IBM Tivoli Directory Server 6.3 Installation, Configuration and un-installation

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Tivoli software

Introduction

Objectives of this presentation

- Basics of directories and LDAP.
- Introduction to the Tivoli Directory Server
- How to install and configure the server
- How to Migrate from the existing version
- How to upgrade to a fix pack
- Basic administration and maintenance tasks
- Available resources

Contents of the presentation

1. Useful links
2. Introduction to directories
3. Introduction to IBM Tivoli Directory Server
4. Installation
5. Configuration
6. Migration
7. Fix pack upgrade
8. Un-installation
9. Known issues

Useful Links

- ITDS Support Portal:
  http://www-947.ibm.com/support/entry/portal/Overview/Software/Tivoli/Tivoli_Directory_Server
- ITDS Online documentation:
  http://publib.boulder.ibm.com/infocenter/tivihelp/v2r1/index.jsp?toc=/com.ibm.IBMDS.doc/toc.xml
- Tivoli Product Lifecycle Site:
  http://www-306.ibm.com/software/sysmgmt/products/support/lifecycle/
- System Requirements:
  http://publib.boulder.ibm.com/infocenter/tivihelp/v2r1/topic/com.ibm.IBMDS.doc/sysreq.htm
- Google group :
  http://groups.google.com/group/ibm.software.ldap/topics?lnk=gschg&hl=en

Useful Links contd..

- Support Techical Exchange (STE) Website:
  http://www-01.ibm.com/software/sysmgmt/products/support/supp_tech_exch.html
- Collecting Data For ITDS (Must Gather):
  http://www-01.ibm.com/support/docview.wss?rs=767&uid=swg21268035
- Recommended Fixes for ITDS:
  http://www-01.ibm.com/support/docview.wss?rs=767&uid=swg27009778
- Featured Documents:
  http://www-1.ibm.com/support/docview.wss?uid=swg27009603

Useful Links contd..

- Fixes by Version:
  http://www-01.ibm.com/support/docview.wss?rs=767&uid=swg21252238
- Tivoli Software Global User Group Community
  http://www.tivoli-ug.org/
- My Notifications:
  https://www-01.ibm.com/software/support/einfo.html
- Download Link from passport advantage
  http://www.ibm.com/support/docview.wss?uid=swg24015906

Introduction to Directories

- What are directories?
- Difference between relational database and Directories.
- How to access Directories?
- LDAP Architecture
  - Information model
  - Naming model
  - Functional model
  - Security model
- Directory Servers

What are Directories? Why?

- A directory is a listing of information about objects arranged in some order that gives details about each object.
- In computer terms, a directory is a specialized database, also called a data repository, that stores typed and ordered information about objects.
- A directory is a set of objects organized in a logical and hierarchical manner giving details about each object.
- Directory acts as a central and common authority that can securely authenticate the system resources that manage the directory data.

Difference between Relational DB and Directories

- Directories are meant to store relatively static information.
- Directories are accessed (read or searched) much more often than they are updated (written).
- Directory implementations still do not support transactions, however all databases do support transactions.
- Directories use a simplified and optimized access protocol e.g. light weight directory access protocol.

How to access Directories?

- Client – Server model of distributed computing.
- Directory Access Protocol.
- RFC 1777 – Lightweight Directory Access Protocol V2.
- RFC 2251 – Lightweight Directory Access Protocol V3.

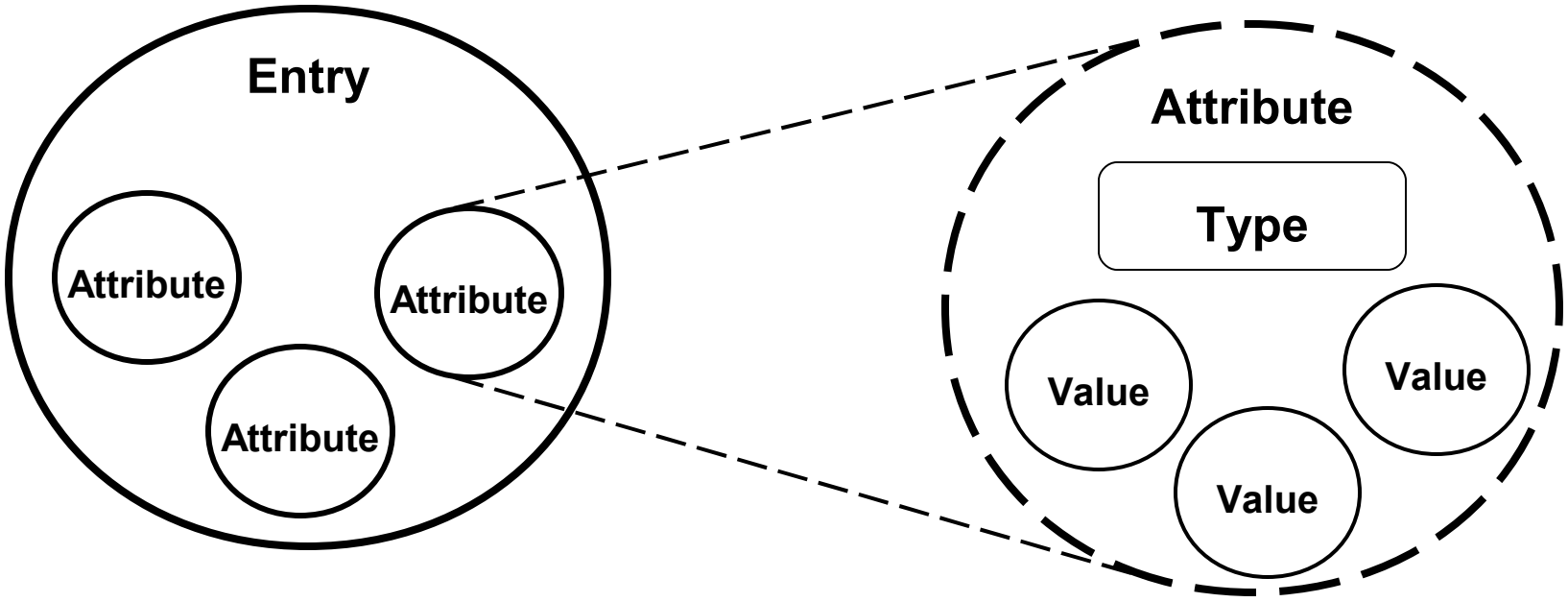
LDAP Architecture

LDAP models:

1. Information: Describes the structure of information stored in an LDAP directory.
2. Naming: Describes how information in an LDAP directory is organized and identified.
3. Functional: Describes what operations can be performed on the information stored in an LDAP directory.
4. Security: Describes how the information in an LDAP directory can be protected from unauthorized access.

Information Model

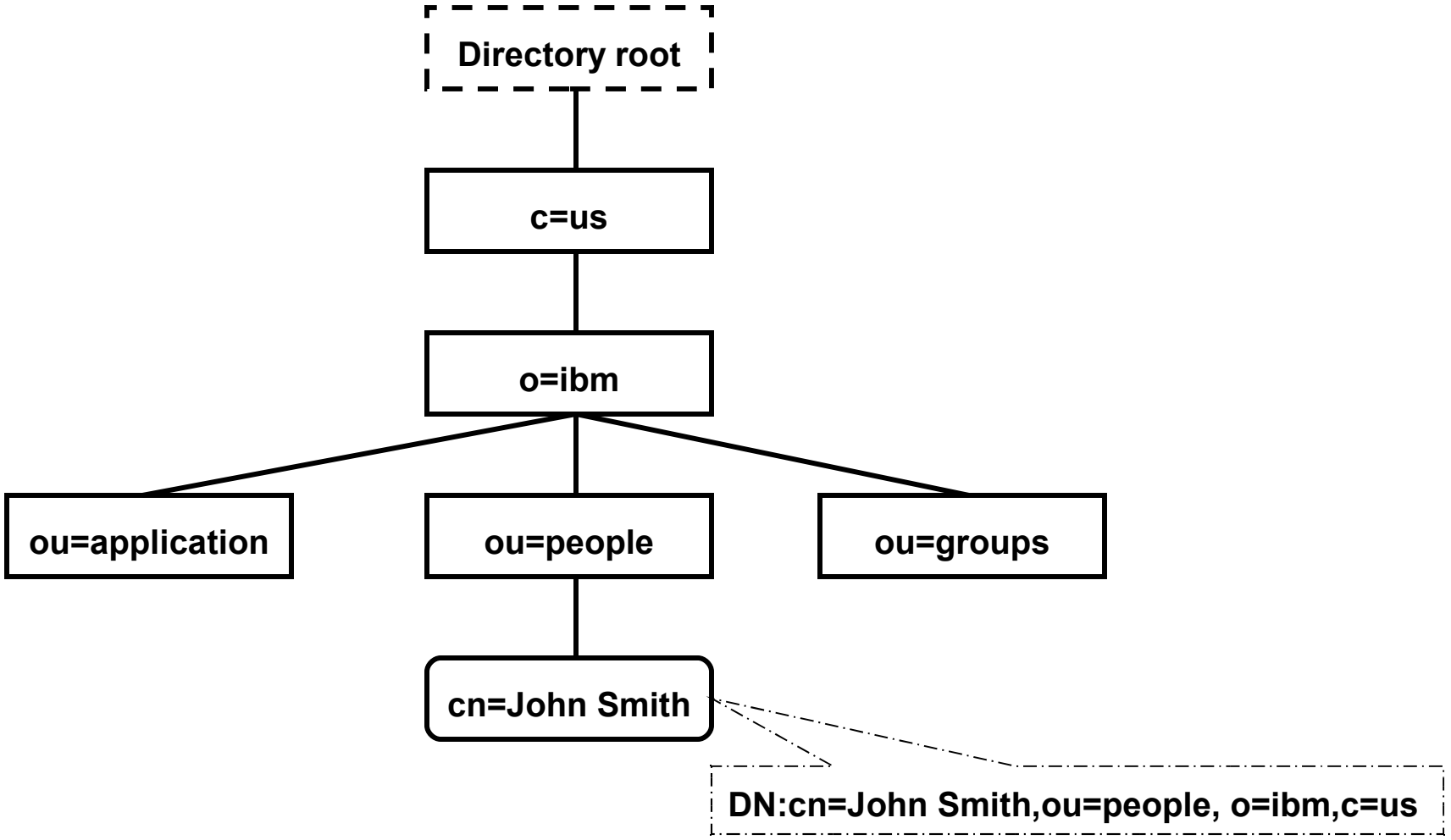
- Information model describes , how information is stores in LDAP.
- Basic unit of information stored in the directory is called an entry.



Naming Model

- Naming model defines how entries are identified and organized.
- Entries are organized in a tree-like structure called the Directory Information Tree (DIT).
- Entries are arranged within the DIT based on their distinguished name (DN).
- A DN is a unique name that unambiguously identifies a single entry.
- DNs are made up of a sequence of relative distinguished names (RDNs).

Example of DIT



Functional Model

- Functional model describes, what all operation can performed on LDAP data.
- Authentication : bind, unbind and abandon
- Query : search and compare
- Update : add, delete, modify and modrdn

Security Model

- Security model describes, how the information in an LDAP directory can be protected from unauthorized access.
- Security model is based on bind operation.
- Simple bind.
- Secure bind (SSL and TLS)
- Simple Authentication and Security Layer (SASL) mechanism.
- Kerberos.

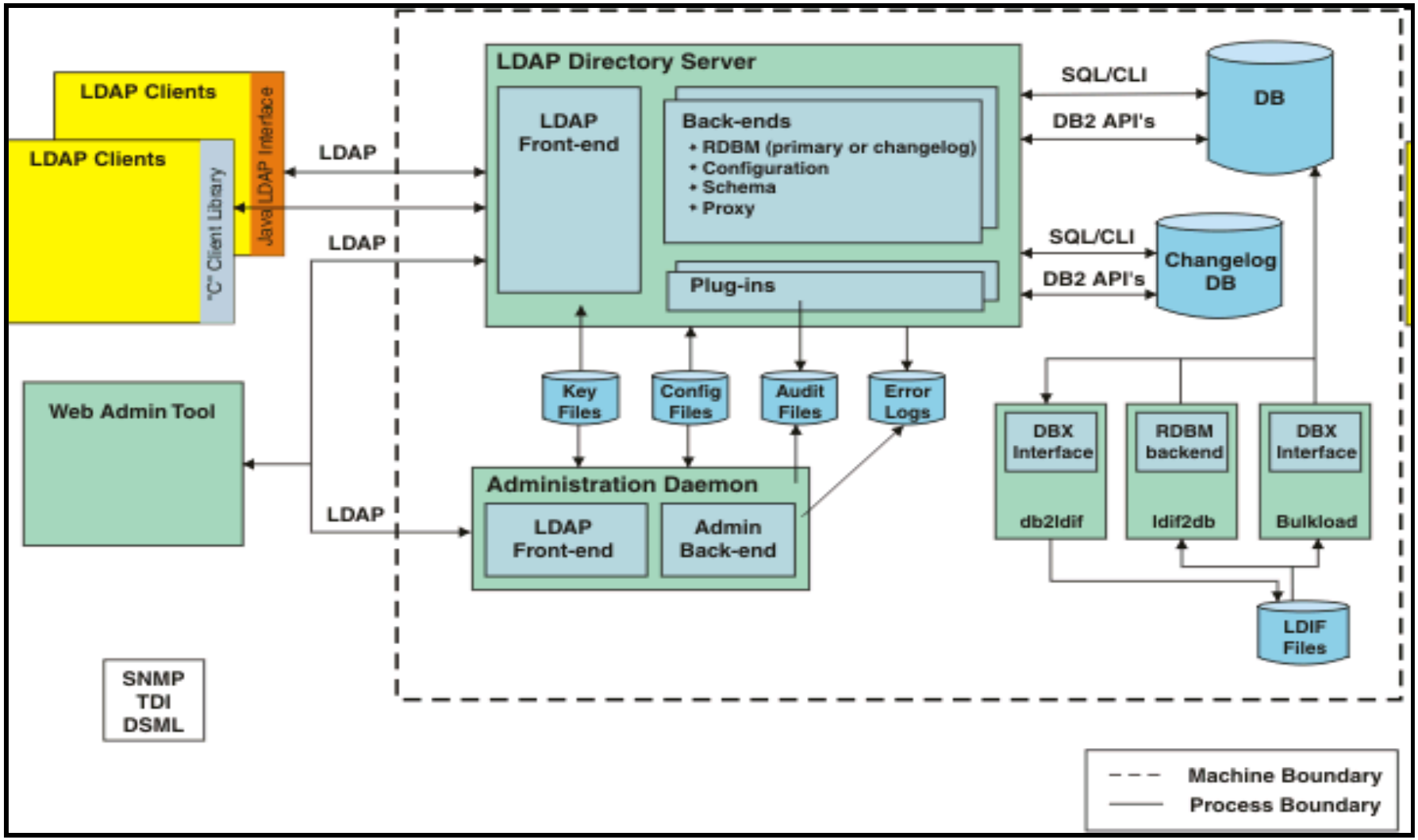
What is Directory server?

- The directory client performs the request, and the process that maintains and looks up information in the directory is called the directory server.
- Some servers can process client requests in parallel. (multi threaded)
- Other servers, if they are currently busy processing another client's request then queue incoming client requests for serial processing. (single treaded)
- Sometimes, a server might become the client of other servers in order to gather the information necessary to process a request. e. g. DNS

Introduction to IBM Tivoli Directory Server

- IBM implementation of the Lightweight Directory Access Protocol (LDAP)
- Supports : Windows, AIX, Linux, Solaris, and HP-UX
- The TDS server stores directory information using a DB2 database, a proxy server for routing LDAP operations to other servers, a client, and a graphical user interface (GUI) for managing servers.
- Robust replication capability for both master and subordinate replication, gateway, cascaded and peer-to-peer replication with up to dozens of master servers
- Support for distributed directories with the LDAP proxy feature
- Eases management and usability with Web Administration Tool and the Instance Administration Tool
- Tight integration with IBM operating systems, WebSphere middleware, Tivoli identity management, and security products

Architecture of Tivoli Directory Server



Components of Installation

- Client Software Developers Kit (SDK)
- Java™ client
- Server
  - Proxy server
  - Full server
- Web Administration Tool
- Embedded version of WebSphere Application Server Express
- Embedded WebSphere Application Server 6.1.0.17 is included
- DB2
- Universal Database Enterprise Server Edition (ESE). DB2 V9.5 Fix Pack 1 ESE is included
- Global Security Kit (GSKit)
- IBM Tivoli Directory Integrator V6.1.1

Server Requirements – All Platforms

- **The following amount of memory is required for each directory server instance:**
  - At least 512 MB for each directory server instance.
  - At least 256 MB for each database instance.
  - At least 512 MB for running the Web Administration Tool and the embedded version of WebSphere Application Server Express on the same computer. For better results use 1 GB or more.
  - At least 256 MB for running IBM Tivoli Directory Integrator.
  - Total of at least 1 GB of memory is required on all platforms.
    - On HP-UX with DB2 9.1, 4 GB of memory is required.
- **For a full server, IBM Tivoli Directory Server (including the client, the server, and the database) requires about 2 GB of disk space.**
  - Might increase based on the number of entries and the size of each entry for your installation.

Preparing for Installation – Users / Groups Needed

- Directory server instance owner.
  - Used for the name of the directory server instance.
- Database instance owner.
  - Owner of the database instance that is used by the directory server instance.
  - Used for the name of the database instance.
- Database owner.
  - Owner of the database that is used by the directory server instance.
  - Used by the directory server instance to connect to the database.
- You can use the same user name for all three roles.
- Follow naming rules and additional restrictions when preparing the user.

