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Linux VM Advanced

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16.1 Introduction

Now that you have set up your own server! You may start to wonder, how do I let users from outside of my machine to connect to my virtual machine? In addition, how can I host more advance servers such as discussion forums? In this lab, you will learn how to setup and deploy a forum and let users from anywhere on the internet connect to your forum.

16.2 Lab Procedures

16.2.1 Setting up NAT of VMWare Player

In order to route network information from your physical machine to your virtual machine, you must set up NAT (Network Address Translation). VMWare already has a virtual network card, so we need to configure the NAT of that virtual network card manually. If you have VMWare workstation installed, it can be done using Virtual Network Editor. However, this was removed in VMware Player. We can still do this manually.

For Windows 7, the configuration file is at

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C:\Users\All Users\VMWare\vmnetnat.conf.

For Windows XP, the configuration file is at

C:\Documents and Settings\All Users\Application Data\VMware\vmnetnat.conf (they are symbolic links).

Suppose the IP of your virtual machine is 192.168.110.131 (it can be different!), open the file and add a line to the [incomingtcp] section:

80 = 192.168.110.131:80

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vmnetnat.conf 🗙	
9,, 10,, 1,, 20,, 30,, 40,, 50,, 60,, 70,, 80,, 90,, 100,, 110,, 120	-
<pre># Timeout for NBDS queries. nbdsTimeout = 3</pre>	
<pre>[incomingtop] # Use these with care - anyone can enter into your virtual machine through these</pre>	
<pre># FTF (both active and passive FTF is always enabled) # ftp localhost 8887 #8887 = 192.168.27.128:21</pre>	
# WEB (make sure that if you are using named webhosting, names point to # your host, not to guest And if you are forwarding port other # than 80 make sure that your server copes with mismatched port # number in Host: header!	
<pre># lynx http://localhost:8888 #8888 = 192.168.27.128:80</pre>	
<pre># SSH # ssh -p 8889 root@localhost #8889 = 192.168.27.128:22</pre>	III
80 = 192.168.110.131:80 [incomingudp] # UDP port forwarding example	

This will route all incoming connection to port 80 of our physical PC to your virtual machine. Under Windows 7, you may need to grant enough permission to write to this file (An alternative way is to copy it to your desktop, modify it, and then copy the file back to its location). Next, you will have to restart the VMWare NAT service by typing the following command in your windows system:

services.msc

鸟 服務 (本機)							
VMware NAT Service	名稱 ^			1	描述	狀態	啟動
	AIO Care Performance Service			(Chec		自動
<u>停止</u> 服務	Sector Content Folder Watcher					已啟動	自動
重新啟動服務	🔍 VAIO Content Metadata Intelligent Analyzing	i Mai	nager	1	提供	已啟動	自動
	& VAIO Content Metadata Intelligent Network	Servi	ice Manager	1	提供	已啟動	自動
描述:	🔍 VAIO Content Metadata XML Interface		Ū.				手動
Network address translation	Service Service					已啟動	手動
for virtual networks.	Service Service			7	為 V	已啟動	自動
	🗟 VAIO Media plus Content Importer					已啟動	自動
	🔍 VAIO Media plus Device Searcher					已啟動	自動
	🎭 VAIO Media plus Digital Media Server					已啟動	自動
	🔍 VAIO Power Management			7	為 V	已啟動	自動
	Service			ł	提供		手動
	🔍 Virtual Disk			1	提供		手動
	Service Authorization Service			1	Auth	已啟動	自動
	Service DHCP Service			[DHC	已啟動	自動
	🙀 VMware NAT Service			1	Net	已啟動	自動
	When the Ware USB Arbitration Service		啟動(S)	1	Arbit	已啟動	自動
	🔍 VMware Workstation Server		停止(O)	F	Rem		手動
	🔍 Volume Shadow Copy		暫停(U)	1	管理		手動
	SNService		繼續(M)			已啟動	自動
	S VUAgent		重新啟動(E)	1	Age		手動

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Find the VMware NAT Service and restart it. You can test to see if it is successful by typing http://127.0.0.1/ lab and see if your personal website is appearing.

