INTERNSHIP ON MIKROTIK ROUTER AND LINUX (OS)

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This Report Presented in Partial Fulfillment of the Requirements for the Degree of Bachelor of Science in Computer Science and Engineering

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DECLARATION

We hereby declare that, this project has been done by us under the supervision of **Md**. **Rayhan Amin, Lecturer, Department of CSE** Daffodil International University. We also declare that neither this project nor any part of this project has been submitted elsewhere for award of any degree or diploma.

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ABSTRACT

Whenever at least two PCs are prepared for interconnect and data or data, at that point we will mastermind them. We have to begin our PC volume and exchange information or information together and after that we should call some extraordinary PC servers. The framework has various capacities that are like the remarkable kind of server. For instance - static, PPPOE, website block, Tuesday firewall, interface, root, DNS, DHCP, VLAN, NAT, ARP, FTP server and scaffold. Every one of them does the contrary work and is difficult to hold a framework without them. On the off chance that the framework is associated with the Internet and we need to ensure your information, at that point they need to set up the server utilizing the Linux working framework. The explanation behind my report's choice is "Server Installation and Configuration ISP (Linux Platform)". For the predetermined server utilizing SSP, the essential for the server, programming and preparing of the item, the procedure of server taking care of and direct examination of the server were told.

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CHAPTER 1 Introduction

1.1 Introduction

During this data innovation time currently, the quantity of various individuals all through the world is generally connected with web creations and an indispensable piece of the server. Linux is likely the most valuable free programming reproduction from the principal rocket, or, as late as everything else. We can't do some recognizable proof with web correspondence without server. Consequently, the DNS server for web server is required. The old practice is to impact the reasonable practice, estimation of state and business issues in the transitory position. Prior to giving all degrees in restorative science, building and bookkeeping divisions, passage level positions have their own specific significance. Today every business and business are described by programming-based correspondence and web advancement. This is called web based business.

Web banking, SMS ready banking, versatile banking, EFT (electronic store move) and so on without the server is nonsensical. DNS (space name structure) is useful on the server and we can work with various kinds of organization utilizing this system. Without web server, web development, email, internet business, broadcast communications, versatile advancement and that's only the tip of the iceberg, incredible and DNS are among them. Today, banking industry and different business affiliations are totally reliant on different sorts of programming and online innovation and the server is extremely essential. In light of ATM innovation (exchanging programming), banking programming, charge cards, Master cards, online exchanges and different programming and servers, particularly one of Linux and their Linux. It has been shaped in a work structure for business, guidance, and individual benefits.

1.2 Motivation

I am correct currently looking for after my Bachelors in Computer Science Engineering at Daffodil International University. I have understood the significance of progressively down to earth data that will positively supplement the learning obviously books and will most likely feature an increasingly far reaching perspective on the issues. In an impermanent activity, I found that I was skilled quietly in the Linux framework and the server organization and the fine parts of the Mikrotik. As a web get to supplier, I have communicated my mind great, conversing with individuals, passing on their needs and giving them a superior organization. My capacity to peruse and comprehend my emotions enormously and rapidly works, however then amazing.

1.3 Internship Objectives

My entrance level area program set itself up as a certified one to grandstand a definitive objective forceful action. In this way, it is very viable in progression of ability. I could present some extraordinary quality to myself as a skilled. Programming building brief work still means to take a shot at school work, help dynamic arrangements and advancement to work in the study hall.

1.4 Introduction to the Company

I am a passing boss to get my readiness, Future Technology. Commended yourself as one of the rule ISP pro associations in Bangladesh itself. This is the most experienced and most settled relationship in the field of ICT, where its key business ethics relates to whole deal relationship with clients. It has all the earmarks of being a break in the improvement of the whole decade of the decade, they are playful for what they have achieved, and in like way, there has been a significant augmentation in their fantasies for the future similarly as empowered.

It can influence you that they started their activities in 2002. In the prior years, they expanded their work and association portfolio as shown by the customer's suggestion and time-honed sales. They work with various national endeavors and open affiliations and complete predisposition. They are using the latest progressions and patching up of the association where it is required. Their Corporate Networks Solutions Division is skilled in achieving the adequacy of state-tech system and media transmission structure with the gathering of exceedingly fruitful explicit aptitudes.

1.5 Report Layout

Chapter-1 Depicted every one of the things presentation after that inspiration, temporary position objects.

Chapter-2 Secured the objective gathering at that point SWOT examination, association structure.

Chapter-3 Included preparing, Responsible obligations, various kinds of steering arrangement (DHCP, DNS, Brigade, NAT) and Linux Basic Commands are portrayed.

Chapter-4 Depicted Competencies Earned at that point keen arrangement and reflection.

Chapter-5 My report describes the conclusion and the professional scope of Linux and Mikrotik.

CHAPTER 2

Organization

2.1 Introduction

I am an impermanent boss to get my preparation, Future Technology Ltd. Future Technology Ltd. applauded yourself as one of the principle ISP specialist organizations in Bangladesh itself. This is the most master and most blessed association in the field of ICT, where its essential business morals identify with long haul associations with customers. It appears to be a crack in the improvement of the entire decade of the decade, they are extremely cheerful for what they have accomplished, and moreover, there has been a critical increment in their dreams for the future just as energized. It can persuade you that they began their exercises in 2002. In the earlier years, they extended their work and organization portfolio as indicated by the client's proposal and time-sharpened solicitation. They work with numerous national ventures and open associations and complete bias. They are utilizing the most recent advancements and rearrangement of the organization where it is required. Their Corporate Networks Solutions Division is gifted in accomplishing the productivity of state-tech framework and media transmission framework with the accumulation of profoundly viable specific aptitudes.

