

IBM Tivoli Software



Introduction to IBM Tivoli Directory Server 6.0 – Debugging

Excerpt taken from presentation given on April 10, 2007
Explore methods to debug a failed IBM Tivoli Directory Server server start

Support Technical Exchange Web site
http://www-306.ibm.com/software/sysmgmt/products/support/supp_tech_exch.html

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Basic Debugging – Configuration Only Mode

If `ibmslapd` runs into any errors during startup it may run in a mode known as “Configuration Only Mode”. When in this mode we can only access configuration options, only the “`cn=configuration`” suffix is active. We cannot access any of the data stored in the backend. To find out what exactly is failing we will typically enable a trace of the server start up.

To enable tracing, issue the following commands:

```
#ldtrc on
```

```
#ldsslapd -l instname -h 65535 2>&1 |tee /tmp/srvtrc.out
```

The output generated should help to debug what is failing.

Command to determine if you are in config only mode:

```
#idsldapsearch -p <port> -b "" -s base objectclass=* | grep -i config
```

This search should return:
`ibm-slapdisconfigurationmode=FALSE`

Basic Debugging – Configuration Only Mode

If the server encounters an error when starting up you will see messages similar to the following:

```
GLPCOM024I The extended Operation plugin is successfully loaded from libback-rdbm.a.
GLPRDB001E Error code -1 from function:" SQLConnect " ldapdb2b .
04/04/2007 23:56:02    0    0    SQLI026N The database manager is already active.
SQLI026N The database manager is already active.
GLPRDB004E The LDAP directory server is unable to connect to the database.
GLPSRV064E Failed to initialize be_config.
GLPSRV040E Error encountered. Server starting in configuration only mode.
GLPCOM024I The extended Operation plugin is successfully loaded from libloga.a.
GLPCOM003I Non-SSL port initialized to 389.
GLPCTL113I Largest core file size creation limit for the process (in bytes): '-1'(Soft limit) and
'-1'(Hard limit).
GLPCTL114I Largest file size creation limit for the process (in bytes): '-1'(Soft limit) and '-1'(
Hard limit).
GLPCTL115I Maximum data segment limit for the process (in bytes): '-1'(Soft limit) and '-1'(Hard
limit).
GLPCTL116I Maximum physical memory limit for the process (in bytes): '-1'(Soft limit) and '-1'(Ha
rd limit).
GLPSRV009I IBM Tivoli Directory (SSL), 6.0      Server started.
```



Basic Debugging – Configuration Only Mode

Additionally you can run the following command to confirm:

```
# idslapsearch -p <port> -b "" -s base objectclass=* | grep -i config
```

```
[ root@ldapaixc1:/home/ismpinst/idsslapd-ismpinst/etc ]  
==> idslapsearch -p 389 -b "" -s base objectclass=* | grep -i config  
ibm-slapdisconfigurationmode=TRUE  
[ root@ldapaixc1:/home/ismpinst/idsslapd-ismpinst/etc ]  
==> █
```

ibm-slapdisconfigurationmode=TRUE confirms that the server is running in configuration mode.

Basic Debugging – Configuration Only Mode

From the output messages in the failed server startup you can see that there is an issue connecting to the database. In order to find out more information we should take a trace of the server startup.

If the server is still running, stop it.

```
# ibmslapd -I ismpinst -k
```

Then check to see if ldtrc is on. If it is off, then enable tracing and restart the server using the `-h debug` flag.

```
[ root@ldapaixc1:/home/ismpinst/idsslapd-ismpinst/etc ]  
==> ldtrc info  
Trace is off.  
[ root@ldapaixc1:/home/ismpinst/idsslapd-ismpinst/etc ]  
==> ldtrc on  
Trace is turned on  
[ root@ldapaixc1:/home/ismpinst/idsslapd-ismpinst/etc ]  
==> ibmslapd -I ismpinst -n -h 65535 2>&1 | tee /tmp/dbg.out
```

Basic Debugging – Configuration Only Mode

Several messages will display, when the command completes view the output file and search for failure messages.

```
094:05:15:38 T1 K1069271 Error - map_rc_func: henv=0,hdbc=1,native retcode = -30082; state = "0800
1"; message = "[IBM][CLI Driver] SQL30082N Attempt to establish connection failed with security
reason "24" ("USERNAME AND/OR PASSWORD INVALID"). SQLSTATE=08001
"
```

This indicates that either the db2 username and / or db2 user password specified in the ibmslapd.conf file is invalid.

