Tivoli software

IBM

Support Technical Exchange: IBM Tivoli Directory Server V6.3 Upgrade (Migration)

By: Ramamohan T. Reddy and Annemarie Fitterer

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Introduction

- Abstract:
  This STE will address various migration / upgrade strategies to the IBM Tivoli Directory Server V6.3 from previous versions / releases on AIX operating system.

- Objectives:
  1. Understanding migration / upgrade
  2. Migration / upgrade possibilities
  3. Simple upgrade
  4. Backup and back-out methods
  5. Separated upgrade of ITDS and DB2
  6. Migrating high availability environments
  7. Best practices
  8. Debugging 1450018

- The latest version of this presentation document can be found at this url: http://www-01.ibm.com/support/docview.wss?uid=swg21450018

Agenda

1. Useful Links
2. Understanding Upgrade / Migration
3. 6.2 –> 6.3 upgrade – platforms
4. 6.1 –> 6.3 upgrade – platforms
5. 6.0 –> 6.3 upgrade – platforms
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7. Upgrade / Migration – same system
8. Upgrade / Migration – remote system
9. Upgrade / Migration in a high availability environments
10. ITDS proxy ldap server upgrade
11. Hints and Tips
12. Problem determination and debugging

1. Useful Links

- IBM Tivoli Directory Server support site:
  http://www-306.ibm.com/software/sysmgmt/products/support/IBMDirectoryServer.html
- Must Gather Document:
  http://www-1.ibm.com/support/docview.wss?uid=swg21268035
- Recommended Fixes:
  http://www-1.ibm.com/support/docview.wss?uid=swg27009778
- Featured Documents:
  http://www-1.ibm.com/support/docview.wss?uid=swg27009603
- Fixes by Version:
  http://www-01.ibm.com/support/docview.wss?rs=767&uid=swg21252238

1. Useful Links

- ITDS v6.3 Package information:
  http://www-01.ibm.com/support/docview.wss?uid=swg24027373
- 6.3 System Requirements:
  http://publib.boulder.ibm.com/infocenter/tivihelp/v2r1/topic/com.ibm.IBMDS.doc/sysreq.htm
- 6.3 Product Documentation:
  http://publib.boulder.ibm.com/infocenter/tivihelp/v2r1/topic/com.ibm.IBMDS.doc/welcome.htm
- 6.2 System Requirements:
  http://publib.boulder.ibm.com/infocenter/tivihelp/v2r1/topic/com.ibm.IBMDS.doc_6.2/sysreq.htm
- 6.1 System Requirements:
  http://publib.boulder.ibm.com/infocenter/tivihelp/v2r1/topic/com.ibm.IBMDS.doc_6.1/sysreq.htm
- 6.0 System Requirements:
  http://publib.boulder.ibm.com/infocenter/tivihelp/v2r1/topic/com.ibm.IBMDS.doc_6.0/requirements.htm
- 5.2 System Requirements:
  http://publib.boulder.ibm.com/infocenter/tivihelp/v2r1/topic/com.ibm.IBMDS.doc_5.2/ldapinst23.htm
  http://publib.boulder.ibm.com/infocenter/tivihelp/v2r1/topic/com.ibm.IBMDS.doc_5.2/addendum52.htm
- For latest tested platforms, software information, refer latest fixpack readme file.

1. Useful Links

- Google Newsgroup:
  http://groups.google.com/group/ibm.software.ldap/topics?lnk=gschg&hl=en
- Tivoli Product Lifecycle Site:
  http://www-306.ibm.com/software/sysmgmt/products/support/lifecycle/
- IBM Identity and Access Management Community:
  https://community.ibm.com/community/user/security/communities/community-home?CommunityKey=e7c36119-46d7-42f2-97a9-b44f0cc89c6d
- My Notifications:
  https://www-01.ibm.com/software/support/einfo.html
- STEs:
  - Introduction to ITDS 6.3 Installation and Configuration:
    http://www-01.ibm.com/support/docview.wss?uid=swg27019820
  - Previous ITDS STEs:
    http://www-01.ibm.com/support/search.wss?rs=767&tc=SSVJJU&q=Tivoli+Directory+Server+STE

2. Upgrade / Migration

- When
  - You have previous version of running ITDS (6.2 / 6.1 / 6.0)
- What
  - Directory Server Instance
    - Configuration (ibmslapd.conf)
    - Schema files
  - DB2 Instance
  - Database
  - Web Administration Tool configuration
- Why
  - To use latest capabilities
  - New hardware/operating systems
- How
  - Product provided methods - GUI methods / Command line methods
- Who
  - Directory Administrator
- If you have ITDS (ldap) 5.2, then you must migrate to 6.2 / 6.1 / 6.0 first.

2. Upgrade / Migration

- Find if 6.2 (or 6.1 / 6.0) instance have schema additions/modifications
  - See if there are any contents in the V3.modifiedschema file (e.g.: /home/ldapdb2/idsslapd-ldapdb2/etc/V3.modifiedschema)
  - Compare the sizes of the V3.* files in instance's etc folder (e.g.: /home/ldapdb2/idsslapd-ldapdb2/etc) with the sizes of product provided V3.* schema files (/opt/IBM/ldap/V6.2/etc/SchemaV6.2/)

```
==> ls -l /home/ldapdb2/idsslapd-ldapdb2/etc/V3*
==> ls -l /opt/IBM/ldap/V6.2/SchemaV6.2/V3*
```

  - If required do a diff between the files in the locations mentioned above. E.g:

```
==> diff /home/ldapdb2/idsslapd-ldapdb2/etc/V3.user.at /opt/IBM/
  ldap/V6.2/SchemaV6.2/V3.user.at
```

- In case if the schema additions / modifications do exist, you must go through upgrade / migration scenario.
- In few cases copying only V3.modifiedschema into a new instance and data load using ldif2db will work, but take a closer look (refer first bullet)
- Prepare and try in your QA / test servers first.

3. 6.2 –> 6.3 upgrade – platforms

- List of platforms where same system upgrade / migration can be performed from ITDS V6.2 to ITDS V6.3:

Hardware	6.2 Supported Operating System	Upgrade to 6.3 on same system
IBM pSeries (ppc/ppc64)	**AIX 6.1, AIX 5.3, RHEL 5, SLES 10, SLES 11**	**Yes**
	RHEL 4, SLES 9	**Not supported with 6.3**
IBM system z (s390x 64-bit)	**RHEL 5, SLES 10, SLES 11**	**Yes**
	RHEL 4, SLES 9	**Not supported with 6.3**
ia32 / x86	**RHEL 5, SLES 10, SLES 11 Microsoft Windows Server: 2003, 2003R2, 2008**	**Yes**
	RHEL 4, SLES 9	**Not supported with 6.3**

- **Note: If an operating system is not supported with 6.3, then same system upgrade is not possible. Remote migration to a 6.3 supported platform on a different system is suggested.**

3. 6.2 –> 6.3 upgrade – platforms (Contd …)

- List of platforms where same system upgrade / migration can be performed from ITDS V6.2 to ITDS V6.3:

Hardware	6.2 Supported Operating System	Upgrade to 6.3 on same system
Sun/Oracle Sparc	**Solaris 9, Solaris 10**	**Yes**
X64 x86_64 amd64	**RHEL 5, SLES 10, SLES 11 Microsoft Windows Server: 2003, 2003R2, 2008 Solaris 10**	**Yes**
	RHEL 4, SLES 9	**Not supported with 6.3**

- **Note: If an operating system is not supported with 6.3, then same system upgrade is not possible. Remote migration to a 6.3 supported platform on a different system is suggested.**
- **HP-UX (PA-RISC / IA64) is a client only supported platform for 6.3**

4. 6.1 –> 6.3 upgrade – platforms

- List of platforms where same system upgrade / migration can be performed from ITDS V6.1 to ITDS V6.3:

Hardware	6.1 Supported Operating System	Upgrade to 6.3 on same system
IBM pSeries (ppc/ppc64)	**AIX 6.1, AIX 5.3, RHEL 5, SLES 10, SLES 11**	**Yes**
	AIX 5.2, RHEL 4, SLES 9	**Not supported with 6.3**
IBM system z (s390x 64-bit)	**RHEL 5, SLES 10, SLES 11**	**Yes**
	RHEL 4, SLES 9	**Not supported with 6.3**
ia32 / x86	**RHEL 5, SLES 10, SLES 11 Microsoft Windows Server: 2003, 2003R2, 2008**	**Yes**
	RHEL 4, SLES 9	**Not supported with 6.3**

- **Note: If an operating system is not supported with 6.3, then same system upgrade is not possible. Remote migration to a 6.3 supported platform on a different system is suggested.**

4. 6.1 –> 6.3 upgrade – platforms (Contd …)

- List of platforms where same system upgrade / migration can be performed from ITDS V6.1 to ITDS V6.3:

Hardware	6.1 Supported Operating System	Upgrade to 6.3 on same system
Sun/Oracle Sparc	**Solaris 9, Solaris 10**	**Yes**
X64 x86_64 amd64	**RHEL 5, SLES 10, SLES 11 Microsoft Windows Server: 2003, 2003R2, 2008 Solaris 10**	**Yes**
	RHEL 4, SLES 9	**Not supported with 6.3**

- **Note: If an operating system is not supported with 6.3, then same system upgrade is not possible. Remote migration to a 6.3 supported platform on a different system is suggested.**
- **HP-UX (PA-RISC / IA64) is a client only supported platform for 6.3**

5. 6.0 –> 6.3 upgrade – platforms

- List of platforms where same system upgrade / migration can be performed from ITDS V6.0 to ITDS V6.3:

Hardware	6.0 Supported Operating System	Upgrade to 6.3 on same system
IBM pSeries (ppc/ppc64)	**AIX 6.1, AIX 5.3, RHEL 5, SLES 10**	**Yes**
	AIX 5.1, AIX 5.2, RHEL 3, RHEL 4, SLES 8, SLES 9	**Not supported with 6.3**
IBM system z (s390 / s390x)	**RHEL 3, RHEL 4, SLES 8, SLES 9 (64 bit with remote database OR 31 bit TDS with local database)**	**Not supported with 6.3**
ia32 / x86	**RHEL 5, SLES 10 Microsoft Windows Server: 2003, 2003R2**	**Yes**
	RHEL 3, RHEL 4, SLES 8, SLES 9	**Not supported with 6.3**

- **Note: If an operating system is not supported with 6.3, then same system upgrade is not possible. Remote migration to a 6.3 supported platform on a different system is suggested.**

5. 6.0 –> 6.3 upgrade – platforms (Contd …)

- List of platforms where same system upgrade / migration can be performed from ITDS V6.0 to ITDS V6.3:

Hardware	6.0 Supported Operating System	Upgrade to 6.3 on same system
Sun/Oracle Sparc	**Solaris 9, Solaris 10**	**Yes**
	Solaris 8	**Not supported with 6.3**
X64 / x86_64 / amd64	**Solaris 10**	**Yes**

- **Note: If an operating system is not supported with 6.3, then same system upgrade is not possible. Remote migration to a 6.3 supported platform on a different system is suggested.**
- **HP-UX (PA-RISC / IA64) is a client only supported platform for 6.3**

6. 6.3 – platforms

- List of V6.3 supported platforms where remote upgrade / migration can be performed to ITDS V6.3:

Hardware	6.3 Supported Operating System
IBM pSeries (ppc/ppc64)	**AIX 7.1, AIX 6.1, AIX 5.3, RHEL 5, SLES 10, SLES 11**
IBM system z (s390x 64-bit)	**RHEL 5, SLES 10, SLES 11**
ia32 / x86	**RHEL 5, SLES 10, SLES 11, Microsoft Windows Server: 2003, 2003R2**
Sun/Oracle - Sparc	**Solaris 9, Solaris 10**
X64 / x86_64 / amd64	**RHEL 5, SLES 10, SLES 11, Microsoft Windows Server: 2003, 2003R2, 2008 Solaris 10**

Questions ?

7. Upgrade to 6.3 on AIX - same system

- Operating system: AIX 6.1 OR AIX 5.3
- Current setup is using EITHER ITDS V6.2, ITDS V6.1 OR ITDS V6.0:
  - **ITDS V6.2 FP2 IF4 (6.2.0.12), DB2 V9.5 FP5 (9.5.0.5), GSKit 7c (7.0.4.28), embedded WAS (6.1.0.13)**

  OR
  - **ITDS V6.1 FP4 IF4 (6.1.0.36), DB2 V9.1 FP7 (9.1.0.7), GSKit 7c (7.0.4.28), embedded WAS (6.1.0.7)**

  OR
  - **IITDS V6.0 FP8 IF6 (6.0.0.64), DB2 v8 FP18 (8.1.1.160), GSKit 7c (7.0.4.28), embedded WAS (5.1.1)**
- Target setup: ITDS V6.3, DB2 v9.7 FP2 (9.7.0.2), GSKit v8 (8.0.13.1)
- Configuration:
  - Single stand alone ldap server with SSL, changelog and password policy enabled
  - Contains local administrative group member users
- For V6.0 minimum required DB2 level before upgrade is DB2 v8 FP14 (8.1.1.128)
- Use either direct root login or “su - root” for installation and migration/upgrade
- Refer installation and configuration document
  http://publib.boulder.ibm.com/infocenter/tivihelp/v2r1/topic/com.ibm.IBMDS.doc/install.htm
- Verify the system requirements for ITDS 6.3 / DB2 9.7 to use on AIX:
  http://publib.boulder.ibm.com/infocenter/tivihelp/v2r1/topic/com.ibm.IBMDS.doc/sysreq26.htm#aixreq
- Verify the system requirements for DB2 9.7 on AIX:
  http://publib.boulder.ibm.com/infocenter/db2luw/v9r7/topic/com.ibm.db2.luw.qb.server.doc/doc/r0008857.html

7. Upgrade to 6.3 on AIX - same system contd…

- Get ITDS V6.3 tar images untarred on the system.
  - Download the ITDS V6.3 from Passport Advantage (http://www-01.ibm.com/support/docview.wss?uid=swg24027373)
  - Untar all tar files into same folder where you have enough disc space. Untar location used in this exercise /data/aix/63
  - Untarred parts:
    - CZK73ML.tar (tds63-aix-ppc64-base.tar)
    - CZK75ML.tar (tds63-aix-ppc64-db2.tar)
    - CZK76ML.tar (tds63-aix-ppc64-eWas.tar)
    - CZK77ML.tar (tds63-aix-ppc64-gskit.tar)
    - CZK78ML.tar (tds63-aix-ppc64-whitepages.tar)
  - Untarred location:

```
==> cd /data/aix/63
==> ls
tdsV6.3
```

7. Upgrade to 6.3 on AIX - same system contd…

- **Find the current 6.2 (or 6.1 / 6.0) instance details**

```
==> idsilist -a
Directory server instances:
---------------------------------------
Instance 1:
Name: ldapdb2
Version: 6.2
Location: /home/ldapdb2
Description: IBM Tivoli Directory Server Instance V6.2
IP Addresses: All available
Port: 389
Secure Port: 636
Admin Daemon Port: 3538
Admin Daemon Secure Port: 3539
Type: Directory Server
```

- **Find the database information from ibmslapd.conf**

```
==> cd /home/ldapdb2/idsslapd-ldapdb2/etc
==> egrep -i '(dblocation|dbname|dbinstance|dbuser)' ibmslapd.conf
ibm-slapdDbInstance: ldapdb2
ibm-slapdDbLocation: /home/ldapdb2
ibm-slapdDbName: ldapdb2
ibm-slapdDbUserID: ldapdb2
ibm-slapdDbUserPW: {AES256}hmAjebuBnlANjv8l7uOZ8Q==
ibm-slapdDbInstance: ldapdb2
ibm-slapdDbName: ldapclog
ibm-slapdDbUserID: ldapdb2
ibm-slapdDbUserPW: {AES256}Os9AP0LhdP9X/m+j8+csOg==
```

7. Upgrade to 6.3 on AIX - same system contd…

- **Backup configuration and schema(Using root login) – migbkup [Optional]**
- **The Location and Name values are used in migbkup command below**

```
==> mkdir /home/ldapdb2/ldapsaveconf
==> chmod g+w /home/ldapdb2/ldapsaveconf
==> chown ldapdb2:idsldap /home/ldapdb2/ldapsaveconf
==> cd /data/aix/63/tdsV6.3/tools/
==> ./migbkup /home/ldapdb2/idsslapd-ldapdb2 /home/ldapdb2/
  ldapsaveconf
```

- **Remove an softlinks for db2 in /usr/lib or /lib folders (IMPORTANT)**

```
==> ls -l /usr/lib/*db2* /lib/*db2*
==> rm /usr/lib/libdb2.a #(similarly remove other db2 links)
```

- **Unset any db2 specific env variables in root's environment (IMPORTANT)**

```
==> export | egrep -i '(db2|sql)';set | egrep -i '(db2|sql)'
```

7. Upgrade to 6.3 on AIX - same system contd…

- Take backups before migration/upgrade
- Backup method 1 – idsdbback from V6.2 (or V6.1 / V6.0)
  Using root login:

```
==> mkdir /home/ldapdb2/ldapbackup1
==> chmod g+w /home/ldapdb2/ldapbackup1
==> chown ldapdb2:idsldap /home/ldapdb2/ldapbackup1
==> ibmslapd -I ldapdb2 -k
==> idsdbback -I ldapdb2 -k /home/ldapdb2/ldapbackup1 -n
```

- Backup method 2 – db2ldif
  Using root login:

```
==> mkdir /home/ldapdb2/ldapbackup2
==> chmod g+w /home/ldapdb2/ldapbackup2
==> chown ldapdb2:idsldap /home/ldapdb2/ldapbackup2
==> idsdb2ldif -I ldapdb2 -o /home/ldapdb2/ldapbackup2/
  ldapdata.ldif
==> cd /home/ldapdb2/idsslapd-ldapdb2
==> tar -cf /home/ldapdb2/ldapbackup2/ldapdb2etc.tar etc
```

- No backup done for Change log database

7. Upgrade to 6.3 on AIX - same system contd…

- Two Upgrade methods are available when upgrading on the same system:
  1. Install / Upgrade using command line and operating system utility methods
     - Previous version can be uninstalled after upgrade
     - Command line utils for migration
       `idsimigr, idsdbmigr, idswmigr`
  2. Install / Upgrade using InstallShield and GUI methods
     - 6.3 installer will not uninstall 6.2 (or 6.1 / 6.0)
     - Previous version can be uninstalled after upgrade
     - Instance Administration Tool (idsxinst) is used for upgrade

7. Upgrade to 6.3 on AIX - same system contd…

1. Upgrade using command line and operating system utility methods

- Note down the current software levels of ITDS, DB2, GSKit and eWAS
- Remember not to unconfigure ldap or db2 instance
- No need to uninstall V6.2 (or V6.1 / V6.0) server (before upgrade)
- Do not uninstall or unconfigure DB2 V9.5 (or DB2 V9.1 / DB2 V8)
- In case of DB2 V8 make sure you have at least FP14 (8.1.1.128)
  - Note: If DB2 Fixpack is just installed before upgrade, do necessary fixpack post install instructions
    - to update the existing DB2 instances and
    - to update the associated databases.
  - Refer:
    http://www-01.ibm.com/support/docview.wss?rs=767&uid=swg21217323
- Stop ibmslapd and ibmdiradm processes

```
==> ibmslapd -I ldapdb2 -k
==> ibmdiradm -I ldapdb2 -k
```

7. Upgrade to 6.3 on AIX - same system contd…

1. Upgrade using command line and operating system utility methods

- Install DB2 v9.7 FP2 provided by ITDS V6.3
- DB2 V9.7 default install location when installed via db2_install: /opt/IBM/db2/V9.7
- When asked to choose a different directory to install – Answer yes

```
==> cd /data/aix/63/tdsV6.3/db2/
==> ls
db2 db2_install db2ls db2setup installFixPack db2_deinstall db2ckupgrade
  db2prereqcheck doc nlpack
==> ./db2_install
Default directory for installation of products - /opt/IBM/db2/V9.7
***********************************************************
Do you want to choose a different directory to install [yes/no]?
no

Then specify product keyword ESE when prompted again.
Upon successful completion of installing 48 tasks
The install log: /tmp/db2_install.log.4849844
```

- DB2 can be installed into custom location / path. (Specify yes and then upon prompting, provide required custom install location / path).
- On AIX systems bos.iocp fileset is required, install the same from AIX OS media.

7. Upgrade to 6.3 on AIX - same system contd…

1. Upgrade using command line and operating system utility methods

- Installing GSKit v8 (8.0.13.1) provided by ITDS V6.3

```
==> cd /data/aix/63/tdsV6.3/gskit/
==> ls -a
.toc GSKit8.gskcrypt64.ppc.rte  GSKit8.gskssl64.ppc.rte
     GSKit8.gskcrypt32.ppc.rte  GSKit8.gskssl32.ppc.rte
==> installp -acXgd . GSKit8
```

- Upon successful completion "SUCCESS" will be displayed in the installation summary report.

```
==> lslpp -L GSKit8*
  Fileset                      Level  State  Type  Description (Uninstaller)
  ----------------------------------------------------------------------------
  GSKit8.gskcrypt32.ppc.rte 8.0.13.1    C     F    IBM GSKit Cryptography
                                                   Runtime
  GSKit8.gskcrypt64.ppc.rte 8.0.13.1    C     F    IBM GSKit Cryptography
                                                   Runtime
  GSKit8.gskssl32.ppc.rte   8.0.13.1    C     F    IBM GSKit SSL Runtime With
                                                   Acme Toolkit
  GSKit8.gskssl64.ppc.rte   8.0.13.1    C     F    IBM GSKit SSL Runtime With
                                                   Acme Toolkit
```

7. Upgrade to 6.3 on AIX - same system contd…

1. Upgrade using command line and operating system utility methods

- Installing ITDS V6.3 packages:

```
==> cd /data/aix/63/tdsV6.3/tdsfiles/
==> ls -a
==> ls
.toc                                    idsldap.clt_max_crypto64bit63
idsldap.srv64bit63                      idsldap.webadmin63
idsldap.clt32bit63                      idsldap.cltbase63

idsldap.srv_max_cryptobase64bit63       idsldap.webadmin_max_crypto63
idsldap.clt64bit63                      idsldap.cltjava63

idsldap.srvbase64bit63                  idsldap.clt_max_crypto32bit63

idsldap.msg63.en_US                     idsldap.srvproxy64bit63

==> installp -acXgYd . idsldap
```

- Installing ITDS V6.3 entitlement package:

```
==> cd /data/aix/63/tdsV6.3/entitlement/; ls -a
.toc          entitlement.txt           idsldap.ent63
==> installp -acXgYd . idsldap
```

- Upon successful completion "SUCCESS" will be displayed in the installation summary report.

7. Upgrade to 6.3 on AIX - same system contd…

1. Upgrade using command line and operating system utility methods

- Install Embedded WebSphere Application Server 7.0.0.7 provided by ITDS V6.3
  ```
  ==> cd /data/aix/63/tdsV6.3/appsrv
  ==> ./install.sh -installRoot /opt/IBM/ldap/V6.3/appsrv
  ```
- Use the idswmigr utility to migrate IDSWebApp application and its settings from /opt/IBM/ldap/V6.2/appsrv into /opt/IBM/ldap/V6.3/appsrv
  ```
  ==> cd /opt/IBM/ldap/V6.3/idstools
  ==> mkdir /tmp/idstempdir
  ```
- For V6.2:
  ```
  ==> ./idswmigr -l /tmp/idstempdir -s /opt/IBM/ldap/V6.2/appsrv
  ```
- For V6.1:
  ```
  ==> ./idswmigr -l /tmp/idstempdir -s /opt/IBM/ldap/V6.1/appsrv
  ```
- For V6.0:
  ```
  ==> ./idswmigr -l /tmp/idstempdir -s /opt/IBM/ldap/V6.0/appsrv
  ```
- To Stop eWAS/WebAdmin for V6.3
  ```
  ==> cd /opt/IBM/ldap/V6.3/appsrv/profiles/TDSWebAdminProfile/bin
  ==> ./stopServer.sh server1
  ```
- To Start eWAS/WebAdmin for V6.3
  ```
  ==> cd /opt/IBM/ldap/V6.3/appsrv/profiles/TDSWebAdminProfile/bin
  ==> ./startServer.sh server1
  ```
- Connect using Browser:
  ```
  http://hostname:12100/IDSWebApp/IDSjsp/Login.jsp
  https://hostname:12101/IDSWebApp/IDSjsp/Login.jsp
  ```

7. Upgrade to 6.3 on AIX - same system contd…

1. Upgrade using command line and operating system utility methods

- Setup ITDS V6.3 links using idslink command
  ```
  ==> cd /opt/IBM/ldap/V6.3/bin
  ==> ./idslink -i -g -s fullsrv -f
  ```
- The above command creates itds specific client and complete server links in /usr/bin pointing to install location /opt/IBM/ldap/V6.1/…
- Use “-f” flag with idslink command if necessary to force link creation
- Use “-g” flag with idslink command to create generic ldap client links such as ldapsearch etc… in /usr/bin
- Use “-l [32|64]” flag with idslink command to create ldap client library links in /usr/lib
- Library links are NOT necessary for Server / Client commands - Don’t set library links unless your custom applications require them.