Preparing the users and groups for installation

- Using the idsadduser command.
  - The following command creates a new user on an AIX, Linux, Solaris, or HP-UX system with user name JoeSmith. The primary group is employees, the home directory is /home/joe, and the password is joespw.

    ```
    idsadduser -u JoeSmith -g dbsysadmin -l /home/joe -w joespw
    ```

  - The following command creates a new user on a Windows system with user name JoeSmith and password joespw. The user is a member of the Administrators group.

    ```
    idsadduser -u JoeSmith -w joespw
    ```

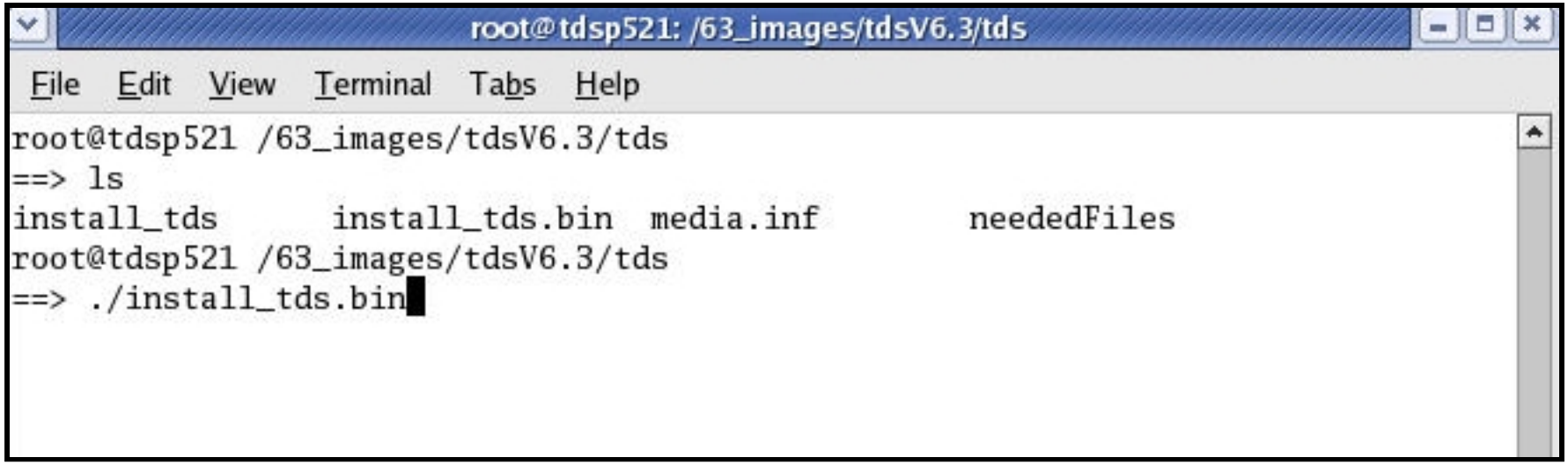
- Using the 'Create user' option in the Configuration utility, this option is covered in the upcoming slides of configuration.

ISMP Install – Launch the Installer

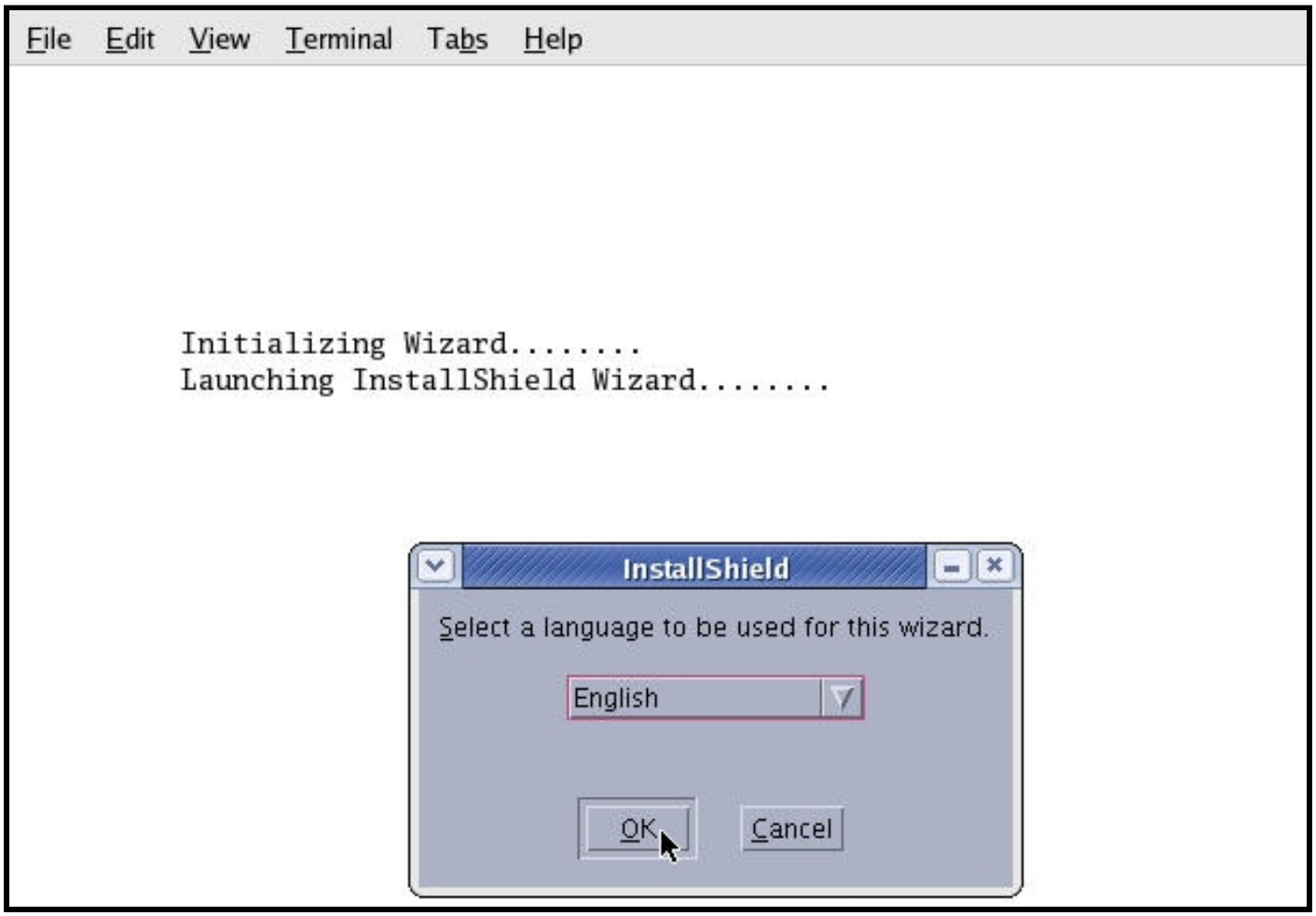
```
cd tdsV6.3/tds
```

Launch the ISMP installer by issuing:

