OpenLDAP installation

At first , install openLDAP and related tools

apt-get install slapd ldap-utils

input ldap password of ldap administrator, c

configure after finish installation , import the schema(Predefined collection of object classes, defined the structure and rules that the LDAP directory should follow)

```
ldapadd -Y EXTERNAL -H ldapi:/// -f /etc/ldap/schema/cosine.ldif
ldapadd -Y EXTERNAL -H ldapi:/// -f /etc/ldap/schema/nis.ldif
ldapadd -Y EXTERNAL -H ldapi:/// -f /etc/ldap/schema/inetorgperson.ldif
```

Next step, we need to configure the ldap database which need to be defined, at first define the basic information of database via import the ldif file we created

new create the ldif file , name is random,(hillstonenet.com.ldif in the instance), refer to the below template, the red words need to be changed to actual domain , DN and password.

```
# Load dynamic backend modules
dn: cn=module,cn=config
objectClass: olcModuleList
cn: module
olcModulepath: /usr/lib/ldap
olcModuleload: back_hdb.la
# Database settings
dn: olcDatabase=hdb,cn=config
objectClass: olcDatabaseConfig
objectClass: olcHdbConfig
olcDatabase: {1}hdb
olcSuffix: dc=hillstonenet,dc=com
olcDbDirectory: /var/lib/ldap
olcRootDN: cn=admin,dc=hillstonenet,dc=com
olcRootPW: password1
olcDbConfig: set_cachesize 0 2097152 0
olcDbConfig: set_lk_max_objects 1500
olcDbConfig: set_lk_max_locks 1500
olcDbConfig: set_lk_max_lockers 1500
olcDbIndex: objectClass eq
olcLastMod: TRUE
olcDbCheckpoint: 512 30
olcAccess: to attrs=userPassword by dn="cn=admin,dc=example,dc=com" write by
anonymous auth by self write by * none
olcAccess: to attrs=shadowLastChange by self write by * read
olcAccess: to dn.base="" by * read
olcAccess: to * by dn="cn=admin,dc=hillstonenet,dc=com " write by * read
```

Import the above file to server

ldapadd -Y EXTERNAL -H ldapi:/// -f hillstonenet.com.ldif
See the following prompts to indicate that the import was successful
SASL username: gidNumber=0+uidNumber=0,cn=peercred,cn=external,cn=auth
SASL SSF: 0
adding new entry "cn=module,cn=config"
adding new entry "olcDatabase=hdb,cn=config"

The ldap server is working right now. But the ldap directory of domain hillstonenet.com is empty, new create one ldif file（tree.hillsontnet.com.ldif）to initialize the ldap tree of hillstonenet.com. Refer to below file:

```
    # create basic object
dn: dc=hillstonenet,dc=com
objectClass: top
objectClass: dcObject
objectclass: organization
o: hillstone networks
dc: hillstonenet
description: hillstone LDAP
# create administrator
dn: cn=admin,dc=hillstonenet,dc=com
objectClass: simpleSecurityObject
objectClass: organizationalRole
cn: admin
description: LDAP administrator
userPassword: password1
# create ou “people”
dn: ou=people,dc=hillstonenet,dc=com
objectClass: organizationalUnit
ou: people
# create ou “group”
dn: ou=groups,dc=hillstonenet,dc=com
objectClass: organizationalUnit
ou: groups
# create user “user1”
dn: cn=user1,ou=people,dc=hillstonenet,dc=com
userPassword: 123456
ou: ou=people,dc=hillstonenet,dc=com
objectClass: person
objectClass: organizationalPerson
sn: N/A
cn: user1
# create user “user2”
dn: cn=user2,ou=people,dc=hillstonenet,dc=com
userPassword: 123456
```

ou: ou=people,dc=hillstonenet,dc=com
objectClass: person
objectClass: organizationalPerson
sn: N/A
cn: user2
create user “user3”
dn: cn=user3,ou=people,dc=hillstonenet,dc=com
userPassword: 123456
ou: ou=people,dc=hillstonenet,dc=com
objectClass: person
objectClass: organizationalPerson
sn: N/A
cn: user3
create group “stu”，并将 user1，user2 添加到组
dn: cn=stu,ou=groups,dc=hillstonenet,dc=com
cn: stu
description: student group
member: cn=user1,ou=people,dc=hillstonenet,dc=com
member: cn=user2,ou=people,dc=hillstonenet,dc=com
objectClass: groupOfNames
objectClass: top

Import the file to the directory：
ldapadd -x -D cn=admin,dc=hillstonenet,dc=com -W -f tree.hillstonenet.com.ldif
Verify if it is successful to importing：
ldapsearch -xLLL -b "dc=hillstonenet,dc=com" cn=user1
Getting user1 information indicate importing successful
We can do the web operation by phpldapadmin,

Install phpldapadmin：
apt-get install phpldapadmin
Modify /etc/phpldapadmin/config.php after finish the installation , the below line need to be modified：
283 row $servers->setValue('server','base',array('dc=hillstonenet,dc=com'));
306 row $servers->setValue('login','bind_id','cn=admin,dc=hillstonenet,dc=com');
Input http://server IP/phpldapadmin/ in browser, click ”login”， input username (cn=admin,dc=hillstonenet,dc=com) and password (password1)，complete the access