Typically this error is encountered when users update the db2 user password on the system and forget to update the ibmslapd.conf file. If the server is running when the password was changed you will not notice a problem until the server is restarted.



Basic Debugging – Configuration Only Mode

In order to fix this we need to verify the db2 username and db2 user password are correct. Then we need to update the configuration file using the idscfgdb utility with the `-I` and `-w` flags.

```
[ root@ldapaixc1:/home/ismpinst/idsslapd-ismpinst/etc ]
==> su - ismpinst
$ su - ismpinst
ismpinst's Password:
$ exit
$ exit
[ root@ldapaixc1:/home/ismpinst/idsslapd-ismpinst/etc ]
==> idscfgdb -I ismpinst -w ismpinst
You have chosen to perform the following actions:

GLPCDB022I The database administrator password will be reconfigured.

Do you want to...
(1) Continue with the above actions, or
(2) Exit without making any changes:1

GLPCDB028I Reconfiguring database password.
GLPCDB029I Reconfigured database password.
[ root@ldapaixc1:/home/ismpinst/idsslapd-ismpinst/etc ]
==>
```



Basic Debugging – Configuration Only Mode

Now that we have updated the configuration file with the correct db2 user password, the server will start successfully.

```
[ root@ldapsaixc1:/home/ismpinst/ldsslapd-ismpinst/etc ]
==> ibmslapd -I ismpinst -n
GLPSRV041I Server starting.
RDBM backend client library loaded
GLPCOM024I The extended Operation plugin is successfully loaded from libevent.a.
GLPCOM024I The extended Operation plugin is successfully loaded from libtranext.a.
GLPCOM024I The extended Operation plugin is successfully loaded from libldaprepl.a.
GLPCOM021I The preoperation plugin is successfully loaded from libDSP.a.
GLPCOM021I The preoperation plugin is successfully loaded from libDigest.a.
GLPCOM024I The extended Operation plugin is successfully loaded from libevent.a.
GLPCOM024I The extended Operation plugin is successfully loaded from libtranext.a.
GLPCOM025I The audit plugin is successfully loaded from libdapaudit.a.
GLPCOM024I The extended Operation plugin is successfully loaded from libevent.a.
GLPCOM022I The database plugin is successfully loaded from libback-config.a.
GLPCOM024I The extended Operation plugin is successfully loaded from libevent.a.
GLPCOM024I The extended Operation plugin is successfully loaded from libtranext.a.
GLPCOM022I The database plugin is successfully loaded from libback-rdbm.a.
GLPCOM010I Replication plugin is successfully loaded from libldaprepl.a.
GLPCOM024I The extended Operation plugin is successfully loaded from libback-rdbm.a.
GLPCOM024I The extended Operation plugin is successfully loaded from libback-rdbm.a.
GLPCOM024I The extended Operation plugin is successfully loaded from libback-rdbm.a.
GLPCOM024I The extended Operation plugin is successfully loaded from liblog.a.
GLPCOM003I Non-SSL port initialized to 389.
GLPCTL113I Largest core file size creation limit for the process (in bytes): '-1'(Soft limit) and '-1'(Hard limit).
GLPCTL114I Largest file size creation limit for the process (in bytes): '-1'(Soft limit) and '-1'(Hard limit).
GLPCTL115I Maximum data segment limit for the process (in bytes): '-1'(Soft limit) and '-1'(Hard limit).
GLPCTL116I Maximum physical memory limit for the process (in bytes): '-1'(Soft limit) and '-1'(Hard limit).
GLPSRV009I IBM Tivoli Directory (SSL), 6.0 Server started.
```

Basic Debugging – Configuration Only Mode

We can also confirm that the server is not running in configuration only mode by running the

```
# idsldapsearch -p <port> -b "" -s base objectclass=* | grep -i config
```

```
[ root@ldapaixc1:/home/ismplnst/idsldapd-ismplnst/etc ]  
==> idsldapsearch -p 389 -b "" -s base objectclass=* | grep -i config  
ibm-slapdisconfigurationmode=FALSE  
[ root@ldapaixc1:/home/ismplnst/idsldapd-ismplnst/etc ]  
==> █
```

This search now confirms that the server is not running in configuration only mode. Problem Solved!



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