16.2.2 Setting up MySQL

First, you need to install a database system (MySQL) to your system. To do so, issue the command:

sudo tasksel						
ou should see the following screen:						
You should see the following screen: Package configuration You can choose to install one or more of the following predefined collections of software. Choose software to install: I Basic Ubuntu server I DenSSH server I DenSSH server I DenSSH server I PostgreSQL database I Print server I Samba file server I Joncat Java server I Ubuntu Cloud Image (instance)						
<0k>						

Enable the LAMP server and TAB to Ok to install the server. After installation is complete, you will be asked for a password. This password is used to connect to your $\tt MySQL$ database (anyone with this password can connect to your database, so usually, we designate a different password for it).

Configuring mysql=server=5.5 While not mandatory, it is highly recommended that you set a password for the MySQL administrative "root" user. If this field is left blank, the password will not be changed. New password for the MySQL "root" user:
<0k>

Wait a few minutes and your installation will be complete.

16.2.3 Setting up the PHPBB3 Forum

With a database available, you can proceed to install a forum software. We will be using the PHPBB3. To install it to your system, use the following command:

sudo apt-get install phpbb3

The installation will continue until it will ask you if you are to use a common database configuration. Please select YES, and the next page will require you to select the database. Please select mysql. The installation will continue and ask you for the password to your database. Please input the password you assigned in the last section. Finally, the installation will require you to provide a password for the Administrator of the PHPBB3 forum. Please remember this password as you will be using this to configure your forum (This password must contain at least 6 characters).

Finally, to let people outside your server access this forum, create a symbolic link

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sudo ln -s /usr/share/phpbb3/www /var/www/phpbb

Restart your **apache2** web server (see previous lab manual) and you should be able to access the forum by the following URL: http://your ip/phpbb.

You should see something like:

Creater Communities Your new phpBB board Powered by Debian	<mark>Q₄SearchSea Advanced sea</mark>
🔆 Board index	
	©fAQ √∂Register O Lo
Information	
Sorry but this board is currently unavailable.	
🖒 Board index	The team • Delete all board cookies • All times are t
	Powered by phpBB® Forum Software © phpBB Group

To the right of the site, there is a Login button. Press it and use the account admin and the password you entered during installation to log into your forum with the highest administrator privileges.

16.2.4 Changing the Default Language

You may discover that your BBS is in English. The following steps will help you change it into Chinese version. The PHPBB3 website at https://www.phpbb.com/languages contains more than 50 translation. You can go to the website and download language files. Using FTP technique uploading it to your virtual machine, and then decompress them over your installation.

You will discover that although you changed the language packs, the system is still at its default: English! To change this, please go to the General tab and choose BOARD CONFIGURATION \rightarrow Board settings.

GENERAL	FORUMS	POSTING	USERS AND GROUPS	PERMISSIONS	STYLES	MAINTENANCE	SYSTEM			
You are log admin [Lo QUICK ACC Manage u	users Welcome to phpBB Thank you for choosing phpBB as your board solution. This screen will give you a quick overview of all the various statistics of your board. The links on the left hand side of this screen allow you to control every aspect of your board experience. Each page will have instructions on how to use the tools. Manage users Image users									
Manage g	roups			Board sta	tistics					
Manage f	orums			STATISTI				VALUE	STATISTIC	VALUE
Moderato	r log			Number of	posts:			1	Posts per day:	0.00
Spiders/R	opots			Number of	topics:			1	Topics per day:	0.00
PHP IIII01	nauon			Number of	users:			1	Users per day:	0.00
BOARD CO	FIGURATION	i		Number of	attachme	ents:		0	Attachments per day:	0.00
Attachme	nt settings			Board star	ted:			Thu Mar 18, 2010 8:24 pm	Avatar directory size:	Not available
Board set	tings			Database	size:			2.78 MiB	Size of posted attachments:	0 Bytes
Board fea	tures			Database	server:			MySQL 5.5.28-Oubuntu0.12.10.2	GZip compression:	Off
Avatar se	ttings			Board vers	sion:			3.0.10 [Re-Check version]	Orphan attachments:	0
Private m	essage setti	ings						. ,		
Post setti	ngs			Resynchro	onise or re	set statistics				

Change the Default Language to 正體中文 and press the Submit button at the end of the page.

