Testing LDAP connectivity with ldapsearch

JIRA and Confluence can do authentication against LDAP (e.g. Active Directory), using the standard Java JNDI library. When you're having LDAP connectivity problems, the `ldapsearch` command can sometimes be useful as a means of verifying your LDAP parameters.

Getting and configuring ldapsearch

On Ubuntu/Debian:

```
apt-get install ldap-utils
```

On CentOS/RHEL:

```
yum install openldap-clients
```

Furthermore on CentOS/RHEL (6.4 at least), if you want SSL/TLS to work, you'll need to edit `/etc/openldap/ldap.conf` and add the lines:

```
## http://serverfault.com/questions/437546/centos-openldap-cert-trust-issues
TLS_CACERT /etc/pki/tls/certs/ca-bundle.crt
```

See the mentioned URL for why.

Sample query

If the `Use SSL` box is checked (typically port 636):

```
ldapsearch \
-LL -x -z5 \
-H ldaps://tx-dc2.corp.example.com:636 \
-D 'CN=svcLDAPquery,CN=Managed Service Accounts,DC=corp,DC=example,DC=com' \
-w "s3cret" \
-b 'OU=Internal,DC=corp,DC=example,DC=com' \
-s sub \
'(&(objectCategory=Person)(sAMAccountName=*))' \
sAMAccountName displayName givenname sn mail
```

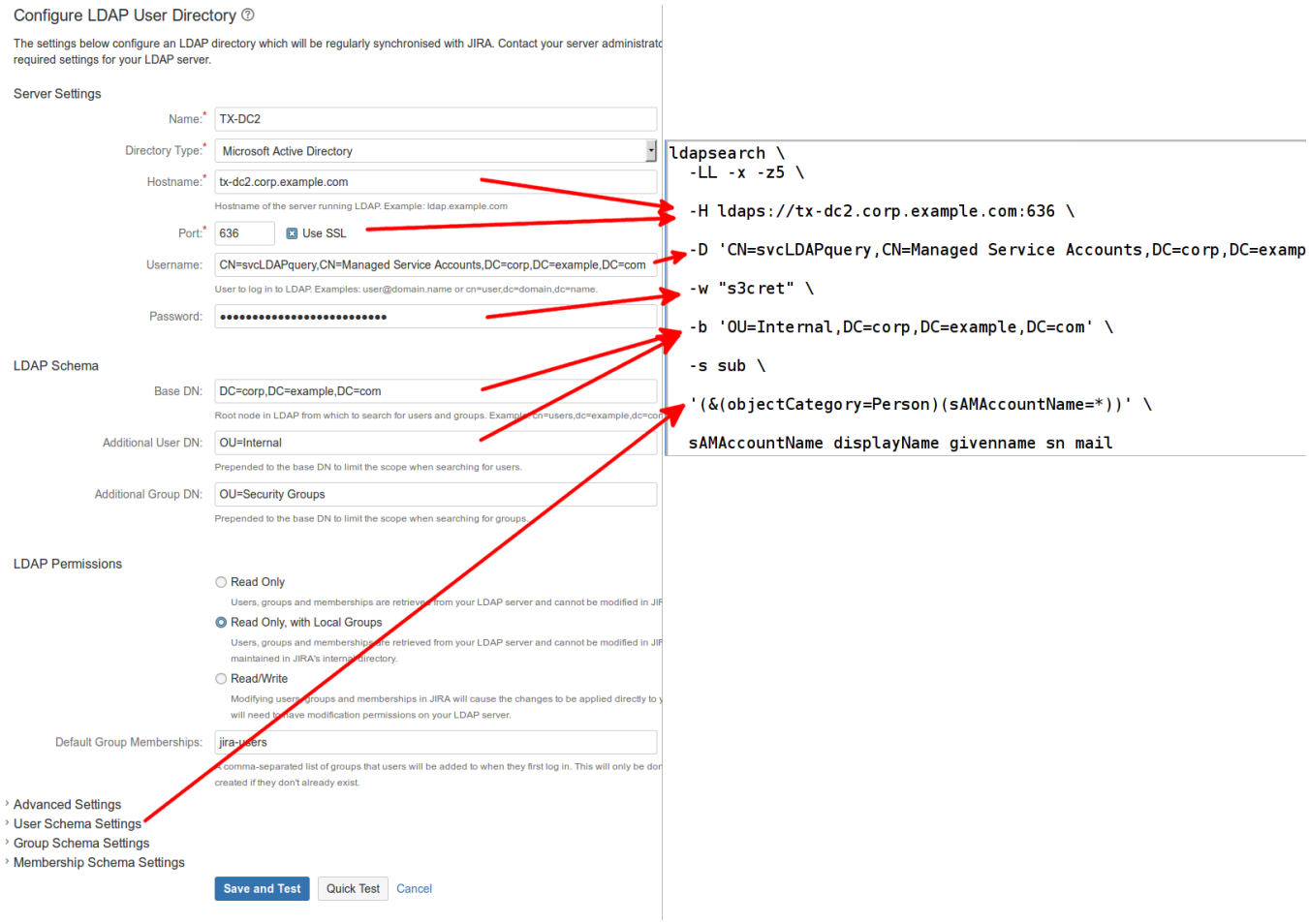
This displays results in the form:

```
dn: CN=Jeff Turner,OU=RedRadish,OU=Contractors,OU=Internal,DC=corp,DC=example,DC=com
sn: Turner
givenName: Jeff
displayName: Jeff Turner
sAMAccountName: jeff.redradish_ext
mail: jeff@redradishtech.com
```