2.2 Product and Market Situation

Bangladesh is a meriting populace, and its objective is to be digitized by 2021. Subsequently, every office and each association in our nation ought to be digitized. Accordingly, IT Master and IT specialists need a tremendous number in the accompanying couple of years. So Daffodil Online Limited gauges a basic piece of displaying action by giving different organization like:

Security ensure

- Web site make and improvement
- Making an IT Master through compelling getting ready
- Displaying and Communications
- Giving different specialized help to the country
- Giving different online administrations to clients
- Offering help for server establishment framework advancement

So finally, I can say that Daffodil Online Ltd is an important part of IT based advertising.

2.3 Target Group

Give numerous administrations and their objective gathering is these are given underneath:

- a) Global Company and Corporate house.
- b) Security Solution
- c) Space Registration and web Hosting
- d) Site Development
- e) Expert Courses and Training
- f) Open Source application arrangement
- g) Web access supplier (ISP)

2.4 SWOT Analysis

SWOT implies Strengths, Weakness, Opportunities and Threats



Figure 2.4.1: Shows Screen SWOT elaborate

Shortcomings is made by absence of capital and absence of Fame and degree is territory development and target showcase gathering and in conclusion dangers are rivalry and opening day issues.

2.5 Organizational Structure

There are such huge numbers of associations in our nation and their have possess authoritative structure. Four kinds of authoritative structure utilitarian, at that point divisional after that network.

The framework structure is testing since it can contact numerous supervisors for hard

revealing and learning. Thus, it is significant for laborers to know their job, duty and employment inclinations.

Autarchy: Although the past three hierarchical structures can work for certain associations, another half and half authoritative structure might be useful for startup or little organizations.

CHAPTER 3 Tasks, Projects and Activities

3.1 Daily Task and Activities

I am an impermanent boss to get my learning, Future Technology. Commended yourself as one of the fundamental ISP specialist co-ops in Bangladesh itself. This is the most experienced and most settled association in the field of ICT, where its essential business morals identify with long haul associations with customers. It has made a wreck in the improvement of the entire decade of the decade, they are exceptionally cheerful for what they have accomplished, and in like manner have altogether expanded their points of view for the eventual fate of supported eagerness. It can persuade you that they began their exercises in 2002. In the earlier years, they extended their work and organization portfolio as per the client's proposal and time-sharpened solicitation. They work with numerous national ventures and open associations and complete bias. They are utilizing the most recent advancements and rearrangement of the organization where it is required. Their Corporate Networks Solutions Division is gifted in accomplishing the proficiency of state-tech framework and media transmission framework with exceptionally profitable properties.

Month to month Collection Month - 1 In the first step I learned constrained in the principal month of the level position and did the accompanying:

- IP tending to
- Sub-netting
- ISP line design
- interface WAN, LAN
- Gateway, DNS, NAT, ping
- DHCP Server

Month - 2 In the second month of entry level position on constrained daffodil online I learned and did the accompanying:

- PPPOE
- Bridge

- Queues, Bandwidth
- Web website square, Mangle design

Month -3 daffodil online entry level positions is constrained to the last I've learned and achieved the accompanying:

- Linux establishment.
- Practices Linux order.
- Hard plate parcel.
- Add, Delete, Lock.
- utilizing the board
- Basic Linux Commands.
- Man, form, history.
- Add client and other consent in a document.

The accompanying works are performed:

- Information of various kinds of index.
- File and catalog duplicate, move, change, bother, Edit.
- User Group and another authorization.
- Shell Scrip.
- Managing at direction and Backup

3.2 Events task and Activities

In training segment, the most significant thing is to give quality instruction to talented and experienced instructors. Future's does not examine this issue. To be the best educator, Future innovation keeps up a foundational asylum. In the first place, applicants will sit for composed tests, at that point a meeting will be taken. At last, the applicant must give 2/3-exhibition classes, we should create human capital for tending to our 21st century challenge and instruction is a standout amongst other equipping to battle against destitution and separation. Since its expressing, Future Technology has been attempting to create and convey new aptitudes and information in innovative and professional training and to give the important abilities and gear for the 21st century occupation advertises. Through which we react to understudies. Lastly, the postulant is chosen or rejected. We generally underline on the up-and-comer.

To guarantee economic improvement in the public arena, so, toward the end, Future Technology is making specialized specialists in IT segment in the nation and abroad.

3.3 Project Task and Activities

3.3.1 MikroTik Router

MikroTik is Ltd. Additionally Known worldwide as MikroTik. Latin Manufacturers Computer Networking Equipment Group. It sells remote items and switch. Established in 1995, the remote innovation market stock was sold. By 2014, the organization has in excess of 100 workers, the organization's items are known for its ease alternatives in costly switch and Ethernet radio hand-off lines [6].

Figure 3.1: The screen shows the MikroTik router installed

3.3.2 Winbox Interface Menu

We don't have much work with the interface menu. Fundamentally, the interface menu is then used to interface or to interface remark. Here in our venture we will rename ether1 as Ether 1-WAN, which will give a superior comprehension of the Ether 1 WAN association. We can remark with Ether 1 that it is being utilized for WAN association.

Add/Set Connect To RoMON Connect	Click to
Managed Neighbors	Connect
T Refresh	Find all 3
MAC Address / IP Address / Identity Versio	on Board
	2 (st RB2011UiAS-2Hn

Figure 3.2: Presentations the screen show of Win box

3.3.3 Static Configuration

After the total establishment of the microcontroller switch working framework, we should simply design the interface. Give and give passwords to the virtual machine (if secret key is arranged, generally leave the secret word field clear.

