

Lab1: Building your own Lab

Lab Objective:

- Preparing VMware Workstation
- Deploying F5 BIGIP System in Virtual Environment
- Licensing and Resource Provisioning
- Network configuration
- Connecting Backend servers [Linux based web servers] for testing

To deploy BIG-IP Virtual Edition on your workstation, VMware provides two great solutions:

- VMware Fusion
- VMware Workstation (For this Lab guide, we'll use VMware Workstation)

Step1: Preparing VMware

VMware is the virtual environment that will host F5 BIGIP System. We need to prepare it in the right way to make this setup work. The virtual machine **[F5 BIGIP VE]** comes with **four virtual NICs**, but we are going to use only three of them. The first one is the out-of-band management, and you need to configure there the IP address you wish to manage your F5 on. All the other interfaces will actively send traffic, and you can tune them at will. Just note that the management interface must be on a separate network than the production interfaces.

Lab1.1: Download and Install VMware workstation Software

- Lab1.2: Edit Network setting
 - Open VMware workstation and then Edit>> Virtual Network Editor
 - Configure the interfaces according to the following table



BIG-IP VM Adapter Name	VMware workstation	Network/VL AN Purpose	IPV4 Network address space	Interface on BIG-IP VM
Net Adapter	Vmnet1, host only	Management	10.1.1.1/24	Mgmt. Port
Net Adapter 2	Vmnet2, host only	Internal	172.16.1.100/24	1.1
Net Adapter 3	Vmnet3, host only	External	192.168.0.100/24	1.2
Net Adapter 4	Unused	Unused	Unused	1.3

a. Edit>> Virtual Network Editor >> Add Network >>Select Network to add >> VMnet2 and also add VMnet3

🔁 VIV	ware	Workstati	on							
File	Edit	View	VM Tabs	Help 🕨 👻 🚭	P 🕰 🕰					
Library				×	∂ Home ×					
<u>_</u>	Туре	iere to se	arch							
		🕀 Virtua	l Network Ed	itor				×		
		Name	Туре	External Connection	Host Connection	DHCP	Subnet Address		VVORKS	ATION 15.5
Ģ	SI	VMnet0 VMnet1 VMnet8	Bridged Host-only NAT	Auto-bridging - NAT	- Connected Connected	- Enabled Enabled	- 192. 168. 109.0 192. 168. 158.0		+)	
									e a New Machine	Open a Virtual Machine
		-VMnet In	formation		Add Network	Remove Net	work Rename N	letwork		
		Bridg	ed (connect V	Ms directly to the external net	twork)	Add a Virtua	l Network		×	
		Briag	ied to: Auton	natic	_	Select a netw	ork to add: VMnet	2	~	
		ONAT	(shared host's -only (connect	IP address with VMs) WMs internally in a private net	twork)	OK	Cancel	Help		
		Conn Host	e <mark>ct a host virt</mark> virtual adapte	tual adapter to this network er name:			_			
		Use	ocal DHCP ser	vice to distribute IP address to	o VMs		DHCP Setting	gs		
		Subnet I	P:	Subnet ma	sk:					
		Restore D)efaults I	mport Export	OK	Cancel	Apply	Help		



- **b.** Select **VMnet1** and change Subnet IP to 10.1.1.0/24
- c. Select VMnet2 and change Subnet IP to 172.16.1.0/24
- d. Select VMnet3 and change subnet IP to 192.168.0.0/24

[Management Network] [Internal Network] [External Network]

👲 Virtual N	Vetwork Edi	tor			×
Name VMnet0 VMnet1 VMnet8 VMnet2 VMnet3	Type Bridged Host-only NAT Host-only Custom	External Connection Auto-bridging - NAT -	Host Connection - Connected Connected Connected -	DHCP - Enabled Enabled Enabled Enabled	Subnet Address - 10.1.1.0 192.168.138.0 172.16.1.0 192.168.0.0
Add Network Remove Network Rename Network VMnet Information O Bridged (connect VMs directly to the external network)					
Bridged to: Automatic Automatic Settings O NAT (shared host's IP address with VMs) NAT Settings Image: The store of					
Connect a host virtual adapter to this network Host virtual adapter name: VMware Network Adapter VMnet3 ✓ Use local DHCP service to distribute IP address to VMs Subnet IP: 192.168.0.0 Subnet mask: 255.255.0					
Restore Defaults Import Export OK Cancel Apply Help					



Step2: Downloading the F5 BIG-IP Virtual Edition

- 1. Navigate and Login at https://downloads.f5.com/esd/productlines.jsp , if you do not have an account then create new account with email ID
- 2. Click Find a Download, select BIG-IP v13.x / Virtual Edition, and click Virtual-Edition again
- 3. Read the License Agreement and click I Accept
- 4. Select the **BIGIP**-currentversion.ALL-scsi.ova file, with the description Image file set for VMware **ESXi** Server
- 5. Choose the nearest download location and Download File.

