eFix 3.2.2-SWD-002 README for SecureWay Directory 3.2.2 AIX Server Installations

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Date: March 31, 2002

eFix: 3.2.2-SWD-002

Component: SecureWay® Directory 3.2.2 (128-bit Encryption Server Installations)

General description

The eFix contains fixes for several problems encountered in SecureWay Directory 3.2.2. The APAR number for each problem is listed in the ″Problems fixed″ section. Refer to the specific APAR for more detail about each problem.

For information on changes and fixes that occurred after the product documentation had been translated, see the *SecureWay Directory Version 3.2.2 README Addendum*. This file is in English only. This file can also be found on the IBM® SecureWay Directory Library Web page using a link from http://www.software.ibm.com/network/directory/library. You can get to the latest information here:
http://www-4.ibm.com/software/network/directory/library/v322/addendum322.htm

Problems fixed

New fixes in 3.2.2-SWD-002

APAR IR47735 (CMVC 71113)
> Support using { as first character in LDAP user passwords.

APAR IR47802 (CMVC 70356)
> Doing an ldapsearch on the Root DSE or Monitor class using * or attributes to be returned is not working with 3.2.2. This fix will allow the search ″ldapsearch -sbase objectclass=* *″ to return all attributes in the root DSE.

APAR IR48028 (CMVC 70625)
> Adding an attribute and modifying ACLs to an objectclass causes the ACL's to not work correctly unless slapd is rebooted.

APAR IR48052 (CMVC 71113)
> When you modify the attribute userpassword for an existing user with a hashed value the server cores.

APAR IR48137 (CMVC 71629)
> Using 3.2.2 efix1, you may see Memory Leak during unbind Operation (in some cases~100 bytes per unbind).

APAR IR48168 (CMVC 71121)
> When upgrading to 3.2.2 and running changelog with peer masters, replication will not be started until replica objects are added to both peer masters.

APAR IR48126 (CMVC 71523)
Fixes the problem where the LDAP server will intermittently core when interacting with the iPlanet proxy Client and Directory Access Router (iDAR).

APAR IR48300 (CMVC 71282)
Memory Leak in acl cache.

APAR IR48302 (CMVC 70876)
Several errors were corrected dealing with messaged displayed when using the ldapcfg script. These could have caused the wrong error message, or no error message to be displayed.

Fixes in 3.2.2-SWD-001

APAR IR47193 (CMVC 68302)
An entry is added to the changelog when slapd restarts. This entry must not be added. It also is not passed from peer to peer.

APAR IR47323 (CMVC 68444)
Slapi_Search_Internal API takes a long time to return data when compared with the command line ldapsearch using the same search parameters.

APAR IR47324 (CMVC 68572)
Removing an attribute breaks access to aclEntrys and exportability using db2ldif.

APAR IR47602 (CMVC 69302)
Replication failure when performing a modify replace with no value. The request is incorrectly written into the change table.

APAR IR47623 (CMVC 68531)
Attempting a modify replace on an attribute with syntax integer or timestamp with the same value and is part of the RDN fails. This operation has worked in previous releases.

APAR IR47624 (CMVC 68542)
Performing an ldapdelete operation incurs a deadlock in the DB2® backend, and the LDAP server hangs.

APAR IR47625 (CMVC 68545)
In a high performing environment such as BluePages, the LDAP server can appear to hang for several minutes at a time.

APAR IR47627 (CMVC 68733)
The LDAP server encounters function sequence errors when delete operations are performed.

APAR IR47629 (CMVC 68805)
The LDAP server experiences a memory leak in the client controls portion of the server's operation structure.

APAR IR47630 (CMVC 68935)
When creating a custom database for the server's backend use, and it is configured for UTF-8 storage, the code page info is not put in slapd32.conf.

APAR IR47631 (CMVC 69012)
The LDAP server incurs a segmentation fault when writing an audit record with unknown-auth.

APAR IR47633 (CMVC 69032)
The LDAP server preoperation plugin preoperation value array is not null terminated as required by specifications.

APAR IR47635 (CMVC 69277)
> SASL bind reports success with SSL connections even if using a keyring database label that does not reference an actual certificate.

APAR IR47692 (CMVC 70361)
> For the ldapssl.h include file, SSL return codes must reflect same information present in the GSKIT 5 product. Equivalent items based on the GSKIT 3 product must be removed.