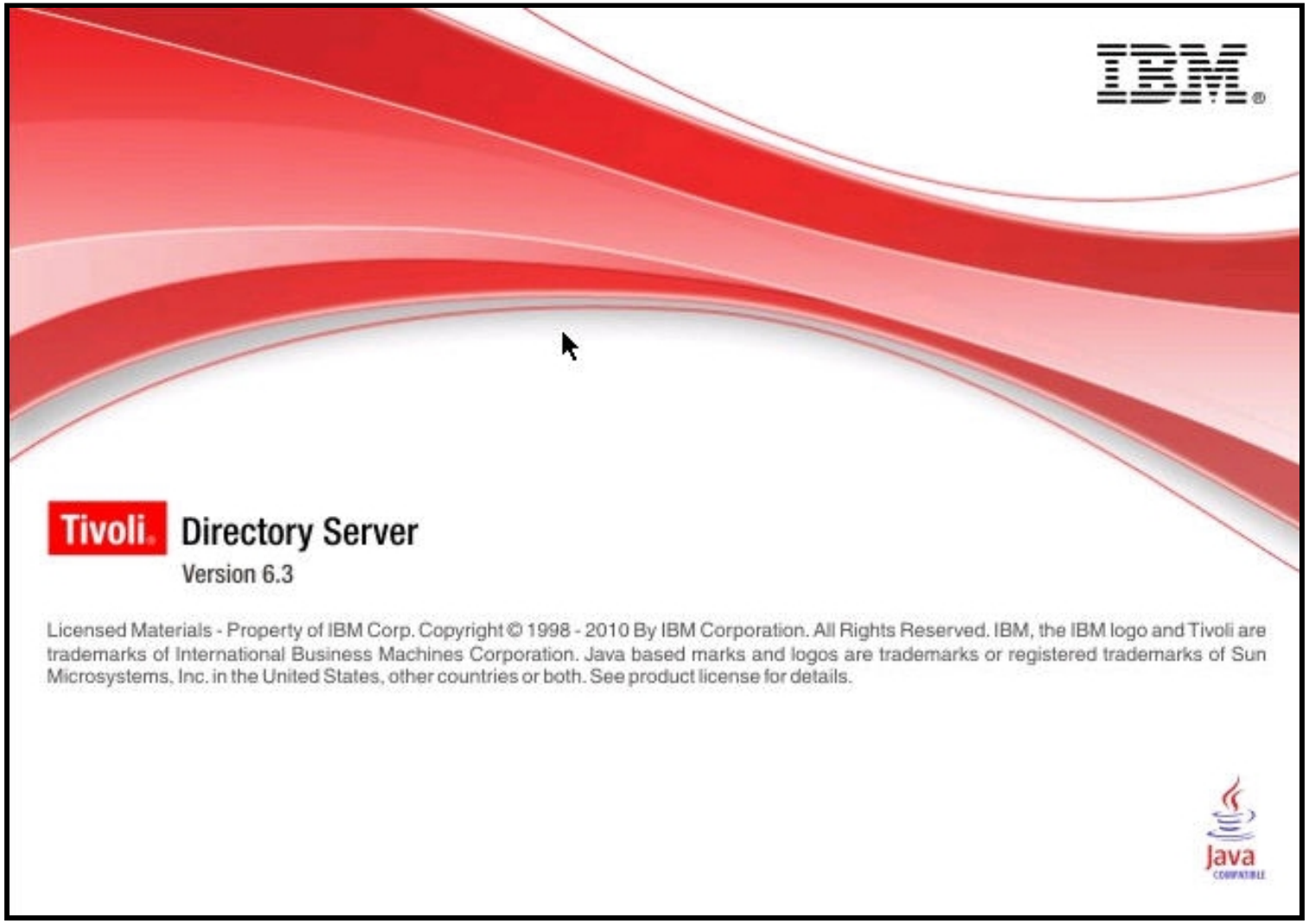
```
./install_tds.bin
```



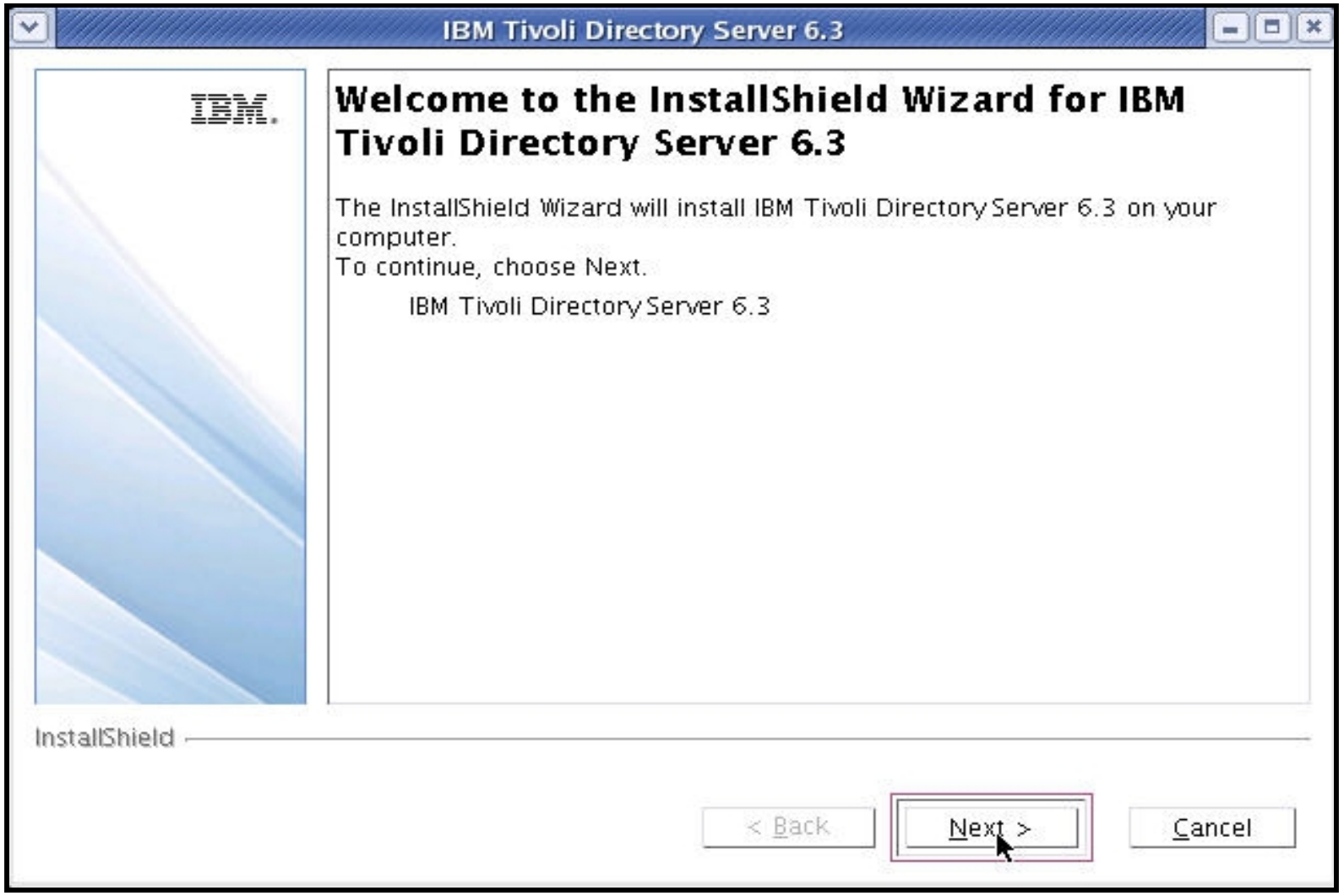
ISMP Install – Language Selection



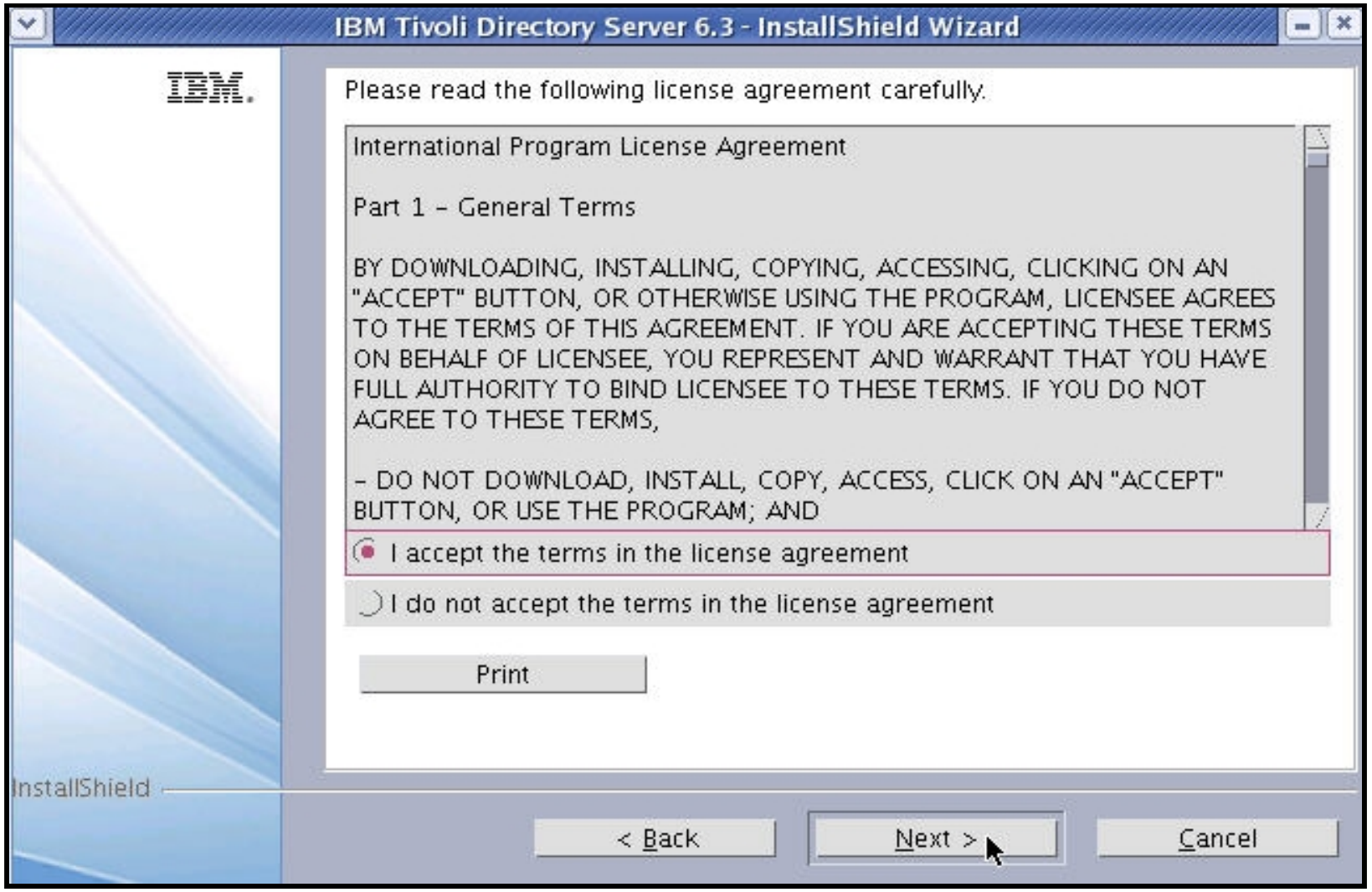
ISMP Install – ITDS Splash Screen



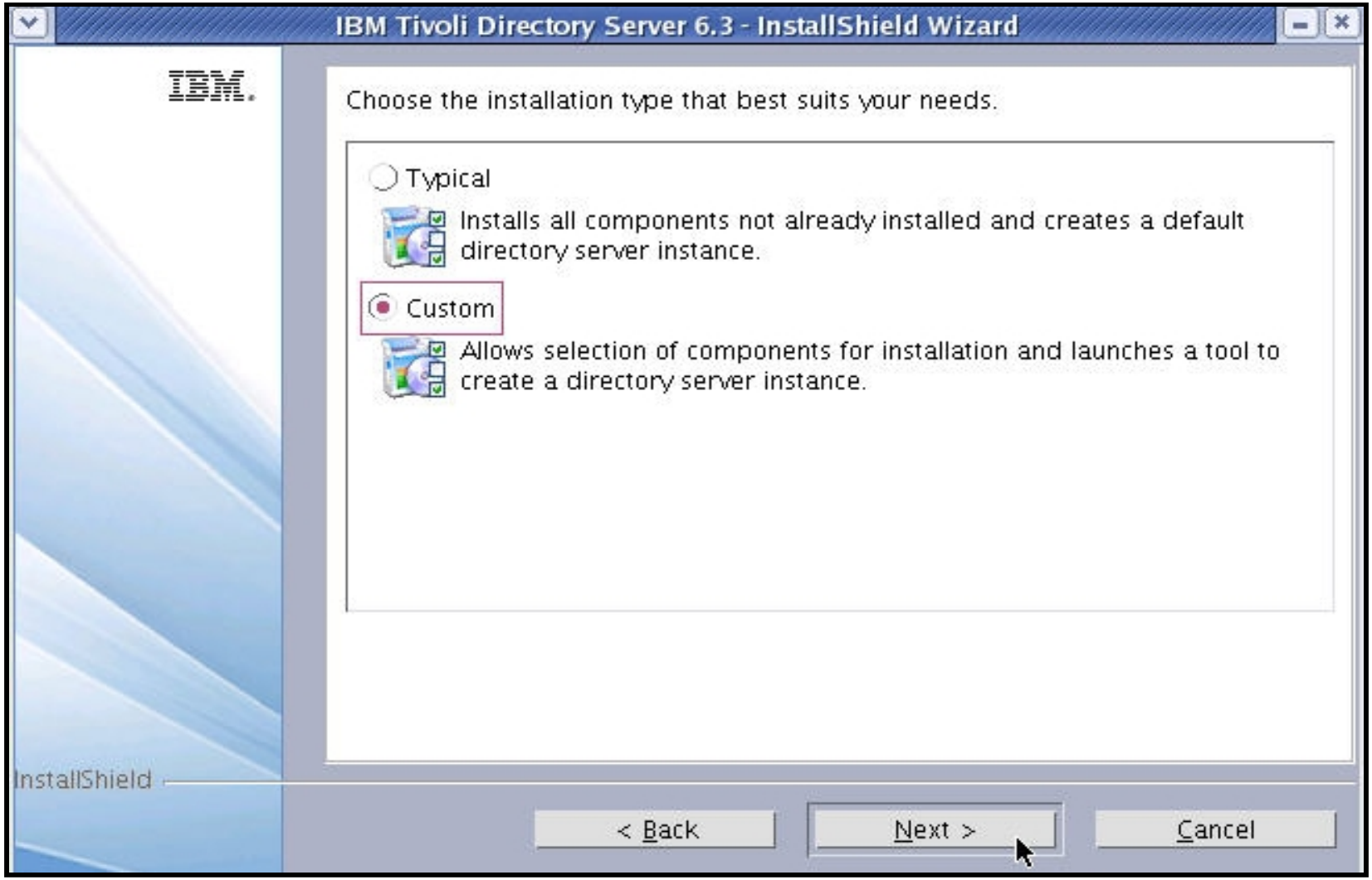
ISMP Install – Welcome screen



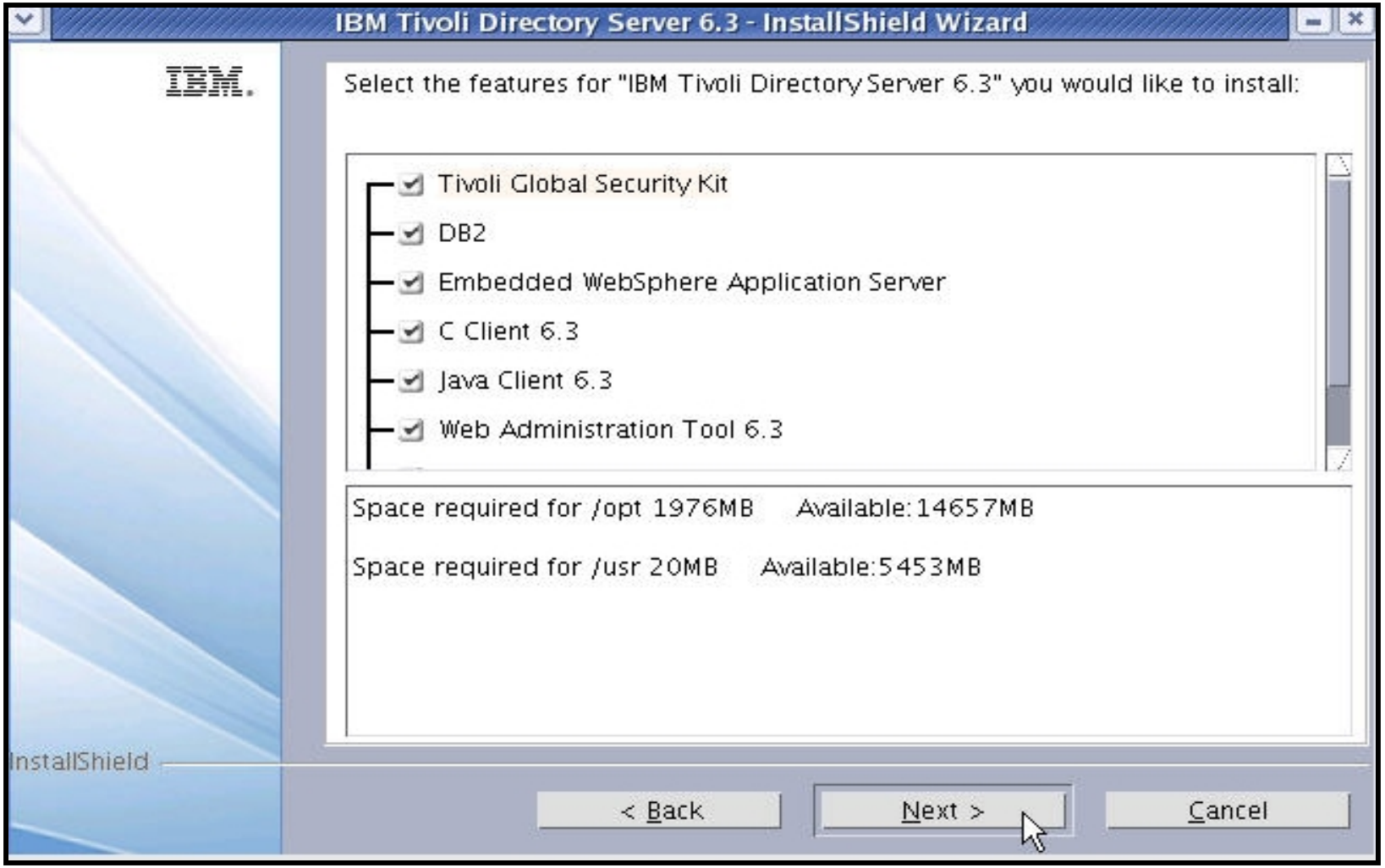
ISMP Install – License Agreement



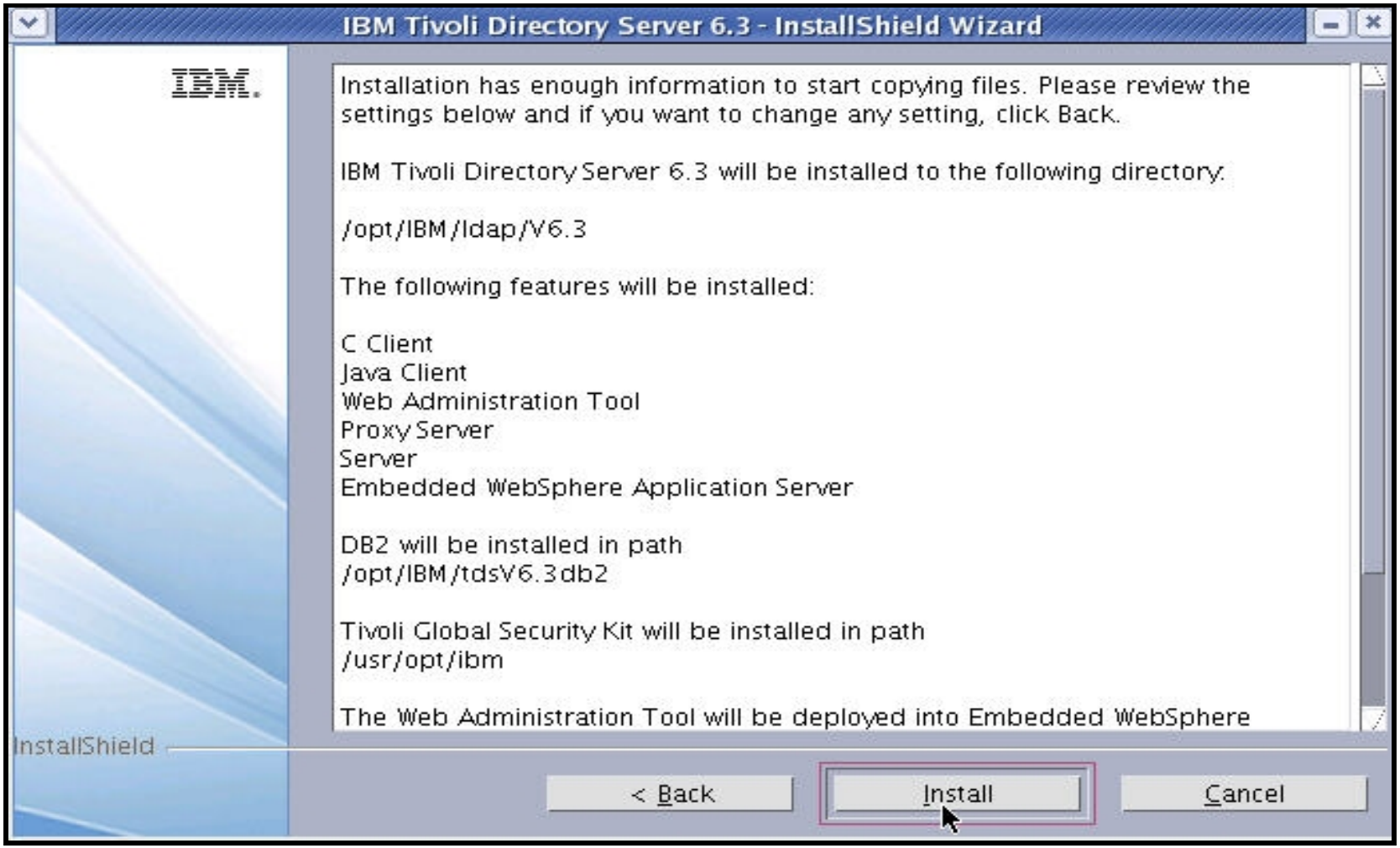
ISMP Install – Installation type



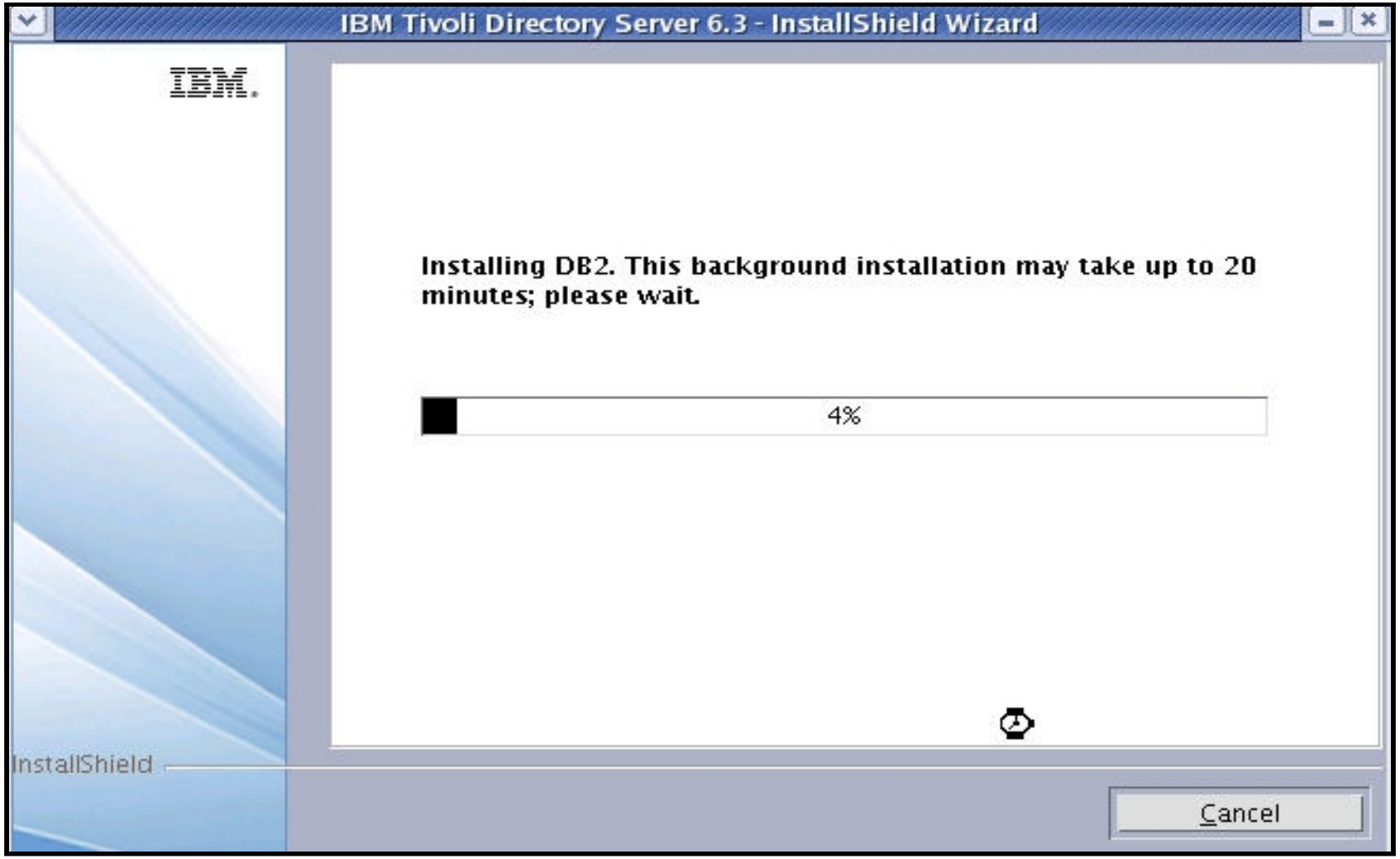
ISMP Install – Feature Selection



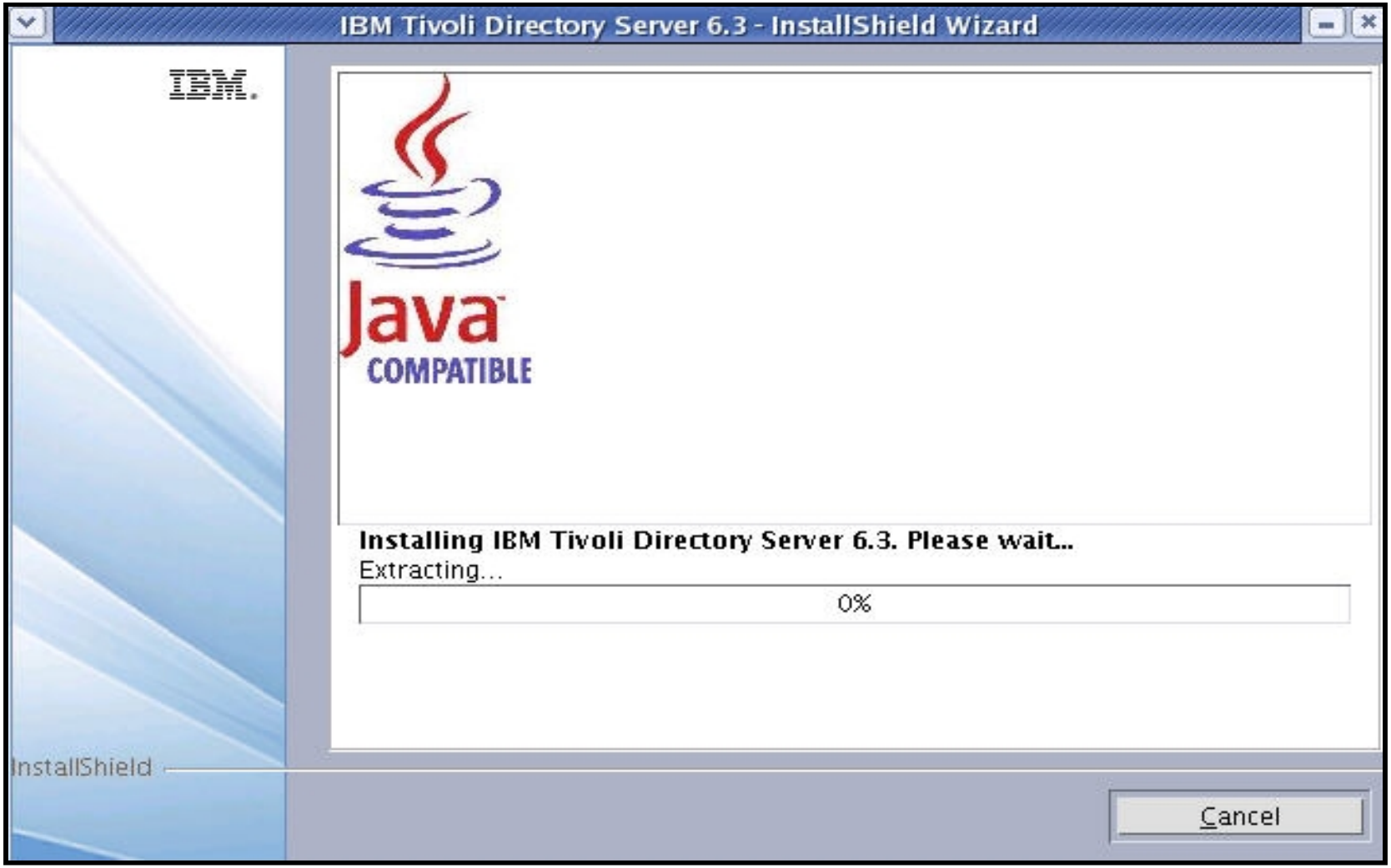
ISMP Install – Feature Confirmation



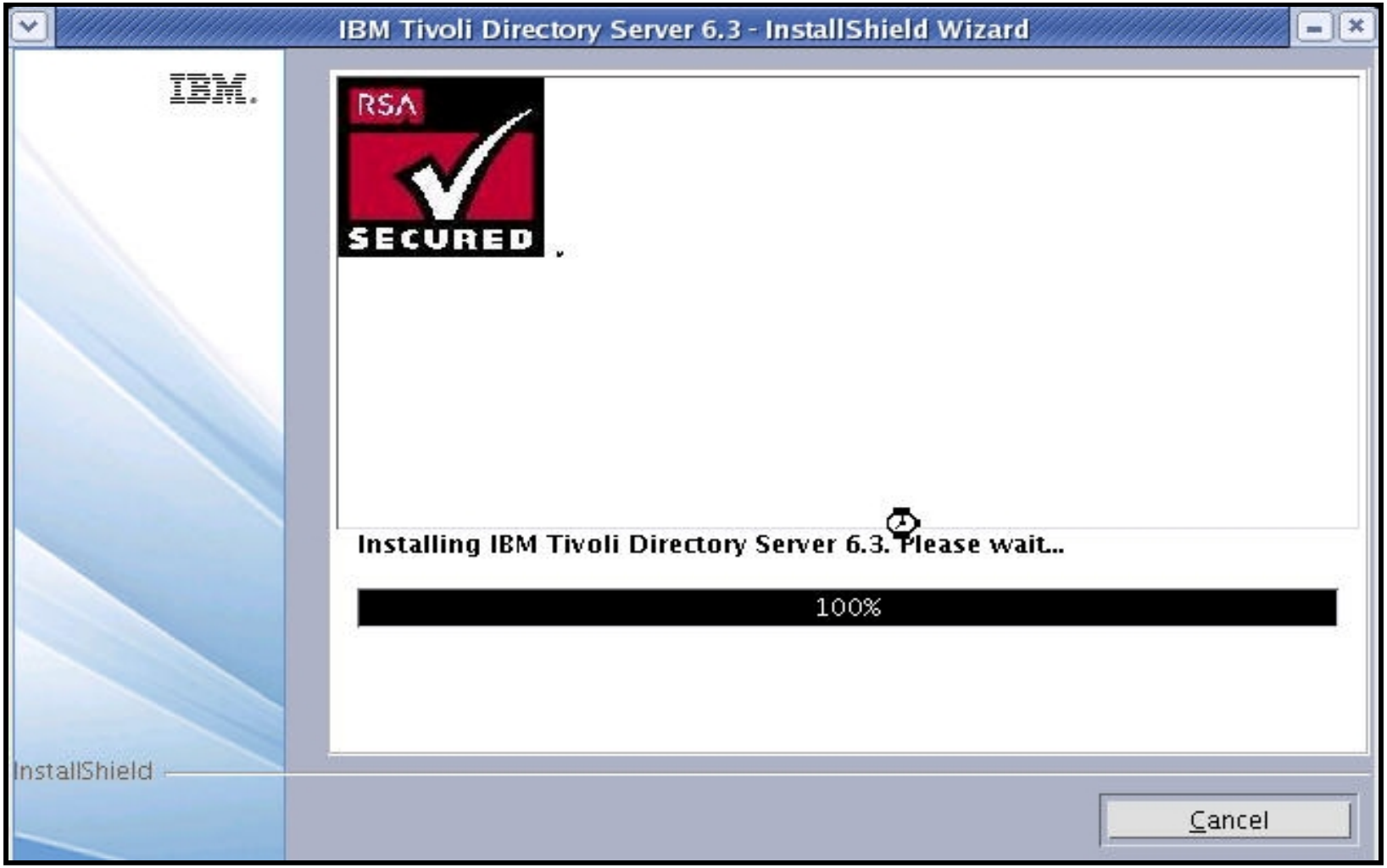
ISMP Install - DB2



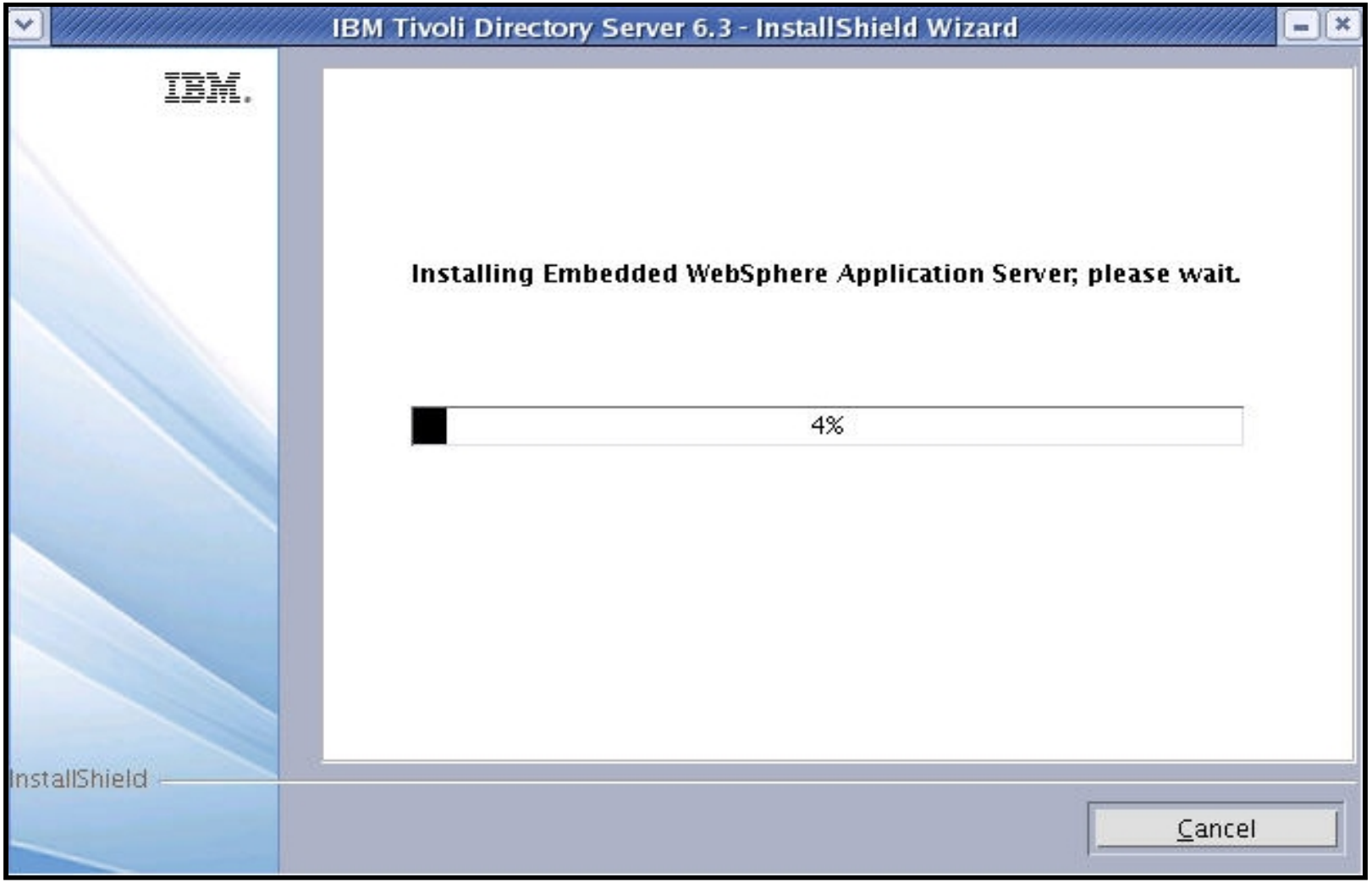
ISMP Install – Extracting ITDS images