- Interface WAN, LAN
- IP address WAN, LAN
- Gateway
- DNS
- NAT
- Ping
- PC IP set
- Ping
- Interface WAN, LAN

Interface WAN, LAN

Above all else, we have to click speedy set at that point snap to ether port 1 at that point proclaim either-1 is WAN port.

🔏 Quick Set										
CAPsMAN	>	Inter	face Interface List	Ethemet	EoIP Tunnel	IP Tunnel	GRE Tunne	VLAN VRRI	Bonding	LTE
Interfaces					Detect Inte	emet			all managements	
Wireless					Detect into		J L2 MTU	Ŧ	Bx	
Bridge		-	Name /	Type Ethernet		Actual MTU 15	00 1598	1x	0 bps	0 br
PPP		R	tether2_LAN	Ethernet			00 1598	131	.5 kbps	11.2 kb
witch			<pre></pre>	Interface	e <ether1_wa< td=""><td>N></td><td></td><td></td><td></td><td></td></ether1_wa<>	N>				
Carle Mesh			ether5	Genera	al Ethernet	Loop Protec	t Overall Sta	ts Rx Stats		
IP	1	-	♦i>ether6	1				and a second		ок
MPLS	1		<pre> ether8 </pre>	6		Name: athe	and the second secon			Cancel
Routing	Þ		♦ i>ether9	E		Type: Ethe	emet			Apply
			ether10	Ę		MTU: 150	D			
System	1	N.	<i>sfp1</i>	- 8						Disable
Queues		X	≪≫wlan1	-1.4	Actual	MTU: 150	0			
Files					L2	MTU: 159	8			Comment
Log		+			Max L2	MTU: 4074	4			Torch
A Radius		12 ite	ems (1 selected)		MAC Ad	dress: D4:0	CA:6D:83:DE:E	8	- T	Cable Test
💥 Tools	Ľ,					ARP: enat				Blink
📰 New Termin	al				ARP Tin					set MAC Address
ICD					ARP III					Reset Counters
MetaROUT	ER									NOOS COGNICIO

Figure 3.3: WAN demonstrates the screen print port

we have to click snappy set at that point snap to ether port 2 at that point announce either-2 is LAN port.

General	Ethemet	Loop F	rotect	Overall Stats	Bx Stats		
	Destination	1 50 55 6				29553	OK
		Name:	ether2	2_LAN			Cancel
		Type:	Ether	net			Apply
		MTU:	1500				
	Actua	al MTU:	1500				Disable
	L	2 MTU:	1598				Comment
	Max L	2 MTU:	4074				Torch
	MAC A	ddress:	D4:CA	A:6D:83:DE:E9			Cable Test
		ARP:	enable	ed		Ŧ	Blink
	ARP T	imeout:	-			1-	Reset MAC Address
							Reset Counters

Figure 3.4: The LAN screen shows the print port

IP address WAN, LAN

IP > Address > Address List > + > Address 10.10.10.120/24 > interface (ether1_WAN)

📲 📲 Bridge		10		
PPP	ARP			
🕎 Switch	Accounting			
°te Mesh	Addresses	Address List		
255 IP 1	Cloud	and the second s		
MPLS N	DHCP Client			Find
	DHCP Relay	Address	/ Network	Interface
System	DHCP Server	J Nout	Address	
Queues	DNS			
Files	Firewall	Add	Iress: 10.10.10.120/24	ок
Log	Hotspot	Netv	work:	Cancel
A Radius	IPsec	Interf	face: ether1_WAN Ŧ	Apply
🖌 Tools ۲	Kid Control		1	Disable
New Terminal	Neighbors		K	
	Packing		Select ether1_V	VARnment
	Pool			Сору
Partition	Routes			Remove
Make Supout.rif	SMB	0 items	ed	
Manual	SNMP			

Figure 3.5: Screen printed IP address shows WAN

IP > Address > Address List > + > Address 192.168.0.1/24 > interface (ether2_LAN)

Address List	
	Find
Address Network 音10.10.10.120/ 10.10.10.0 音192.168.0.1/24 192.168.0.0	Interface ether1_WAN ether2_LAN
Address <192.168.0.1/24>	
Address: 192.168.0.1/24	ок
Network: 192.168.0.0	Cancel
Interface: ether2_LAN	Apply
	Disable
Select ether2_L	AN Comment
	Сору
item	Remove
enabled	

Figure 3.6: Screen printed IP address demonstrates LAN

Gateway

```
IP > routes > + > Gateway \ 10.10.10.1 > Apply > ok
```

Bridge			
📫 PPP	ARP		
🕎 Switch	Accounting		
TS Mesh	Addresses	Route List	
题 IP 👔 🖹	Cloud	Routes Nexthops Rules VRF	
MPLS N	DHCP Client	[] → - ✓ Find	all
Routing	DHCP Relay	Dist. Address / Gateway Distance Routing Mark Pref. Sc	ource
Bill System ►	DHCP Server	DA ▶ 10.10.0/24 ether1_WAN reachable 0 10.10.1 DAC ▶ 192.168.0.0/24 ether2 LAN reachable 0 192.161	
Queues	DNS	DAC ▶ 192.168.0.0/24 ether2_LAN reachable 0 192.168	S.U. I
Files	Firewall	New Route	[
Log	Hotspot	General Attributes	ОК
Radius	IPsec	Dst. Address: 0.0.0.0/0	Cano
e Tools	Kid Control	Gateway: 10.10.1	
New Terminal	Neighbors	Gateway: 10.10.10.1	Apply
LCD	Packing	Check Gateway:	Disab
MetaROUTER	Pool	Gateway IP	Comme
Partition	Routes		Сору
Make Supout.rif	SMB	2 Distance:	
Manual	SNMP	Scope: 30	Remo
New WinBox	Services	Target Scope: 10	
Exit	Settings	Routing Mark:	
	Socks		
	TETP	Pref. Source:	