APAR IR47874 (CMVC 70380)
> Bulkload utility fails if shell does not append inherited value to PATH environment variable.

APAR IR47886 (CMVC 70068, 70493)
> Search operations fail, and dbsync process show excessive resource utilitization due to default ldap_desc.deid index.

APAR IR47928 (CMVC 69750, 69774)
> Memory leaks occur in the server process.

APAR IR47930 (CMVC 70538)
> LDAP clients operating on Solaris can hang performing an add operation.

APAR IR48029 (CMVC 70142, 70236)
> Modify ldif processing to allow for sending and receipt value identified to have zero length.

Platforms

AIX® Operating System versions 4.3.3 or higher, or AIX 5L™ Version 5.1 with the following fileset installed:
X11.adt.lib 4.3.3.0 (or later)

Dependencies

SecureWay Directory 3.2.2 or 3.2.2 efix1 must be installed.

DB2 Universal Database™ version 7.2 FixPack 5 or higher.

Files replaced or added by this eFix

With $INSTALL_DIR representing the root of the LDAP installation, the files replaced are:

```
$INSTALL_DIR/bin/dmt
$INSTALL_DIR/bin/ldamsg
$INSTALL_DIR/bin/ldapdelete
$INSTALL_DIR/bin/ldapdeleted
$INSTALL_DIR/bin/ldapmodify
$INSTALL_DIR/bin/ldapmodifyd
$INSTALL_DIR/bin/ldapmodrdn
$INSTALL_DIR/bin/ldapmodrdnd
$INSTALL_DIR/bin/ldapsearch
$INSTALL_DIR/bin/ldapsearchd
$INSTALL_DIR/bin/slapd
$INSTALL_DIR/bin/slapdd
$INSTALL_DIR/bin/task_dbback
$INSTALL_DIR/config/LDAPCfg.jar
$INSTALL_DIR/include/ldapssl.h
$INSTALL_DIR/lib/libadmin.a
$INSTALL_DIR/lib/libback-rdbm.a
$INSTALL_DIR/lib/libcl.a
$INSTALL_DIR/lib/libibmldap.a
$INSTALL_DIR/lib/libibmldapd.a
$INSTALL_DIR/lib/libibmldapn.a
```

```
$INSTALL_DIR/lib/libldacfg.so
$INSTALL_DIR/lib/libldapaudit.a
$INSTALL_DIR/lib/libldapjrt.a
$INSTALL_DIR/lib/libldapstatic.a
$INSTALL_DIR/lib/libldapstaticd.a
$INSTALL_DIR/lib/libldapstaticn.a
$INSTALL_DIR/lib/libldif.a
$INSTALL_DIR/lib/libslapi.a
$INSTALL_DIR/lib/libutils.a
$INSTALL_DIR/lib/libutlsa.a
$INSTALL_DIR/sbin/bulkload
$INSTALL_DIR/sbin/db2ldif
$INSTALL_DIR/sbin/ldif
$INSTALL_DIR/sbin/ldif2db
$INSTALL_DIR/sbin/ltou
$INSTALL_DIR/sbin/miglen
$INSTALL_DIR/sbin/runstats
$INSTALL_DIR/sbin/utol
$INSTALL_DIR/web/buildno.txt
$INSTALL_DIR/web/cgi-bin
$INSTALL_DIR/web/cgi-bin/ldacgi3d.exe
$INSTALL_DIR/web/cgi-bin/ldacgi3e.exe
$INSTALL_DIR/web/cgi-bin/ldacgid.exe
$INSTALL_DIR/web/cgi-bin/ldacgie.exe
```

The default for INSTALL_DIR is /usr/ldap.