The query does a subtree (`-s sub`) search for all nodes below `OU=Internal,DC=corp,DC=example,DC=com`, returning the `sAMAccountName` (i.e. username), full name, first name and email attributes for each. It is limited to 5 results (`-z5`).

LDAP's `startTLS` extension also allows a connection on port 389 to be upgraded to TLS (`ldapsearch -ZZ`) but I can find no evidence that JIRA /Confluence support this.

If you can see the existing JIRA/Confluence User Directory, the properties map to `ldapsearch` parameters as follows:



Auto-generating ldapsearch commands

If you're using PostgreSQL as the database, you can generate the correct `ldapsearch` command directly from the database. Save this SQL to a file, `crowd_to_ldapsearch.sql`:

crowd_to_ldapsearch.sql

```
CREATE EXTENSION tablefunc;
WITH ldap AS (
    select * from crosstab('select directory_id, attribute_name, attribute_value from cwd_directory_attribute
order by 1,2',
        $$values ('ldap.url'),
        ('ldap.userdn'),
        ('ldap.password'),
        ('ldap.basedn'),
        ('ldap.user.dn'),
        ('ldap.user.filter'),
        ('ldap.user.username'),
        ('ldap.user.displayname'),
        ('ldap.user.email'),
        ('ldap.user.firstname'),
        ('ldap.user.lastname')
        $$)
    AS ct(directory_id int,
        "url" varchar,
        "userdn" varchar,
        "password" varchar,
        "basedn" varchar,
        "user.dn" varchar,
        "user.filter" varchar,
        "user.username" varchar,
        "user.displayname" varchar,
        "user.email" varchar,
        "user.firstname" varchar,
        "user.lastname" varchar)
)
SELECT '# For directory ' || directory_id ||'
ldapsearch \
-LL -x -z5 \
-H ' || url || ' \
-D ''' || userdn || ''' \
-w ''' || password || ''' \
-b ''' || CASE "user.dn" WHEN '' THEN basedn ELSE "user.dn" || ',' || basedn END || ''' \
-s sub \
''' || "user.filter" || ''' '
 || "user.username" || ' ' ||
"user.displayname" || ' ' ||
"user.firstname" || ' ' ||
"user.lastname" || ' ' ||
"user.email"
FROM ldap;
```

and run it against your JIRA database as the 'postgres' user (or equivalent superuser able to enable extensions):

```
psql -tAq jira < /tmp/crowd_to_ldapsearch.sql
```

The output is one `ldapsearch` command per LDAP directory configured:

```
$ psql -tAq < ~/crowd_to_ldapsearch.sql

# For directory 10000
ldapsearch \
-LL -x -z5 \
-H ldaps://tx-dc2.corp.example.com:636 \
-D 'CN=svcLDAPquery,CN=Managed Service Accounts,DC=corp,DC=example,DC=com' \
-w 'REDACTED' \
-b 'OU=Internal,DC=corp,DC=example,DC=com' \
-s sub \
'(&(objectCategory=Person)(sAMAccountName=*))' sAMAccountName displayName givenName sn mail
Time: 2.063 ms
```