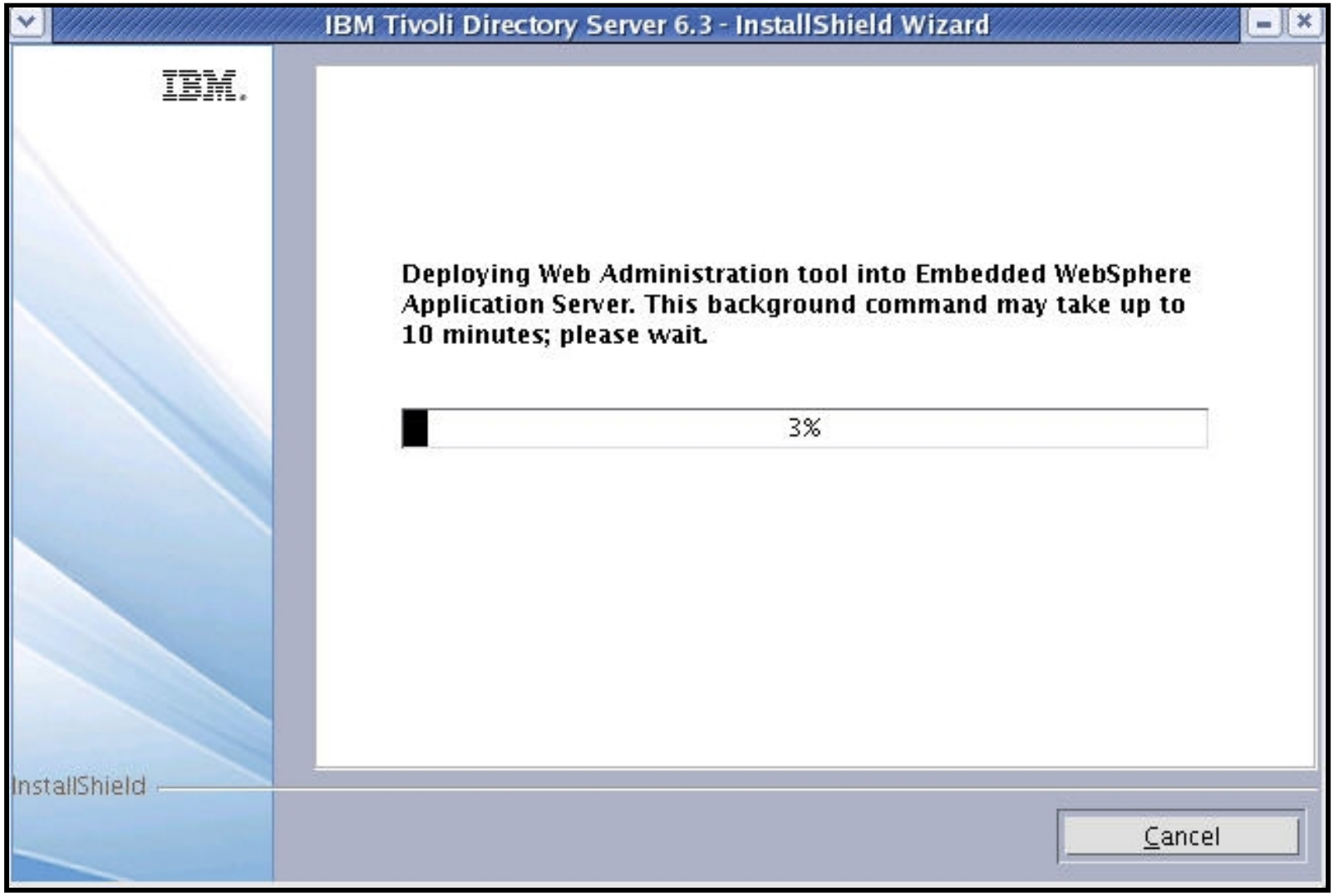
ISMP Install - ITDS



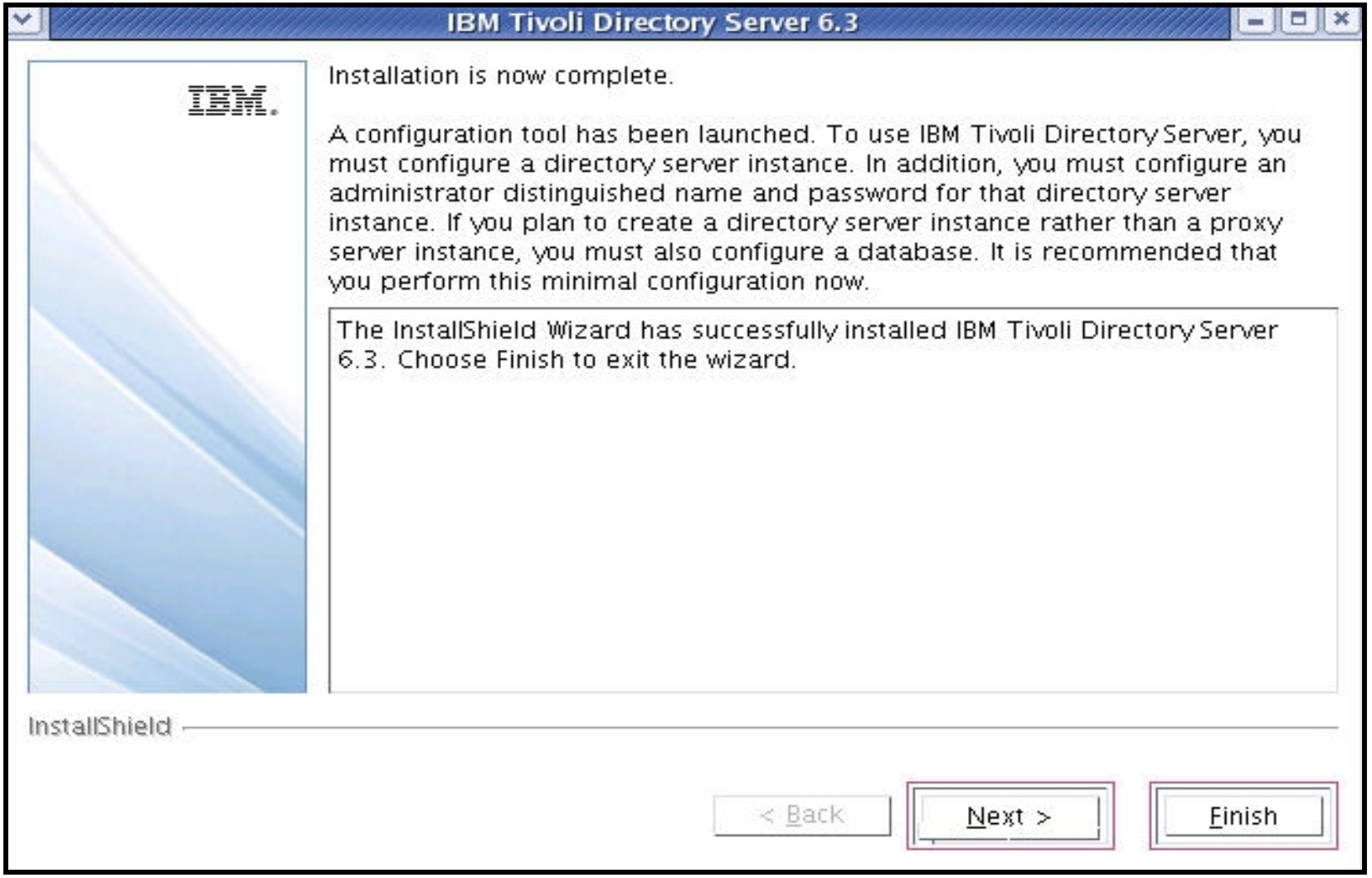
ISMP Install - eWAS



ISMP Install – Deploying WAT into eWAS



ISMP Install - Complete



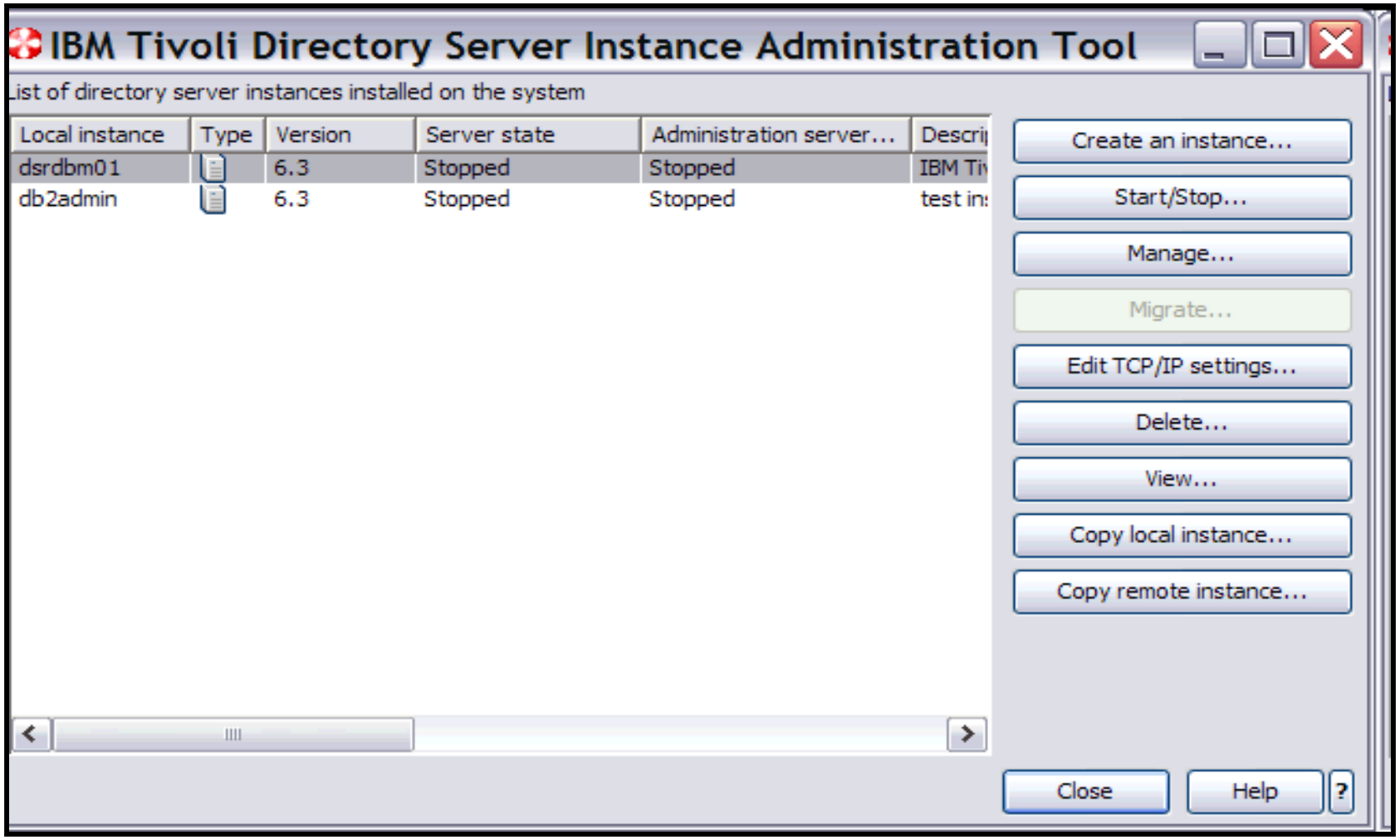
ISMP Install – Set Links via idslink utility

Set links to the ITDSv6.3 client and server utilities.

For usage information use “-?”

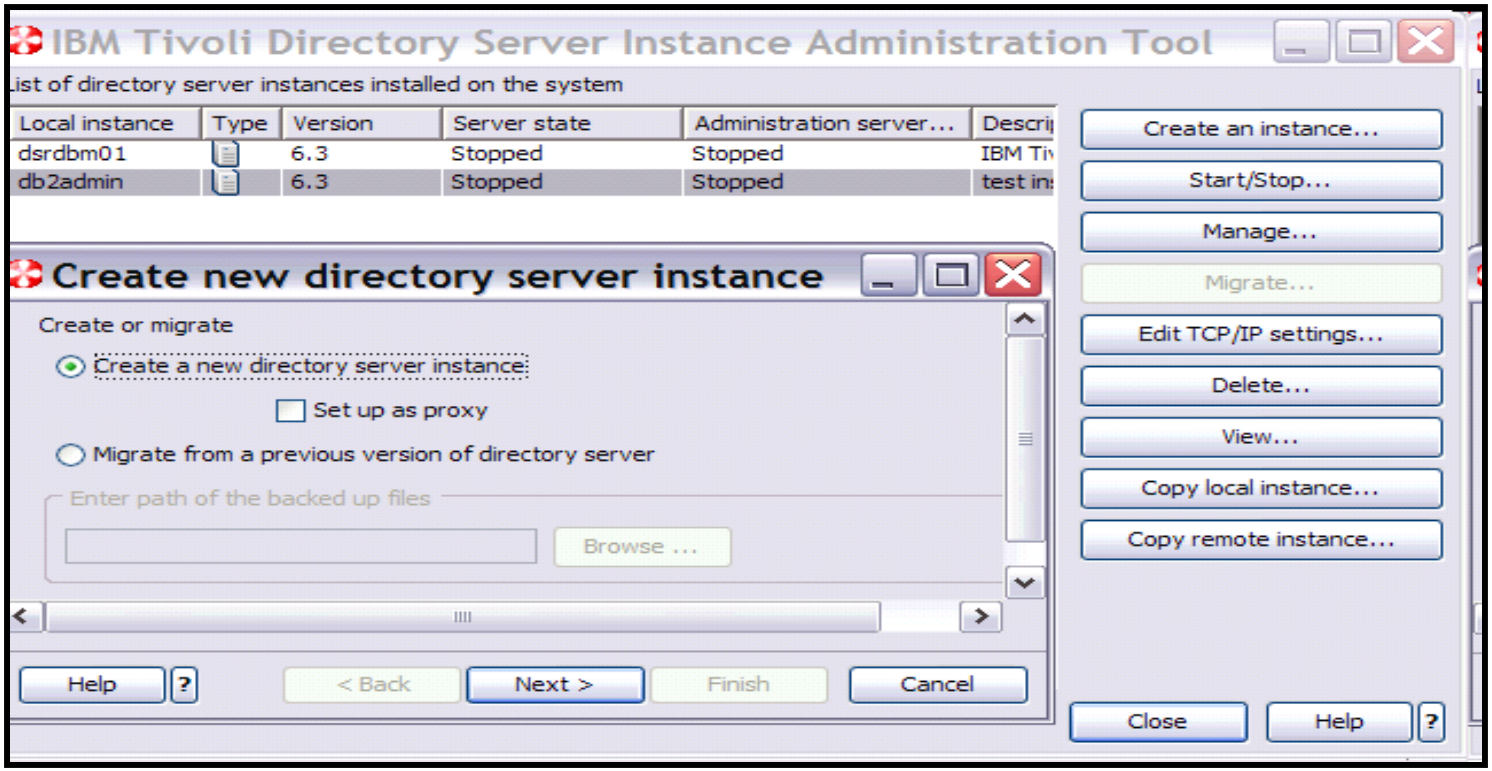
```
File  Edit  View  Terminal  Tabs  Help
root@tdsp521 /
==> cd /opt/IBM/ldap/V6.3/bin
root@tdsp521 /opt/IBM/ldap/V6.3/bin
==> ls
64                  idsldapdiff       idsrmlink         ldapexop
ibmdirctl           idsldapexop       idsversion        ldapmodify
idsdirctl           idsldapmodify     ldapadd           ldapmodrdn