eFix contents

The archive for this eFix is named 3.2.2-SWD-002-AIX.tar. The archive for this eFix includes:

```
- This README file

- The file bin/dmt
- The file bin/ldamsg
- The file bin/ldapdelete
- The file bin/ldapdeleted
- The file bin/ldapmodify
- The file bin/ldapmodifyd
- The file bin/ldapmodrdn
- The file bin/ldapmodrdnd
- The file bin/ldapsearch
- The file bin/ldapsearchd
- The file bin/slapd
- The file bin/slapdd
- The file bin/task_dbback
- The file config/LDAPCfg.jar
- The file include/ldapssl.h
- The file lib/libadmin.a
- The file lib/libback-rdbm.a
- The file lib/libcl.a
- The file lib/libibmldap.a
- The file lib/libibmldapd.a
- The file lib/libibmldapn.a
- The file lib/libldacfg.so
- The file lib/libldapaudit.a
- The file lib/libldapjrt.a
- The file lib/libldapstatic.a
- The file lib/libldapstaticd.a
- The file lib/libldapstaticn.a
- The file lib/libldif.a
- The file lib/libslapi.a
- The file lib/libutils.a
- The file lib/libutlsa.a
- The file sbin/bulkload
- The file sbin/db2ldif
```

```
- The file sbin/ldif
- The file sbin/ldif2db
- The file sbin/ltou
- The file sbin/miglen
- The file sbin/runstats
- The file sbin/utol
- The file web/buildno.txt
- The file web/cgi-bin
- The file web/cgi-bin/ldacgi3d.exe
- The file web/cgi-bin/ldacgi3e.exe
- The file web/cgi-bin/ldacgid.exe
- The file web/cgi-bin/ldacgie.exe

- The file web/buildno.txt
```

Applying the eFix

Note: Your replication environment must be cleaned or resynched, or both. See section 5.2 of the *IBM(R) SecureWay(R) Directory Version 3.2.2 Server Readme* at:

http://www-4.ibm.com/software/network/directory/library/v322/server.htm

1. Extract the eFix contents into a temporary directory. For the purpose of this release note, assume that the symbol $TEMP points to the following directory:

```
# cd $TEMP
# tar -xvf 3.2.2-SWD-002-AIX.tar
```

2. For each of the master and slave server installations targeted to receive the eFix, make sure the servers are stopped prior to applying the eFix.

3. Replace the installed version of each file with the version included in the eFix. Move the currently installed file to a location outside of the LDAP installation filesystem or rename the currently installed file. Copy the extracted files to the correct locations in the install folder. The install version locations for each file are:

```
$INSTALL_DIR/bin/dmt
$INSTALL_DIR/bin/ldamsg
$INSTALL_DIR/bin/ldapdelete
$INSTALL_DIR/bin/ldapdeleted
$INSTALL_DIR/bin/ldapmodify
$INSTALL_DIR/bin/ldapmodifyd
$INSTALL_DIR/bin/ldapmodrdn
$INSTALL_DIR/bin/ldapmodrdnd
$INSTALL_DIR/bin/ldapsearch
$INSTALL_DIR/bin/ldapsearchd
$INSTALL_DIR/bin/slapd
$INSTALL_DIR/bin/slapdd
$INSTALL_DIR/bin/task_dbback
$INSTALL_DIR/config/LDAPCfg.jar
$INSTALL_DIR/include/ldapssl.h
$INSTALL_DIR/lib/libadmin.a
$INSTALL_DIR/lib/libback-rdbm.a
$INSTALL_DIR/lib/libcl.a
$INSTALL_DIR/lib/libibmldap.a
$INSTALL_DIR/lib/libibmldapd.a
$INSTALL_DIR/lib/libibmldapn.a
$INSTALL_DIR/lib/libldacfg.so
$INSTALL_DIR/lib/libldapaudit.a
$INSTALL_DIR/lib/libldapjrt.a
$INSTALL_DIR/lib/libldapstatic.a
$INSTALL_DIR/lib/libldapstaticd.a
$INSTALL_DIR/lib/libldapstaticn.a
$INSTALL_DIR/lib/libldif.a
$INSTALL_DIR/lib/libslapi.a
$INSTALL_DIR/lib/libutils.a
```

```
$INSTALL_DIR/lib/libutlsa.a
$INSTALL_DIR/sbin/bulkload
$INSTALL_DIR/sbin/db2ldif
$INSTALL_DIR/sbin/ldif
$INSTALL_DIR/sbin/ldif2db
$INSTALL_DIR/sbin/ltou
$INSTALL_DIR/sbin/miglen
$INSTALL_DIR/sbin/runstats
$INSTALL_DIR/sbin/utol
$INSTALL_DIR/web/buildno.txt
$INSTALL_DIR/web/cgi-bin
$INSTALL_DIR/web/cgi-bin/ldacgi3d.exe
$INSTALL_DIR/web/cgi-bin/ldacgi3e.exe
$INSTALL_DIR/web/cgi-bin/ldacgid.exe
$INSTALL_DIR/web/cgi-bin/ldacgie.exe

$INSTALL_DIR/web/buildno.txt
```

Again, the default for INSTALL_DIR is /usr/ldap.