7. Upgrade to 6.3 on AIX - same system contd…

1. Upgrade using command line and operating system utility methods

- Use the idsimigr utility to migrate the following:
  - Configuration, Schema and database
  - Upgrades ids and db2 instances
  - Performs necessary DB2 instance migration and database migration

```
==> idsimigr -?
Usage: idsimigr [-I instance_name [-u backup_dir] [-p port] [-s secure_port] [-a
   adm_port] [-c adm_secureport] [-t db_instance] [-i ipaddress] [-l inst_location] [-r
   description] [-G group_name] [-w user_password] [-d debug_level] [-b output_file] [-
   q] [-n]] | -v | -?
```

- Run idsimigr utility

```
==> idsimigr -I ldapdb2 -n
```

- Start ldap server for upgraded instance

```
==> ibmslapd -I ldapdb2
```

- When migrating from V6.1 (or V6.0) to V6.3 - GLPMIG043W and GLPMIG044W messages may show up. (This can be ignored).
- Idsimigr tool will show conflicts in schema only for V3.* files (includes V3.modifiedschema).
- In case any conflicts in V3.* files and custom schema files, ibmdiradm and ibmslapd will fail to start. GLPSCH021E messages may show up in the ibmdiradm.log or ibmslapd.log. Resolve all the schema conflicts manually.

7. Upgrade to 6.3 on AIX - same system contd…

2. Upgrade using InstallShield & Instance Administration Tool (GUI)

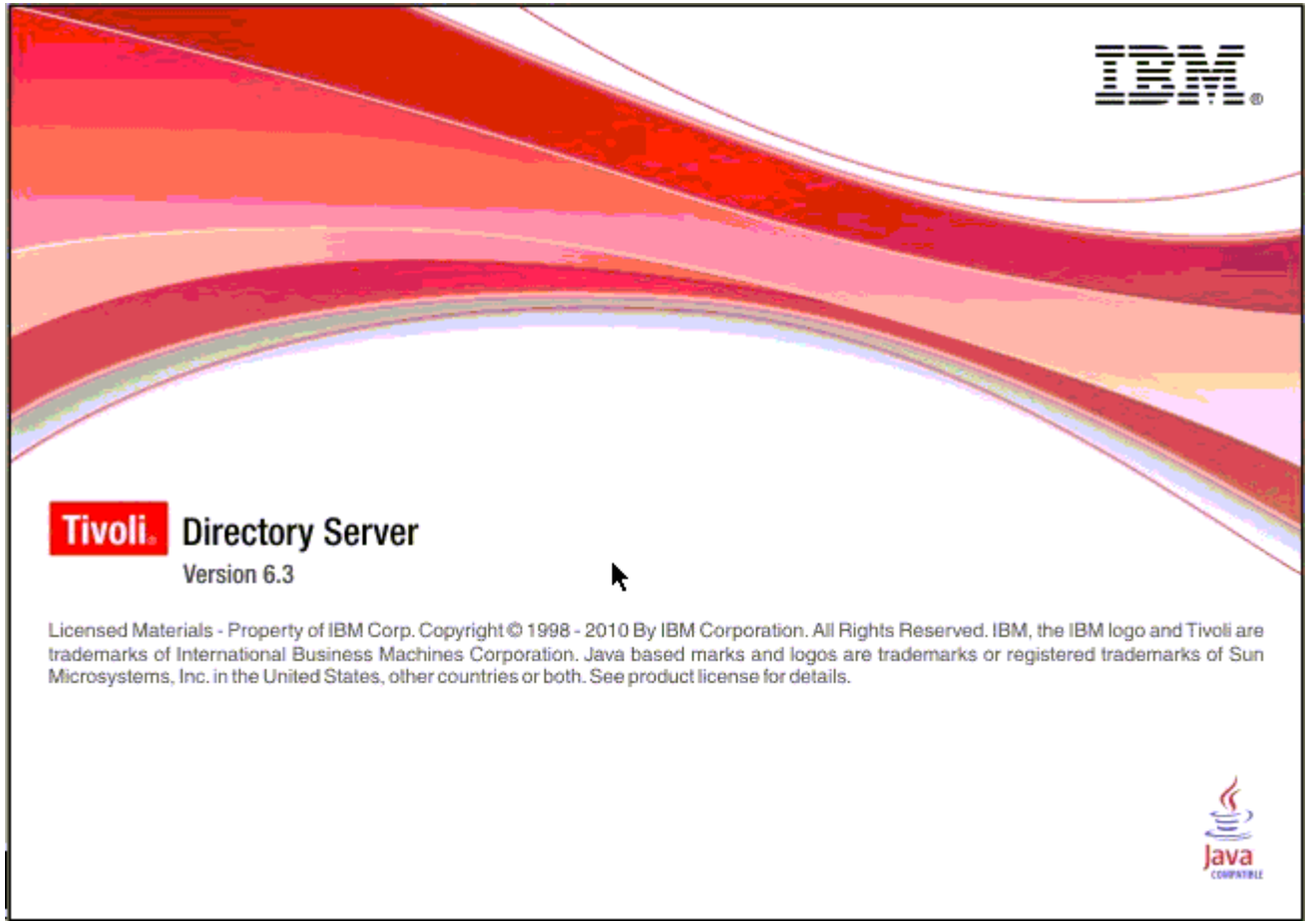
- Start the InstallShield GUI

```
==> cd /data/aix/63/tdsV6.3/tds/
==> ./install_tds.bin
Initializing Wizard.....
```

- It might take few minutes to get the initial GUI to appear

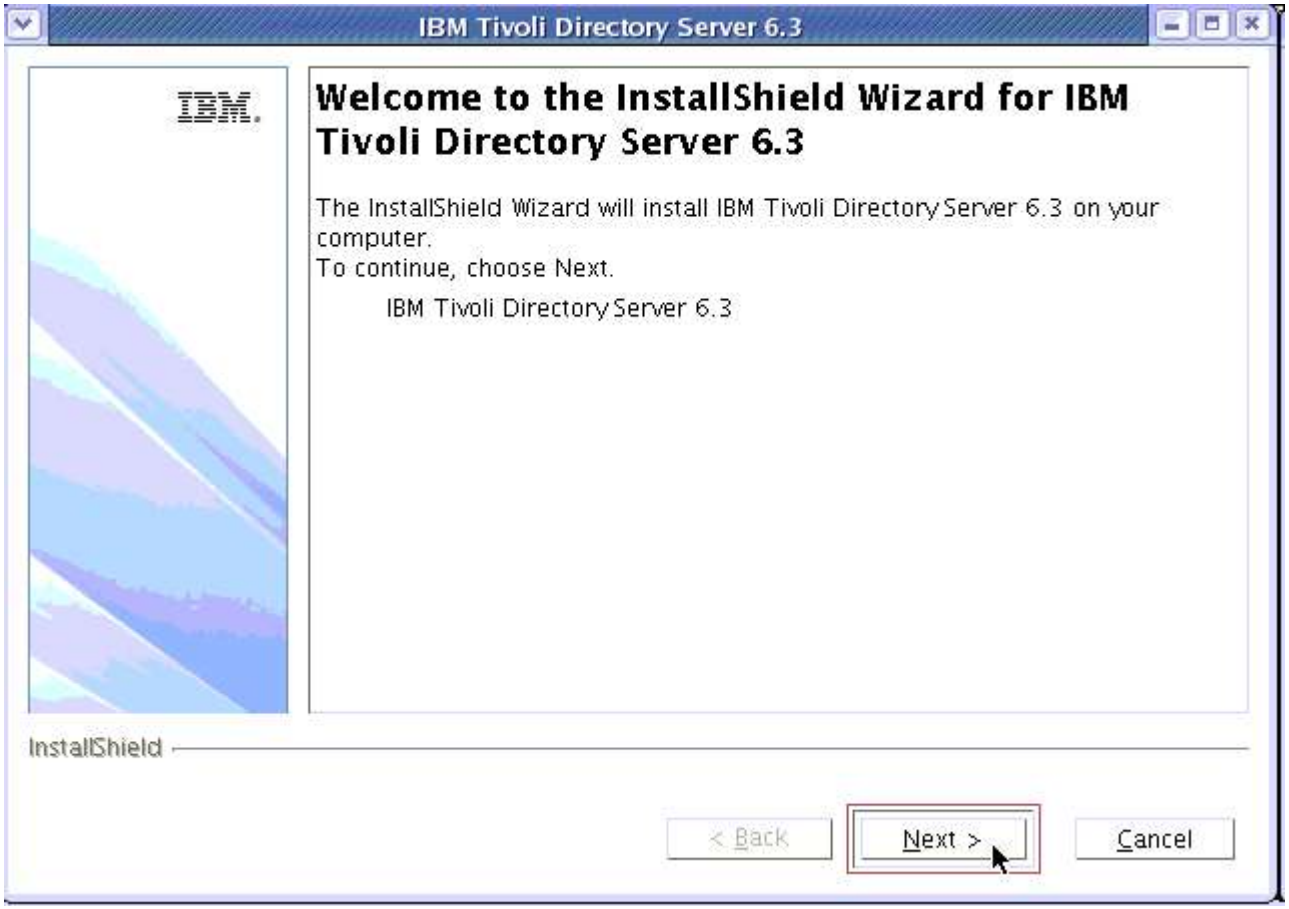
7. Upgrade to 6.3 on AIX - same system contd…

2. Upgrade using InstallShield & Instance Administration Tool (GUI)



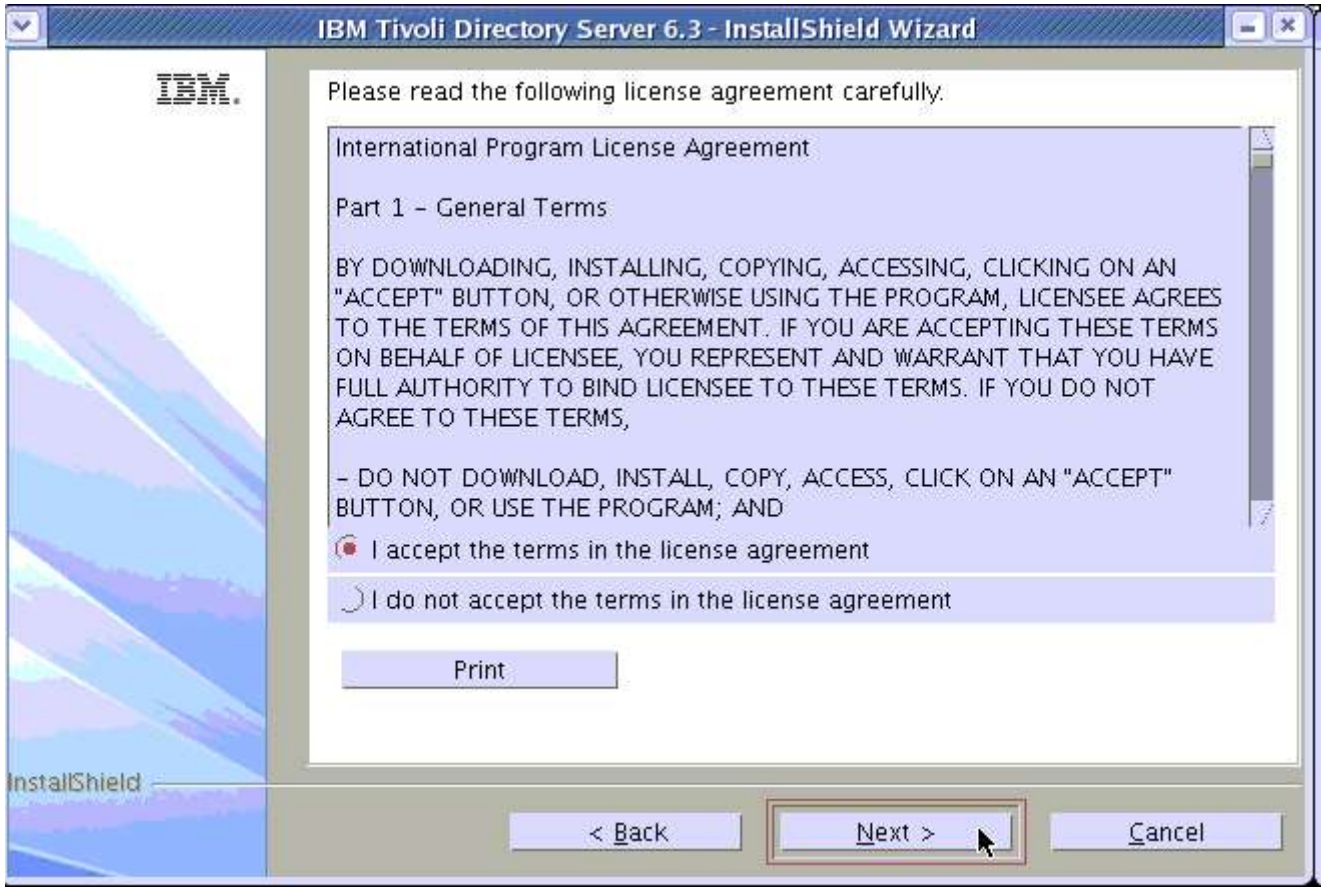
7. Upgrade to 6.3 on AIX - same system contd…

2. Upgrade using InstallShield & Instance Administration Tool (GUI)



7. Upgrade to 6.3 on AIX - same system contd…

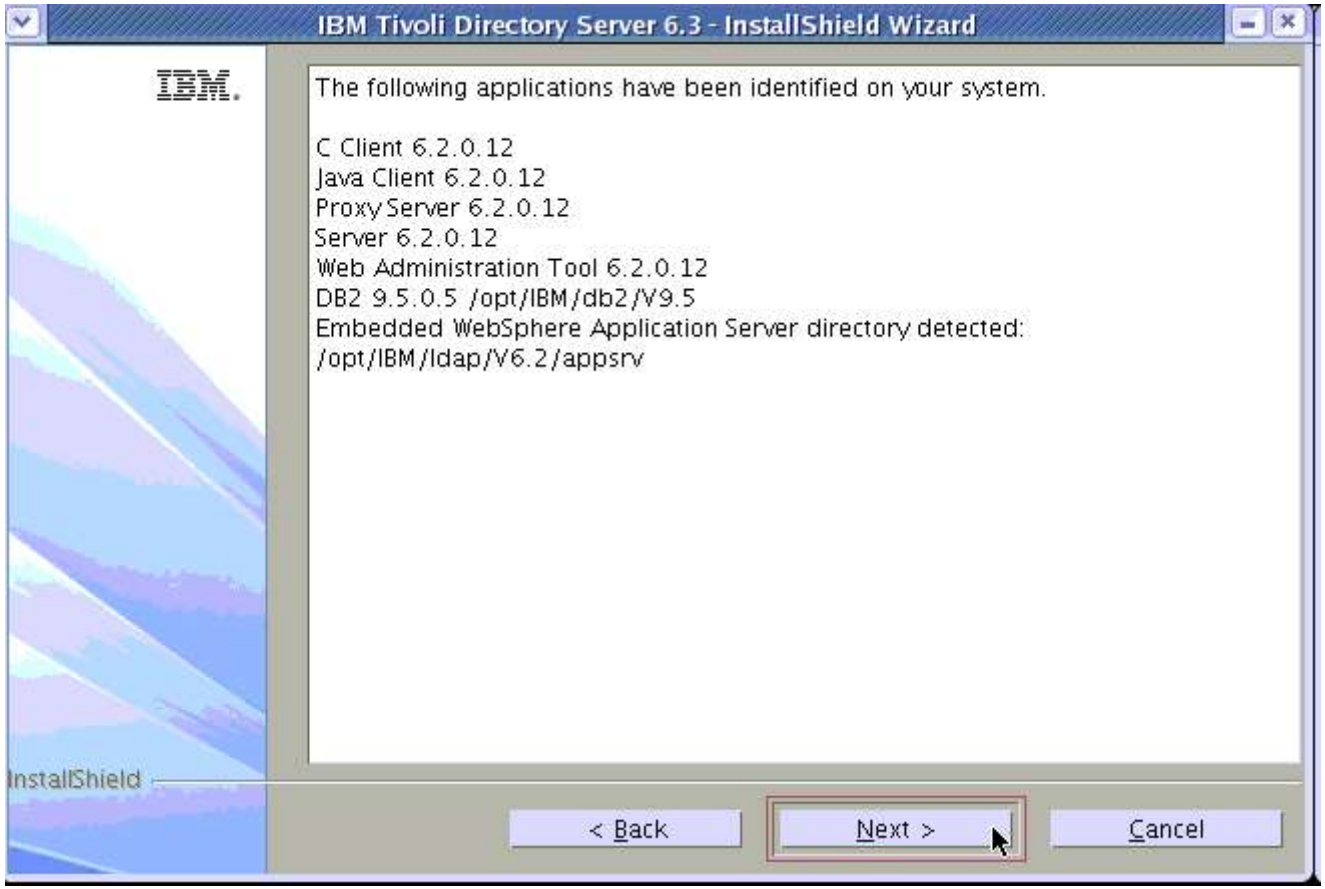
2. Upgrade using InstallShield & Instance Administration Tool (GUI)