idsldapadd          idsldapmodrdn     ldapchangepwd     ldapsearch
idsldapchangepwd    idsldapsearch     ldapcompare       ldaptrace
idsldapcompare      idsldaptrace      ldapdelete        tbindmsg
idsldapdelete       idslink           ldapdiff
root@tdsp521 /opt/IBM/ldap/V6.3/bin
==> ./idslink -g -i -s fullsrv -f
```

ITDS Instance Administration Tool

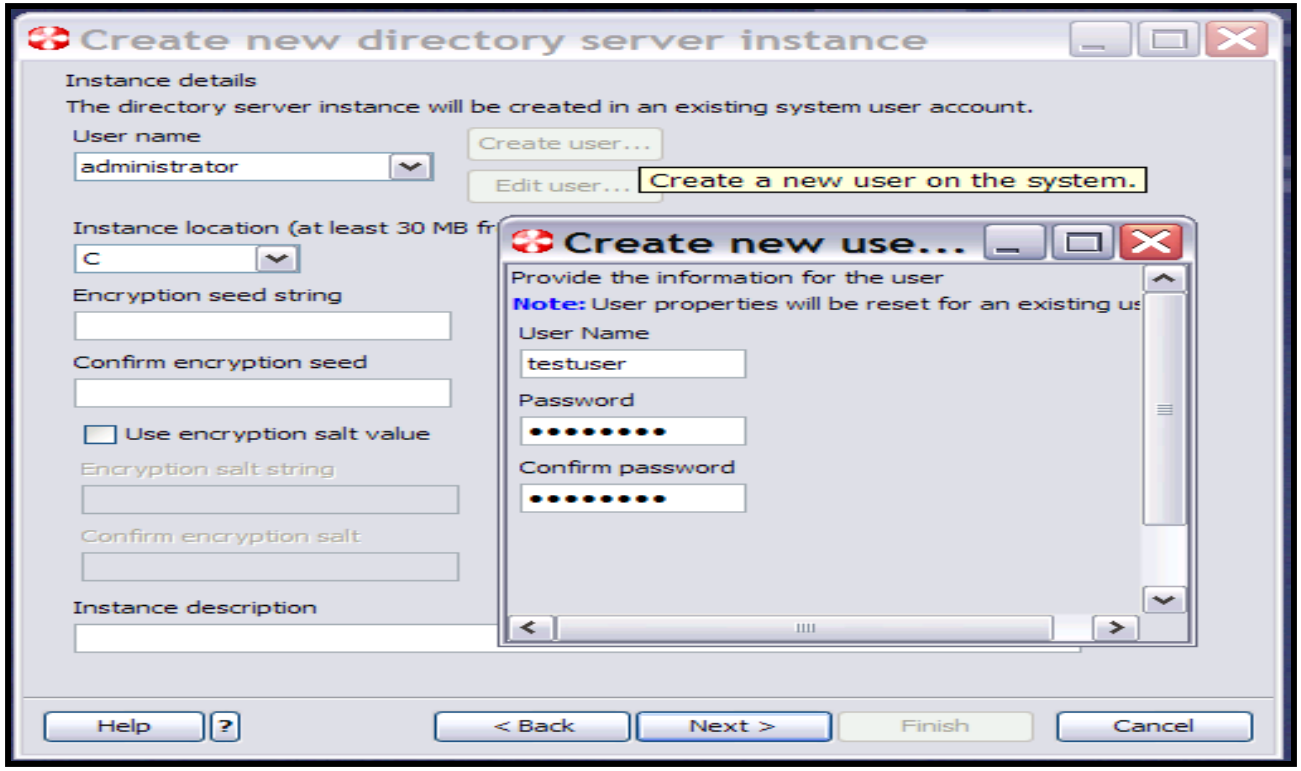


Creating a new TDS instance

- Click on create a new instance

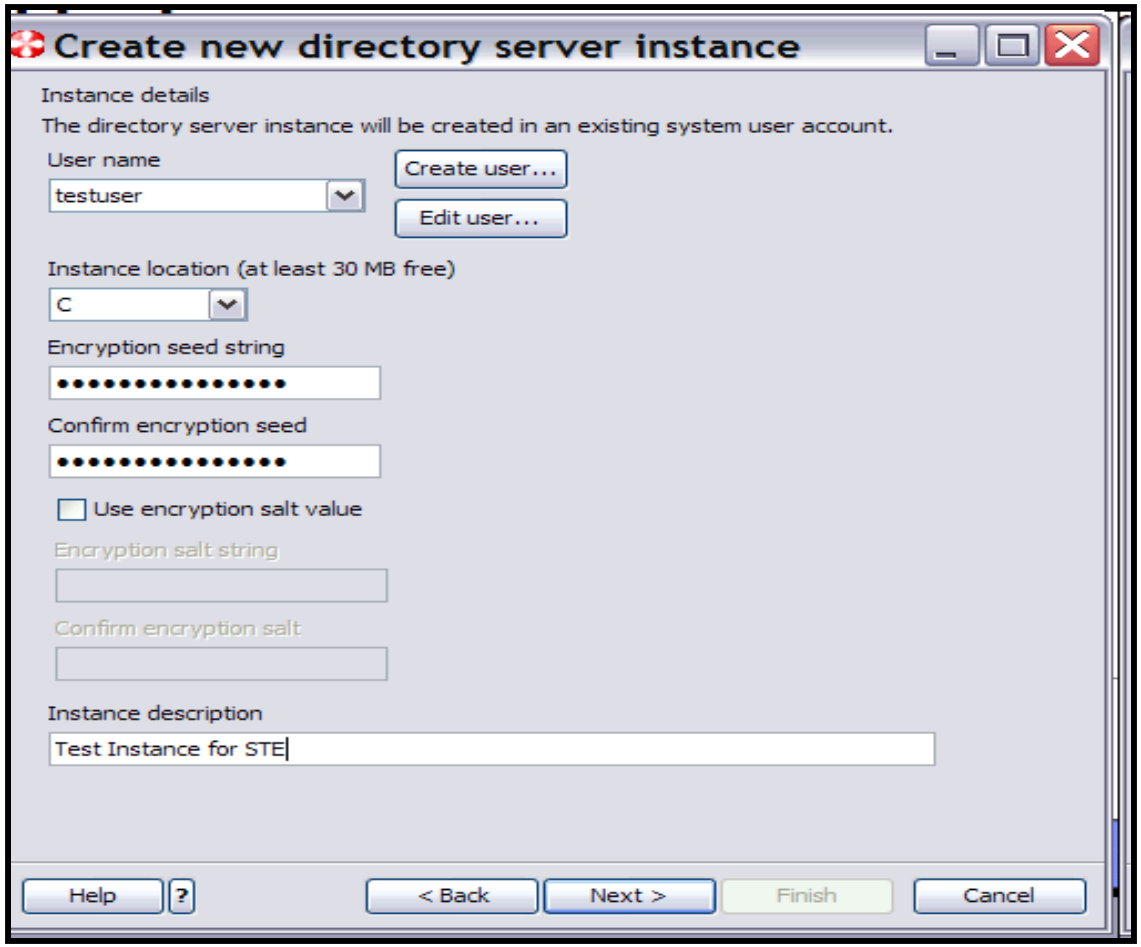


Creating a new TDS instance contd..

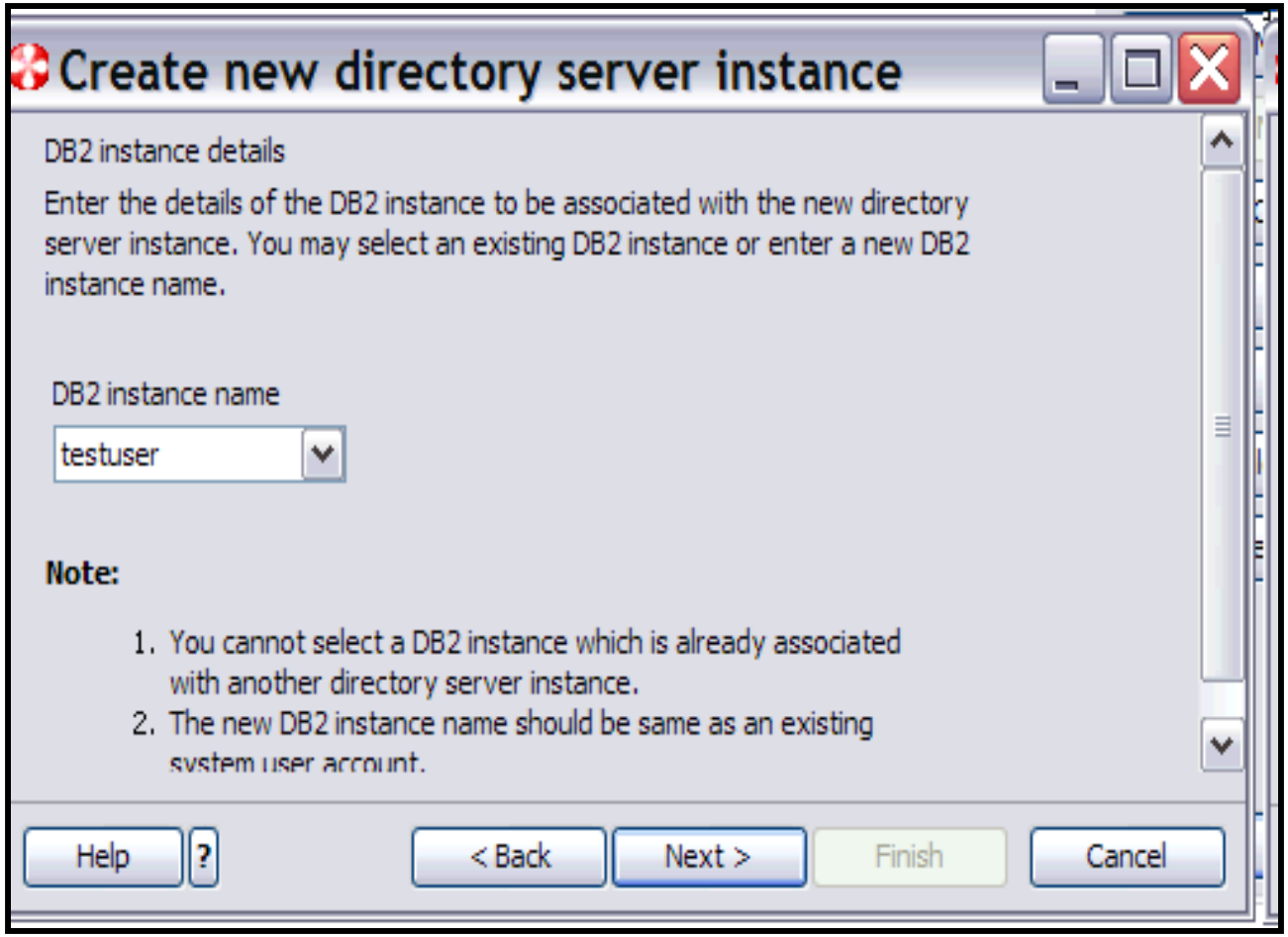


- An administrator instance exists by default, in this case we would create a new user that would be the TDS instance owner.