Figure 3.7: The Screen Print Gateway association appears

<u>DNS</u>

Domain name system IP > DNS > server 203.190.10.252

📲 📲 Bridge	2 				
PPP	ARP				
🛫 Switch	Accounting				
ete Mesh	Addresses				
IP	Cloud	DNS Settings			
MPLS N	DHCP Client		1		
Routing	DHCP Relay	Servers:	203.190.10.252		ок
System	DHCP Server		8.8.8.8	•	Cancel
Queues	DNS	Dynamic Servers:			Apply
Files	Firewall		Allow Remote Requ	lests	Static
Log	Hotspot	Max UDP Packet Size:	-	300.0	
A Radius	IPsec	Max ODT Tacket Size.	4030		Cache
💥 Tools 🗅	Kid Control	Query Server Timeout:	2.000	s	
New Terminal	Neighbors	Query Total Timeout:	10.000	s	
	Packing				
MetaROUTER	Pool	Max. Concurrent Queries:	100		
Partition	Routes	Max. Concurrent TCP Sessions:	20		
Make Supout.rif	SMB		20.40	KiB	
Manual Manual	SNMP	Cache Size:		KIB	
New WinBox	Services	Cache Max TTL:			
Exit	Settings	Cache Used:	17 KiB		

Figure 3.8: Screen print demonstrates IP DNS setting

<u>NAT</u>

Network address translation IP > Firewall > NAT > + > Action masquerade

Bridge		-						
🚅 PPP	ARP							
🛫 Switch	Accounting	_						
18 Mesh	Addresses	Firewall						
se ip 🔥 🖹	Cloud	Filter Rules	NAT Mangle Raw	Service Ports	Connection	Address Lists	Layer7 Pr	otocols
MPLS	DHCP Client	*		00 Reset Co		Reset All Counter	_	constantenende
Routing	DHCP Relay	Actio	البجار المسارك			roto Src. Port	Dst. Port	In. Inte
System	DHCP Server	# Addi	Les les les	C. Address Ds	L. Address Fi	1010 SIC. FOIL		In. Inte
Queues	DNS		New NAT Rule	1		-		
Files	Firewall		Advanced Extra	Action Statis	tics	ОК		
Log	Hotspot		Action: ma	squerade	/ Ŧ	Cancel		
Radius	IPsec			Log	/	Apply		
Tools	Kid Control		10 10 10 T	LOG				
New Terminal	Neighbors		Log Prefix:	_/		Disable		
LCD	Packing		To Ports:	/	•	Commen		
MetaROUTER	Pool					Сору		
Partition	Routes		Ľ	•		Remove		
Make Supout.rif	SMB	0.0	Select	t masque	abe	Reset Court	-	
Manual	SNMP	0 items	Jelect	masque	auc			
New WinBox	Services					Reset All Cou	nters	
Exit	Settings							
	Socks							

Figure 3.9: Screen print NAT completing showcase

<u>Ping</u>

Snap to new terminal after that order ping 8.8.8.8 at that point press enter

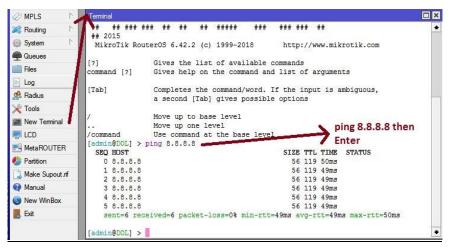


Figure 3.10: Screen Print Ping End Display

PC IP set

Snap to web association symbol at that point system setting after that change connector alternative then Ethernet, now snap to right catch then properties and use IP address and DNS server address.

neral	
	ed automatically if your network supports i need to ask your network administrator i.
Obtain an IP address aut	omatically
Ose the following IP addr	ess:
IP address:	192.168.0.2
Subnet mask:	255 . 255 . 255 . 0
Default gateway:	192.168.0.1
Obtain DNS server addre	ss automatically
Output the following DNS se	
Preferred DNS server:	203.190.10.252
Alternate DNS server:	8 . 8 . 8 . 8
Validate settings upon e	xit Advanced

Figure 3.11: Shows Screen Print getting IP in pc

3.3.4 DHCP Server

The DHCP server incorporates both server and customer part. DHCP transfer, DHCP customer, different DHCP systems, static and dynamic DHPP arrangements, radio help infinitesimal switch working frameworks incorporate DHCP or Dynamic Host Control Protocol. DHCP is utilized for simple dispersion of IP addresses in neighborhood.

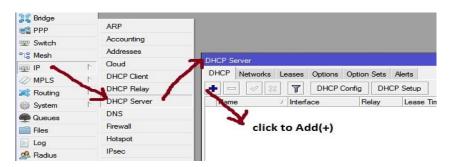


Figure 3.12: Screen print arrangement show DHCP

DHCP Setup	DHCP Setup
Select interface to run DHCP server on	Select network for DHCP addresses
DHCP Server Interface: ether2_LAN	DHCP Address Space: 192:168.0.0/24
Back Next Cancel	Back Next Cancel
Click toNext	Click toNext

DHCP Setup	DHCP Setup
Select pool of ip addresses given out by DHCP server	Select gateway for given network
Addresses to Give Out: 192.168.0.2-192.168.0.254	Gateway for DHCP Network: 192.168.0.1
Back Next Cancel	Back Next Cancel
Click to Next	V Click toNext

Figure 3.13: Print all procedure of screen show and effectively DHCP arrangement

DHCP Setup
Select DNS servers
DNS Servers: 203.190.10.252
8.8.8.8
Back Next Cancel
Click to Next

Figure 3.13: Print all process of screen display and successfully DHCP setup

3.3.5 PPPOE

Point-to-Point Protocol over Ethernet first thing in the PPPOE IP at that point pool at that point include (+) and make name at that point putting address.