7. Upgrade to 6.3 on AIX - same system contd…

2. Upgrade using InstallShield & Instance Administration Tool (GUI)

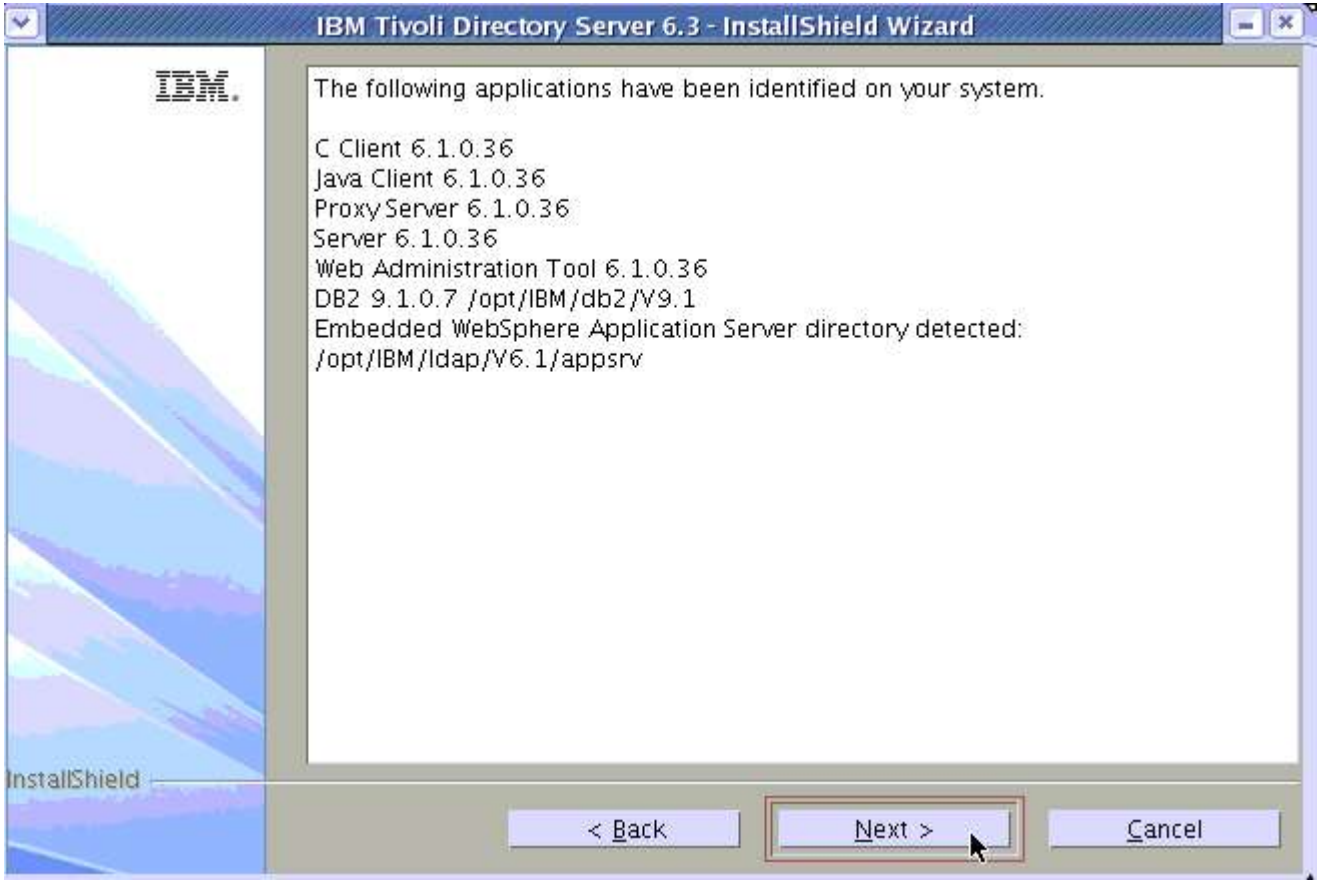
v6.2->



7. Upgrade to 6.3 on AIX - same system contd…

2. Upgrade using InstallShield & Instance Administration Tool (GUI)

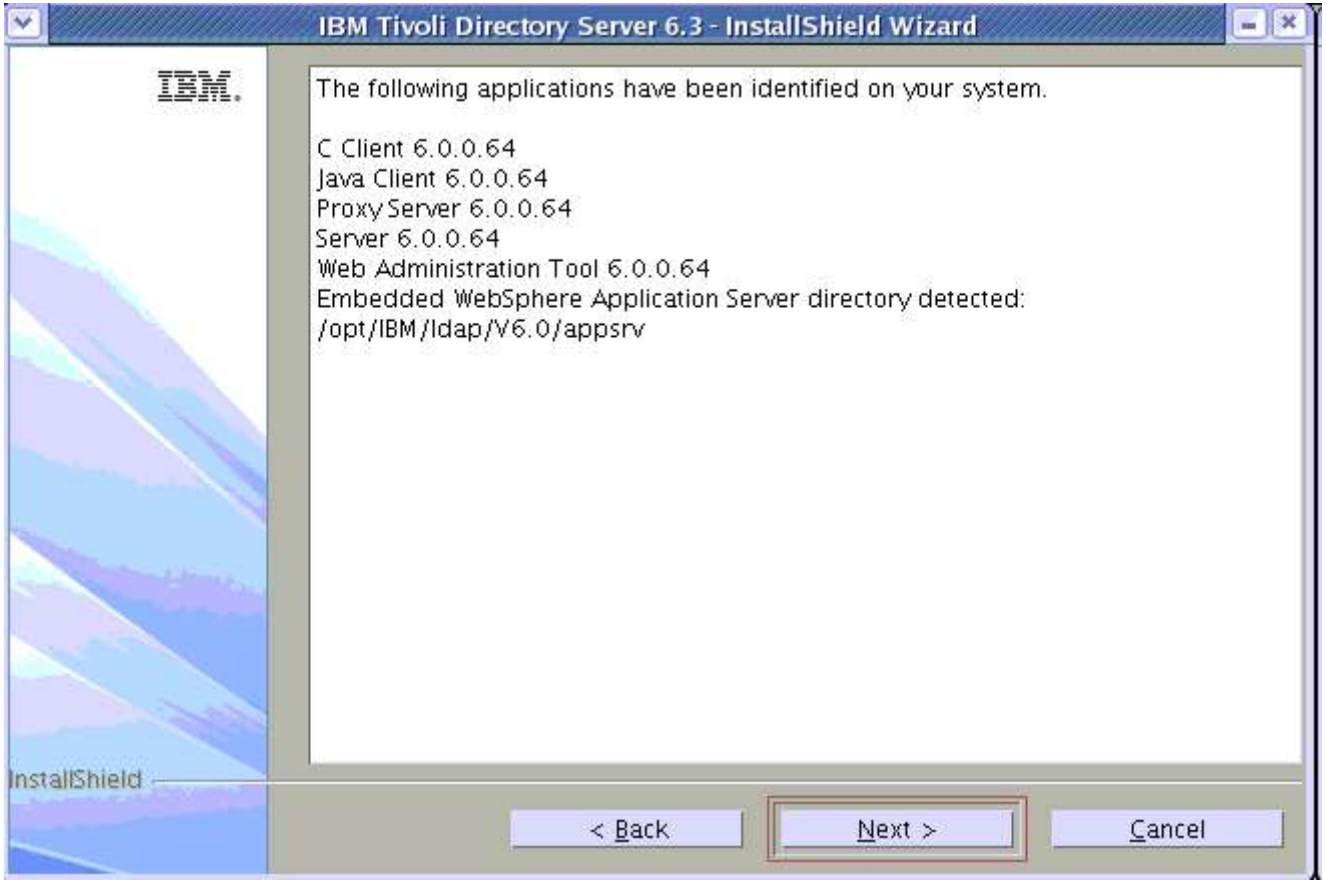
v6.1->



7. Upgrade to 6.3 on AIX - same system contd…

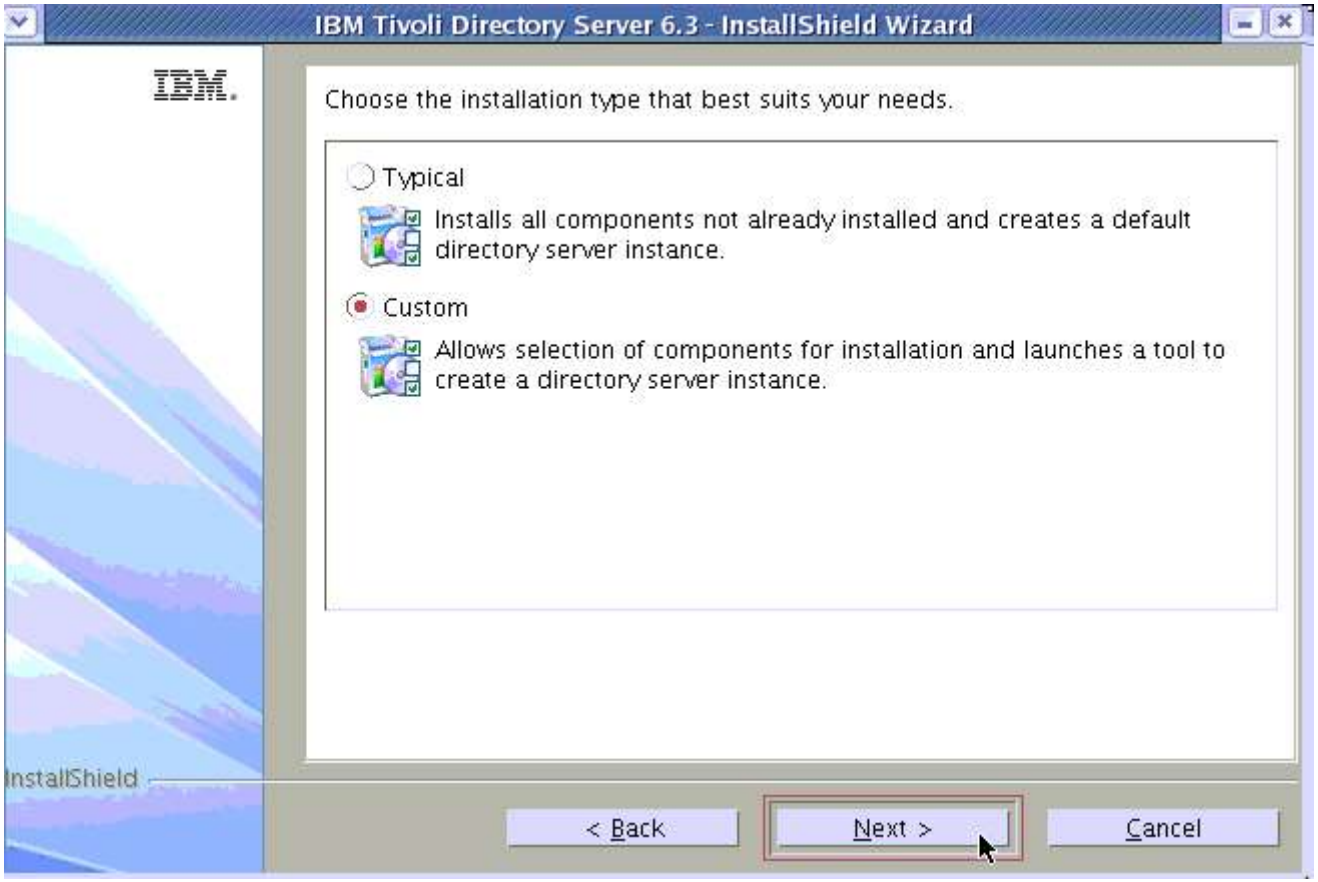
2. Upgrade using InstallShield & Instance Administration Tool (GUI)

v6.0->



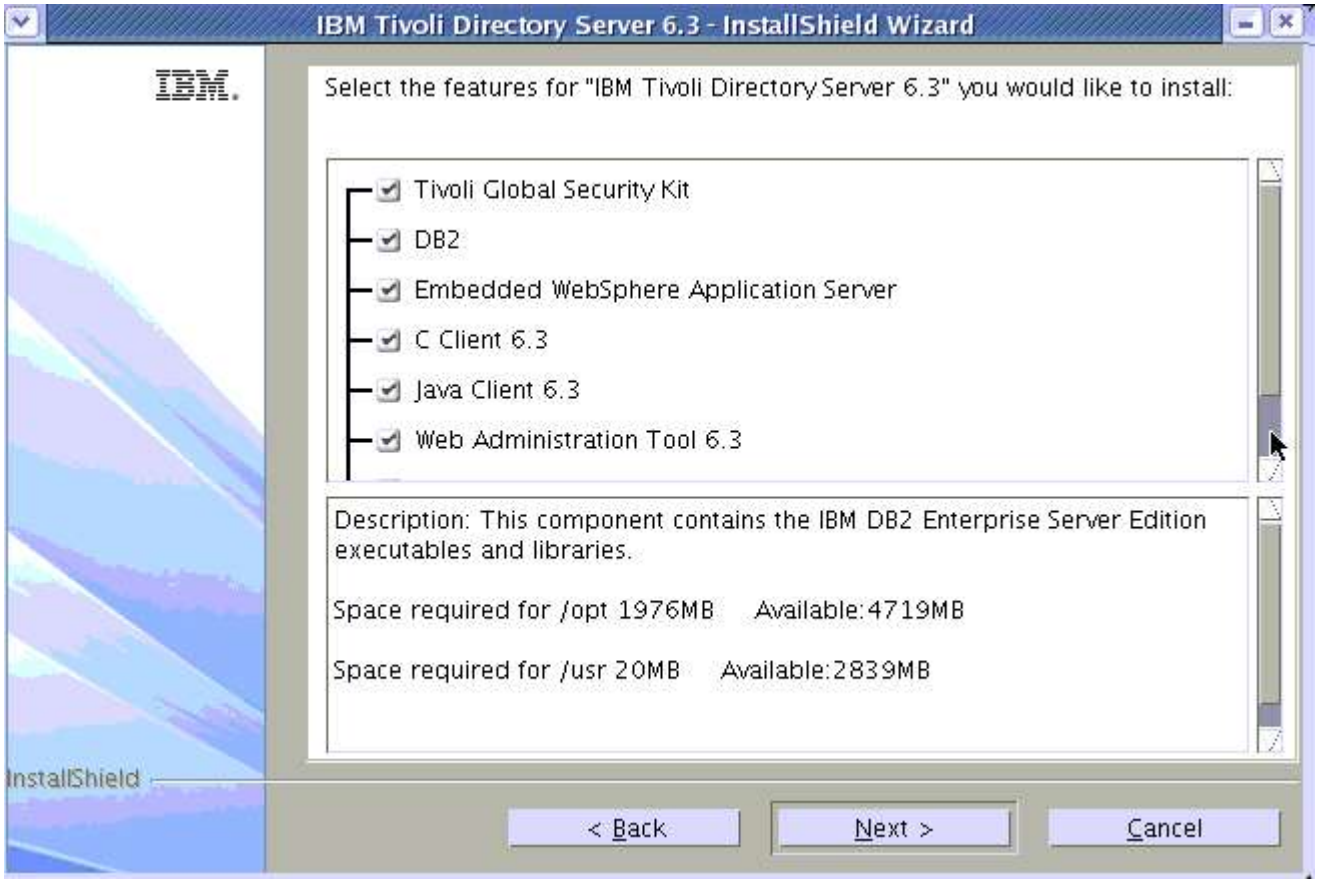
7. Upgrade to 6.3 on AIX - same system contd…

2. Upgrade using InstallShield & Instance Administration Tool (GUI)



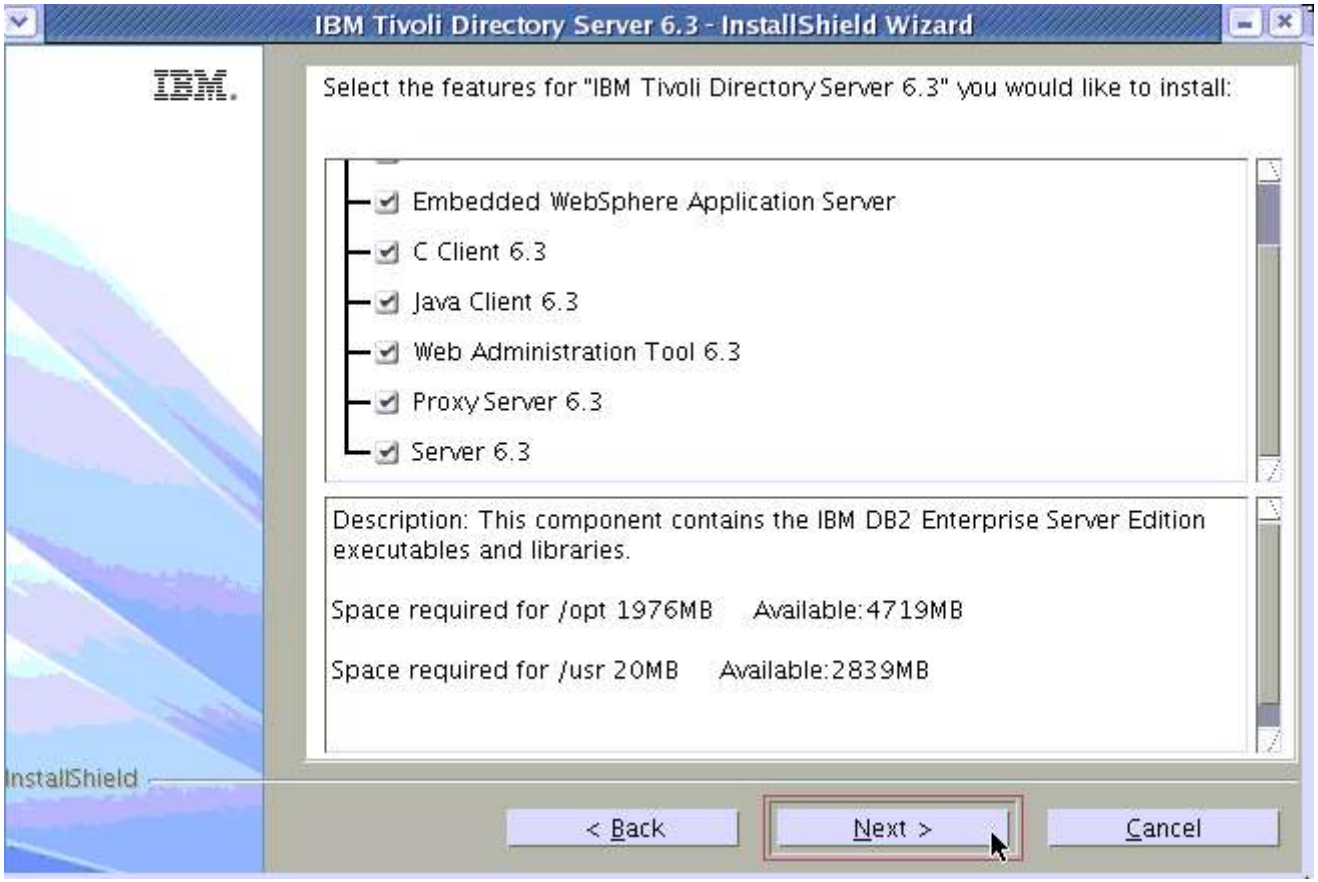
7. Upgrade to 6.3 on AIX - same system contd…

2. Upgrade using InstallShield & Instance Administration Tool (GUI)



7. Upgrade to 6.3 on AIX - same system contd…

2. Upgrade using InstallShield & Instance Administration Tool (GUI)

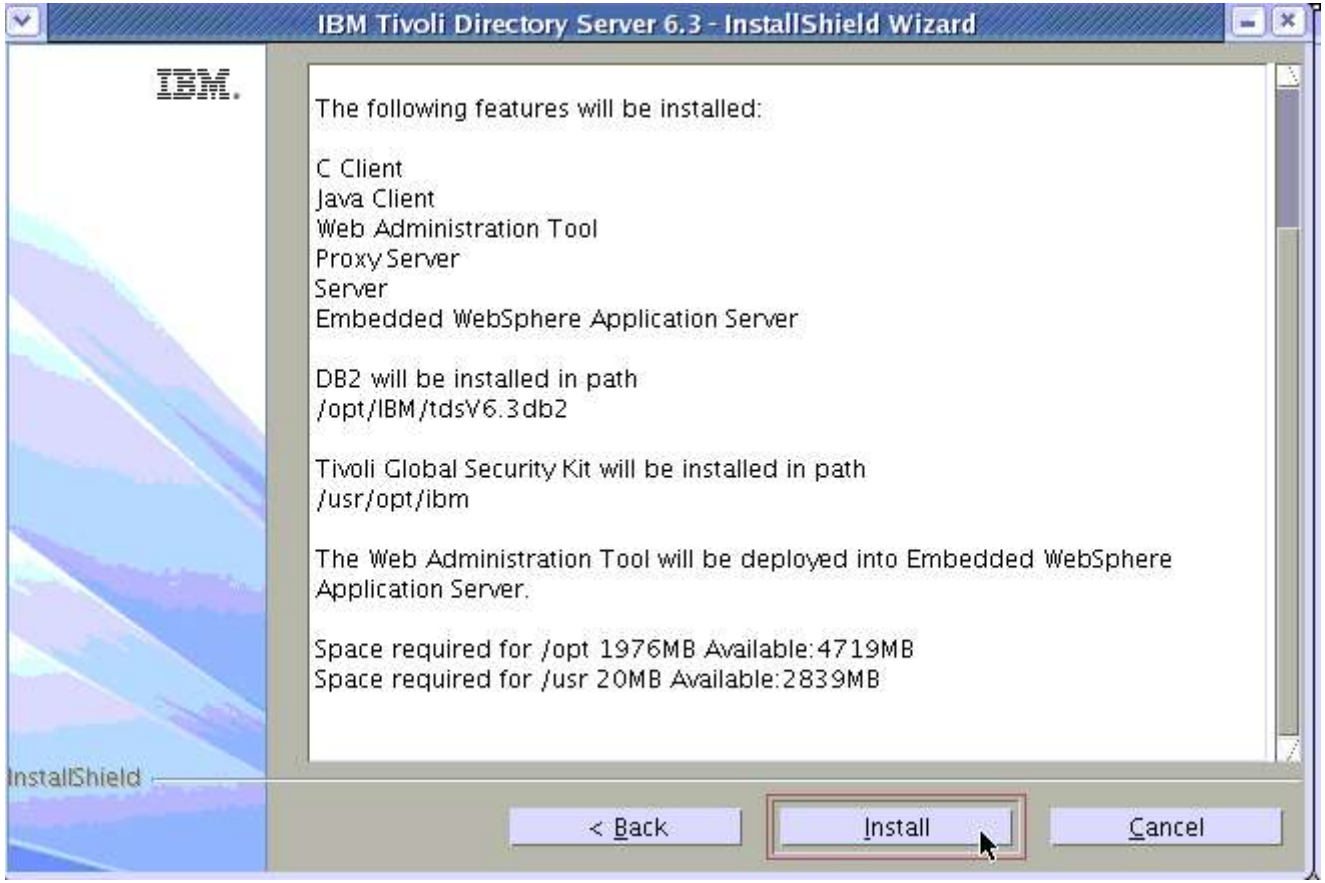


7. Upgrade to 6.3 on AIX - same system contd…

2. Upgrade using InstallShield & Instance Administration Tool (GUI)

7. Upgrade to 6.3 on AIX - same system contd…

2. Upgrade using InstallShield & Instance Administration Tool (GUI)



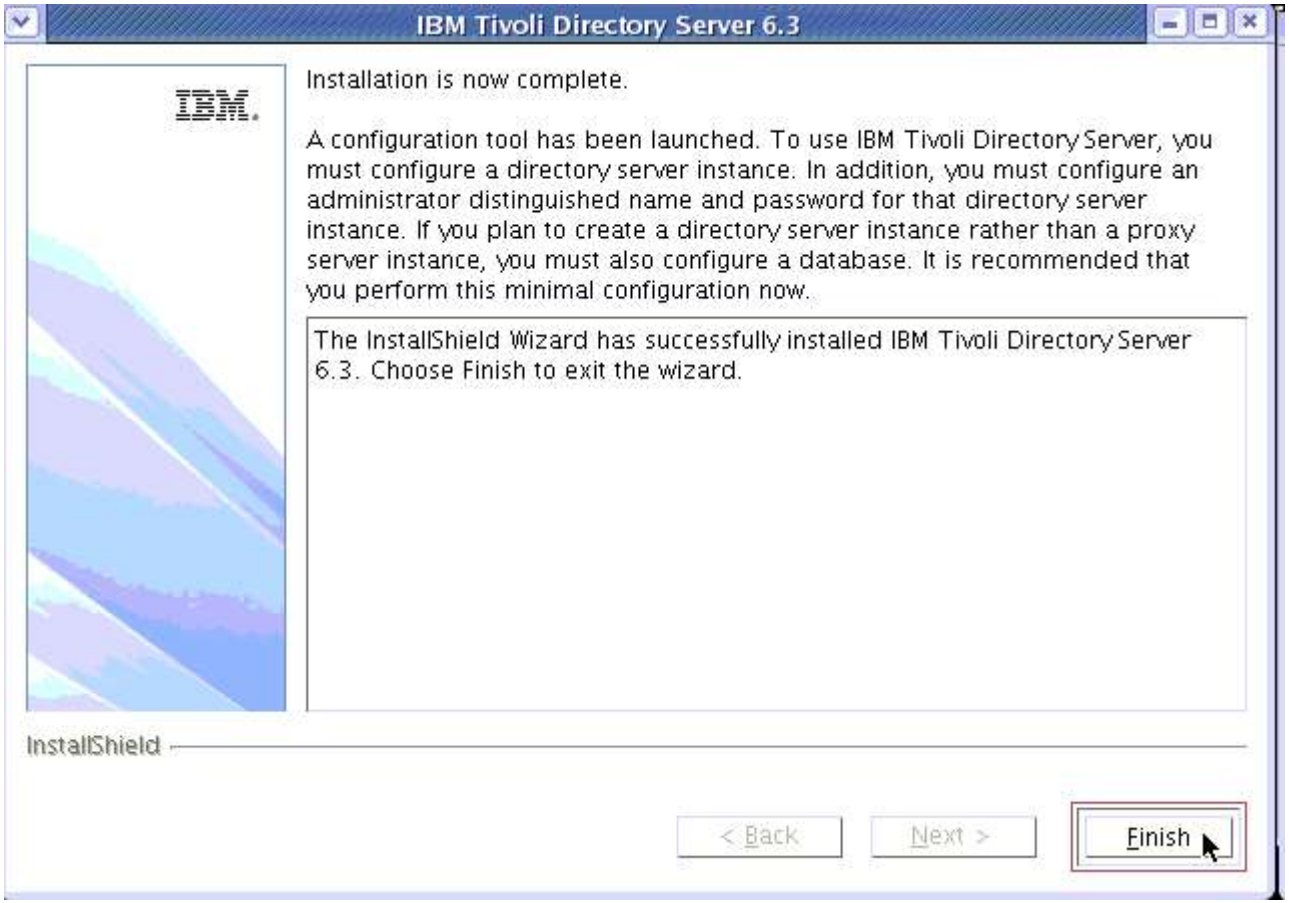
7. Upgrade to 6.3 on AIX - same system contd…

2. Upgrade using InstallShield & Instance Administration Tool (GUI)

- Next set of panels show progress as follows:
  - Installing DB2
  - Installing GSKit
  - Installing IBM Tivoli Directory Server V6.3
  - Creating uninstaller
  - Installing Embedded WebSphere Application Server
  - Deploying Web Administration tool into Embedded WebSphere Application Server

7. Upgrade to 6.3 on AIX - same system contd…

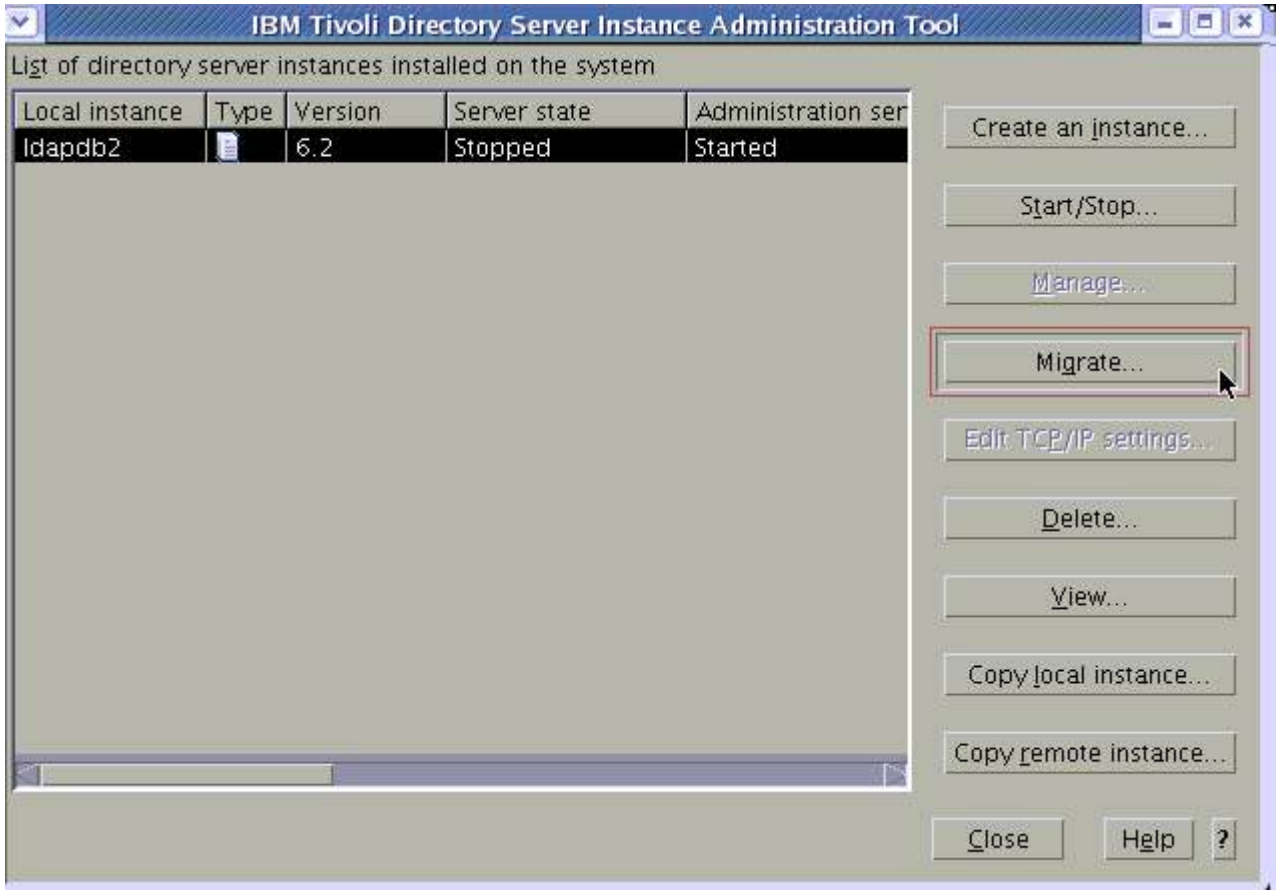
2. Upgrade using InstallShield & Instance Administration Tool (GUI)



