

# IT601P – System and Network Administration (Practical)

## Exam-Ready Notes + Model Answers

### 1. Linux Directory Structure (Important)

/	Root directory
/bin	Essential user commands (ls, cp, mv)
/sbin	System admin commands
/etc	System configuration files
/home	User home directories
/var	Variable data (logs)
/dev	Device files (/dev/sda)
/proc	Kernel and process info
/tmp	Temporary files
/usr	User applications

### 2. Linux Redirection Symbols

>	Redirect output to file (overwrite)
>>	Append output to file
<	Take input from file
	Pipe output of one command to another

### 3. LDAP Command Flags (-x, -LLL, -H, -b)

- x → Simple authentication (not SASL)
- LLL → LDIF format without comments
- H → LDAP server URI
- b → Base DN for search

### 4. SSH Setup (Custom Port 2022)

1. Install: `sudo apt install openssh-server`
2. Edit `/etc/ssh/sshd_config` → Port 2022
3. Restart: `sudo systemctl restart ssh`
4. Connect: `ssh -p 2022 user@ip`

### 5. Dockerfile Example

```
FROM ubuntu:22.04
MAINTAINER Ayesha Siddiqua
CMD ["echo", "Welcome to IT601P"]
```

### 6. Bind9 A and PTR Records Example

Forward Zone (vusna.com): `ldap IN A 192.168.19.7`  
Reverse Zone: `7 IN PTR ldap.vusna.com.`

### 7. .htaccess Example for Folder Protection

```
AuthType Basic
AuthName "Restricted Area"
AuthUserFile /secure/.htpasswd
```

Require valid-user

## 8. LDAP Setup Steps

1. `sudo apt install slapd ldap-utils`
2. `sudo dpkg-reconfigure slapd`
3. `ldapsearch -x -LLL -H ldap:/// -b dc=vusna,dc=com`
4. `ldapadd -x -D "cn=admin,dc=vusna,dc=com" -W -f file.ldif`

## 9. Kerberos Setup for `sna@vusna.com`

1. `sudo apt install krb5-kdc krb5-admin-server`
2. `sudo krb5_newrealm`
3. `sudo kadmin.local → addprinc sna`
4. `kinit sna`
5. `klist`

## 10. Postfix + Dovecot Email Commands

Install Postfix: `sudo apt install postfix mailutils`

Install Dovecot: `sudo apt install dovecot-core dovecot-imapd`

Check version: `postconf mail_version`

Test SMTP: `telnet email.vusna.com 25`