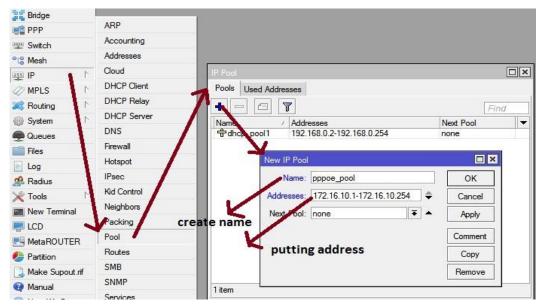


Figure 3.14: Screen creation demonstrates PPPOE

3.3.6 Bridge

The extension can make a coherent interface. This extension interface empowers to consolidate between at least two physical interfaces or physical and sensible interfaces. Name another interface and snap OK. In this way, to make a scaffold association, make another interface with the given name, click "connect". At that point click on the scaffold tab "+" will open another window.

Step 1

🚰 Quick Set		
CAPSMAN		
T Wireless		
Bridge		
PPP		
🛫 Switch		
°℃ Mesh		
IP T	Bridge	
	Bridge Ports VLANs MSTIs Port MST Overrides Filters NAT Hosts	MDB
C/ 111 20	🛃 📼 🖉 🍸 Settings	
and the damag	Name / Type L2 MTU Tx	Rx
System ۲	R Ninterface <bridge_lan></bridge_lan>	
Queues	General STP VLAN Status Traffic 🐂	ок
Files	Name: bridge LAN	Cancel
Log		
🥵 Radius	Type: Bridge	Apply
🔀 Tools 💦 🗅	MTU:	Disable
New Terminal	Actual MTU: 1500	Comment
ECD	L2 MTU: 65535	
MetaROUTER	MAC Address: C6:5A:CE:68:CE:45	Сору
Partition		Remove
📑 Make Supout.rif	1 žem	Torch
😋 Manual	ARP Timeout:	
Sew WinBox	Admin. MAC Address:	
📙 Exit		
	Ageing Time: 00:05:00	
	IGMP Snooping	
	Fast Forward	

Figure 3.15: Shows Screen Print create of BRIDGE process (1)

<u>Step 2</u>

Bridge	Ports	VLANs	MSTIs	Port MST Ov	verrides	Filter	s NAT	Н	osts	MDB	
Ł			9 7		L. SSC						1005720
#	a dest	ace	Bri	idge	Ho	rizon	Priority (٦	Path	Cost	Role
0 IH	tte	ther4	bri	dge_LAN	nana ban	asashi		80	Grand	10	disabled port
	A-A -	ther3		dae LAN				80	0	10	disabled port
1 IH	1-1-6	uners	1000	LICE LININ	- 11-	10					
1 IH 2 IH		ther5	bri	dge_LAN dge_LAN	clic	k ad	d to	80			disabled port

Figure 3.16: Shows Screen Print make of BRIDGE process (2)

<u>Step 3</u>

😹 Bridge			
PPP	ARP		
🕎 Switch	Accounting		
ଂଞ୍ଚ Mesh	Addresses	Address List	
IP N	Cloud		
MPLS N	DHCP Client		1
Routing	DHCP Relay	Address / Network Interface	-
System	DHCP Server	D ⊕172.168.19.255 172.16.10.254 <pppoe-numabi< td=""><td>i></td></pppoe-numabi<>	i>
Queues	DNS	宁 宁 192.168.0.1/24 192.168.0.0 bridge_LAN	
Files	Firewall	Address <192.168.0.1/24>	
Log	Hotspot	Address: 192.168.0.1/24 OK	
🧟 Radius	IPsec double	Network: 192.168.0.0 Cancel	
💥 Tools 🗈 🗅	Kid Control click		
New Terminal	Neighbors	Interface: bridge_LAN Apply	
LCD	Packing	Disable	
	Pool	select interface Comment	
Partition	Routes		
Make Supout.rif	SMB	Сору	
Marce superior	SNMP	3 it Remove	
New WinBox	Services	enabled	

Figure 3.17: Shows Screen Print make of BRIDGE process (3)

3.3.7 LINUX

Linux is a work structure created from a piece made by Linux Torvalds while under the University of Helsinki. Much of the time, it is obvious to a great many people in Linux. It might be because of both political and operational, it ought to be clearer. Linux is a practical system that alludes to the utilization of other work structure, Windows, Mac OS, MS-DOS, Solaris and others as a differentiation choice. An interface between Linux PC/Server Tools and its continuous undertakings. An unprotected, cross-

organize viable system from the Linux open source working structure, or Linux OS, Unix PC, PC, Netbook, Multipurpose and Tablet contraption, PC game support, server, supercomputer and Unix outlook. There is a breaking point from the sky. Linux OS is utilized over and again as a Linux Convention for both work zones and servers and supports the Linux part (utilitarian system focus) and apparatus and libraries. The notable Linux OS applications use Centos, Dabian, Ubuntu, Fedora, Red Hat and Express [1].

3.3.8 Installation Centos

CentOS Linux OS variant. Focuses have been set up for big business working frameworks, it is an appropriation of Linux working frameworks dependent on RHEL (Red Hat Enterprise Linux) and as of now the most well-known Linux distributions for web servers.