7. Upgrade to 6.3 on AIX - same system contd…

2. Upgrade using InstallShield & Instance Administration Tool (GUI)

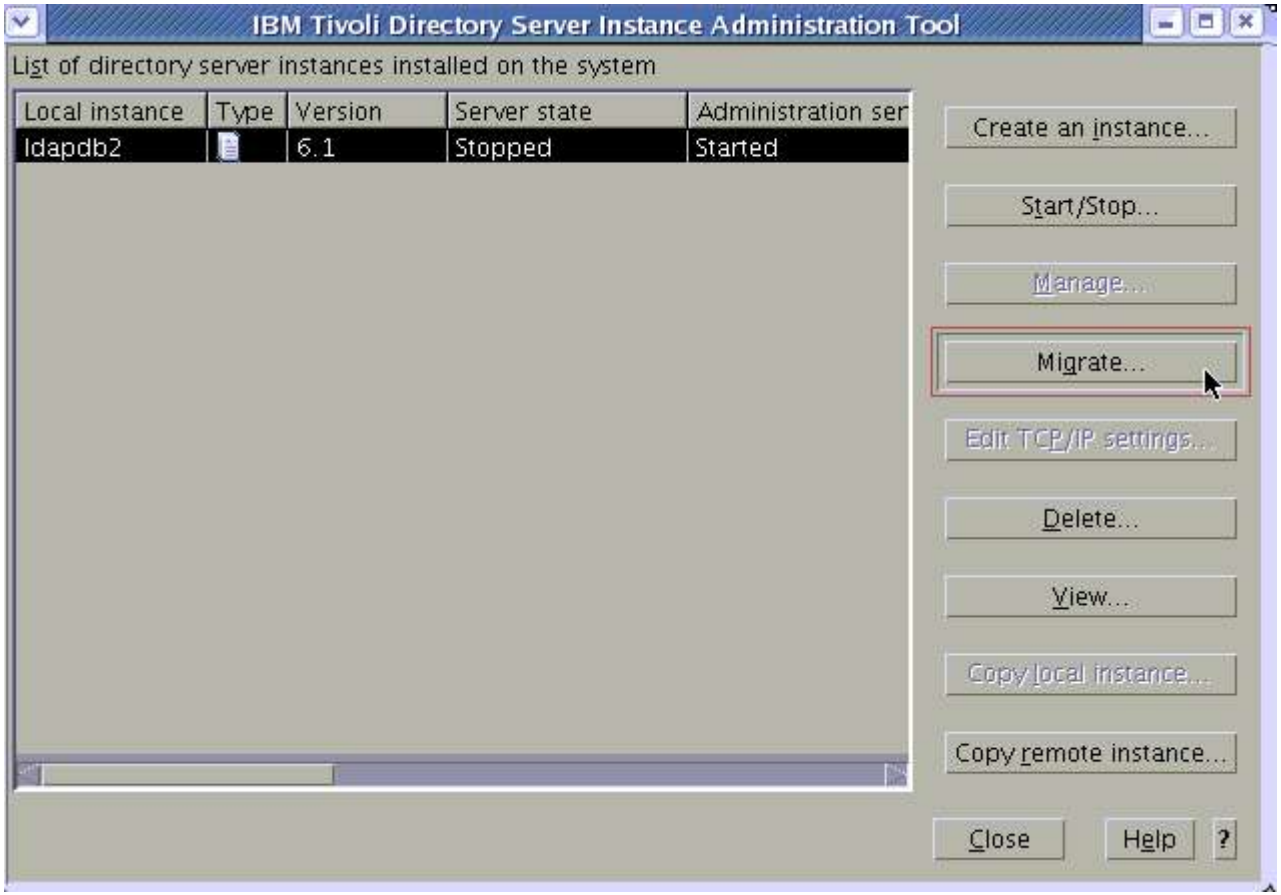
V6.2->



7. Upgrade to 6.3 on AIX - same system contd…

2. Upgrade using InstallShield & Instance Administration Tool (GUI)

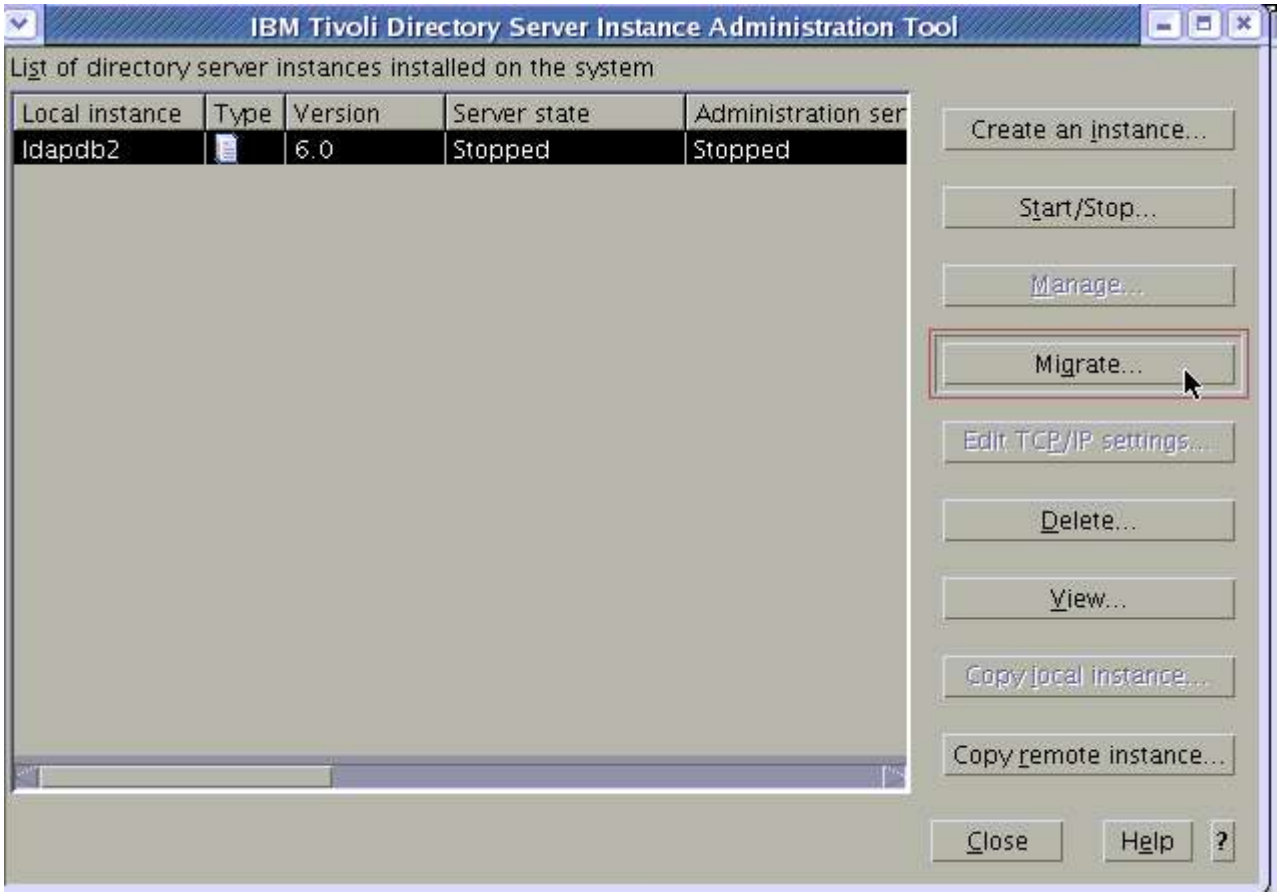
V6.1->



7. Upgrade to 6.3 on AIX - same system contd…

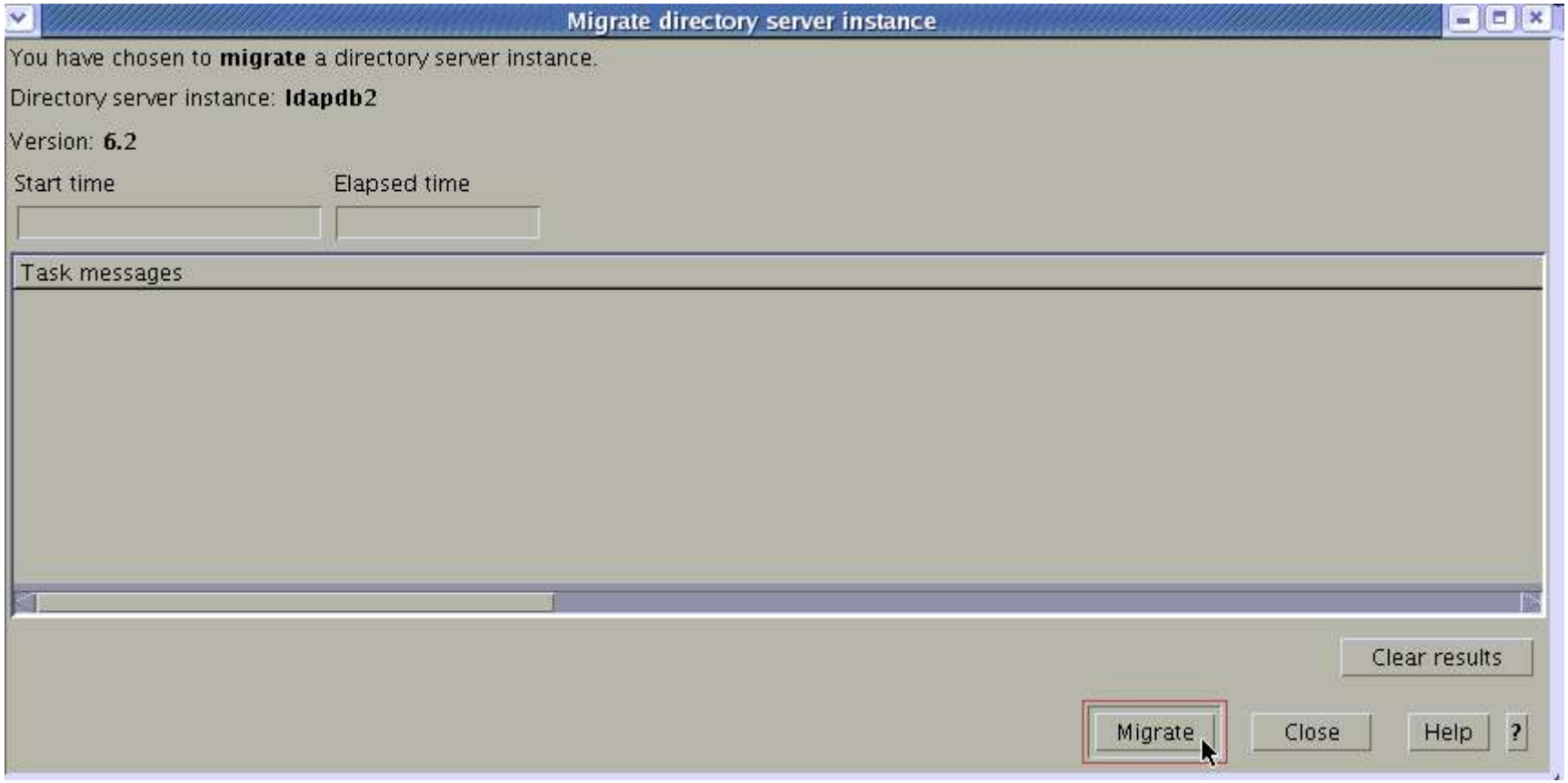
2. Upgrade using InstallShield & Instance Administration Tool (GUI)

V6.0->



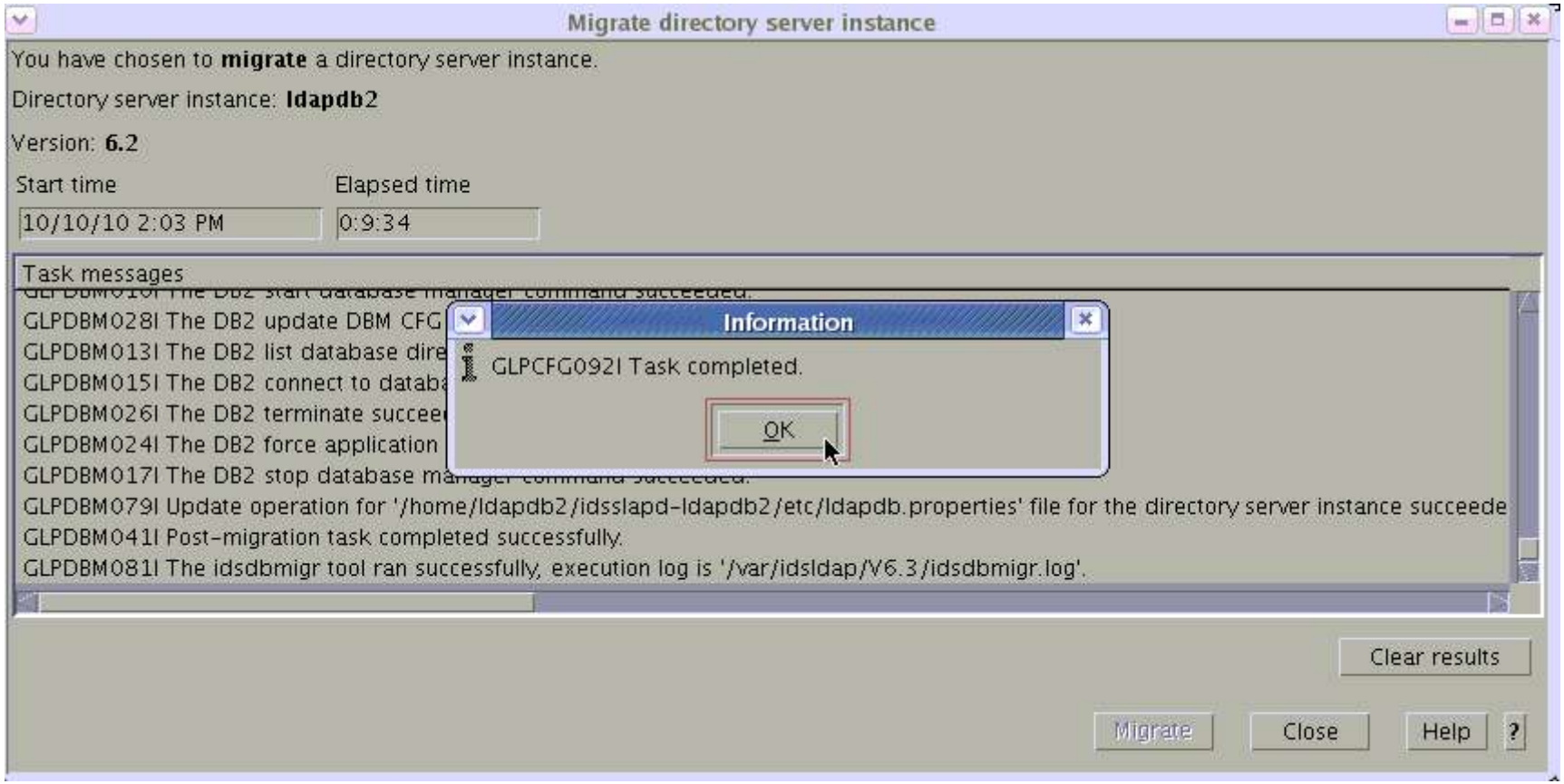
7. Upgrade to 6.3 on AIX - same system contd…

2. Upgrade using InstallShield & Instance Administration Tool (GUI)



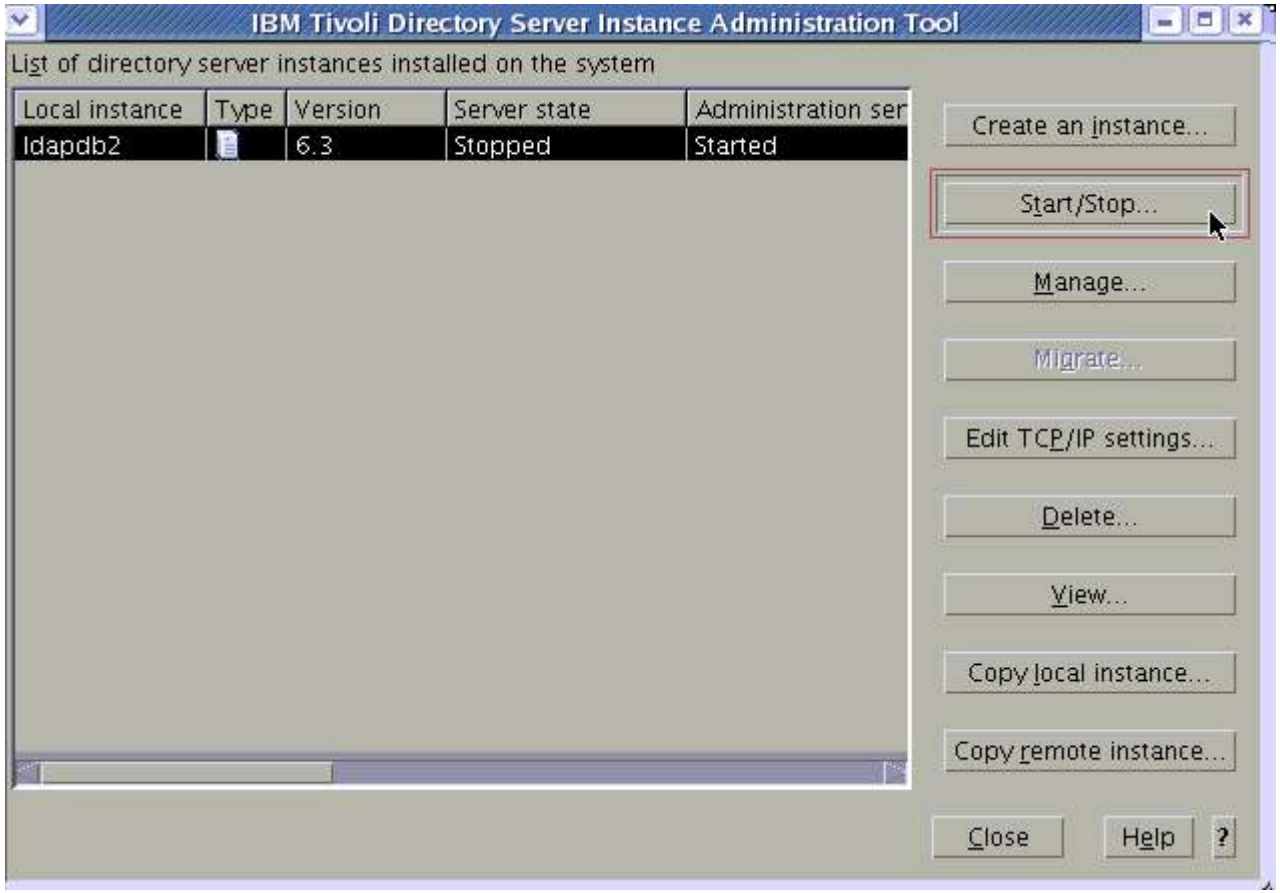
7. Upgrade to 6.3 on AIX - same system contd…

2. Upgrade using InstallShield & Instance Administration Tool (GUI)



7. Upgrade to 6.3 on AIX - same system contd…

2. Upgrade using InstallShield & Instance Administration Tool (GUI)



7. Upgrade to 6.3 on AIX - same system contd…

2. Upgrade using InstallShield & Instance Administration Tool (GUI)

- Setup ITDS V6.2 links using idslink command
  ```
  ==> cd /opt/IBM/ldap/V6.3/bin
  ==> ./idslink -i -g -s fullsrv -f
  ```
- The above command creates itds specific client and complete server links in /usr/bin pointing to install location /opt/IBM/ldap/V6.1/…
- Use “-f” flag with idslink command if necessary to force link creation
- Use “-g” flag with idslink command to create generic ldap client links such as ldapsearch etc… in /usr/bin
- Use “-l [32|64]” flag with idslink command to create ldap client library links in /usr/lib
- Library links are NOT necessary for Server / Client commands - Don’t set library links unless your custom applications require them.

7. Upgrade to 6.3 on AIX - same system contd…

Verifying the Upgrade

- To verify upgraded instance at 6.3 level

```
==> idsilist -a
==> idsldapsearch -s base -b " " objectclass=*
  vendorversion
```

- To verify upgraded db2 instance at 9.7 level

```
==> su - ldapdb2
==> db2level
```

- To verify the upgraded database at 9.7 level

```
==> db2 connect to ldapdb2
```

7. Upgrade to 6.3 on AIX - same system contd…

Back-out procedures to go back to 6.2/6.1/6.0

- Verify and clean up if ITDS 6.3 instance exists
  ```
  ==> idsilist -a
  ```
- If the 6.2 instance exists, then drop it completely
  ```
  ==> idsidrop -I ldapdb2 -r -n
  ```
- Verify if the DB2 9.7 instance is gone from the output of db2ilist
  ```
  ==> /opt/IBM/tdsV6.3db2/instance/db2ilist
  OR
  ==> /opt/IBM/db2/V9.7/instance/db2ilist
  ```
- If the db2 9.7 instance exists drop the same.
  ```
  ==> /opt/IBM/tdsV6.3db2/instance/db2idrop ldapdb2
  OR
  ==> /opt/IBM/db2/V9.7/instance/db2idrop ldapdb2
  ```
- Clean up/rename the instance location folder (from “idsilist -a” output earlier)
  ```
  ==> cd /home/ldapdb2
  ==> rm -rf idsslapd-ldapdb2
  ```
- Clean up home folder of the user ldapdb2 (for any sqllib folders)
  ```
  ==> cd ~ldapdb2
  ==> rm -rf sqllib* *.log
  ```
- Clean up the database folder
  ```
  ==> cd /home/ldapdb2
  ==> rm -rf ldapdb2 ldap32kcont_ldapdb2
  ```

7. Upgrade to 6.3 on AIX - same system contd…

Back-out procedures to go back to 6.2/6.1/6.0

- ITDS V6.2 is used in commands below. In case if backing out to V6.1/ V6.0 then use V6.1 or V6.2 instead of V6.2.
- Create 6.2 (or 6.1 / 6.0) instance and associated db2 instance (same settings as before):
  [In idsicrt -g option is not required for 6.0]

```
==> /opt/IBM/ldap/V6.2/sbin/idsicrt -I ldapdb2 -e
  encrypt_seed -g encrypt_salt -t ldapdb2 -l /home/
  ldapdb2 -n
```

- Configure an associated database (same settings as before so that we can do a restore)

```
==> /opt/IBM/ldap/V6.2/sbin/idscfgdb -I ldapdb2 -a
  ldapdb2 -w password -t ldapdb2 -l /home/ldapdb2 -n
```

- Configure Admin DN and password

```
==> /opt/IBM/ldap/V6.2/sbin/idsdnpw -I ldapdb2 -u
  cn=root -p pswd -n
```

7. Upgrade to 6.3 on AIX - same system contd…

Back-out procedures to go back to 6.2/6.1/6.0

- ITDS V6.2 is used in commands below. In case if backing out to V6.1/ V6.0 then use V6.1 or V6.2 instead of V6.2.
- Back-out method 1 - if the backup method 1 was done :

```
==> /opt/IBM/ldap/V6.2/sbin/idsdbrestore -I ldapdb2 -k /home/
  ldapdb2/ldapbackup1 -n
```

- Back-out method 2 - if the backup method 2 was done :

```
==> cd /home/ldapdb2/idsslapd-ldapdb2
==> tar -xf /home/ldapdb2/ldapbackup2/ldapdb2etc.tar
==> /opt/IBM/ldap/V6.2/sbin/idsldif2db -I ldapdb2 -i /home/
  ldapdb2/ldapbackup2/ldapdata.ldif
```

- Configure changelog database if necessary

```
==> /opt/IBM/ldap/V6.2/sbin/idscfgchglg -I ldapdb2
```

- Start ldap server with 6.2/6.1/6.0 and verify

```
==> /opt/IBM/ldap/V6.2/sbin/ibmslapd -I ldapdb2
```

7. Upgrade to 6.3 on AIX - same system contd…

Important points

- Watch for objectclass/attribute collisions during migration
- Resolve collisions for custom schema.
- ITDS V6.3 requires GSKit V8
- ITDS V6.3 InstallShield GUI installs only 64 bit GSKit V8 on AIX
  - **`GSKit8.gskcrypt64 GSKit8.gskssl64`**
- GSKit V8 can use the existing kdb files which were created using GSKit V7.
- If you need to use 32 bit ITDS (ldap) client with SSL (along with Tivoli Access Manager or secldapcIntd) then you also need to install 32 bit GSKit v8 using command line methods:

```
==> cd /data/aix/63/tdsV6.3/gskit/
==> installp -acXgYd . GSKit8.gskcrypt32
==> installp -acXgYd . GSKit8.gskssl32
```

Questions & Answers

8. Upgrade to 6.3 on AIX - Remote system

- Remote system upgrade is preferred in following cases:
  - Current 6.2 / 6.1 / 6.0 operating system is not supported with 6.3
  - Switching to a different hardware / operating system
- The following table shows list of ITDS supported operating systems per endianness:

Endianness	Operating Systems
Big Endian	AIX, HP-UX (PA-RISC / IA64), Solaris (Sparc), Linux (ppc/ ppc64), Linux (s390/s390x)
Little Endian	Linux (x86 / ia32 / i386), Linux (x86_64) Windows (x86 / 32 bit), Windows (x64 / 64 bit)

  - Note: HP-UX is client only supported platform for 6.3
- The following cases arise when doing remote system upgrade
  1. Remote system upgrade between two different source and target systems with **same** endianness. E.g.: From AIX 5.3 to AIX 6.1, From HP-UX to AIX, From windows(x86) to Linux (x86_64).
  2. Remote system upgrade between two different source and target systems with **different** endianness. E.g.: From Solaris (sparc) to Linux x86_64, From Linux (x86) to AIX 6.1

8. Upgrade to 6.3 on AIX - Remote system Contd …

1. Remote upgrade across systems with same endianness

- Install 6.3 on a supported operating system
  - Separate target 6.3 and source (6.2/6.1/6.0) systems assumed.
- Install the products using either command line method or using InstallShield GUI method:
  - DB2 V9.7 FP2
  - GSKit 8.0.13.1
  - ITDS 6.3
  - Install eWAS 7.0.0.7 and deploy the IDSWebApp.war into eWAS
  - Create soft links to ITDS 6.3
- Copy / ftp migbkup script from 6.3 system (<tds63_install_location>\sbin\ folder) into /tmp on ITDS 6.2/6.1/6.0 system and enable the execute permissions on the migbkup script.