4. Assign the correct owner, group, and permissions to the replaced files. Assume $OWNER is the owner value in the installation files, and $GROUP is the group value. The value of $OWNER for the following files is root:

```
$INSTALL_DIR/web/cgi-bin/ldacgid.exe
$INSTALL_DIR/web/cgi-bin/ldacgi3d.exe
$INSTALL_DIR/web/cgi-bin/ldacgie.exe
$INSTALL_DIR/web/cgi-bin/ldacgi3e.exe
```

The value of $OWNER for the remaining files is ldap. The value for $GROUP for all files is ldap.

```
# chown $OWNER <file>
# chgrp $GROUP <file>
```

The permissions on the files must be set according to the following guide: # chmod <permissions> <file>

```
$INSTALL_DIR/bin/dmt                        755
$INSTALL_DIR/bin/ldapdelete                 755
$INSTALL_DIR/bin/ldapdeleted                755
$INSTALL_DIR/bin/ldapmodify                 755
$INSTALL_DIR/bin/ldapmodifyd                755
$INSTALL_DIR/bin/ldapmodrdn                 755
$INSTALL_DIR/bin/ldapmodrdnd                755
$INSTALL_DIR/bin/ldapsearch                 755
$INSTALL_DIR/bin/ldapsearchd                755
$INSTALL_DIR/bin/slapd                      750
$INSTALL_DIR/bin/slapdd                     755
$INSTALL_DIR/bin/task_dbback                750
$INSTALL_DIR/config/LDAPCfg.jar             644
$INSTALL_DIR/include/ldapssl.h              644
$INSTALL_DIR/lib/libslapi.a                 644
$INSTALL_DIR/lib/libback-rdbm.a             644
$INSTALL_DIR/lib/libutils.a                 644
$INSTALL_DIR/lib/libutlsa.a                 755
$INSTALL_DIR/lib/libcl.a                    644
$INSTALL_DIR/lib/libadmin.a                 644
$INSTALL_DIR/lib/libldacfg.so               755
$INSTALL_DIR/lib/libldapaudit.a             644
$INSTALL_DIR/lib/libldapjrt.a               755
$INSTALL_DIR/lib/libibmldap.a               755
$INSTALL_DIR/lib/libibmldapd.a              755
$INSTALL_DIR/lib/libldapstatic.a            755
$INSTALL_DIR/lib/libldapstaticd.a           755
$INSTALL_DIR/lib/libldif.a                  755
$INSTALL_DIR/sbin/ldif                      755
```

```
$INSTALL_DIR/sbin/ldif2db                              755
$INSTALL_DIR/sbin/db2ldif                              755
$INSTALL_DIR/sbin/bulkload                             755
$INSTALL_DIR/sbin/runstats                             755
$INSTALL_DIR/sbin/miglen                               755
$INSTALL_DIR/sbin/utol                                 750
$INSTALL_DIR/sbin/ltou                                 750
$INSTALL_DIR/web/cgi-bin/ldacgid.exe                  4755
$INSTALL_DIR/web/cgi-bin/ldacgi3d.exe                 4755
$INSTALL_DIR/web/cgi-bin/ldacgie.exe                  4755
$INSTALL_DIR/web/cgi-bin/ldacgi3e.exe                 4755

$INSTALL_DIR/web/buildno.txt                           644
```

5. Start each of the replica and master servers.

Confirming the eFix has been applied successfully

The eFix has been applied successfully if all files included in the eFix have replaced the pre-eFix files of the same names. If after applying the eFix, any facility making use of the SDK has degraded function as compared to its pre-fix operation, please notify SecureWay Directory support personnel.