Creating a new TDS instance contd..

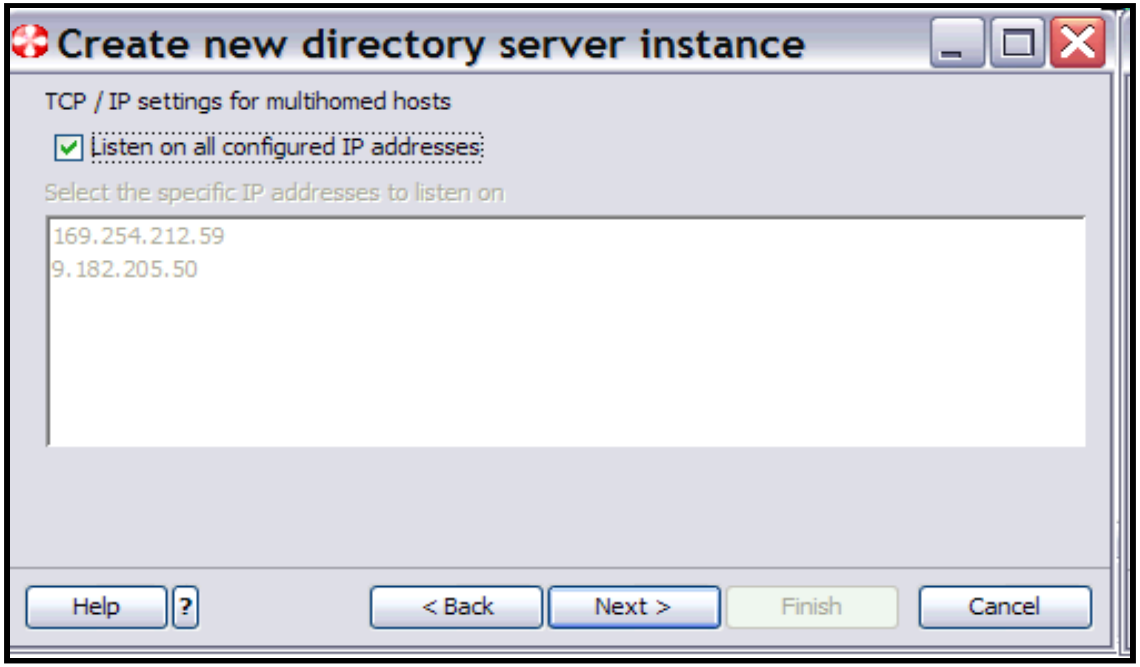


Creating a new TDS instance contd..

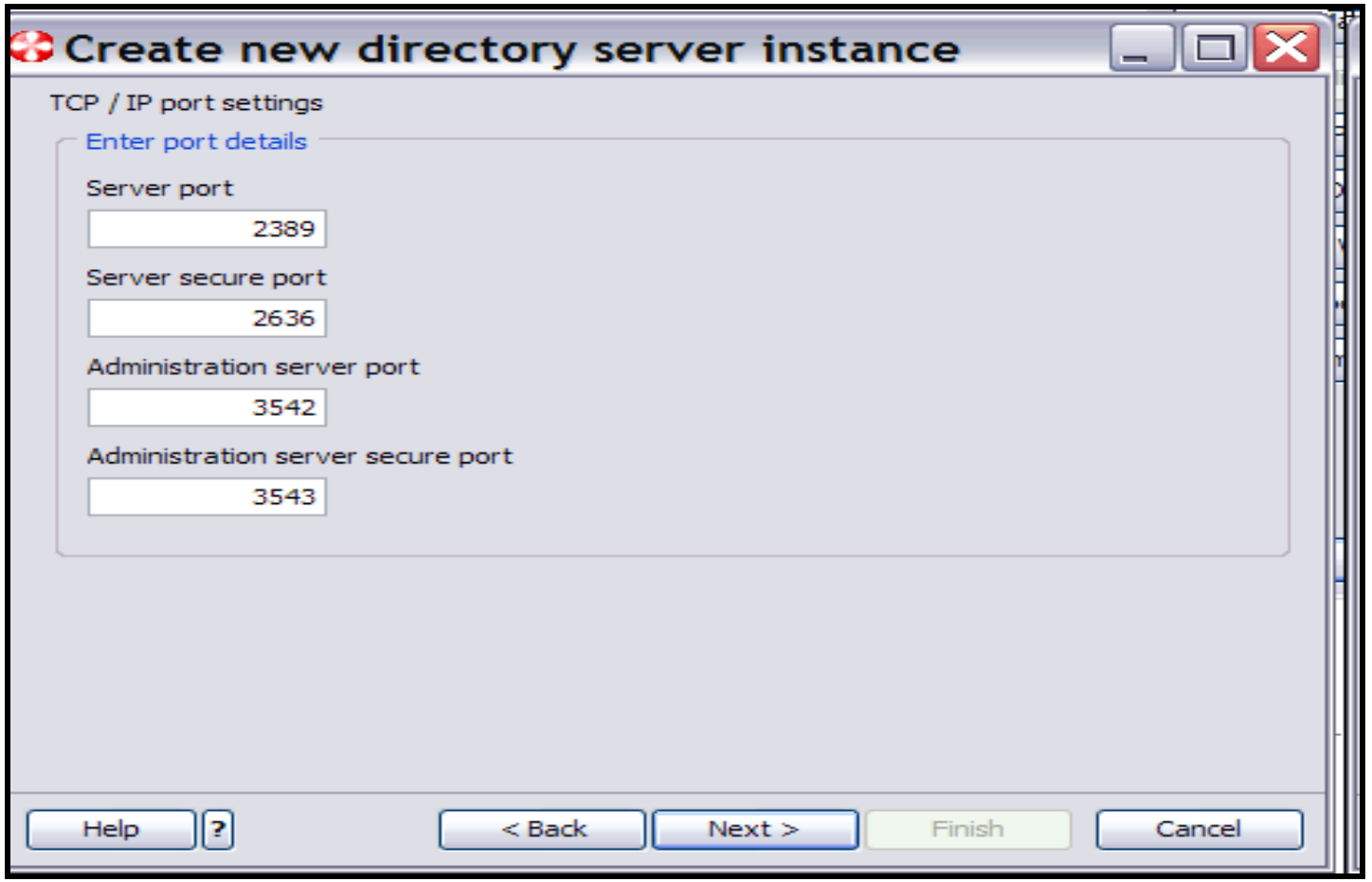


Creating a new TDS instance contd..

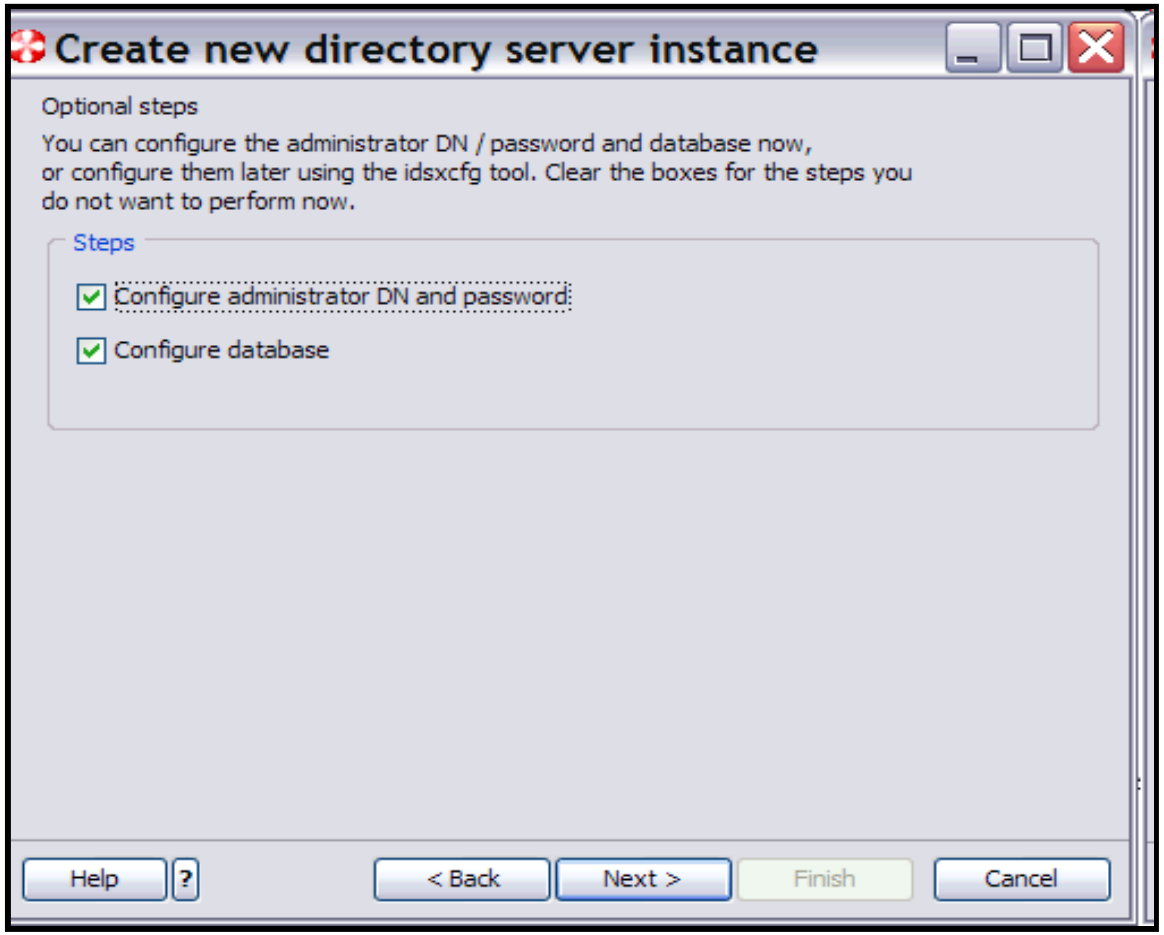
- Check the TCP/IP Settings as below.



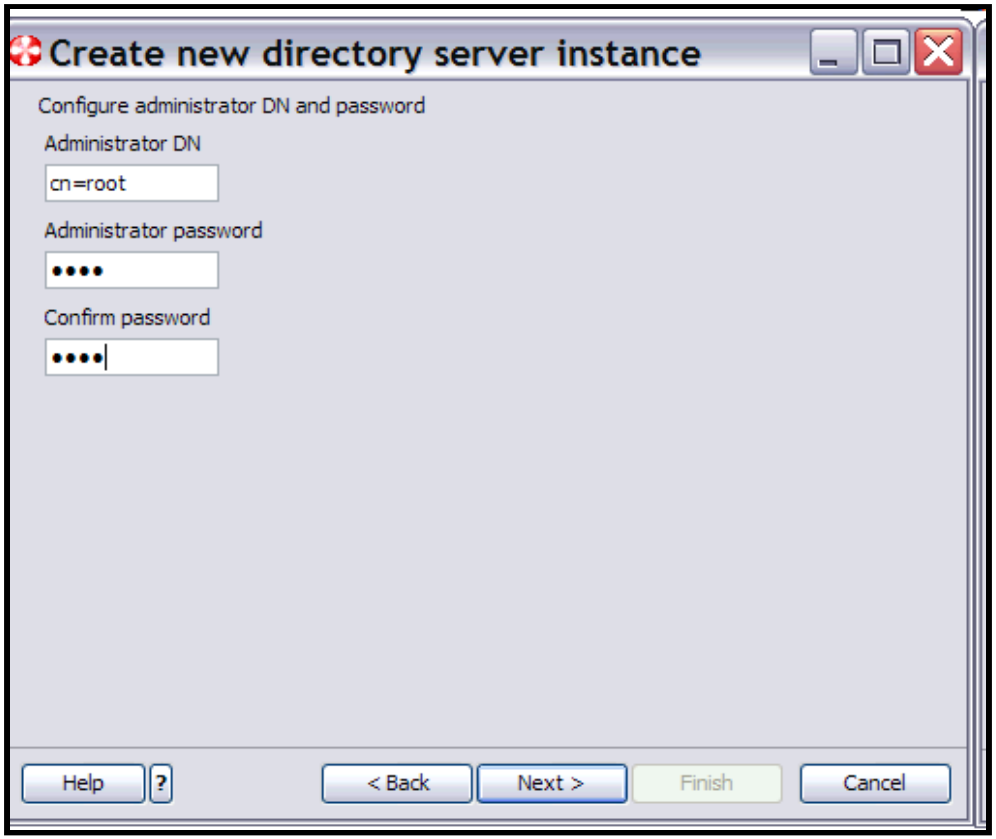
Creating a new TDS instance contd..



Configuration of the Instance

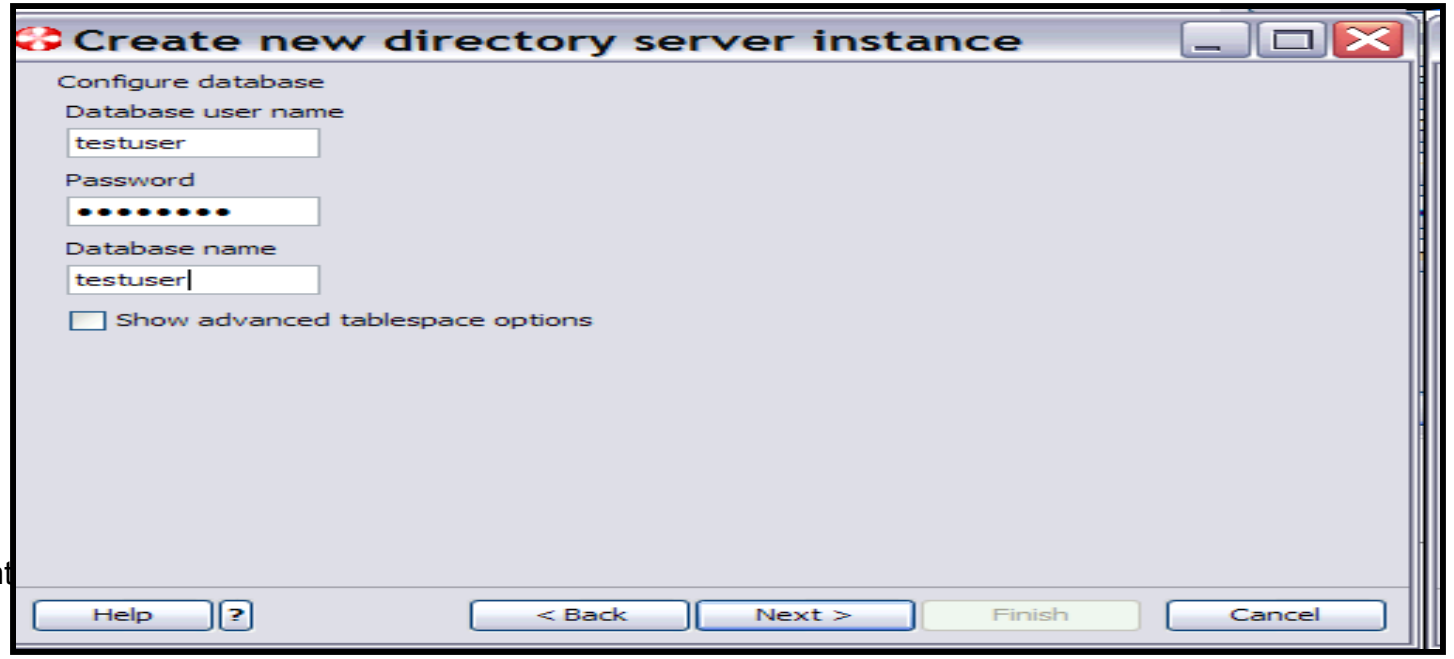


Configuration of the Instance contd..