8. Upgrade to 6.3 on AIX - Remote system Contd …

1. Remote upgrade across systems with same endianness

- On ITDS 6.2/6.1/6.0 system – backup configuration and schema migbkup and export data (**Using root login**): (for V6.1/V6.0 use appropriate path for db2ldif)

```
==> mkdir /home/ldapdb2/ldapsaveconf
==> chmod g+w /home/ldapdb2/ldapsaveconf
==> chown ldapdb2:idsldap /home/ldapdb2/ldapsaveconf
==> chmod +x /tmp/migbkup
==> /tmp/migbkup /home/ldapdb2/idsslapd-ldapdb2  /home/
  ldapdb2/ldapsaveconf
==> cp -p <custom_schema_files> /home/ldapsaveconf/etc #IMP
==> cd /home/ldapdb2; tar cvf ldapsaveconf.tar ldapsaveconf
==> /opt/IBM/ldap/V6.2/db2ldif -I ldapdb2 -o
  <path_with_space>/data.ldif
==> /opt/IBM/ldap/V6.2/db2ldif -I ldapdb2 -s cn=localhost -o
  <path_with_space>/local.ldif
==> /opt/IBM/ldap/V6.0/db2ldif -I ldapdb2 -s cn=pwdpolicy -o
  <path_with_space>/pwdpolicy.ldif     # required ONLY for
  V6.0
```

- db2ldif with out -s option will get data from all suffixes except cn=localhost (and cn=pwdpolicy for V6.0).

8. Upgrade to 6.3 on AIX - Remote system Contd …

1. Remote upgrade across systems with same endianness

- Copy / ftp ldapsaveconf.tar, data.ldif (and local.ldif, pwdpolicy.ldif) from ITDS 6.2/6.1/6.0 system over to ITDS 6.3 system and explode the ldapsaveconf.tar on 6.3 system in /tmp

```
==> cd /tmp; tar xvf ldapsaveconf.tar
```

- Now one of the following methods can be used to create the upgraded instance and data load.
  a. Command line method
  b. GUI method using Instance admin tool and configuration tool.
- The methods a and b are discussed in detail in next few slides.

8. Upgrade to 6.3 on AIX - Remote system Contd …

1. Remote upgrade across systems with same endianness
a. Using command line method

- On ITDS 6.3 system create ldapdb2 user to own the ids and db2 instances
  ==> idsadduser -u ldapdb2 -w password -g idsldap -n
- On ITDS 6.3 system upgrade the schema and configuration using idsimigr:
  ==> idsimigr -I ldapdb2 -u /tmp/ldapsaveconf -n
- Upgrade utility idsimigr takes care of all V3 files including V3.modifiedschema.
- Copy the custom schema files back into instance's etc folder:
  ==> cp /tmp/ldapsaveconf/etc/<customschemafiles> /home/ldapdb2/idsslapd-ldapdb2/etc
  ==> chown ldapdb2:idsldap /home/ldapdb2/idsslapd-ldapdb2/etc/<customschemafiles>
- On ITDS 6.3 system Configure to create new database (required) and changelog database (optional) for the instance:
  ==> idscfgdb -I ldapdb2 -a ldapdb2 -w ldapdb2_passwd -t ldapdb2 -l /home/ldapdb2 -n
  ==> idscfgchglg -I ldapdb2 -n

8. Upgrade to 6.3 on AIX - Remote system Contd …

1. Remote upgrade across systems with same endianness
a. Using command line method

- Check on current pre V6.3 server and increase LOGFILSIZ on V6.3 instance, if the ldif contains large (group) entries:
  REFER: http://www-01.ibm.com/support/docview.wss?uid=swg21121437
- Import data into ITDS 6.3 instance created with upgraded schema/conf for large data load prefer idsbulkload, (Use idsldif2db for the local.ldif)

```
==> idsldif2db -I ldapdb2 -i data.ldif
OR
==> idsbulkload -I ldapdb2 -i data.ldif
==> idsldif2db -I ldapdb2 -i local.ldif
==> idsldif2db -I ldapdb2 -i pwdpolicy.ldif # V6.0 to V6.3
```

- Copy over kdb file required by SSL from ITDS 6.3/6.1/6.0 system over to ITDS 6.3 system and keep it in same path as that on ITDS 6.3/6.1/6.0.
- Start ibmdiradm and ibmslapd on ITDS 6.3 system

```
==> ibmdiradm -I ldapdb2
==> ibmslapd -I ldapdb2
```

  – Note: Watch for library loading issues when moving across different platforms due to difference in extensions of libraries. (e.g.: .a / .so)

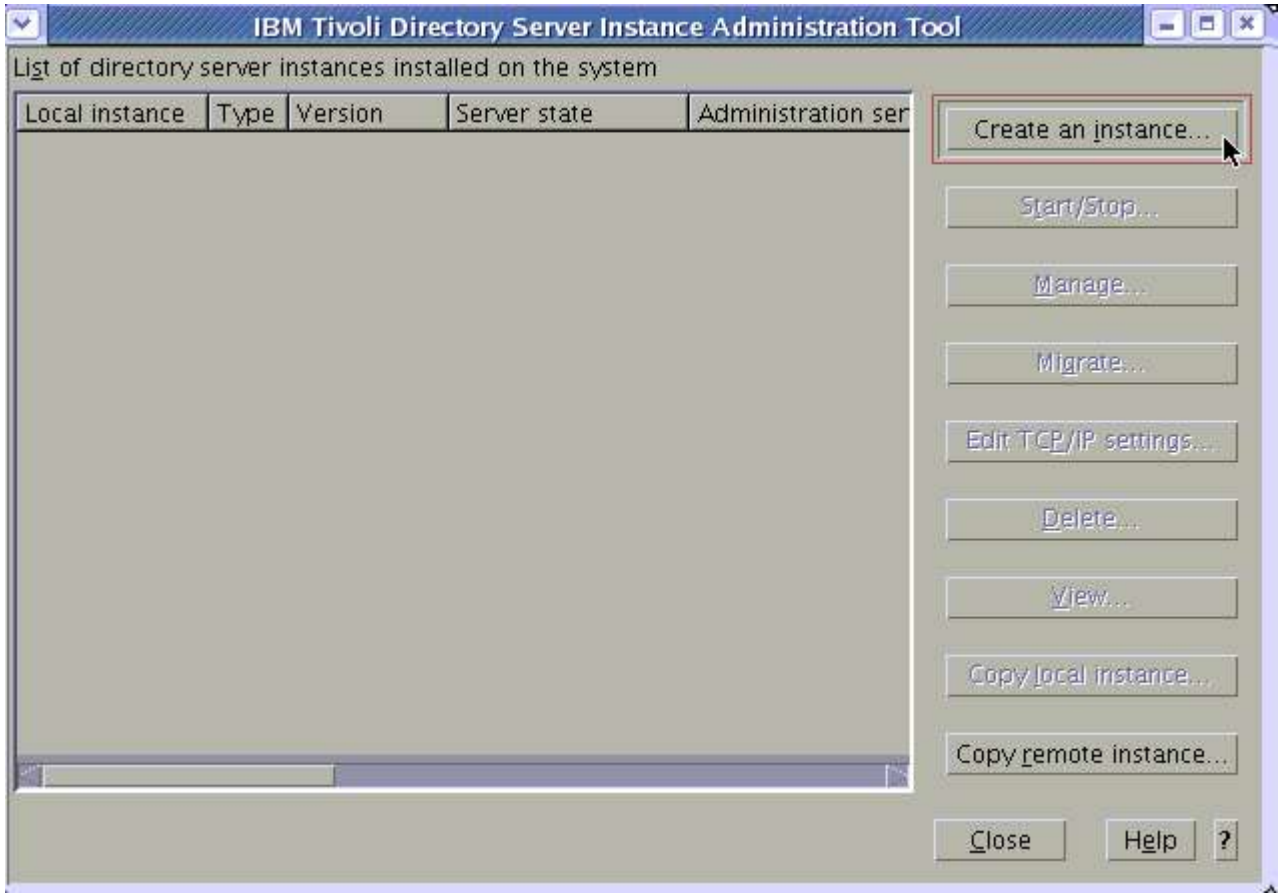
8. Upgrade to 6.3 on AIX - Remote system Contd ...

1. Remote upgrade across systems with same endianness

b. Using GUI method

- Launch the Instance Administration tool as root user:

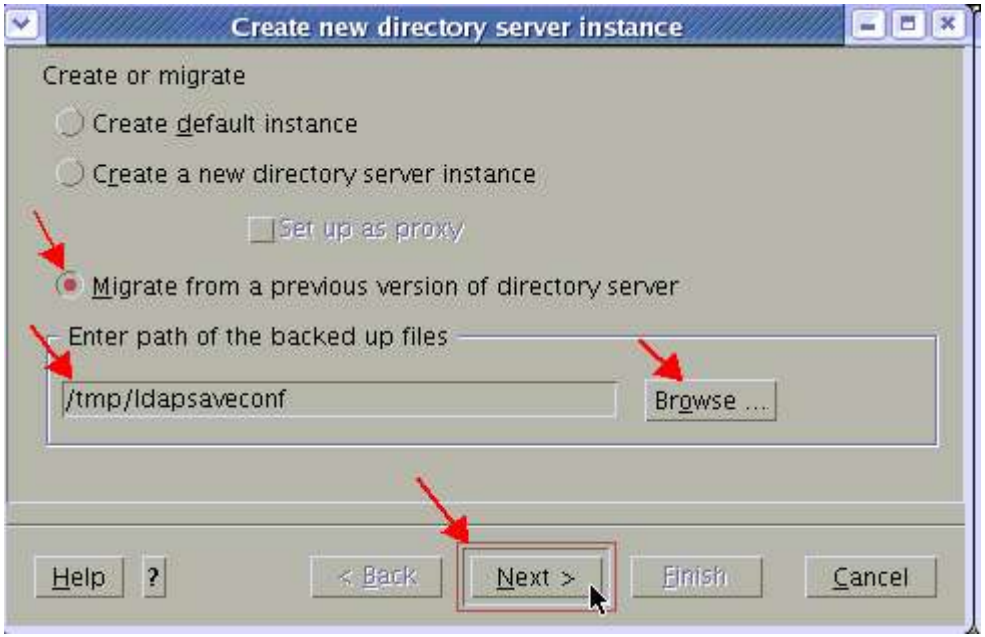
  ==> idsxinst



8. Upgrade to 6.3 on AIX - Remote system Contd …

1. Remote upgrade across systems with same endianness

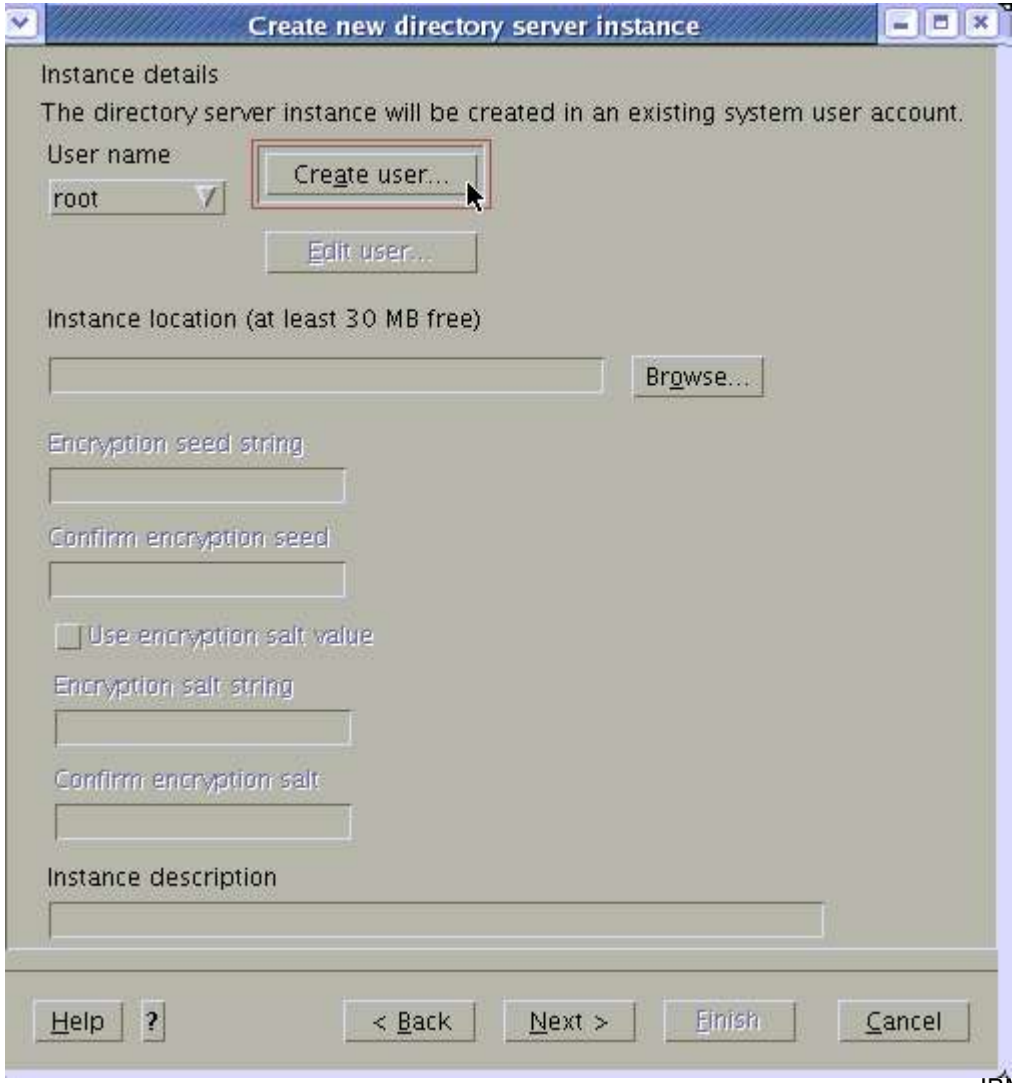
b. Using GUI method



8. Upgrade to 6.3 on AIX - Remote system Contd …

1. *Remote upgrade across systems with same endianness*

b. Using GUI method



8. Upgrade to 6.3 on AIX - Remote system Contd …

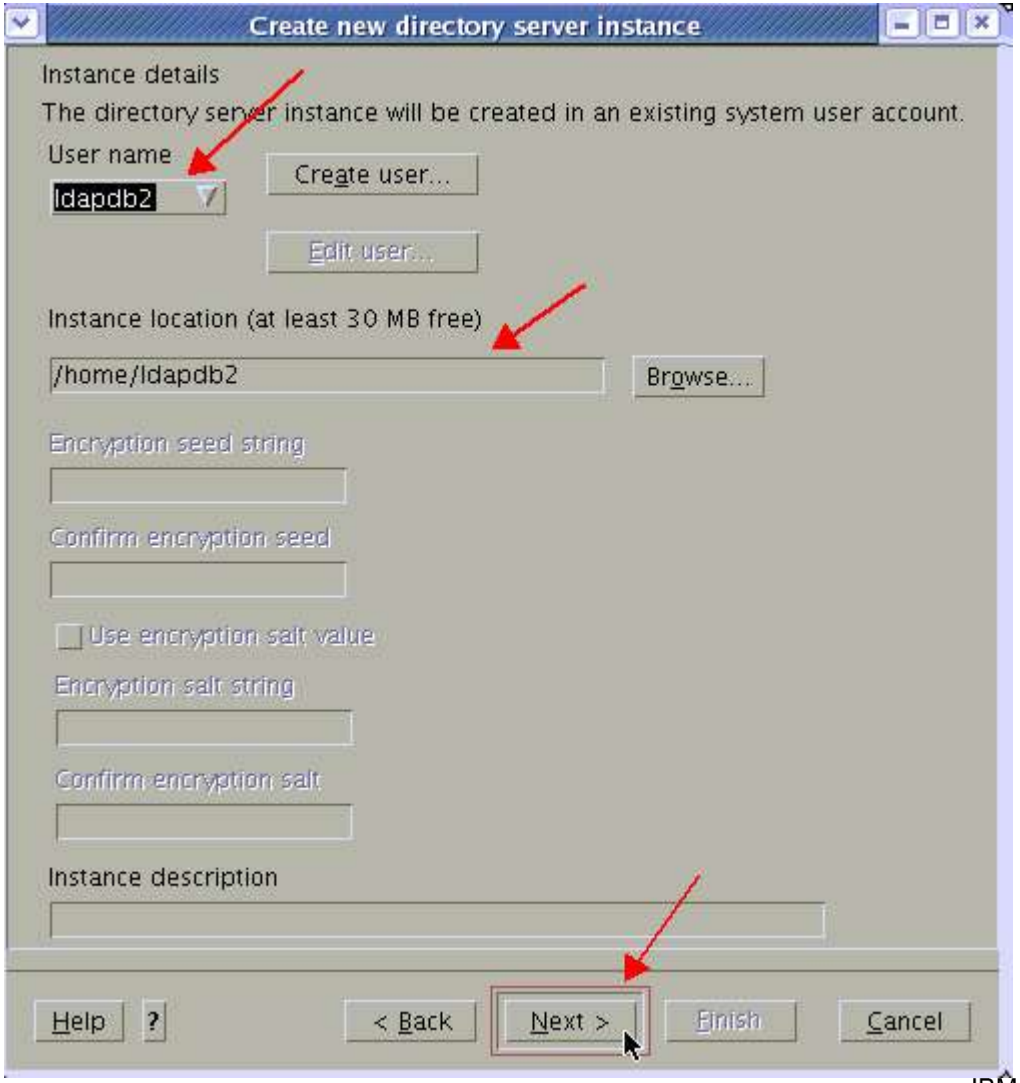
1. Remote upgrade across systems with same endianness