Figure 3.18: Centos demonstrates the establishment procedure (1)



Figure 3.19: Centos demonstrates the establishment procedure (2)



Figure 3.20: The show in Centos demonstrates the last procedure

3.3.9 Creating Linux Partition

Making Linux in Partition:

To introduce Linux, we have to make root/boot, (/), swap, /home for our segments.

Root Partition

There is a root segment where "/" is situated on the root parcel, where every one of the documents (aside from boots) are situated in the root index. Least 5 GB HDD space is required.

Boot Partition:/boot

Segment Boot (200 MB): The segment mounted on/boot/with the records utilized during the bootstrap procedure contain the working framework piece (which enables your framework to boot Linux). Because of requirements, you should make a nearby ext3 parcel to hold these documents. For most clients, a 200 MB boot segment is adequate [4].

SWAP Partition

Parcel swap is utilized to help virtual memory. In different hands, the information is kept in touch with a swap parcel when there isn't sufficient RAM to store the prepared information on your framework. Segment Swap 2 GB virtual RAM for 2 GB of physical RAM, and afterward any sum over 2 GB ought to be equivalent to 1x physical RAM, yet it can't be under 32 MB.

/home Partition:/home

Fill the mount point/home and most noteworthy allowed size

Device	Size (MB)	Mount Point/ RAID/Volume	Туре	Format		
✓ LVM Volume Groups						
✓ VolGroup	204596					
LogVol01	2048		swap	\checkmark		
LogVol00	100000	1	ext4	\checkmark		
LogVol02	102548	/home	ext4	\checkmark		
→ Hard Drives						
Sda (/dev/sda)						
sdal	200	/boot	ext4	\checkmark		
sda2	204599	VolGroup	physical volume (LVM)	\checkmark		
			Create	Edit	Delete	Reset

Figure 3.21: Screen Display Screen Print Partition

3.3.10 Files and Directories

An accumulation of registries and/or different indexes. Since a registry can do it. On the off chance that there are different catalogs, we get a registry arrangement. Top degree of control.

Unique catalog Files and indexes can be named by the way. Unique catalog.

Is alluded to as/Other catalogs are determined by the way. Shaped the way.

Separate by name/by A record can be determined by way. On the off chance that it's the registry, at that point.

The way could end with a/. A flat out way registry begins with classification course and name catalog or document under it. For instance:/and so on/hostname specifies the hostname of the above record hostname in the root catalog of the root index.

3.3.11 User login and Terminal Interface

CentOS release 6.4 (Final)
Numabi
Password:
Cancel Log In

Figure 3.22: Screen Centos demonstrates the client's login page print

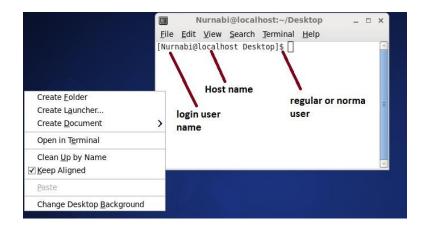


Fig 3.23: Shows Screen Print terminal

3.3.12 Basic Command

- Whoami
- /root/home
- clear
- history
- df -Th
- lsblk
- lscpu
- cat/etc/redhat -release
- free -m
- uname
- uname -a
- cat/proc/meminfo
- date
- cal
- cal 2019
- hostname
- pwd
- poweroff

- init 0
- shutdown -h now

3.3.13 FTP Server (File Transfer Protocol)

Record Transfer Protocol (FTP) is a standard framework show that begins with a large group of PC reports and afterward used to pay for the following host on the TCP-based framework. For instance, the Web a basic system with a FTP server. FTP depends on a server building and uses the separated control and report relationship among clients and servers. FTP customers can check themselves utilizing a non-unknown substance sign in show as a client name and a mystery word, however the server can plan secretly yet can namelessly interfaces. Safe diseases that affirm client names and privacy and encoded posts, FTP is regularly ensured with SSL/TLS (FTPS). The SSH File Transfer Protocol (SFTP) is utilized now and similarly, however it is another, extraordinary one [5].

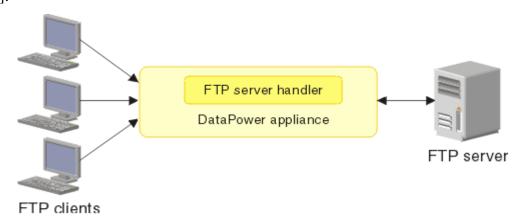
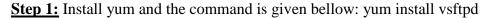


Figure 3.24: Simple Network with FTP Server



```
Iroot@localhost Desktop]# yum install vsftpd*
Loaded plugins: fastestmirror, refresh-packagekit, security
Loading mirror speeds from cached hostfile
* base: mirror.dhakacom.com
* updates: mirror.dhakacom.com
base | 3.7 kB 00:00
extras | 3.4 kB 00:00
updates | 3.4 kB 00:00
Setting up Install Process
Package vsftpd-2.2.2-24.el6.x86_64 already installed and latest version
Nothing to do
[root@localhost Desktop]#
```

Figure 3.25: Show of a Yum installation

<u>Step 2:</u> Now input vi editor and command vi /etc/vsftpd/vsftpd.conf Then press Enter key.