Below is some relevant information on the replacement files:

```
- Filesize for bin/dmt                             is 14903
- Filesize for bin/ldamsg                          is 13914
- Filesize for bin/ldapdelete                      is 23819
- Filesize for bin/ldapdeleted                     is 23824
- Filesize for bin/ldapmodify                      is 51433
- Filesize for bin/ldapmodifyd                     is 51436
- Filesize for bin/ldapmodrdn                      is 24623
- Filesize for bin/ldapmodrdnd                     is 24628
- Filesize for bin/ldapsearch                      is 51444
- Filesize for bin/ldapsearchd                     is 51449
- Filesize for bin/slapd                           is 1732881
- Filesize for bin/slapdd                          is 1732966
- Filesize for bin/task_dbback                     is 34577
- Filesize for config/LDAPCfg.jar                  is 788942
- Filesize for include/ldapssl.h                   is 15677
- Filesize for lib/libadmin.a                      is 227078
- Filesize for lib/libback-rdbm.a                  is 1808864
- Filesize for lib/libcl.a                         is 40579
- Filesize for lib/libibmldap.a                    is 525876
- Filesize for lib/libibmldapd.a                   is 525868
- Filesize for lib/libibmldapn.a                   is 500511
- Filesize for lib/libldacfg.so                    is 48743
- Filesize for lib/libldapaudit.a                  is 63314
- Filesize for lib/libldapjrt.a                    is 29167
- Filesize for lib/libldapstatic.a                 is 699015
- Filesize for lib/libldapstaticd.a                is 699005
- Filesize for lib/libldapstaticn.a                is 666134
- Filesize for lib/libldif.a                       is 16062
- Filesize for lib/libslapi.a                      is 122695
- Filesize for lib/libutils.a                      is 5123294
- Filesize for lib/libutlsa.a                      is 58167
- Filesize for sbin/bulkload                       is 535939
- Filesize for sbin/db2ldif                        is 392472
- Filesize for sbin/ldif                           is 25261
- Filesize for sbin/ldif2db                        is 395654
- Filesize for sbin/ltou                           is 25847
- Filesize for sbin/miglen                         is 82441
- Filesize for sbin/runstats                       is 373697
- Filesize for sbin/utol                           is 25848
- Filesize for web/cgi-bin/ldacgi3d.exe            is 2936312
```

```
      - Filesize for web/cgi-bin/ldacgi3e.exe        is 2936312
      - Filesize for web/cgi-bin/ldacgid.exe         is 7623541
      - Filesize for web/cgi-bin/ldacgie.exe         is 7623541

      - sum -r  bin/dmt                    results are:  59528  xxxx
      - sum -r  bin/ldamsg                 results are:  50773  xxxx
      - sum -r  bin/ldapdelete             results are:  55236  xxxx
      - sum -r  bin/ldapdeleted            results are:  19724  xxxx
      - sum -r  bin/ldapmodify             results are:  42653  xxxx
      - sum -r  bin/ldapmodifyd            results are:  22258  xxxx
      - sum -r  bin/ldapmodrdn             results are:  37499  xxxx
      - sum -r  bin/ldapmodrdnd            results are:  61655  xxxx
      - sum -r  bin/ldapsearch             results are:  43307  xxxx
      - sum -r  bin/ldapsearchd            results are:  18943  xxxx
      - sum -r  bin/slapd                  results are:  57676  xxxx
      - sum -r  bin/slapdd                 results are:  55928  xxxx
      - sum -r  bin/task_dbback            results are:  19414  xxxx
      - sum -r  config/LDAPCfg.jar         results are:  50270  xxxx
      - sum -r  include/ldapssl.h          results are:  17457  xxxx
      - sum -r  lib/libadmin.a             results are:  04234  xxxx
      - sum -r  lib/libback-rdbm.a         results are:  22413  xxxx
      - sum -r  lib/libcl.a                results are:  02946  xxxx
      - sum -r  lib/libibmldap.a           results are:  49346  xxxx
      - sum -r  lib/libibmldapd.a          results are:  39331  xxxx
      - sum -r  lib/libibmldapn.a          results are:  02288  xxxx
      - sum -r  lib/libldacfg.so           results are:  52604  xxxx
      - sum -r  lib/libldapaudit.a         results are:  47718  xxxx
      - sum -r  lib/libldapjrt.a           results are:  08624  xxxx
      - sum -r  lib/libldapstatic.a        results are:  10170  xxxx
      - sum -r  lib/libldapstaticd.a       results are:  43853  xxxx
      - sum -r  lib/libldapstaticn.a       results are:  55753  xxxx
      - sum -r  lib/libldif.a              results are:  46469  xxxx
      - sum -r  lib/libslapi.a             results are:  61496  xxxx
      - sum -r  lib/libutils.a             results are:  59812  xxxx
      - sum -r  lib/libutlsa.a             results are:  20038  xxxx
      - sum -r  sbin/bulkload              results are:  25410  xxxx
      - sum -r  sbin/db2ldif               results are:  28654  xxxx
      - sum -r  sbin/ldif                  results are:  38305  xxxx
      - sum -r  sbin/ldif2db               results are:  52624  xxxx
      - sum -r  sbin/ltou                  results are:  07550  xxxx
      - sum -r  sbin/miglen                results are:  21807  xxxx
      - sum -r  sbin/runstats              results are:  24798  xxxx
      - sum -r  sbin/utol                  results are:  24346  xxxx
      - sum -r  web/cgi-bin/ldacgi3d.exe  results are:  44675  xxxx
      - sum -r  web/cgi-bin/ldacgi3e.exe  results are:  30125  xxxx
      - sum -r  web/cgi-bin/ldacgid.exe   results are:  03068  xxxx
      - sum -r  web/cgi-bin/ldacgie.exe   results are:  44243  xxxx
```