b. Using GUI method

8. Upgrade to 6.3 on AIX - Remote system Contd …

1. *Remote upgrade across systems with same endianness*

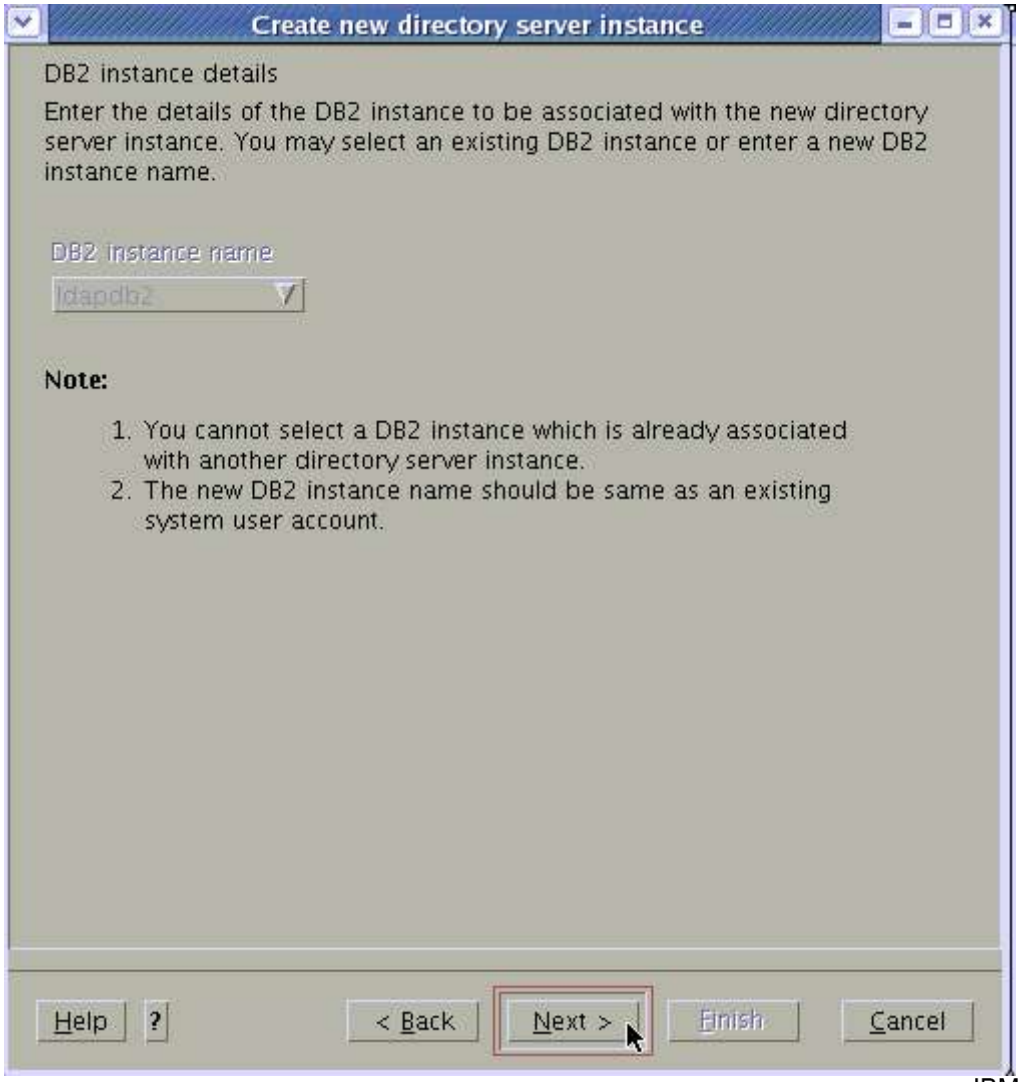
b. Using GUI method



8. Upgrade to 6.3 on AIX - Remote system Contd …

1. *Remote upgrade across systems with same endianness*

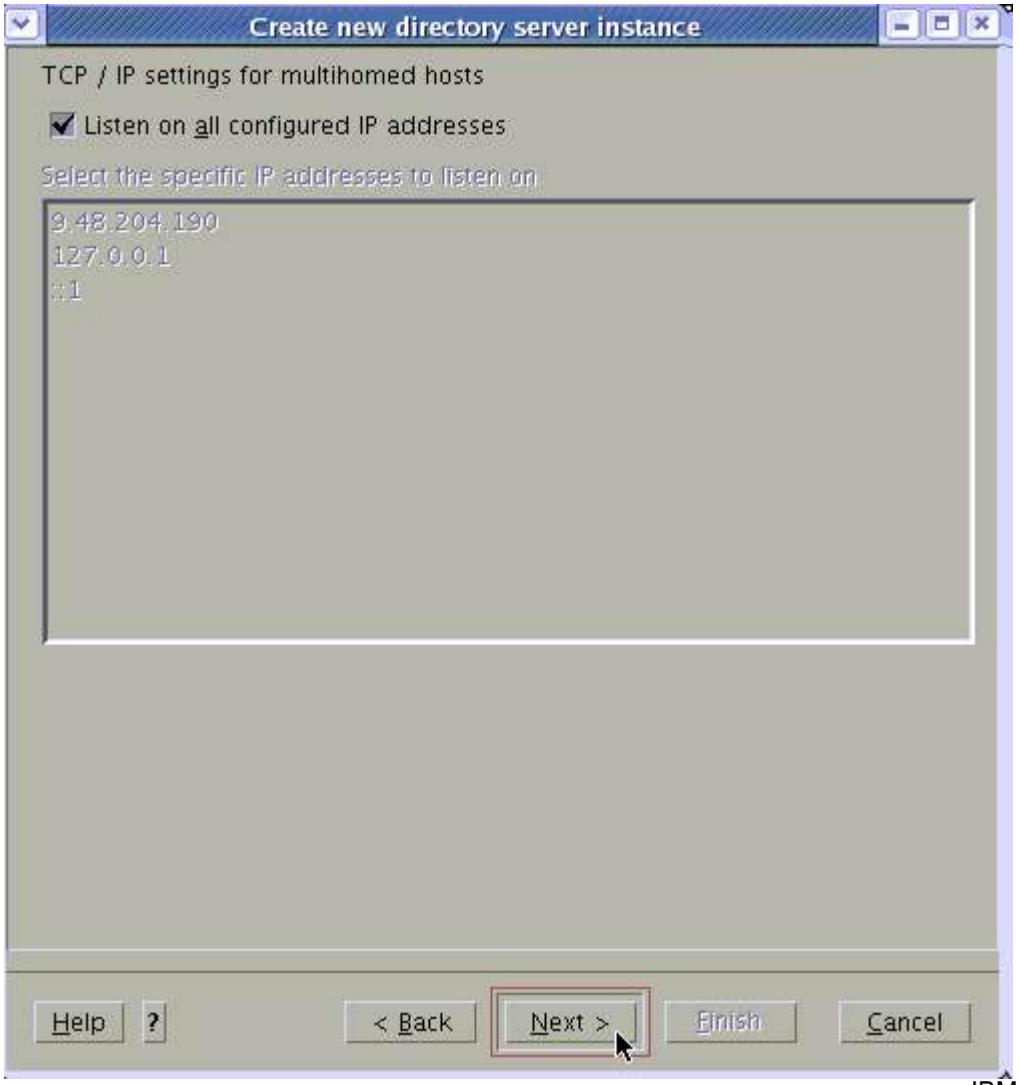
b. Using GUI method



8. Upgrade to 6.3 on AIX - Remote system Contd …

1. Remote upgrade across systems with same endianness

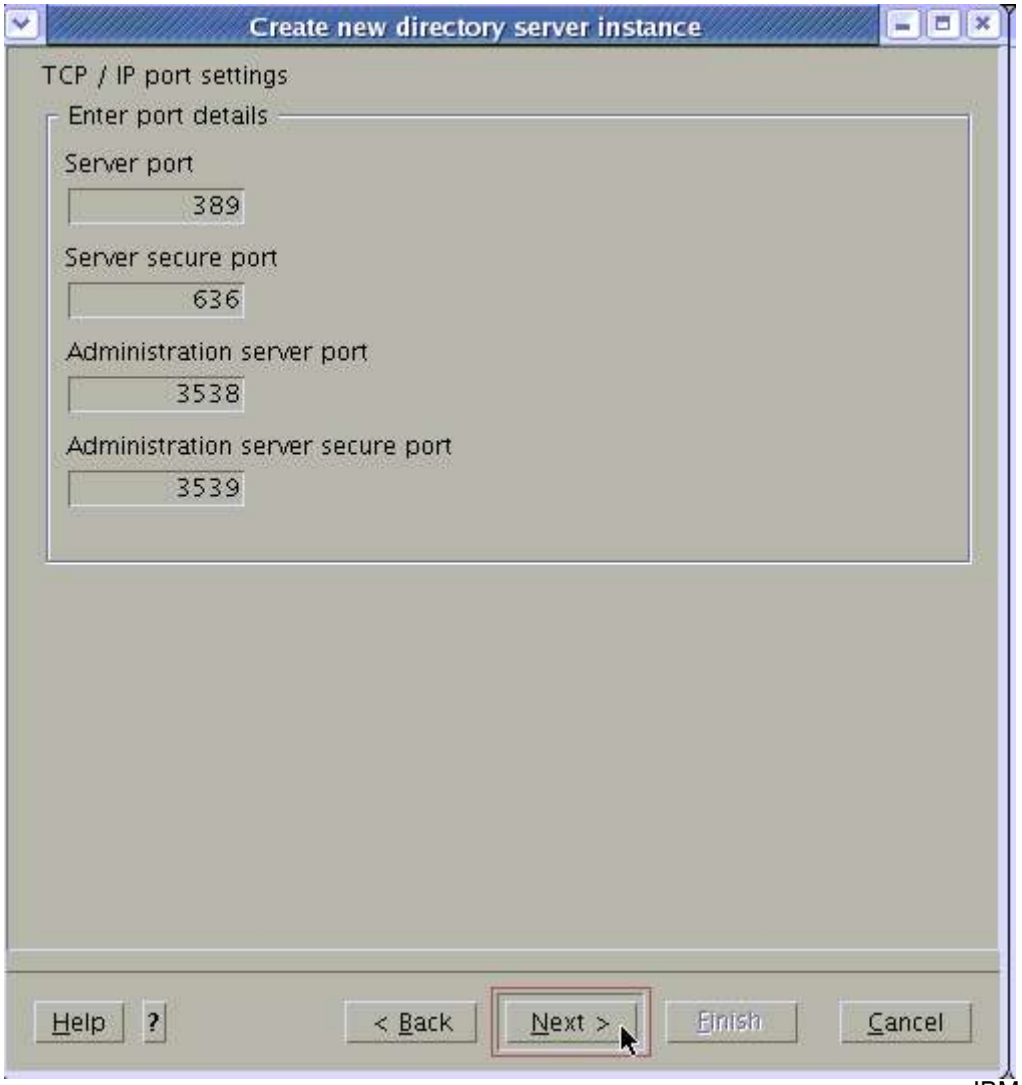
b. Using GUI method



8. Upgrade to 6.3 on AIX - Remote system Contd …

1. *Remote upgrade across systems with same endianness*

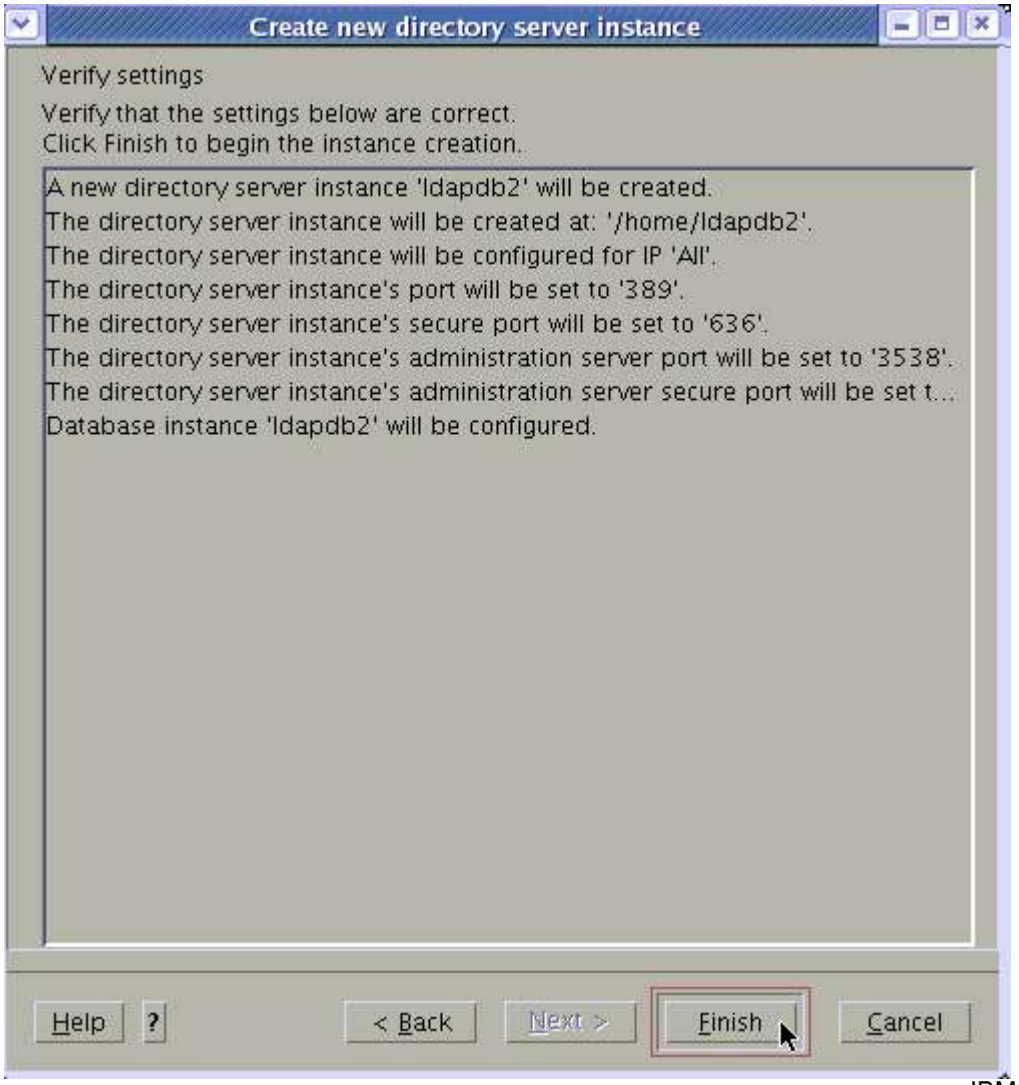
b. Using GUI method



8. Upgrade to 6.3 on AIX - Remote system Contd …

1. *Remote upgrade across systems with same endianness*

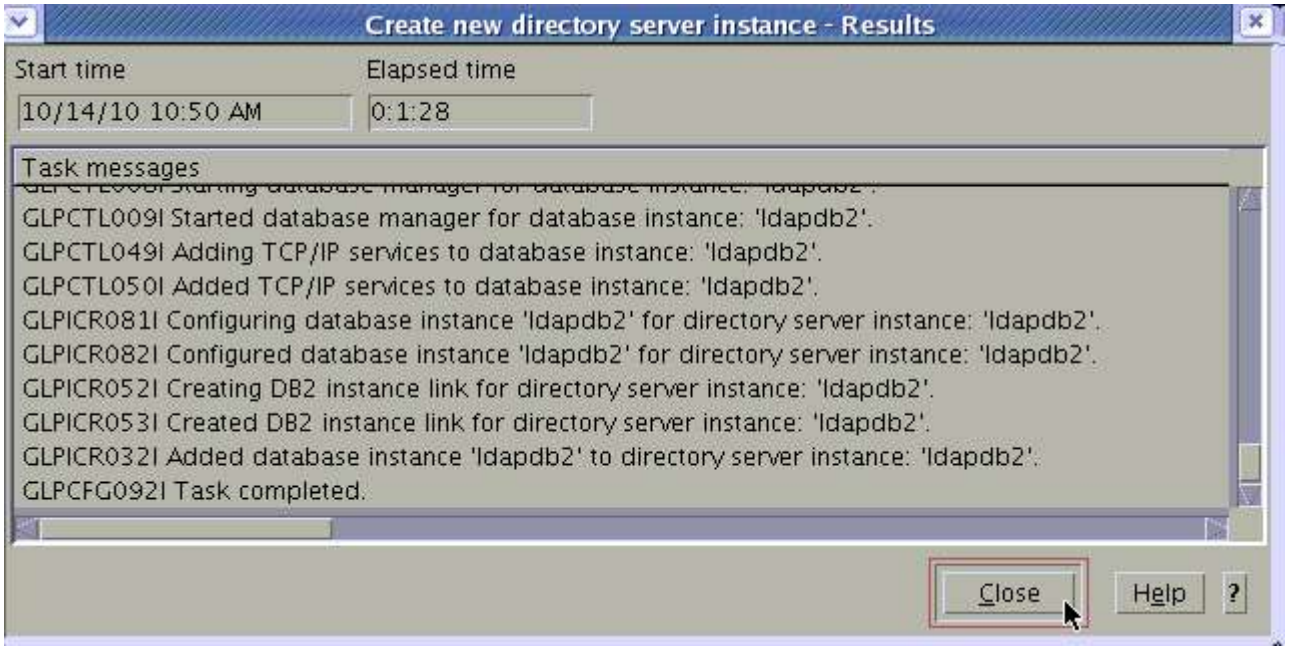
b. Using GUI method



8. Upgrade to 6.3 on AIX - Remote system Contd …

1. Remote upgrade across systems with same endianness

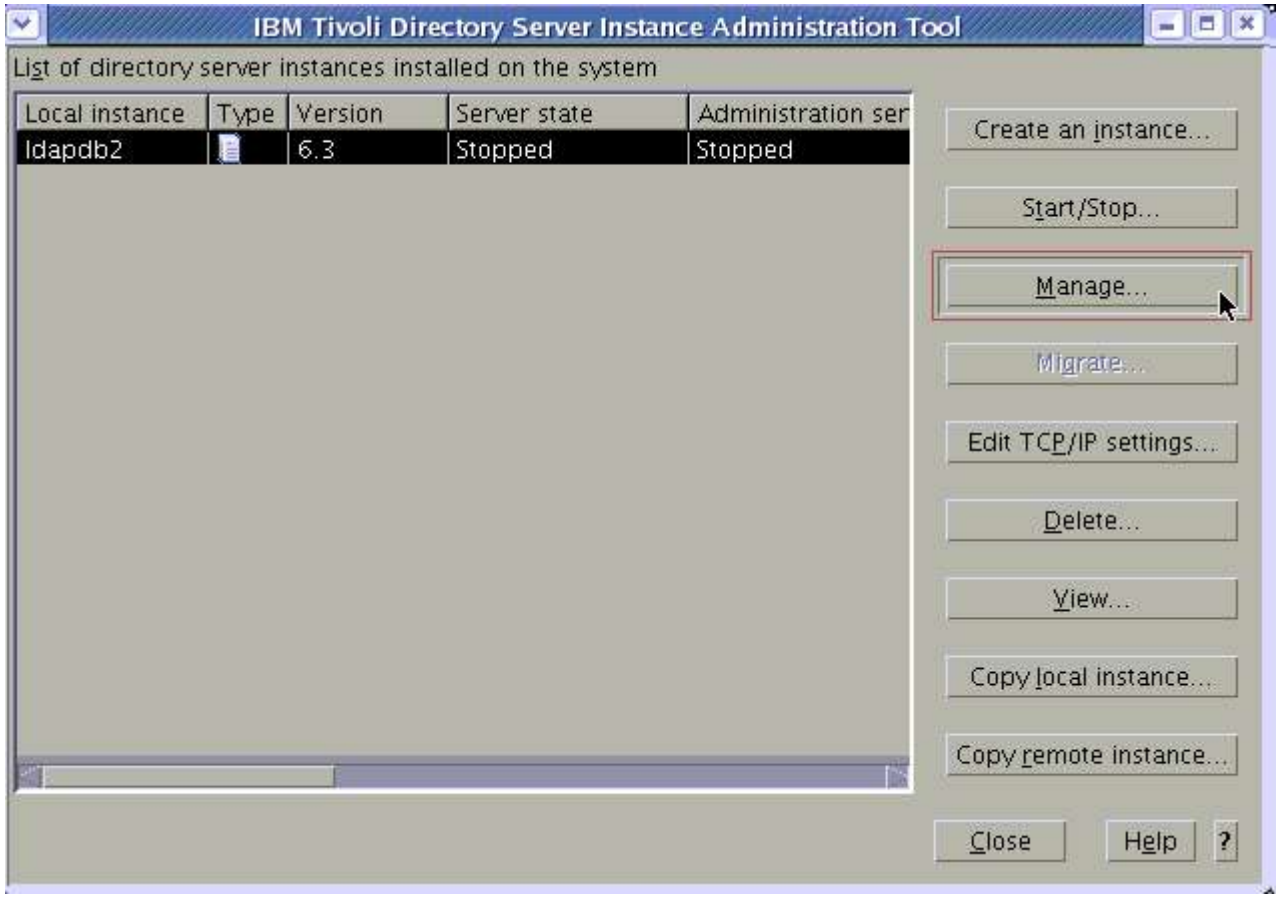
b. Using GUI method



8. Upgrade to 6.3 on AIX - Remote system Contd …

1. *Remote upgrade across systems with same endianness*

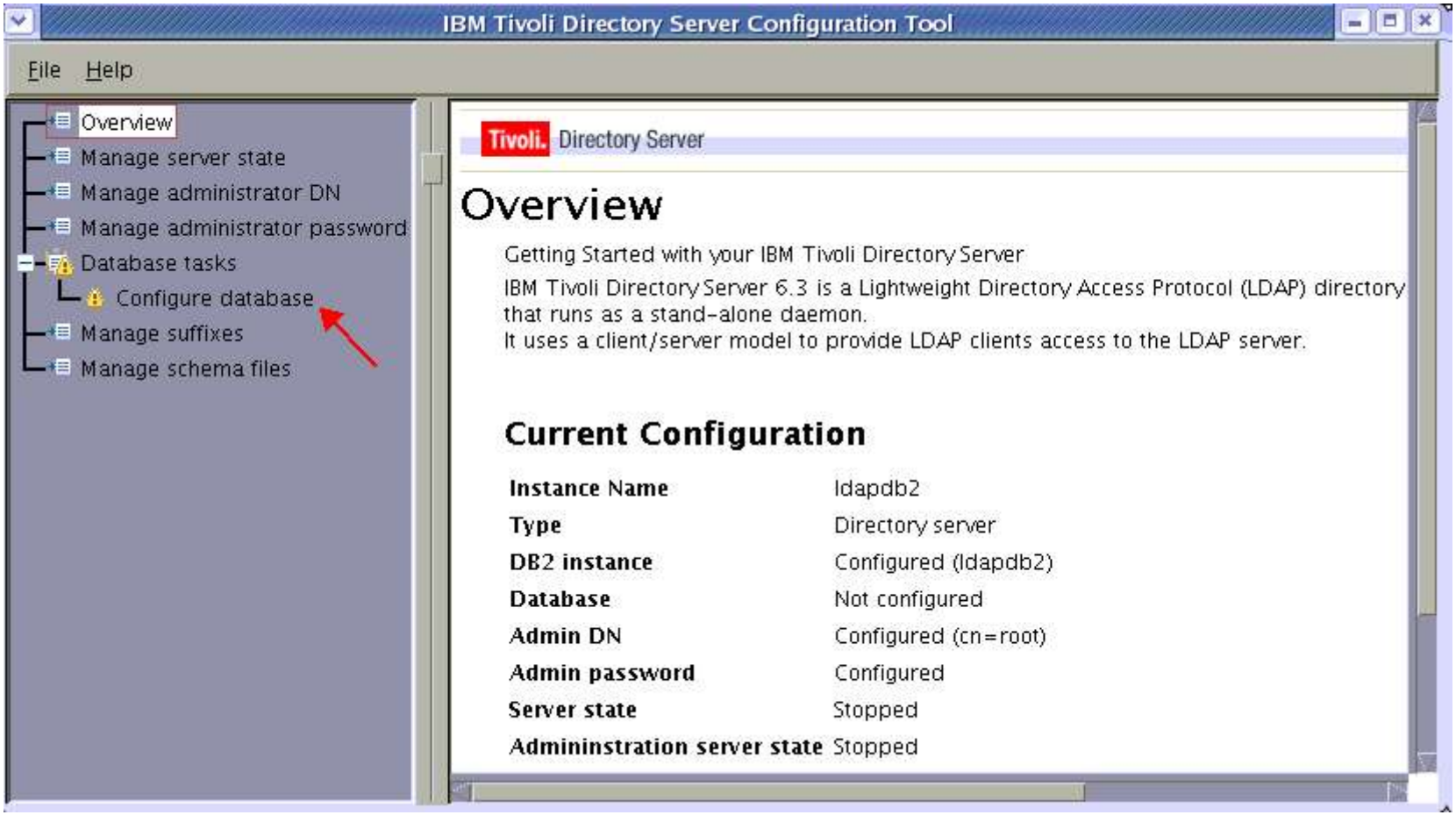
b. Using GUI method



8. Upgrade to 6.3 on AIX - Remote system Contd …