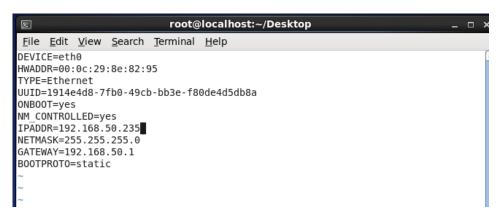


Figure 3.26: Print screen of a Vi Configuration

<u>Step 3</u>: I click the Esc catch and enter the direction at that point demonstrate this page. At the point when the line changes. Here I will erase yes and compose NO and spare the page

```
Example config file /etc/vsftpd/vsftpd.conf
#
##
  The default compiled in settings are fairly paranoid. This sample file
  loosens things up a bit, to make the ftp daemon more usable.
Please see vsftpd.conf.5 for all compiled in defaults.
#
# READ THIS: This example file is NOT an exhaustive list of vsftpd options.
# Please read the vsftpd.conf.5 manual page to get a full idea of vsftpd's
#
  capabilities.
# Allow anonymous FTP? (Beware - allowed by default if you comment this out).
anonymous enable=N0 🖕
# Uncomment this to allow local users to log in.
local enable=YES
# Uncomment this to enable any form of FTP write command.
write_enable=YES
# Default umask for local users is 077. You may wish to change this to 022,
# if your users expect that (022 is used by most other ftpd's)
local_umask=022
```

Figure 3.27: Screen print 12 line of an anonymous enable No

<u>Step 4</u>: I am ready to download and download ASCII to press Esc catch and compose directions = Yes at that point demonstrate this page. Press the Enter key. Spare this page.



Figure 3.28: ASCII screen can be printed and downloaded

Step 5: User created and set the password

🗊 root@localhost:~/Desktop	- 0
Eile Edit View Search Terminal Help	
<pre>root@localhost Desktop]# useradd Nurnabi root@localhost Desktop]# cat /etc/passwd grep Nurnabi lurnabi 505:507::/home/Ripon:/bin/bash root@localhost Desktop]# usermod -s /sbin/nologin Nurnabi root@localhost Desktop]# cat /etc/passwd grep Nurnabi urnabi 505:507::/homeNurnabi sbin/nologin root@localhost Desktop]# passwd Ripon hanging password for user Nurnabi ew password: AD PASSWORD: it is too simplistic/systematic etype new password: asswd: all authentication tokens updated successfully. root@localhost Desktop]# </pre>	

Figure 3.29: Create screen print user and password set

Step 6: Now I restart and press the network key again by restarting the command

[root@localhost ~]# service NetworkManager status	l	UΚ	1
NetworkManager (pid 1405) is running [root@localhost ~]# service NetworkManager stop			
Stopping NetworkManager daemon: [root@localhost ~]# check NetworkManager off	[0K]
bash: check: command not found			
[root@localhost ~]# check NetworkManager off			
bash: check: command not found			
[root@localhost ~]# chack NetworkManager off bash: chack: command not found			
[root@localhost ~]# check Networkmanager off			
bash: check: command not found			
[root@localhost ~]# chkconfig NetworkManager off			
[root@localhost ~]# service NetworkManager status			
NetworkManager is stopped			
[root@localhost ~]# service network restart			
Shutting down interface eth0:		0K	
Shutting down loopback interface:		0K	
Bringing up loopback interface:	[0K]
Bringing up interface eth0:	[0K]
[root@localhost ~]#			

Figure 3.30: Restart a service network screen print

<u>Step 7</u>: Then I will open the browser and ftp: //192.168.50.235 and will show this page. Here I'll type the username and password.

	Index of ftp://192.168.50.235/ - Moi	tilla Firefox	
and the state of t	ory Bookmarks Tools Help		
Connecting	0		
関 ftp://192.168	50.235	~ 0	Google
0	Authentication Required		
User Name:	Enter username and password for ftp://192.168.50.235	Last Mod	lifed

Figure 3.31: Print a username and password screen

3.4 Challenges

It is hard to think about joining as a steady association when your impermanent area can be reestablished. Impermanent errands there is a probability of critical undertakings associated with workplaces up until this point, and after that they can be tried and how the framework decides how to look. Impermanent area is without their very own boundary! I'm going to cover a few worries with many helped warriors. But remember all. As an intern these may face various challenges.

Be that as it may, recall all. As an assistant these may confront different difficulties Given underneath:

a) Get in with workspace.

b) Few frameworks have the ability to accomplish.

c) Compatibility with the official fairness and quality. d) Establish connections identifying with the experts.

e) Expert with self-show hostile action.

f) Get a few honors from the association.

g) Use open tongue with the expert for comparability.

h) Reveal the pertinent range with various level customers.

I) Effective and keep the customer's comfort cool

j) Ultimately the majority of an understudy needs to confront a few unique issues including above.

Finally, we can say that you can't achieve achievement if there is no test. Nearby these lines, during the time spent your thriving, every one of our tests will be paid attention to.

CHAPTER 4 Competencies and Smart Plan

4.1 Competencies Earned

Explicit issues toward the finish of the framework, the Linux issue, and the driving understanding. Because of the conditions indicating conditions, we can just present some new mistakes. I accept the Linux Model Framework Model will give an answer that will be expanded later or later. Premium carbide end plant and rotational cutting gadget maker excellent application.

Screenplay: College, life science, look into based, superb Linux gathering, server and pole storing answer structure, national security through essential advancement techniques.

4.2 Smart Plan

A teaching result is a teaching method, depending on what a student reaches, it has the power to get another or to do it. For both the introduction and deportation of the Datacenter System and Server Machine, for example, Lead part of the Linux programming function to spend, for example LDAP HA, coordination of program studying output, temporary and field position evaluation. The Student Association's Office stores many unique international education results: Collecting and organizing an internship project detail. Take part in the Linux web site summary. In addition, education results regularly, the role of internship in the Hierarchical Strategy and Methods of On-Site Supervisors [2].

4.3 Reflections

Your brief area can be reestablished, when it is hard to think about joining the publicizing office as a steady. Transitory assignments can at present be significant in the natural condition and after that they can fall into the test and you should decide how the technique will be found. Brief area is without their very own boundary! I'm going to cover a few worries with many helped warriors. In conclusion, we can say that there is no achievement if there is no test. Notwithstanding these lines, during the time spent.