Each xxxx represents the number of blocks used by the file. This number is filesystem format dependent.

The contents of the web/buildno.txt file are:

```
SecureWay Directory  Release: aus322ldap  Build: 020425a  (SWD 322 e-fix2)
```

Additional usage notes

Restricting write access to LDAP search storage file
In the current 3.2.1 and 3.2.2 releases on AIX, there is a file ($INSTALL_DIR/etc/dmtSearch.obj) that is used to store searches for re-use in the DMT. This file has default read/write access to all users. It is recommended that this file be modified to be only readable/writable to the owner (ldap) and group (ldap admin group) and restrict other or world read/write access. Do the following to check and modify the file access (this example uses $INSTALL_DIR as the installation directory):

On AIX, to confirm that this file exists, enter the following commands:

```
[root]==> ls -lt $INSTALL_DIR/etc/dmtSearch.obj
-rw-rw-rw-   1 ldap    ldap          0 Mar 20 17:32    dmtSearch.obj

[root]==> chmod 660   $INSTALL_DIR/etc/dmtSearch.obj
[root]==> ls -lt $INSTALL_DIR/etc/dmtSearch.obj
-rw-rw----   1 ldap    ldap          0 Mar 20 17:32    dmtSearch.obj
```

After making this change:

- Guest users can only save searches when the dmtSearch.obj file has o=rw permissions. If the dmtSearch.obj file has lesser permissions or is missing, the command prompt session that started the DMT displays an exception message, and the search save is not saved. The user is not given any direct notice that the exception has occured, other than the name the search was saved under is not added to the search tre in the DMT left panel.
- When a user that does not have UNIX® access to the dmtSearch.obj file attempts to read the contents (by selecting Search Names in the Navigation Window) they see a "warning message of java.lang.NullPointerException in a window Dialogue that dmt was started in.
- If the dmtSearch.obj file is deleted, the next time it is created, it has owner read/write access and group/other Read access (for example, file access is -rw-r--r--)
- The LDAP user also gets exceptions for all search save attempts, except when the dmtSearch.obj file has g=rw permissions.

Remove LDAP_DESC_DEID index for improved performance

In the 3.2.2 and 3.2.2 efix1 releases, if you loaded your data into a new database using bulkload or db2ldif commands, an index (LDAP_DESC_DEID) is created. Dropping the LDAP_DESC_DEID index in many cases improves performance, especially search operations performance. Starting in the 3.2.2 eFix2, this index is not created by default and it is recommended that it be removed to improve performance. To drop the LDAP_DESC_DEID index, do the following:

1. Stop slapd.
2. db2 connect to ldapb2.
3. Run the following command:

    ```
    db2 DROP INDEX LDAPDB2.LDAP_DESC_DEID
    ```
4. Stop and restart DB2.

Setting the slapd executable to run with large memory model

The slapd and slapdd binaries have been configured to run on AIX using the default 256 MB process size.

If you have configured local loopback and enabled the large memory model for your slapd/slapdd binary, the slapd/slapdd process can be up to 2 GB. For more information, see "Using a local loopback connection to DB2" of the *IBM SecureWay Version 3.2.2 Directory Tuning Guide* at the following Web address: http://www-4.ibm.com/software/network/directory/library/v322/tuning.pdf.

To configure your slapdd to run using more than 256 MB of memory, do the following:

1. Make a copy of the slapdd.
2. As root, run the setmaxmem script against the slapdd executable:

    ```
    /usr/ldap/sbin/setmaxmem
    ```

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