phar.ini, /etc/php.d/zip.ini
PHP API	20100412
PHP Extension	20100525
Zend Extension	220100525
Zend Extension Build	API220100525,NTS
PHP Extension Build	API20100525,NTS
Debug Build	no
Thread Safety	disabled
Zend Signal Handling	disabled
Zend Memory Manager	enabled
Zend Multibyte Support	disabled
IPv6 Support	enabled
DTrace Support	disabled
Registered PHP Streams	https, ftps, compress.zlib, compress.bzip2, php, file, glob, data, http, ftp, phar, zip
Registered Stream Socket Transports	tcp, udp, unix, udg, ssl, sslv3, tls