1. Remote upgrade across systems with same endianness

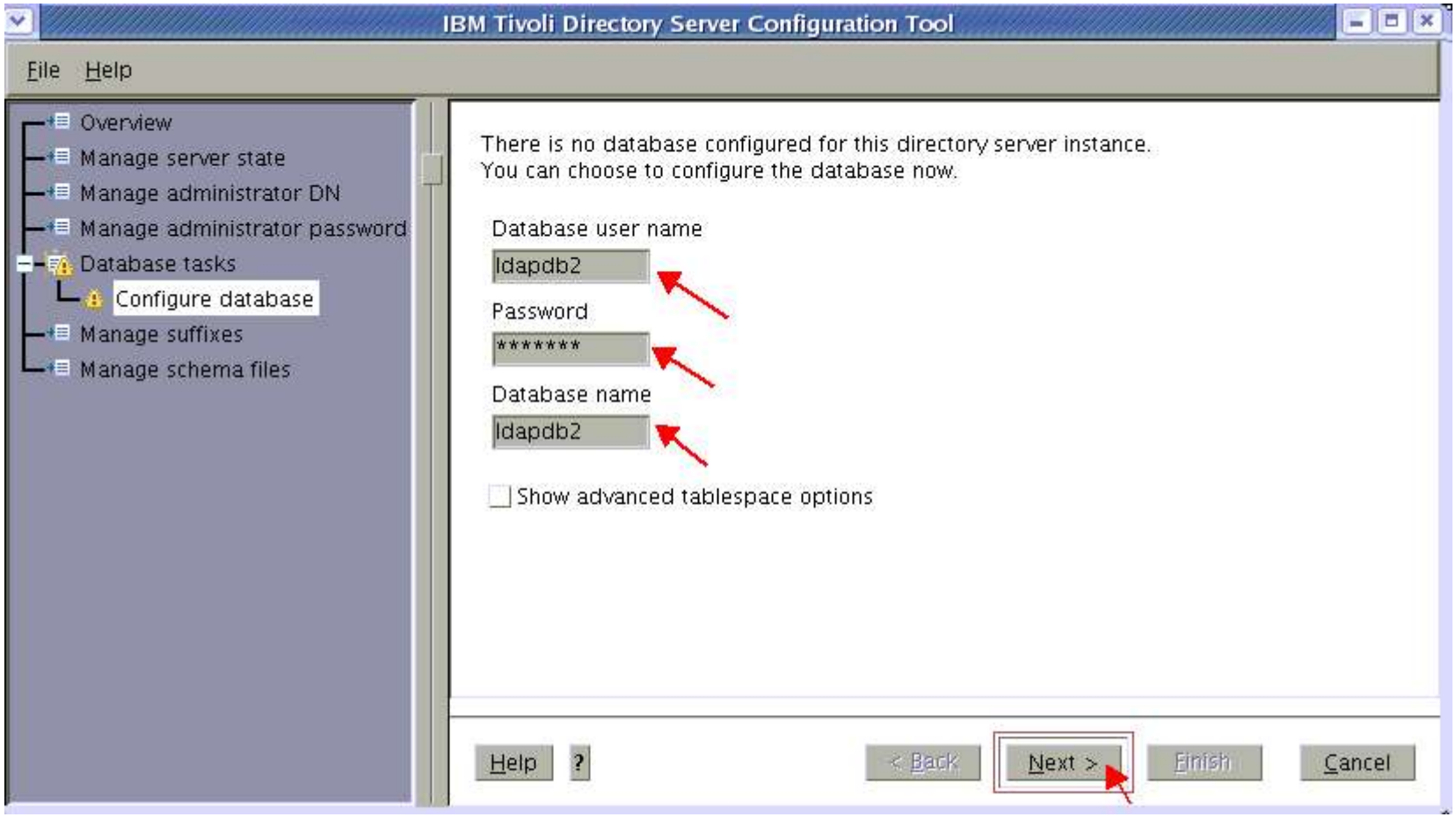
b. Using GUI method



8. Upgrade to 6.3 on AIX - Remote system Contd …

1. Remote upgrade across systems with same endianness

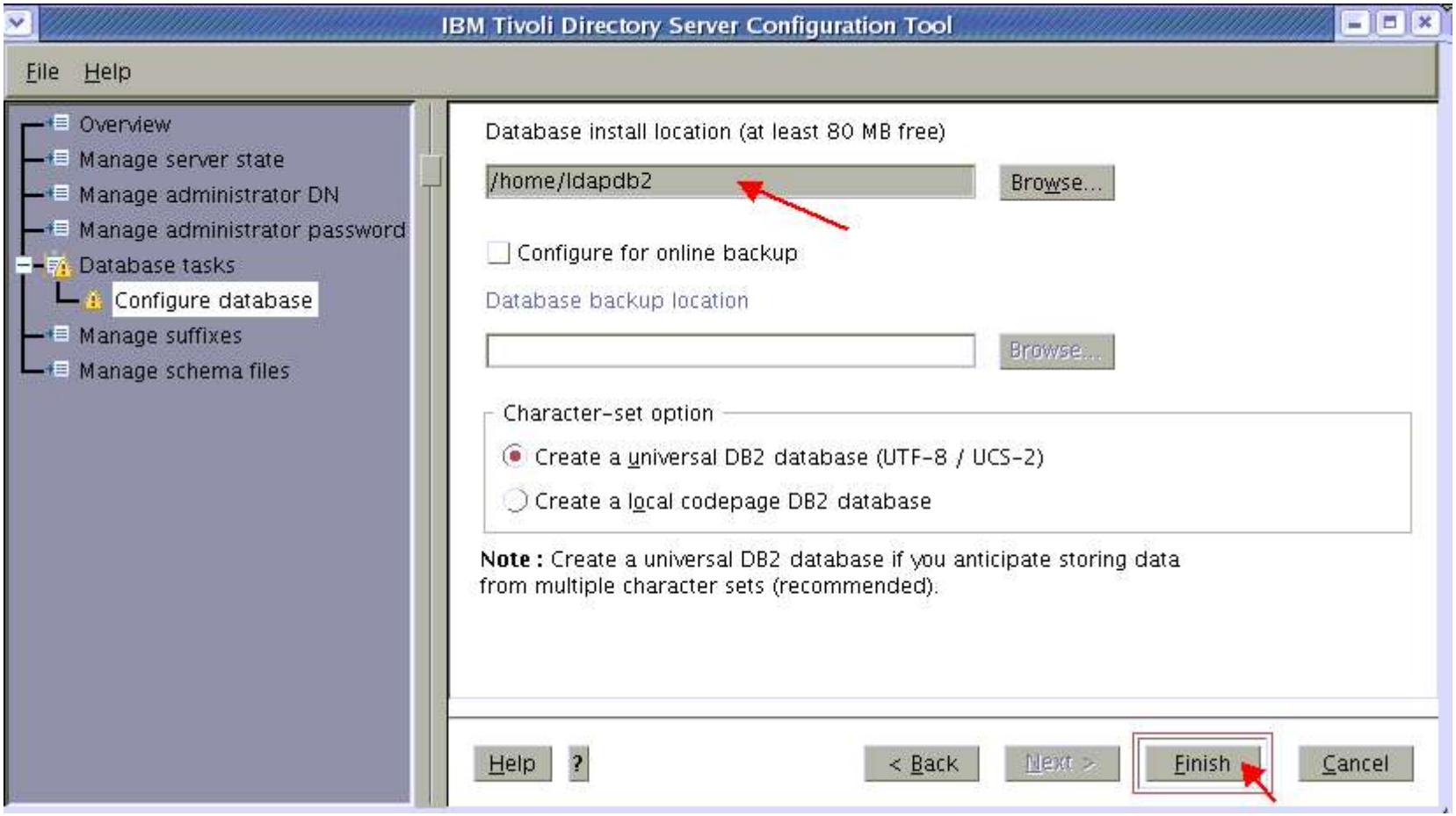
b. Using GUI method



8. Upgrade to 6.3 on AIX - Remote system Contd ...

1. Remote upgrade across systems with same endianness

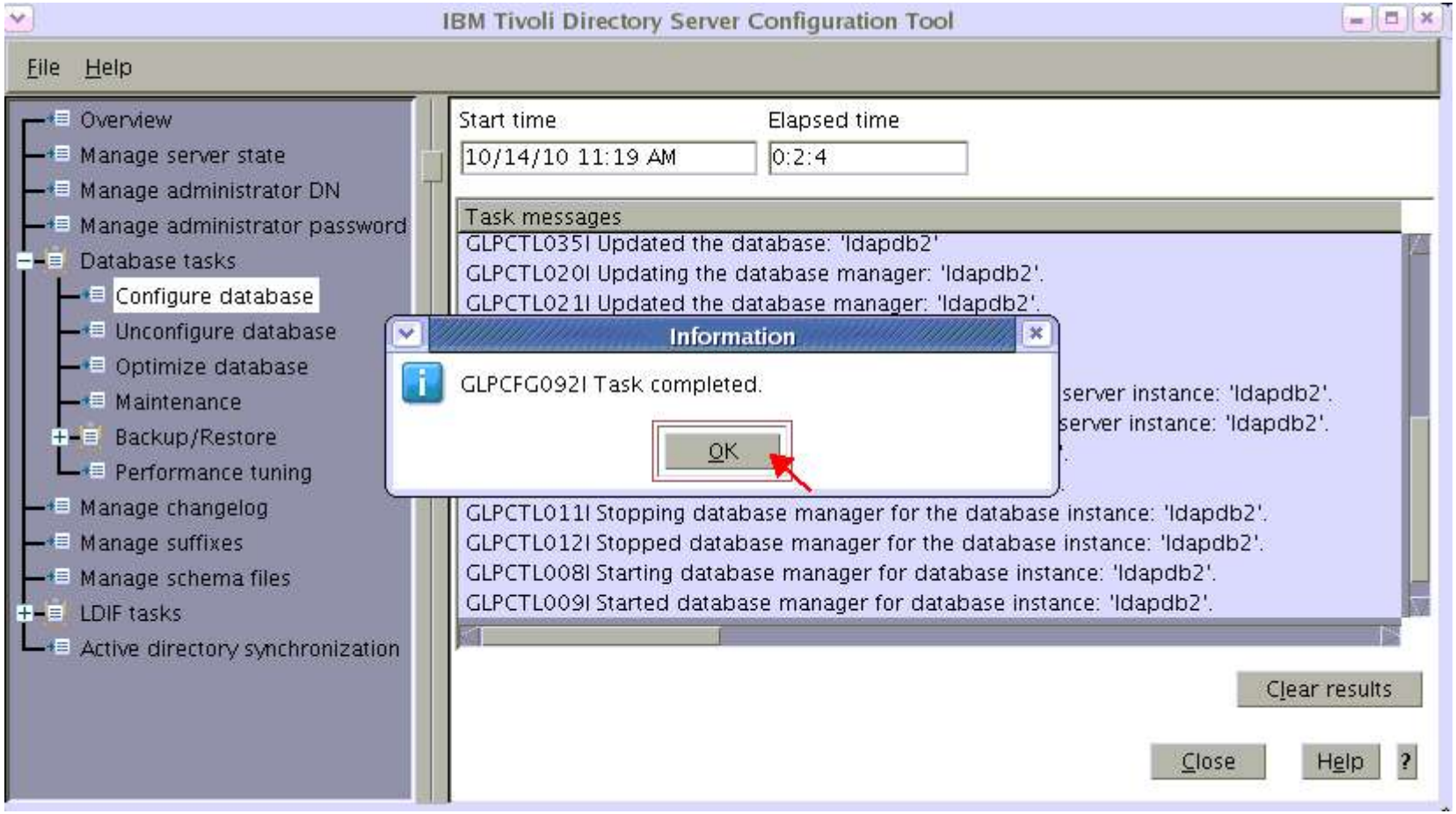
b. Using GUI method



8. Upgrade to 6.3 on AIX - Remote system Contd ...

1. Remote upgrade across systems with same endianness

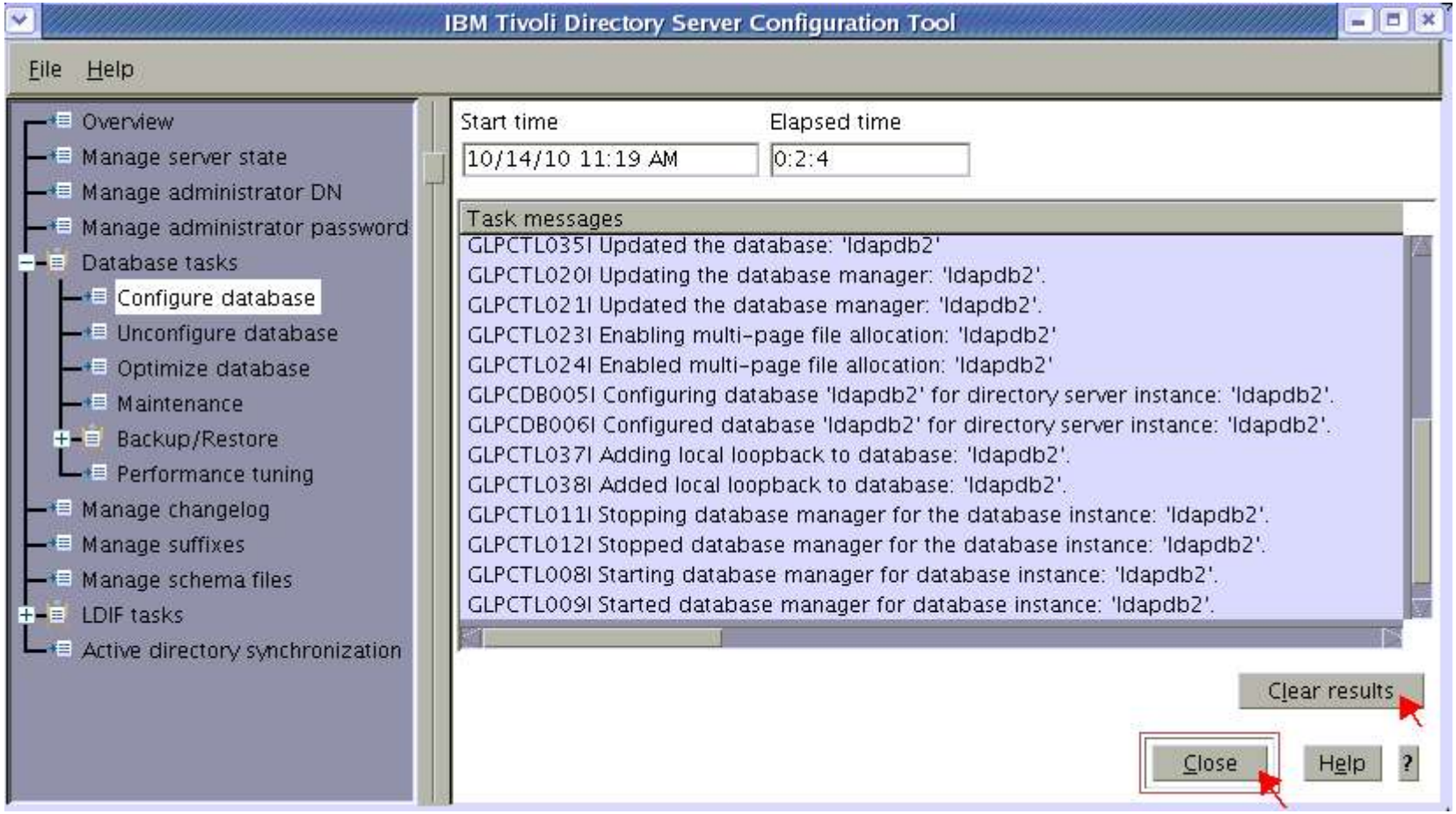
b. Using GUI method



8. Upgrade to 6.3 on AIX - Remote system Contd ...

1. Remote upgrade across systems with same endianness

b. Using GUI method



8. Upgrade to 6.3 on AIX - Remote system Contd …

1. Remote upgrade across systems with same endianness

b. Using GUI method

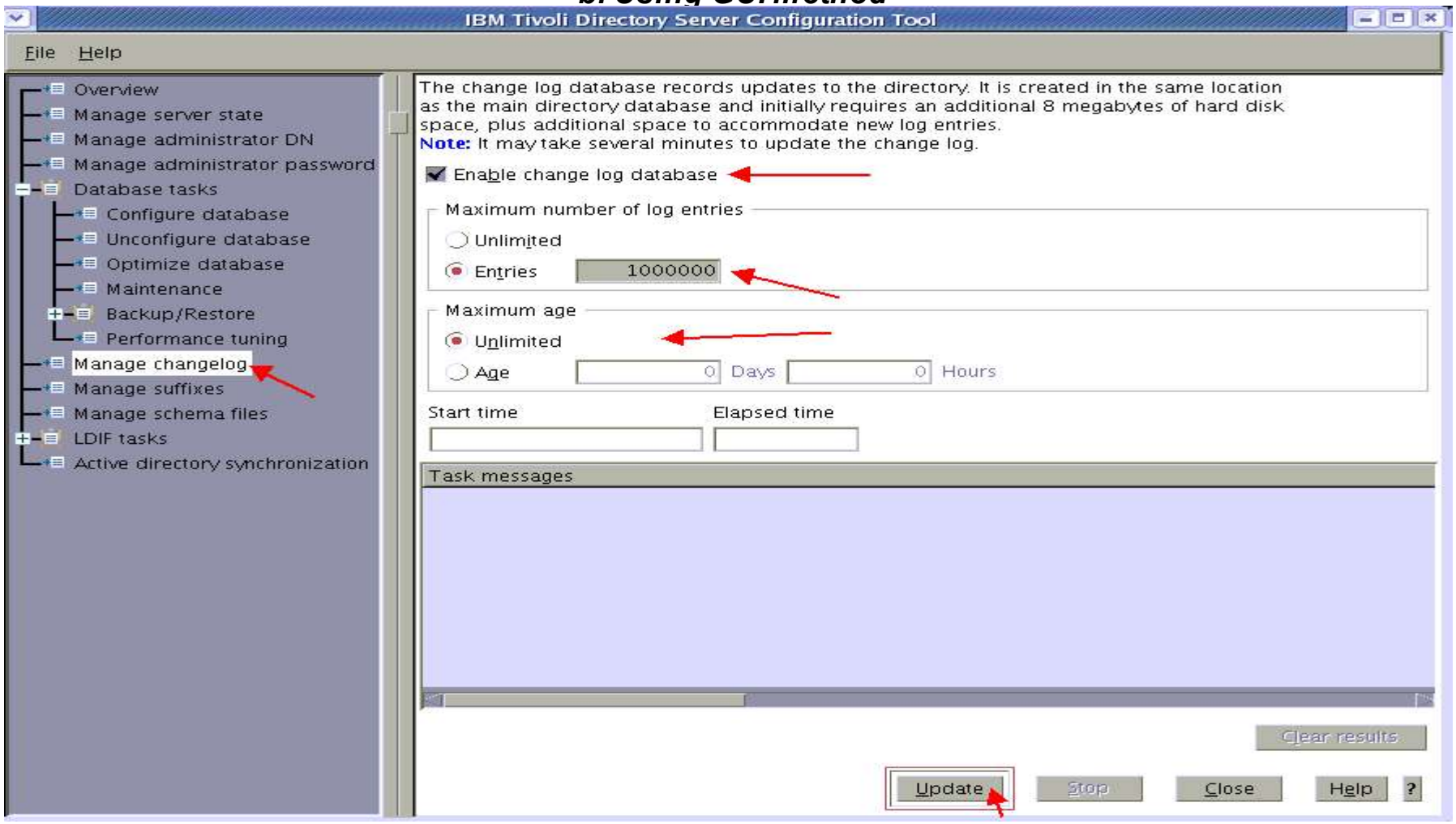
- When upgrading from V6.2 over to V6.3 and if you have custom schema files do the following:
- Copy the custom schema files back into instance's etc folder:

```
==> cp /tmp/ldapsaveconf/etc/<customschemafiles> /home/ldapdb2/idsslapd-ldapdb2/
    etc
==> chown ldapdb2:idsldap /home/ldapdb2/idsslapd-ldapdb2/etc/<customschemafiles>
```