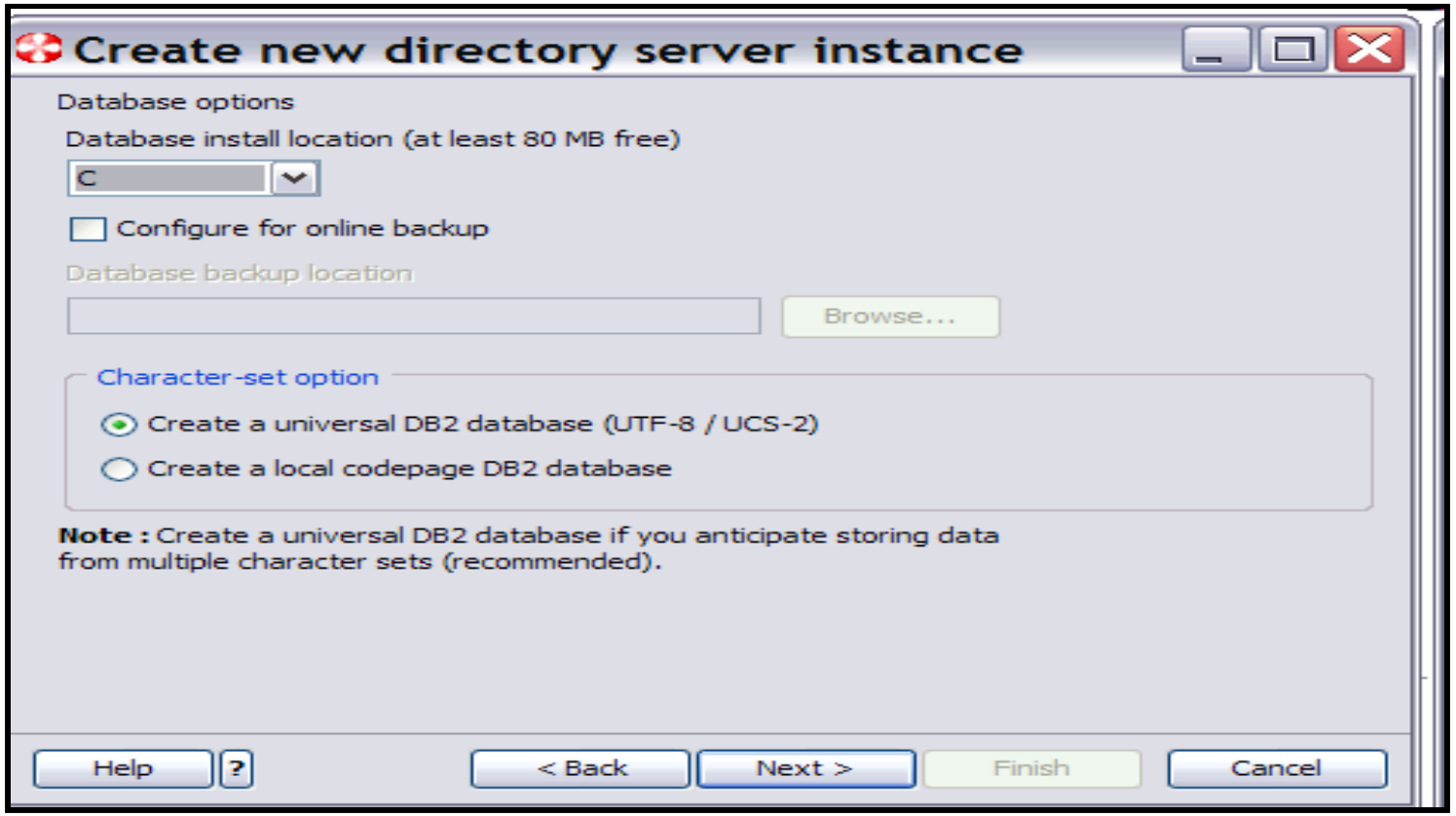


Configuration of the Instance contd..

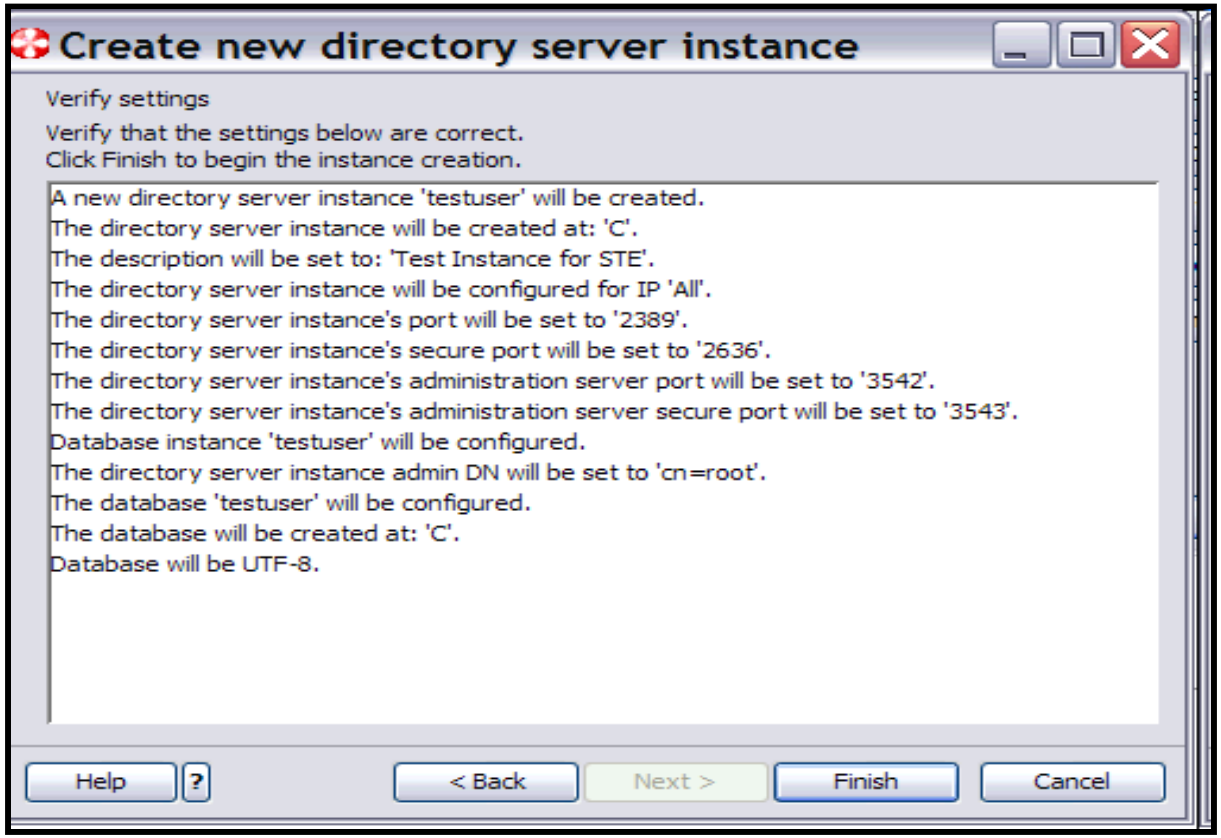
- Ent



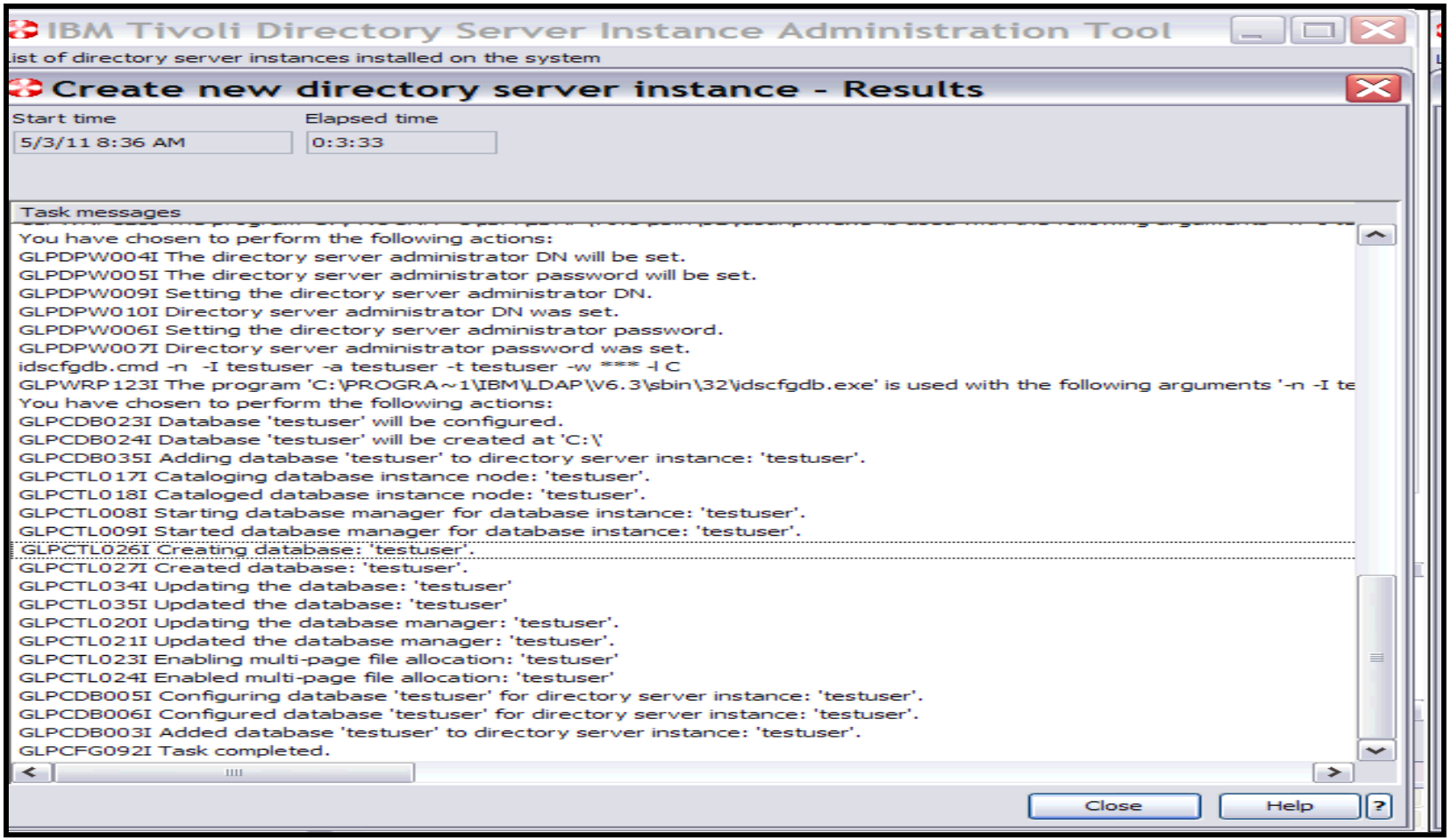
Configuration of the Instance contd..



Configuration of the Instance contd..



Configuration of the Instance completed



Instance configuration through command line

- Creating a user that will be the DB2 and TDS instance owner
- idsadduser -?
- Command to create the DB2 and directory server instance owner and groups.
- idsadduser [-u username [-w password] [-l home_dir] -g group_name] [-d debug_level] [-b output_file] [-q] [-n]] | -v | -?

Instance configuration through CLI contd..

- Adding the user

```
bash-3.2# idsadduser -u testuser -w secret -l /home/testuser -g idsldap
GLPWRP123I The program '/opt/IBM/ldap/V6.2/sbin/64/idsadduser' is used with the
following arguments '-u testuser -w ***** -l /home/testuser -g idsldap'.


You have chosen to perform the following actions:

GLPGRP019I System user will be created for directory server instance.
GLPGRP020I The system user 'testuser' will be created.
GLPGRP021I The user's primary group 'idsldap' will be created.
GLPGRP022I The home directory for user 'testuser' will be '/home/testuser'.
GLPGRP024I The user 'testuser' will be a member of group 'idsldap'.
GLPGRP025I The user 'root' will be a member of group 'idsldap'.
GLPGRP005I The password for user 'testuser' will be set.
Do you want to....
 (1) Continue with the above actions, or
 (2) Exit without making any changes:1


GLPGRP034I The group 'idsldap' already exists.
GLPGRP029I The user 'testuser' was created successfully.
GLPGRP030I The user 'testuser' was added to group 'idsldap' successfully.
GLPGRP047I The user 'root' is already a member of group 'idsldap'.
GLPGRP006I Setting the password for user 'testuser'
GLPGRP007I Successfully changed password for user 'testuser'.
bash-3.2#
```

Instance configuration through CLI contd..

- Verifying the user creation and setting write permissions

```
bash-3.2# cat /etc/passwd | grep testuser
testuser:!:266:201::/home/testuser:/usr/bin/ksh
bash-3.2# chmod 775 /home/testuser
bash-3.2# chown testuser /home/testuser
bash-3.2#
```

Instance creation

- Command to create a directory server instance.
- idsicrt -?
  - Usage: idsicrt **[-I instance_name [-e encrypt_seed]** [-g encrypt_salt] [-p port] [-s secureport] [-a adm_port] [-c adm_secureport] [-t db_instance] [-C] [-i ipaddress] **[-l inst_location]** [-r description] [-d debug_level] [-b output_file] [-G group_name] [-w user_password] [-q] **[-n]** [-x]] | -v | -?
  - Ex. idsicrt -I testuser -e 123456789012345 -l /home/testuser -n

Instance creation contd..

```
bash-3.2# idsicrt -I testuser -e 123456789012345 -l /home/testuser -n
GLPWRP123I The program '/opt/IBM/ldap/V6.3/sbin/64/idsicrt' is used with the fo
llowing arguments 'idsicrt -I testuser -e ***** -l /home/testuser -n'.
You have chosen to perform the following actions:

GLPICR020I A new directory server instance 'testuser' will be created.
GLPICR057I The directory server instance will be created at: '/home/testuser'.
GLPICR013I The directory server instance's port will be set to '4389'.
GLPICR014I The directory server instance's secure port will be set to '4636'.
GLPICR015I The directory instance's administration server port will be set to '
3546'.
GLPICR016I The directory instance's administration server secure port will be s
et to '3547'.
GLPICR019I The description will be set to: 'IBM Tivoli Directory Server Instanc
e V6.3'.
GLPICR021I Database instance 'testuser' will be configured.
GLPICR028I Creating directory server instance: 'testuser'.
GLPICR025I Registering directory server instance: 'testuser'.
GLPICR026I Registered directory server instance: : 'testuser'.
GLPICR049I Creating directories for directory server instance: 'testuser'.
GLPICR050I Created directories for directory server instance: 'testuser'.
GLPICR043I Creating key stash files for directory server instance: 'testuser'.
GLPICR044I Created key stash files for directory server instance: 'testuser'.
GLPICR040I Creating configuration file for directory server instance: 'testuser
'.
GLPICR041I Created configuration file for directory server instance: 'testuser'
.
GLPICR034I Creating schema files for directory server instance: 'testuser'.
GLPICR035I Created schema files for directory server instance: 'testuser'.
GLPICR037I Creating log files for directory server instance: 'testuser'.
GLPICR038I Created log files for directory server instance: 'testuser'.
GLPICR088I Configuring log files for directory server instance: 'testuser'.
GLPICR089I Configured log files for directory server instance: 'testuser'.
GLPICR085I Configuring schema files for directory server instance: 'testuser'.
GLPICR086I Configured schema files for directory server instance: 'testuser'.
```

Instance creation completed

```
GLPICR073I Configuring ports and IP addresses for directory server instance: 't
estuser'.
GLPICR074I Configured ports and IP addresses for directory server instance: 'te
stuser'.
GLPICR077I Configuring key stash files for directory server instance: 'testuser
'.
GLPICR078I Configured key stash files for directory server instance: 'testuser'
.
GLPICR046I Creating profile scripts for directory server instance: 'testuser'.
GLPICR047I Created profile scripts for directory server instance: 'testuser'.
GLPICR103I Adding instance information to the .profile file for directory serve
r instance: 'testuser'.
GLPICR104I Added instance information to the .profile file for directory server
 instance: 'testuser'.
GLPICR069I Adding entry to /etc/inittab for the administration server for direc
tory instance: 'testuser'.
GLPICR070I Added entry to /etc/inittab for the administration server for direct
ory instance: 'testuser'.
GLPICR118I Creating runtime executable for directory server instance: 'testuser
'.
GLPICR119I Created runtime executable for directory server instance: 'testuser'
.
GLPCTL074I Starting admin server for directory server instance: 'testuser'.
GLPCTL075I Started admin server for directory server instance: 'testuser'.
GLPICR029I Created directory server instance: : 'testuser'.
GLPICR031I Adding database instance 'testuser' to directory server instance: 't
estuser'.
GLPCTL002I Creating database instance: 'testuser'.
GLPCTL003I Created database instance: 'testuser'.
GLPICR133I Setting the DB2 registry for database instance 'testuser' to allow DB2 SELECTIVITY.
GLPICR134I The DB2 registry for database instance 'testuser' has been set to allow DB2 SELECTIVITY.
GLPCTL017I Cataloging database instance node: 'testuser'.
GLPCTL018I Cataloged database instance node: 'testuser'.
GLPCTL008I Starting database manager for database instance: 'testuser'.
GLPCTL009I Started database manager for database instance: 'testuser'.
GLPCTL049I Adding TCP/IP services to database instance: 'testuser'.
GLPCTL050I Added TCP/IP services to database instance: 'testuser'.
GLPICR081I Configuring database instance 'testuser' for directory server instance: 'testuser'.
GLPICR082I Configured database instance 'testuser' for directory server instance: 'testuser'.
GLPICR052I Creating DB2 instance link for directory server instance: 'testuser'.
GLPICR053I Created DB2 instance link for directory server instance: 'testuser'.
GLPICR032I Added database instance 'testuser' to directory server instance: 'testuser'.
bash-3.2#
```

Instance configuration

- Command to configure database with directory server instance.
- idscfgdb -?

```
- idscfgdb [-I instance_name] [-w db_admin_pw]
[-a db_admin_id -t db_name -l db_location [-x]]
[-collate [on|off]] [-c ] [-k backup_dir] [-m
ts_type] [-u usr_ts_loc] [-U usr_ts_size] [-r
ldap_ts_loc] [-R ldap_ts_size] [-z ext_size] [-f
config_file] [-d debug_level] [-b output_file]
[-q] [-n]]
```