CHAPTER 5

Conclusion and Future Career

5.1 Conclusion

Making this brief occupation reason and making ISP arrangement and organization on the Linux stage. The section level position focuses give essential information correspondence, Linux prerequisites, Linux framework organization, and advance Network setting and more noteworthy segment. Be that as it may, it is totally free because of the total organization. This is pretty much a wide range of framework benefits, web server applications, Telnet, SSH, FTP, DNS, mail and that's just the beginning. There is an incredible opportunity to gain proficiency with the structure programming in Linux with obstruction. Since the source code is available to us and the rule and collaborator's general framework, we can do a few pursuits. Different pieces of Linux have been made as test or innovative highlights, for instance, postgraduate posts. Completely coordinated, firm UNIX working structure, with a lot of free-contact programming prepared to help the Linux Elite System Administration, makes Linux programming a quality that attempts, strong, bedstead handling layer reasonable for corporate server conditions. These total hand-courses will enable you to learn and adjust the job, the executives, and the executives of the learning server for mission-based framework organization. Figure out how you need to present extra, update programming parts with the more noteworthy segment ongoing structures and improve server security. Linux OS is the practical structure that gives solid yield, steady and powerful validation of fruitful organization. We don't settle on choices on this viable structure.

5.2 Scope for Future Career

In a brief timeframe of this transitory work activity, I naturally actualized. Linux on PUPA Linux to execute future computerization for mechanized auto completion augmentations for SOC Linux. Degree installment activities/activities and fixed time-check. In this circumstance there will be Internet accessibility gadgets, for instance, a web program and an email customer that empowers the customer to make a go on the web without getting the essential system for their contraptions - paying little heed to

whether Windows is working. In the interim, the Linux Multipurpose Internet Gadget (MIDs) is shown. Impressions device, for instance, wireless and PDA and extra netbook contraption - little workstation right machine, a little piece of their bigger accomplice's focal advantages, increasingly powerful gainful packs.

Linux is an incredible and colossal work system that you can learn via preparing, I appear to recommend you begin working with Linux for your new and a newbie. I can fix it and perhaps it can make it less troublesome. There is no imperfection in speaking to explicit expert in a particular programming lingo, yet it doesn't give you a chance to portray it. What is a Linux software engineer and designing work field? What are the favelas choice way to deal with find a brief line of work at a start?? PC and scratch pad PC Framework BIOS dispatch Linux, which empowers customers to begin their devices inside a couple of moments and improve a fair Linux state.

REFERENCES

[1] webopedia. (2019). Linux OS (Operating System). [Online] Available at: http://www.webopedia.com/TERM/L/linux_os.html [Accessed 2 Jun. 2019].

 [2] Placementprofession.com. (2019). LINUX interview question. [online] Available at: http://www.placementprofession.com/2011/09/linux-interview-question.html [Accessed 2 Jun. 2019].

[3] Google Books. (2019). Linux System Administration. [online] Available at: https://books.google.com.bd/books?id=EQWwCAAAQBAJ [Accessed 2 May. 2019].

[4] Prakash, A. (2019). How To Dual Boot Linux Mint And Windows 10 [Beginner's Guide]. [online] It's FOSS. Available at: https://itsfoss.com/guide-install-linux-mint-16-dual-bootwindows/ [Accessed 2 May 2019].

[5] En.wikipedia.org. (2019). File Transfer Protocol. [online] Available at: https://en.wikipedia.org/wiki/File_Transfer_Protocol [Accessed 2 May 2019].

[6] En.wikipedia.org. (2019). MikroTik. [online] Available at:

https://en.wikipedia.org/wiki/MikroTik [Accessed 2 May 2019].

Appendices

Appendix A: Internship Reflection

I would most likely ensure that every associate is given an astonishing activity to give a protected working condition, productive advancement. Unix shell and Linux server status Common associate with open-source venture open-talk The Linux Working Framework is an Open Source Working Framework. Actually, Linux's work structure is utilized for server plan. Hypothetically, Linux is viewed as the best, versatile, groundbreaking server-based usefulness. My motivation is to give a protected work environment. Find out about the servers of the Linux association from the server, we will discuss the motivation behind taking a shot at brief work and make a game plan. Today, the vast majority of the assets utilize the Linux Activities Framework. system all around.

Appendix B: Company Detail

I am a transitory manager for my preparation, Future Technology Ltd. Future Technology Ltd. adulated itself as a noteworthy ISP specialist organization in Bangladesh. It is by all accounts an extreme improvement of the entire decade of the decade, they are exceptionally glad for what they have accomplished, and in like manner have a noteworthy increment in their viewpoint for what's to come. They work with numerous national ventures and government offices and are totally particular. This is an accomplished and set up association in ICT, where its essential business strategies identify with durable associations with their customers. The most recent improvement and recreation of the organization where they are required. Their Corporate Networks Solutions Division is gifted in procuring the most proficient particular gathering of cutting edge innovation and media transmission framework aptitudes. It can persuade you that they began their exercises in 2002. In earlier years, they extended their activity and organization portfolio as per client's recommendation and noble solicitation.

PLAGARISM REPORT

ORIGIN	ALITY REPORT				
2	3%	1%	0%	23	%
SIMIL	ARITY INDEX	INTERNET SOURCES	PUBLICATIONS	STUDEN	IT PAPER
PRIMA	RY SOURCES				
1	Submitte Student Paper	ed to Daffodil Inte	rnational Unive	ersity	2
2	WWW.WIV	viecks.web.id ▫			<

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