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Soard settings Here you can determine the basic operation of your board, give it a fitting name and description, and among other settings adjust the default values for timezone and language.					
Board settings					
Site name:	Your new phpBB board				
Site description:	Powered by Debian				
Disable board: This will make the board unavailable to users. You can also enter a short (255 character) message to display if you wish.	● Yes ◎ No				
Default language:	English [GB]				
Date format: The date format is the same as the PHP date function.	English [GB] <u>18699</u> 2 5:52 am ▼ D M d, Y g:i a				
Guest timezone:	(UTC) Western European Time. Greenwich Mean Time				

The default language for the boards should now be Chinese the next time you login. How about for user default language that overrides this setting? Go to the User Control Panel at the upper left of the website.

_				
🛆 Во	ard index			
89 <u>Us</u>	e <mark>r Control Panel</mark> (0 new messages) • View your posts			@FAQ & Members @ Logout [admin
Infor	User Control Panel rently disabled.			
It is cu [Mode	rently Thu Dec 20, 2012 6:03 am ator Control Panel]			Last visit was: Thu Dec 20, 2012 6:01
View u	nanswered posts • View unread posts • View new posts • View active topics			Mark forums re
EVAN	I E CATEGODY	TOPICS	LAST DOST	

To the third tab ${\tt Board}$ ${\tt Preferences},$ you can change your language preferences again.

Overview Profile	Board preferences	Private messages Usergroups Friends & Foes	
		Edit global settings	
Edit global cottings		Users can contact me by e-mail:	🙆 Yes 💮 No
Edit posting defaults		Administrators can e-mail me information:	🕘 Yes 💮 No
Edit display options		Allow users to send you private messages: Note that administrators and moderators will always be able to send you messages.	Yes O No
		Hide my online status: Changing this setting won't become effective until your next visit to the board.	Yes O No
		Notify me on new private messages:	Yes O No
		Pop up window on new private message:	🔘 Yes 💿 No
		My language:	正體中文 🔽

Remember to press the Submit button at the end of the page. Why do you have to do this? Because the admin account was created before changing the system default language, so settings that it has was all before the change. From this point and on, new accounts will apply the new default languages.

16.2.5 Enabling the Forum Service to the Public

The default configuration prevents users from login and registering. To open your forum to the public, go into the administrative menu and look for board settings. Suppose we have Chinese language installed already, you will see: To the third tab Board Preferences, you can change your language preferences again.

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一般 版面 發表 會員及群組 權限 風格 維護 3	*#	
您目前登入的帳號為: admin 「発出」「発出 ACP 1	討論區設定	
Commit That If That was 1	在這裡,您可以決定討論區的基本組態,設定適當的名稱以及描述,以及調整合適的時區與語系預設值。	
快速進入	討論區設定	
管理會員	討論區名載:	Your new php88 board
管理存組		rou new pripos source
智理NUE	討論區描述:	Powered by Debian
101.11.40.487 SATE 18 99 1	國閉討論區:	◎ ₽ ◎ 示
PHP 資訊	這個動作將便會員無法連結討論區。如果您希望,那麼您也可以輸入一段簡短的 (最多 255 個字元) 訊息	
	22,886/15 *	
討論團基本組織	意谈語言:	正體中文
附加檔案設定	時間格式:	自訂 D M d, Y g;i a
>討論區設定	時間格式相同於 PHP date 函式。	

Change the 關閉討論區 option to 否. Your done! People can now enter your forum and register. Now you have every setting available. You can decide how should people register and be verified, create new boards, set permissions, change styles and etc.

16.3 Lab Questions

Show to the TA how you can accomplish the following tasks:

- See if your friend can access your personal web page from their machine.
- Have PHPBB3 installed, showing the screen.
- Change default language to Chinese.
- Create new discussion boards.
- Have a friend register and post an article.
- (Advanced) Download and install new styles for your forum (http://www.phpbb3styles.net/).

16.4 Lab Report

Demonstration is done in class.

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