8. Upgrade to 6.3 on AIX - Remote system Contd ...

1. *Remote upgrade across systems with same endianness*

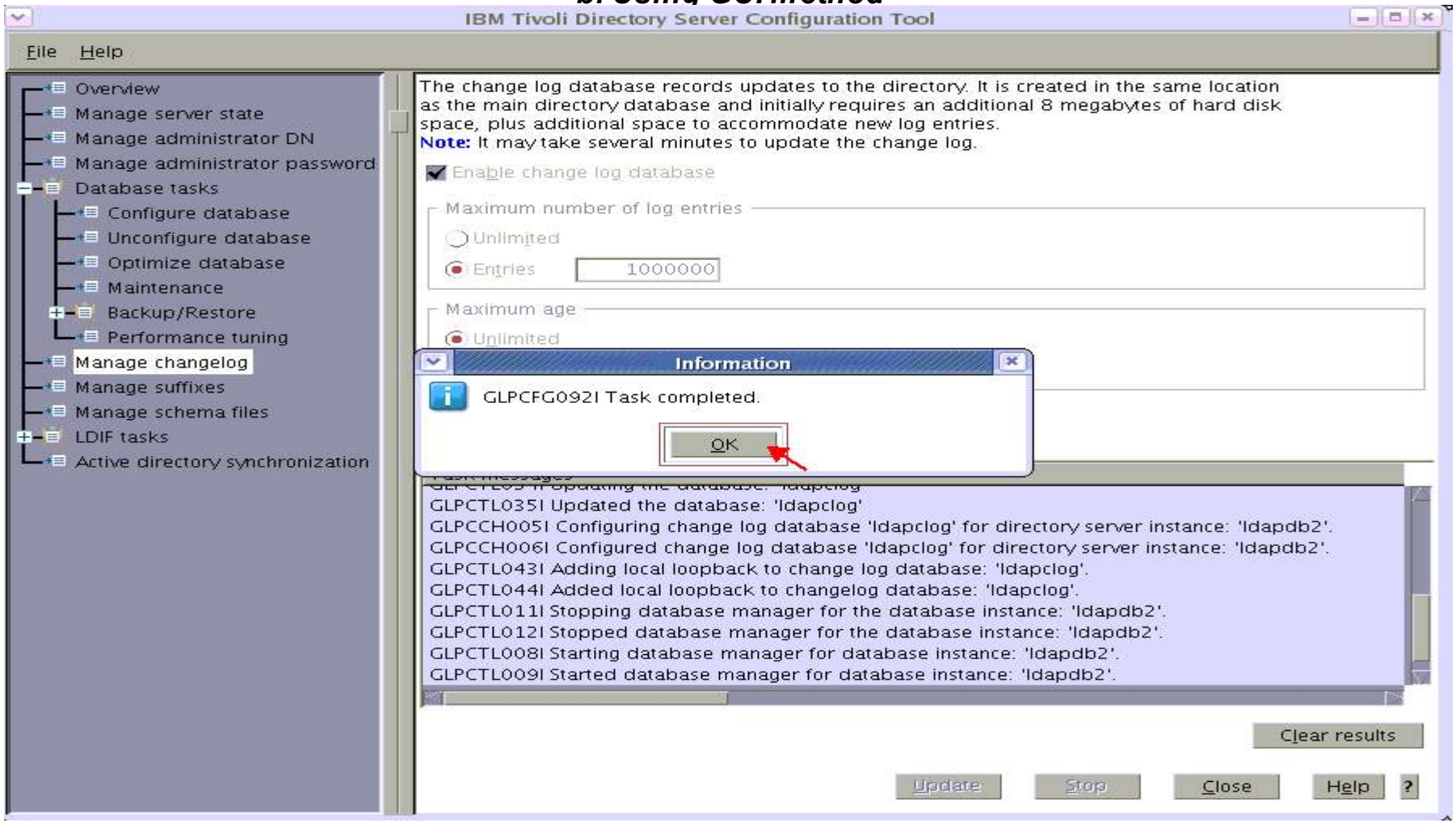
b. Using GUI method



8. Upgrade to 6.3 on AIX - Remote system Contd …

1. Remote upgrade across systems with same endianness

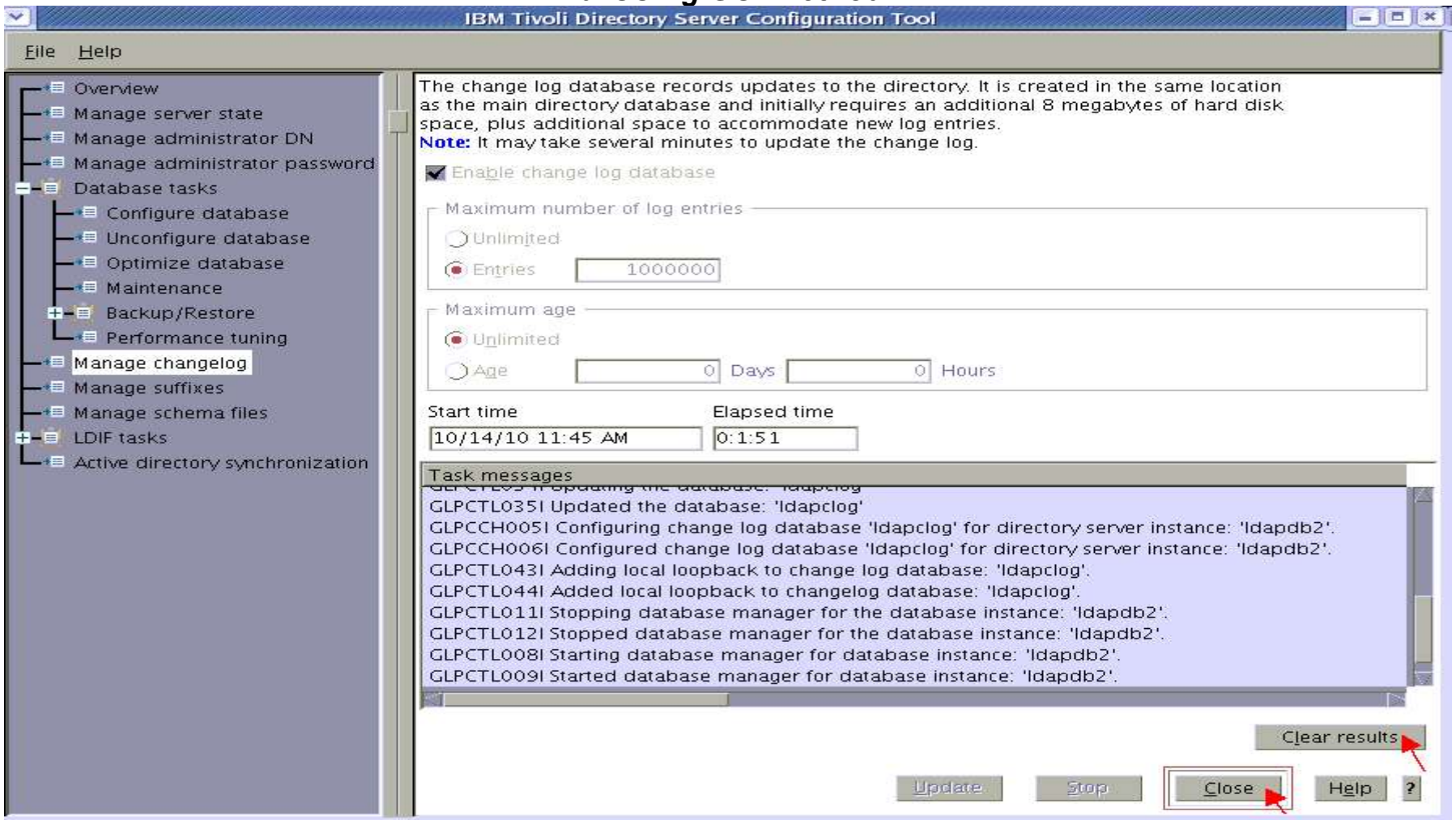
b. Using GUI method



8. Upgrade to 6.3 on AIX - Remote system Contd …

1. Remote upgrade across systems with same endianness

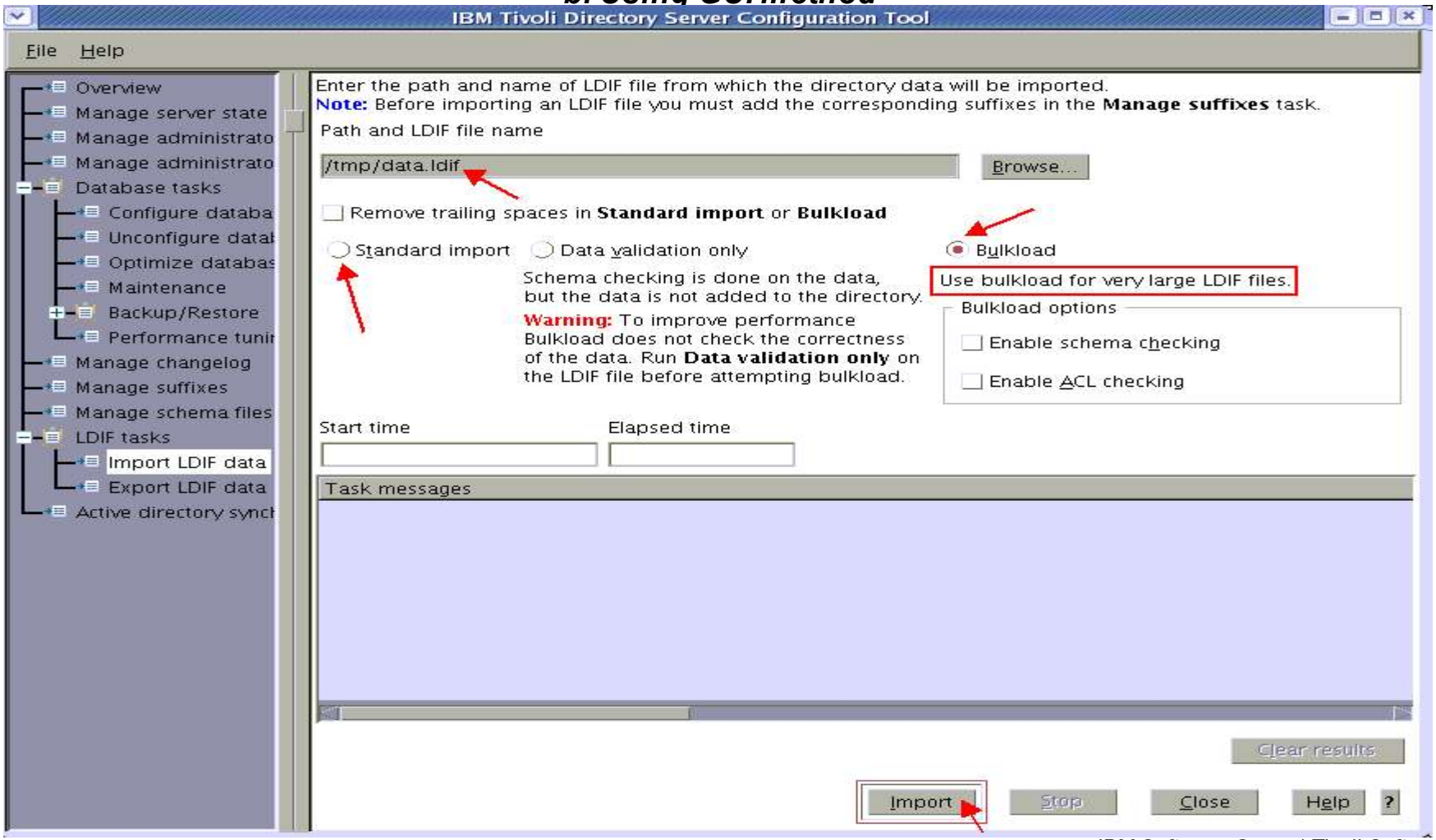
b. Using GUI method



8. Upgrade to 6.3 on AIX - Remote system Contd …

1. Remote upgrade across systems with same endianness

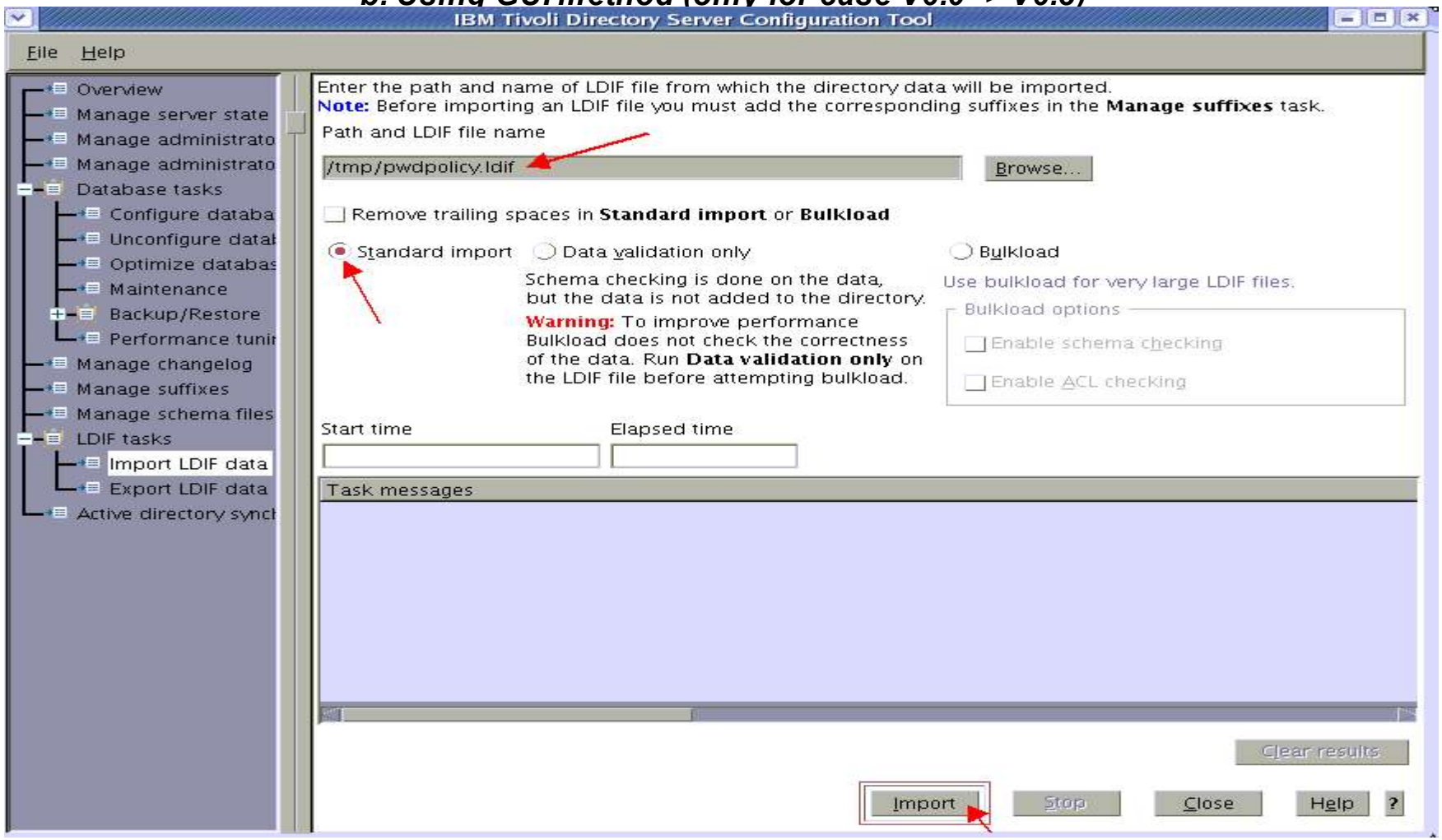
b. Using GUI method



8. Upgrade to 6.3 on AIX - Remote system Contd …

1. Remote upgrade across systems with same endianness

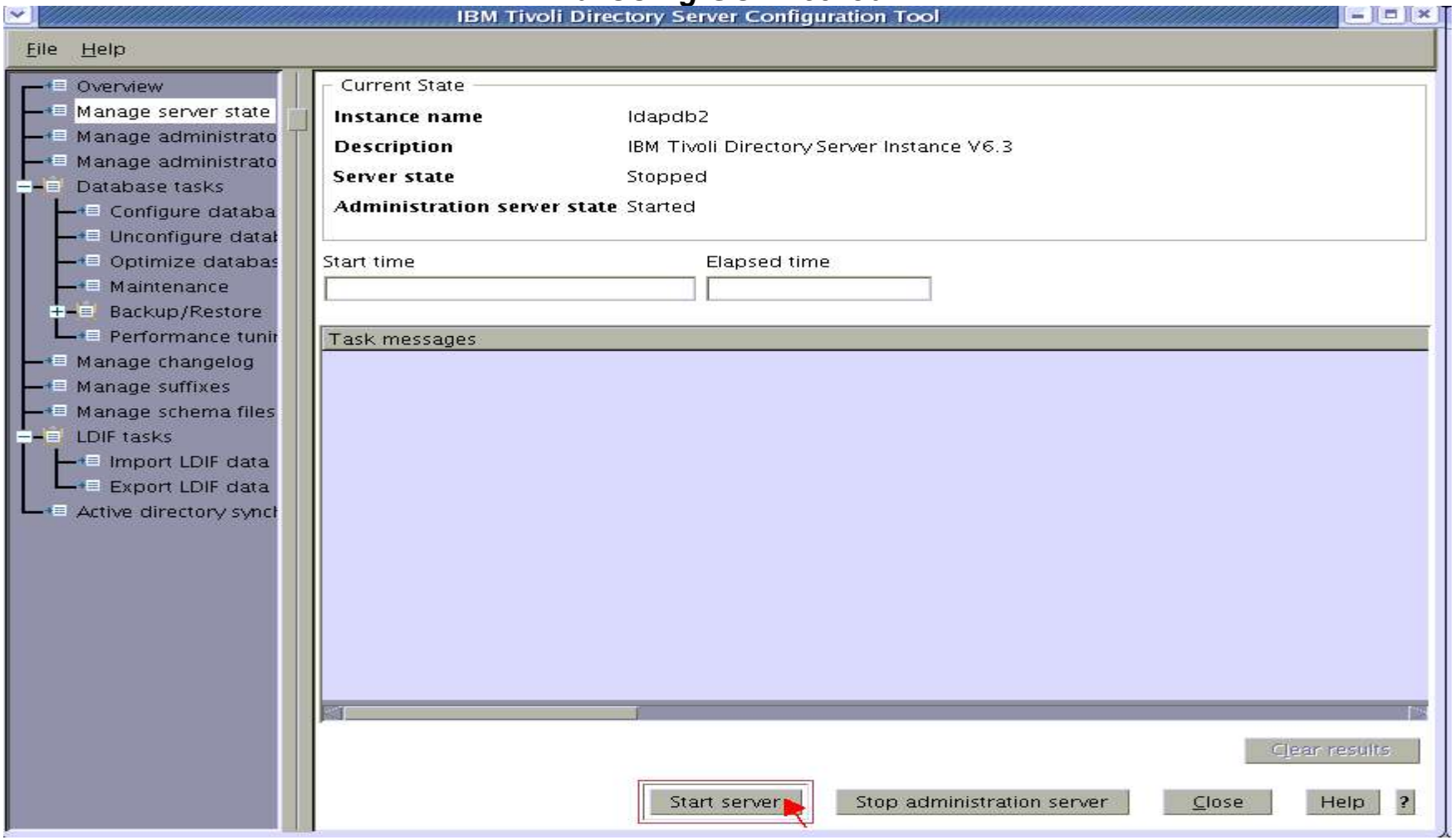
b. Using GUI method (only for case V6.0 -> V6.3)



8. Upgrade to 6.3 on AIX - Remote system Contd …

1. Remote upgrade across systems with same endianness

b. Using GUI method



8. Upgrade to 6.3 on AIX - Remote system Contd …

Remote upgrade across systems with same endianness - Important points

- After the data load, the first time ibmslapd may take longer time. This is a known issue at this time and reported over to L3.
- If the server process doesn't step down to instance owner or if the searches were not working even after about 10 minutes of ibmslapd, kill the pid of ibmslapd and start again. This time ibmslapd will start fine.

8. Upgrade to 6.3 on AIX - Remote system Contd …

2. Remote upgrade across systems with different endianness

- Remote migration/upgrade method when endianness of the 6.2 (or 6.1 / 6.0) system and V6.3 system differs.
- Big Endian: AIX, HP-UX (pa-risc), HP-UX(IA64), Solaris (sparc), Linux (ppc), Linux on zSeries
- Little Endian: Linux (x86), Linux (x86_64), Solaris (opteron/x64) Windows (x86) and Windows (x64)
- Key stash files of the 6.x instance are platform dependent binary files
  - Ibmslapddir.ksf - Directory key stash file - applies to data in ldap /database
  - Ibmslapdcfg.ksf - Configuration key stash file - applies to ibmslapd.conf file
- This procedure will help to get upgraded schema, that could be used in a new instance on 6.3 to load the data.
- Applicable only for 6.2 (or 6.1 / 6.0)

8. Upgrade to 6.3 on AIX - Remote system Contd …

2. Remote upgrade across systems with different endianness

- Install 6.3 on a supported operating system (assuming separate 6.3 and pre-6.3 systems)
- Install using command line methods:
  - Install DB2 V9.7 FP2
  - Install GSKit 8.0.13.1
  - Install ITDS 6.3
  - Create soft links to ITDS 6.3
- Install Embedded WebSphere Application Server 7.0.0.7 provided by ITDS V6.3

```
==> cd /data/aix/63/tdsV6.3/appsrv
==> ./install.sh -installRoot /opt/IBM/ldap/V6.3/appsrv
```

- Install IDSWebApp web application into appsrv:

```
==> cd /opt/IBM/ldap/V6.3/idstools
==> ./deploy_IDSWebApp
```

8. Upgrade to 6.3 on AIX - Remote system Contd …

2. Remote upgrade across systems with different endianness

- Copy / ftp migbkup script into /tmp on ITDS 6.2 (or 6.1/6.0) system and turn on the execute permissions on the same.
- Look for demonstration in the notes pages below.
- On ITDS 6.2 (or 6.1/6.0) system – backup configuration and schema migbkup and export data (**Using root login**):

```
==> mkdir /home/ldapdb2/ldapsaveconf
==> chmod g+w /home/ldapdb2/ldapsaveconf
==> chown ldapdb2:idsldap /home/ldapdb2/ldapsaveconf
==> chmod +x /tmp/migbkup
==> /tmp/migbkup /home/ldapdb2/idsslapd-ldapdb2  /home/
   ldapdb2/ldapsaveconf
==> cp -p <custom_schema_files> /home/ldapsaveconf/etc #IMP
==> cd /home/ldapdb2; tar cvf ldapsaveconf.tar ldapsaveconf
==> idsdb2ldif -I ldapdb2 -o <path_with_space>/data.ldif
   -k encrypt_seed -t encrypt_salt      # V6.2/V6.1/V6.0
==> idsdb2ldif -I ldapdb2 -s cn=pwdpolicy -o
   <path_with_space>/pwdpolicy.ldif     # V6.0 ONLY
```

8. Upgrade to 6.3 on AIX - Remote system Contd …

2. Remote upgrade across systems with different endianness

- Copy / ftp ldapsaveconf.tar and data.ldif from ITDS 6.2 (or 6.1/6.0) system over to ITDS 6.3 system and explode the ldapsaveconf.tar on 6.3 system in /tmp

```
==> cd /tmp
==> tar xvf ldapsaveconf.tar
```

- On ITDS 6.3 system create ldapdb2 user to own the ids and db2 instances

```
==> idsadduser -u ldapdb2 -w password -g idsldap -n
```

- Remove the key stash files from /tmp/ldapsaveconf/etc folder

```
==> cd /tmp/ldapsaveconf/etc
==> rm ibmslapddir.ksf ibmslapdcfg.ksf
```

- Create dummy key stash files.

```
==> idsgendirksf -s encrypt_salt -e encrypt_seed -l /tmp/
   ldapsaveconf/etc
==> cp ibmslapddir.ksf ibmslapdcfg.ksf
```

- On ITDS 6.3 system upgrade the schema and configuration using idsimigr:

```
==> idsimigr -I ldapdb2 -u /tmp/ldapsaveconf -n
```

8. Upgrade to 6.3 on AIX - Remote system Contd …

2. Remote upgrade across systems with different endianness

- Preserve all the schema files from the upgraded instance.

```
==> cd /home/ldapdb2/idsslapd-ldapdb2
==> cp -rp etc ../etc_upgrade_save
```

- Drop the upgraded instance

```
==> idsidrop -I ldapdb2 -r -n
```

- Create a new 6.3 instance

```
==> idsicrt -I ldapdb2 -e encrypt_seed -g encrypt_salt -n
```

- Copy upgraded schema including custom schema files from previously upgraded etc folder

```
==> cd /home/ldapdb2/idsslapd-ldapdb2/etc
==> cp ../../etc_upgrade_save/V3* .
==> cp /tmp/ldapsaveconf/<customschemafiles> .
```

- On ITDS 6.3 system Configure to create new database for the instance:

```
==> idscfgdb -I ldapdb2 -a ldapdb2 -w passwd -t ldapdb2 -l /
    home/ldapdb2 -n
```

8. Upgrade to 6.3 on AIX - Remote system Contd …

2. Remote upgrade across systems with different endianness

- Update the new 6.3 instance's configuration file

```
==> idsdnpw -I ldapdb2 -u cn=root -p password -n
==> idscfgsuf -I ldapdb2 -s o=sample -n # add other suffixes
```

- Compare the ibmslapd.conf of new instance with the ibmslapd.conf file in etc_upgrade_save folder and make additional changes as required.
- Don't copy ibmslapd.conf from etc_upgrade_save folder onto new instance.
- Import data into ITDS 6.3 instance (for large data load prefer idsbulkload)

```
==> idsldif2db -I ldapdb2 -i data.ldif
OR (==> idsbulkload -I ldapdb2 -i data.ldif)
==> idsldif2db -I ldapdb2 -i pwdpolicy.ldif # V6.0 to V6.3 ONLY
```

- If SSL is configured - copy over kdb file required by SSL from ITDS 6.2 (or 6.1 / 6.0) system over to ITDS 6.3 system and keep it in same path.
- Start ibmdiradm and ibmslapd on ITDS 6.2 system

```
==> ibmdiradm -I ldapdb2
==> ibmslapd -I ldapdb2
```

Questions & Answers

9. Upgrade / Migration in a high availability environments

- Topology:
  - Three Peer Masters
- Current setup:
  - ITDS V6.2 FP2 IF4 (6.2.0.12), DB2 V9.5 FP5(9.5.0.5), GSKit 7 (7.0.4.28)

  OR
  - ITDS V6.1 FP4 IF4 (6.1.0.36) DB2 V9.1 FP7 (9.1.0.7), GSKit 7 (7.0.4.28)

  OR
  - ITDS V6.0 FP8 IF6 (6.0.0.64), DB2 v8 FP18 (8.1.1.160), GSKit 7 (7.0.4.28)
- Target setup:
  - ITDS V6.3 (6.3.0.0), DB2 V9.7 FP2 (9.7.0.2), GSKit 8 (8.0.13.1)
- Configuration:
  - Replicated ldap servers
  - SSL enabled
  - changelog enabled
  - password policy enabled
- Same system upgrade on AIX 6.1

9. Upgrade / Migration in a high availability environments

- Important Note: Find a mechanism to direct your ldap traffic to a specific ldap server, such as load balancer or update client application configuration
- Master1, Master2 and Master3 are three peer master ldap servers in initial 6.2/6.1/6.0 setup
- Direct all your ldap traffic to Master3
- Suspend the replication queues from Master3 to other Master servers
- All updates from ldap clients will be made on Master3 and will be in replication queues for Master1 and Master2
- Stop Master1 and Master2 ldap servers (both ibmslapd and ibmdiradm processes)
- Stop the embedded application server on Master1 or / and Master2 if its installed and running

9. Upgrade / Migration in a high availability environments

- Upgrade Master1 and Master2
- Use either operating system utility upgrade
  OR
- Use InstallShield GUI upgrade method
- Bring up Master1 and Master2 ldap server
  ==> ibmslapd -I ldapdb2
- Now bring up the TDSWebAdminProfile server1 on either Master1 or Master2 systems and connect to Master1, Master2 and Master3 ldap servers via separate browser windows.
  ==>/opt/IBM/ldap/V6.3/appsrv/profiles/TDSWebAdminProfile/bin/startServer.sh server1

9. Upgrade / Migration in a high availability environments

- Resume the replication queue(s) from Master3 –> Master1 and Master3 –> Master2
- Wait for any updates pending on replications queues from Master3 to clear out to Master1 and Master2
- Now suspend all queues from Master1 –> Master3 and Master2 –> Master3
- Direct all your ldap traffic to Master1
- All updates from ldap clients will be made on Master1 will be replicated immediately to Master2 where as they wait in replication queues on Master1 to Master3
- Stop Master3 ldap server (both ibmslapd and ibmdiradm)
- Stop the embedded application server on Master3 if its installed and running

9. Upgrade / Migration in a high availability environments

- Upgrade Master 3 using either operating system utility method
  OR
- Using InstallShield / GUI upgrade method
- Bring up Master3 ldap server
  ==> ibmslapd -I ldapdb2
- Resume the replication queue(s) from
  Master1 -> Master3 and Master2 -> Master3
- Wait for any updates pending on replications queues from Master1 to clear out to Master3
- Schema updates via ldap modify operations and password policy updates will be replicated automatically

Questions & Answers

10. 6.2 (or 6.1/6.0) ITDS proxy ldap server upgrade to 6.3

- For 6.2 (or 6.1/6.0) ITDS Proxy server along with distributed directory backend servers, upgrade backend servers first
- Install ITDS 6.3 and GSKit 8 on proxy server system
- DB2 V9.7 is not required for proxy server system
  - Proxy server do not have an RDBM backend on the same instance
  - Proxy server will connect distributed directory servers
- Migrate 6.2 (or 6.1/6.0) proxy server instance

  ==> idsimigr -I idsldap -n

OR

- Create a new 6.3 proxy server instance
- Configure using 6.2 WebAdmin tool

Questions & Answers

11. Hints and Tips

- After successful upgrade over to 6.3, pre 6.3 version of ITDS and its related components can be uninstalled. Refer to the infocenter for the respective versions for uninstallation instructions.
- If Tivoli Directory Integrator is required, it must be installed separately
- Make sure 6.0 ldap instance is using DB2 v8 FP18 (at least FP14), before upgrading on same system
- DB2 V9.7 license gets installed into its install location - /opt/IBM/tdsV6.2db2/license/
- On 32-bit x86 Linux TDS6.2 provides DB2 V9.7 WSE.
  (There is no DB2 9.7 ESE available for this platform)
- Verify custom schema after upgrade with custom schema of pre6.3
- After Remote migration watch out for library load issues due to incorrect extensions. “.so”, “.sl” or “.a” are used on different platforms.
- If you encounter GLPSCH064W messages due incompatible matching rules with the syntax of the attributes, the matching rules must be fixed in schema: Refer: **http://www-01.ibm.com/support/docview.wss?rs=767&uid=swg21368082**

11. Hints and Tips

- Reverting back – Procedures provided
- Move forward – Do remote migration.
- Refer info center for product documentation: http://publib.boulder.ibm.com/infocenter/tivihelp/v2r1/index.jsp?topic=%2Fcom.ibm.IBMDS.doc%2Fwelcome.htm
- Refer Problem determination guide section for migration: http://publib.boulder.ibm.com/infocenter/tivihelp/v2r1/topic/com.ibm.IBMDS.doc/pdguide.htm
- Refer support site for known issues: http://www-306.ibm.com/software/sysmgmt/products/support/IBMDirectoryServer.html
- Upgrade ITDS in your staging / test / QA / Dev environments before attempting to Upgrade the production environment
- Known issue: After a remote migration the ibmslapd may take long time (more than a couple of hours to start), if it goes more than anticipated normal start time, just kill the process (kill -9 <pid>) and restart the ibmslapd.
- Don’t do any database administration while doing the upgrade.

11. Hints and Tips

Upgrade in ITAM environments

- Make sure you look for the support statements of ITAM version and its compatibility with ITDS 6.3 (http://www-306.ibm.com/software/sysmgmt/products/support/IBMTivoliAccessManagerfore-business.html)
- Refer to ITAM documentation for overall migration (http://publib.boulder.ibm.com/infocenter/tivihelp/v2r1/topic/com.ibm.itame.doc/welcome.htm)
- In case of ITAM data model change during upgrade, you must export the data into ldif, process data using ITAM provided utilities and then import the ldif data into 63 instance.
- Synchronizing previous ITAM env data with upgraded ITAM env at LDAP level via ITDS replication is not feasible if you have differences in data models in ITAM LDAP servers across versions.
- 6.x ITDS server and clients can co-reside on the same system

11. Hints and Tips

Upgrade in ITIM environments

- Make sure you look for the support statements of ITIM version and its compatibility with ITDS V6.3 (http://www.ibm.com/software/sysmgmt/products/support/IBMTivoliIdentityManager.html)
- Refer to ITIM documentation for overall migration strategy (http://publib.boulder.ibm.com/infocenter/tivihelp/v2r1/index.jsp?topic=/com.ibm.itim.doc/welcome.htm)
- ITDS 6.3 (and 6.2) provides Referential integrity plugin.
- 6.x ITDS server and clients can co-reside on the same system

12. Problem determination and debugging

- Refer Problem determination guide section for migration http://publib.boulder.ibm.com/infocenter/tivihelp/v2r1/topic/com.ibm.IBMDS.doc/pdguide54.htm#migration
- Search support site with keywords you observe for known issues http://www-306.ibm.com/software/sysmgmt/products/support/IBMDirectoryServer.html
- Migration logs are in /var/idsldap/V6.3/ folder
- Look into /var/idsldap/V6.3/idsadm.log
- Also look into the home folder of the instance user for: ldapdb2.log and upgrade.log
- Use idsimigr command line utility to proceed with problem determination
- Instructions for tracing idsimigr command line utility:

```
==> ldtrc info
==> ldtrc off (if its already turned on)
==> ldtrc on
==> idsimigr … -d 65535 -b <outputFile>
OR
==> idsimigr … -d 65535 2>&1 | tee /tmp/idsimigr.trc
==> ldtrc off
```

Questions & Answers