Step3: Requesting for Trial/Demo License for BIG-IP VE and BIG-IQ

- 1. Go to https://downloads.f5.com/trial/
- 2. Request for Free Trial License to Evaluate BIG-IP VE and BIG-IQ
- 3. Check Your Inbox for **Registration key** [Expiry is 30 days]

Step4: Importing F5 BIG-IP Virtual Edition Image

- 1. From VMware Workstation , navigate to **File>Open** click choose file
- Select the BIG-IP VE Image File (ova/ovf File) from your download location and click open
- Name the new virtual Machine whatever you want for our example we'll use F5 BIG-IP LTM1

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Lab 2: Creating LTM Objects [Node, Pool and Virtual Server]

Lab Objective:

- Create three Nodes [172.16.1.1 , 172.16.1.2 , 172.16.1.3]
- Create Pool and Add Members [Nodes with Port]
- Configure a virtual server and associate with the pool
- Verify traffic flow through the BIG-IP System using statistics

Lab Requirements:

 GUI access of F5 BIGIP System with management IP address https://10.1.1.1

A. Create Nodes

Server1:172.16.1.1, Server2:172.16.1.2, Server3:172.16.1.3

1. Create a Node using the information in the Following table.

Со	nfiguration utility				
Loc	Local Traffic>>Nodes>Node List, then click Create				
	General Properties				
	Name	Server1			
	Description	Leave Blank or Any description			
	Address	172.16.1.1			
	Configuration section				
	Health Monitors	Node Specific			
	Select Monitors	Select ICMP from Available List			
	Ratio	1			
	Connection Limit	0			
	Connection Rate Limit	0			



Local Traffic » Nodes : Node List » New Node...

Name	Server1
Description	
Address	Address FQDN 172.16.1.1
onfiguration	
Health Monitors	Node Specific V
Select Monitors	Active Available /Common icmp <<< >> x Active Available gateway_icmp https_443 real_server snmp_dca tcp_echo
Availability Requirement	All Health Monitor(s)
Ratio	1
Connection Limit	0
Connection Data Limit	0

2. Click Repeat.

Note: Repeat will save the current object and prepare you to create another object of the same type.

3. Once the "success" icon appears at the top of the page, change the entries in the **general Properties** section to :

Name	Server2
Address	172.16.1.2

4. Click **Repeat** to create third node object change the entries in the **general Properties** section to:

Name	Server3
Address	172.16.1.3

5. Click **Finished**.



B. Create a Pool

1. Create a Pool using the information in the Following table.

Configuration utility			
Local Traffic>> Pools>>Pool list, then click Create			
Configuration Sect	ion		
Configuration		Basic	
Name		http_pool	
Health Monitors		Move tcp from Available to Active .	
Resources section			
New Members		Node List	
		Address: Server1(172.16.1.1)	
		Service Port: 80 HTTP	
		Address: Server2(172.16.1.2)	
		Service Port: 80 HTTP	
		Address: Server3(172.16.1.3	
		Service Port: 80 HTTP	
Click		Add	
When Complete, C	lick	Finished	

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_vs1

General Properties	
Name	http
Vettech Cloud	

www.nettechcloud.com

		Standard
	Destination Address	Address 192.168.0.200
	Service port	НТТР
	Resources section	
	Default Pool	http_pool
When complete, Click		Finished

Test the Virtual Server

- 1. Open web browser window and establish a connection to your virtual server at http://192.168.0.200 Note the results of the page that is displayed, then "hard-refresh" the page five to ten times. (In most browsers ctrl+F5 hard refreshes the page.)
- 2. Verify that traffic was sent through your virtual server and pool members by examining statistics on local traffic and answering the questions below in the space provided.

Hint: use the **Refresh** and **Reset** buttons in the **Display options** area to manage the statistics display.

Configuration utility				
Statistics >>Module statistics >> Local Traffic				
Display Options Section				
Statistics Type : Virtual servers				
Do you see the incoming traffic from client to				
virtual server?				
Do you see the outgoing traffic from virtual				
server to client?				
Statistics Type : Pools				
Did traffic go to each pool member?				
Did each pool member manage the same				
number of connections? (Look at the values				

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172.16.1.3:80?