Ex. idscfgdb -I testuser -l /home/testuser -a testuser -w secret -t testuser -n

Instance configuration completed

```
bash-3.2# idscfgdb -I testuser -l /home/testuser -a testuser -w secret -t testuser -n
GLPWRP123I The program '/opt/IBM/ldap/V6.3/sbin/64/idscfgdb' is used with the following argumen
ts '-I testuser -l /home/testuser -a testuser -w ***** -t testuser -n'.
You have chosen to perform the following actions:

GLPCDB023I Database 'testuser' will be configured.
GLPCDB024I Database 'testuser' will be created at '/home/testuser'
GLPCDB035I Adding database 'testuser' to directory server instance: 'testuser'.
GLPCTL017I Cataloging database instance node: 'testuser'.
GLPCTL018I Cataloged database instance node: 'testuser'.
GLPCTL008I Starting database manager for database instance: 'testuser'.
GLPCTL009I Started database manager for database instance: 'testuser'.
GLPCTL026I Creating database: 'testuser'.
GLPCTL027I Created database: 'testuser'.
GLPCTL034I Updating the database: 'testuser'
GLPCTL035I Updated the database: 'testuser'
GLPCTL020I Updating the database manager: 'testuser'.
GLPCTL021I Updated the database manager: 'testuser'.
GLPCTL023I Enabling multi-page file allocation: 'testuser'
GLPCTL024I Enabled multi-page file allocation: 'testuser'
GLPCDB005I Configuring database 'testuser' for directory server instance: 'testuser'.
GLPCDB006I Configured database 'testuser' for directory server instance: 'testuser'.
GLPCTL037I Adding local loopback to database: 'testuser'.
GLPCTL038I Added local loopback to database: 'testuser'.
GLPCTL011I Stopping database manager for the database instance: 'testuser'.
GLPCTL012I Stopped database manager for the database instance: 'testuser'.
GLPCTL008I Starting database manager for database instance: 'testuser'.
GLPCTL009I Started database manager for database instance: 'testuser'.
GLPCDB003I Added database 'testuser' to directory server instance: 'testuser'.
bash-3.2#
```

Setting up Admin DN and password

- Command to configure administrative DN and password.

idsdnpw -?

```
idsdnpw [-I instance_name [-u user_DN] [-p
  password] [-f config_file] [-d debug_level] [-
  b output_file] [-q] [-n]] | -v | -?
```

Ex. idsdnpw -I testuser -u cn=root -p secret –n

```
bash-3.2# idsdnpw -I testuser -u cn=root -p secret -n
GLPWRP123I The program '/opt/IBM/ldap/V6.3/sbin/64/idsdnpw' is used with t
s '-I testuser -u cn=root -p ***** -n'.
You have chosen to perform the following actions:

GLPDPW004I The directory server administrator DN will be set.
GLPDPW005I The directory server administrator password will be set.
GLPDPW009I Setting the directory server administrator DN.
GLPDPW010I Directory server administrator DN was set.
GLPDPW006I Setting the directory server administrator password.
GLPDPW007I Directory server administrator password was set.
bash-3.2#
```

Verifying the configuration of instance

- Verify if the server is configured properly
- idsilist –a will list the details of the instance

```
-----------------------------------
Instance 5:

Name: testuser
Version: 6.3
Location: /home/testuser
Description: IBM Tivoli Directory Server Instance V6.3
IP Addresses: All available
Port: 4389
Secure Port: 4636
Admin Server Port: 3546
Admin Server Secure Port: 3547
Type: Directory Server
bash-3.2#
```

Adding a suffix

- Stop the server ibmslapd –I <instance name> -k
- Idscfgsuf –I <instance name> -s <suffix name>

```
bash-3.2# ibmslapd -I testuser -k
GLPSRV124I The directory server instance 'testuser' is already stopped.
bash-3.2# idscfgsuf -I testuser -s "ou=India,o=ibm"
GLPWRP123I The program '/opt/IBM/ldap/V6.3/sbin/64/idscfgsuf' is used with the following argume
nts '-I testuser -s ou=India,o=ibm'.
You have chosen to perform the following actions:

GLPCSF007I Suffix 'ou=India,o=ibm' will be added to the configuration file of the directory ser
ver instance 'testuser'.

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


GLPCSF004I Adding suffix: 'ou=India,o=ibm'.
GLPCSF005I Added suffix: 'ou=India,o=ibm'.
bash-3.2#
```

Verifying whether the suffix is correctly configured

- Start the server

```
# ibmslapd -I testuser -n
```

```
bash-3.2# ibmslapd -I testuser
GLPSRV041I Server starting.
GLPCTL113I Largest core file size creation limit for the process (in bytes): '1073741312'(Soft limit) an
'-1'(Hard limit).
GLPCTL121I Maximum Data Segment(Kbytes) soft ulimit for the process was 131072 and it is modified to the
rescribed minimum 262144.
GLPCTL122I Maximum File Size(512 bytes block) soft ulimit for the process is 2097151 and the prescribed
imum is 2097151.
GLPCTL122I Maximum Open Files soft ulimit for the process is 2000 and the prescribed minimum is 500.
GLPCTL121I Maximum Physical Memory(Kbytes) soft ulimit for the process was 32768 and it is modified to t
prescribed minimum 262144.
GLPCTL121I Maximum Stack Size(Kbytes) soft ulimit for the process was 32768 and it is modified to the pr
cribed minimum 65536.
GLPCTL119I Maximum Virtual Memory(Kbytes) soft ulimit for the process is -1 and the prescribed minimum i
1048576.
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.
GLPSRV155I The DIGEST-MD5 SASL Bind mechanism is enabled in the configuration file.
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.
GLPCOM023I The postoperation plugin is successfully loaded from libpsearch.a.
GLPCOM024I The extended Operation plugin is successfully loaded from libpsearch.a.
GLPCOM025I The audit plugin is successfully loaded from libldapaudit.a.
GLPCOM024I The extended Operation plugin is successfully loaded from libevent.a.
GLPCOM023I The postoperation plugin is successfully loaded from libpsearch.a.
GLPCOM024I The extended Operation plugin is successfully loaded from libpsearch.a.
```

Verifying suffix configuration contd..

- Server started, check the non SSL port, the TDS server will listen to this port

```
GLPCOM024I The extended Operation plugin is successfully loaded from libevent.a.
GLPCOM023I The postoperation plugin is successfully loaded from libpsearch.a.
GLPCOM024I The extended Operation plugin is successfully loaded from libpsearch.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.
GLPCOM023I The postoperation plugin is successfully loaded from libpsearch.a.
GLPCOM024I The extended Operation plugin is successfully loaded from libpsearch.a.
GLPCOM022I The database plugin is successfully loaded from libback-rdbm.a.
GLPCOM010I Replication plugin is successfully loaded from libldaprepl.a.
GLPSRV189I Virtual list view support is enabled.
GLPCOM021I The preoperation plugin is successfully loaded from libpta.a.
GLPSRV194I The Record Deleted Entries feature is disabled. Deleted entries are immediately remo
e database.
GLPSRV207I Group conflict resolution during replication is disabled.
GLPSRV200I Initializing primary database and its connections.
GLPRDB126I The directory server will not use DB2 selectivity.
GLPCOM024I The extended Operation plugin is successfully loaded from libloga.a.
GLPCOM024I The extended Operation plugin is successfully loaded from libidsfget.a.
GLPSRV180I Pass-through authentication is disabled.
GLPCOM003I Non-SSL port initialized to 4389.
```

Verify if the suffix has been added

- Query idsldapsearch on the port to which the server is listening to, the suffix *"ou=India, o=ibm"* has been configured.

```
bash-3.2# idsldapsearch -p 4389 -D cn=root -w secret -s base -b "" objectclass=* | grep naming
namingcontexts=CN=SCHEMA
namingcontexts=CN=CONFIGURATION
namingcontexts=CN=LOCALHOST
namingcontexts=CN=IBMPOLICIES
namingcontexts=CN=DELETED OBJECTS
namingcontexts=OU=INDIA,O=IBM
ibm-configurationnamingcontext=CN=CONFIGURATION
bash-3.2#
```

Adding an entry to the suffix

- Create an ldif file containing the entries to be added, and use it for adding the entries with idsldapadd.

```
bash-3.2# idsldapadd -D cn=root -w secret -p 4389 -i testfile.ldif
Operation 0 adding new entry cn=Nilesh, ou=India, o=ibm

Operation 1 adding new entry cn=Shital, ou=India, o=ibm

bash-3.2#
```

```
bash-3.2# cat /home/testuser/testfile.ldif
dn: cn=Nilesh, ou=India, o=ibm
objectclass: inetOrgPerson
objectclass: organizationalPerson
objectclass: person
objectclass: top
sn: patel

dn: cn=Shital, ou=India, o=ibm
objectclass: inetOrgPerson
objectclass: organizationalPerson
objectclass: person
objectclass: top
sn: patil
```

Performing search on the entry

```
bash-3.2# idsldapsearch -p 4389 -D cn=root -w secret -s base -b "cn=Nilesh,ou=India,o=ibm" obje
ctclass=*
cn=Nilesh,ou=India,o=ibm
objectclass=inetOrgPerson
objectclass=organizationalPerson
objectclass=person
objectclass=top
sn=patel
cn=Nilesh
bash-3.2#
```

Fix Pack Upgrade

- The fix pack for ITDSV 6.3 can be found at the link below,
  https://www-304.ibm.com/support/docview.wss?rs=767&uid=swg21496581#v63

Tivoli Directory Server V6.3 information				
Product Level	Server / Client		Web Administration Tool (IDSWebApp)	
	v.r.m.f	Build date (Mmm DD YYYY)	Version	Build date (Day MM/DD/YYYY)
6.3 Base	6.3.0.0	Aug 4 2010	6.0000	Thu 07/29/2010
6.3.0.0-TIV-ITDS-IF0001	6.3.0.1	Nov 18 2010	6.0001	Thu 11/18/2010
6.3.0.0-TIV-ITDS-IF0002	6.3.0.2	Feb 1 2011	6.0001	Thu 11/18/2010
6.3.0.0-TIV-ITDS-IF0003	6.3.0.3	Apr 8 2011	6.0001	Thu 11/18/2010

Before Installing the fix

- Terminate all the daemon processes associated with the IBM Tivoli Directory Server V6.3 that includes
  - The Directory Server
  - The Administration Server
  - The Proxy Server if present

- The procedure to back out installation of the fix is different from the earlier versions, you may need to reinstall / uninstall the product for backing out. So read the back-out procedure first or you might first check the fix pack behavior in your test environment.

Before Installing the fix contd..

- Extract (un-tar or unzip) the fix archive to a directory with adequate free space.
  - **AIX** 535 MB **6.3.0.0-TIV-ITDS-AIX-IF0003**
  - **HP-UX** (IA64) 451 MB **6.3.0.0-TIV-ITDS-HPUXIA64-IF0003**
  - **Linux** (IA32) 260 MB **6.3.0.0-TIV-ITDS-Linux32-IF0003**
  - **Linux** (x86-64) 264 MB **6.3.0.0-TIV-ITDS-LinuxX64-IF0003**
  - **Linux** i/p 270 MB **6.3.0.0-TIV-ITDS-Linuxip-IF0003**
  - **Linux** s390 235 MB **6.3.0.0-TIV-ITDS-Linuxz-IF0003**
  - **Solaris** (SPARC) 467 MB **6.3.0.0-TIV-ITDS-SolarisSparc-IF0003**
  - **Solaris** (x86-64) 374 MB **6.3.0.0-TIV-ITDS-SolarisX64-IF0003**
  - **Windows** (IA32) 703 MB **6.3.0.0-TIV-ITDS-Win32-IF0003**
  - **Windows** (x86-64) 780 MB **6.3.0.0-TIV-ITDS-WinX64-IF0003**

Installation of fix pack

- Stop all Tivoli Directory Server client or server processes
  - The directory server

    ```
    ibmslapd -I <directory server instance> -k
    ```
  - The administration daemon

    ```
    idsdiradm -I <instancename> -k
    ```
  - The custom LDAP applications
  - If tracing is enabled, turn off tracing

    ```
    ldtrc off
    ```

Installation of fix pack contd..

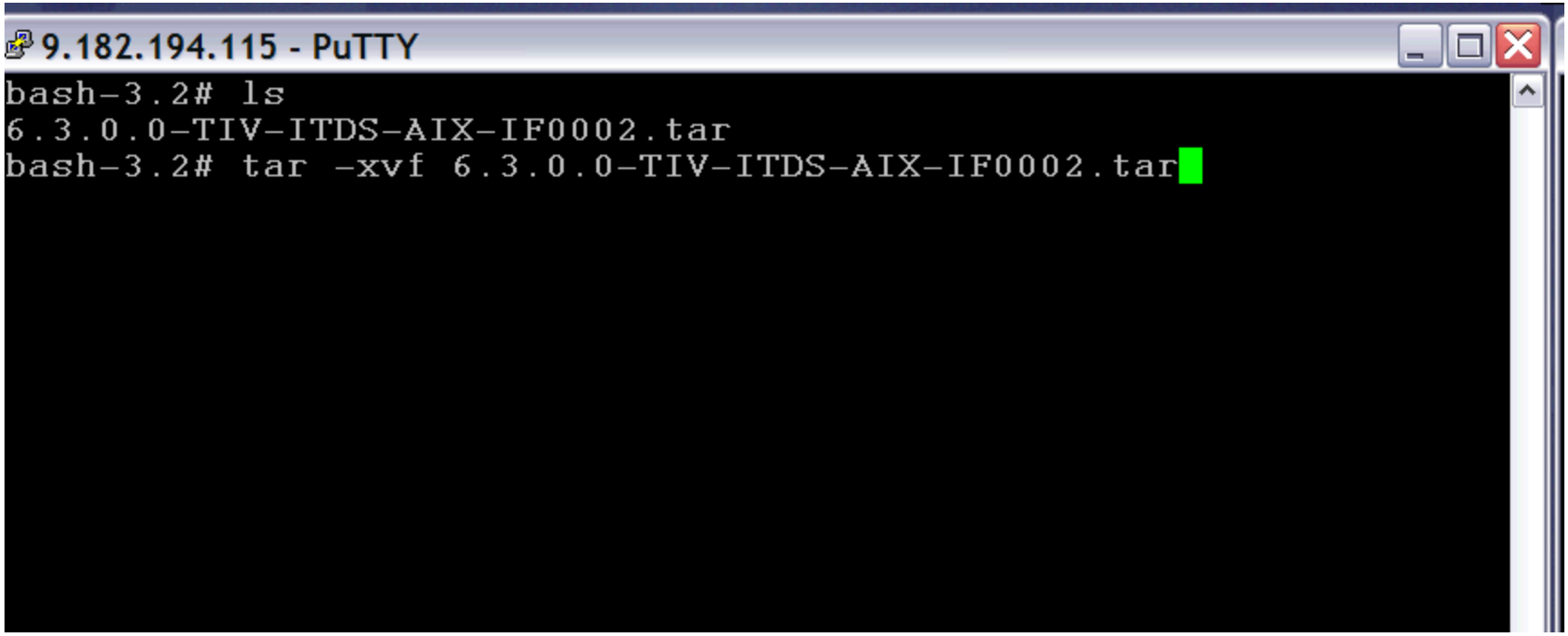
- On AIX, Linux, Solaris, and HP-UX systems, go to the subdirectory where you un-tarred the file

```
idsinstall -u -f
```

- On Windows systems, go to the subdirectory where you unzipped the file
  - ITDS_Client-only
  - ITDS_Full
  - whitepages.
  - Open either the ITDS_Client-only or ITDS_Full folder
    - Run *install_tds.exe* as a user with Administrator privilege. Follow the instructions on the InstallShield GUI panels that are displayed. The installation program installs updates to the components that are already installed on your system.

Installation of fix pack contd..

- For AIX



Installation of fix pack contd..

- Un-tar is complete

```
x 6.3.0.0-TIV-ITDS-AIX-IF0002/whitepages/Aix64/install/engine
x 6.3.0.0-TIV-ITDS-AIX-IF0002/whitepages/Aix64/install/engine/en
gine.jar, 2981803 bytes, 5824 tape blocks
x 6.3.0.0-TIV-ITDS-AIX-IF0002/whitepages/Aix64/install/engine/ex
t
x 6.3.0.0-TIV-ITDS-AIX-IF0002/whitepages/Aix64/install/engine/ex
t/aixppk.jar, 665914 bytes, 1301 tape blocks
x 6.3.0.0-TIV-ITDS-AIX-IF0002/whitepages/Aix64/install/engine/li
brary
x 6.3.0.0-TIV-ITDS-AIX-IF0002/whitepages/Aix64/install/engine/li
brary/hsqldb.jar, 258921 bytes, 506 tape blocks
x 6.3.0.0-TIV-ITDS-AIX-IF0002/whitepages/install_AixWp.bin, 7826
5344 bytes, 152862 tape blocks
x 6.3.0.0-TIV-ITDS-AIX-IF0002/whitepages/media.inf, 13 bytes, 1
tape blocks
x 6.3.0.0-TIV-ITDS-AIX-IF0002/whitepages/neededFiles
x 6.3.0.0-TIV-ITDS-AIX-IF0002/whitepages/neededFiles/deployDWP.b
at, 2102 bytes, 5 tape blocks
x 6.3.0.0-TIV-ITDS-AIX-IF0002/whitepages/neededFiles/deployDWP.s
h, 2486 bytes, 5 tape blocks
bash-3.2#
```

Installation of fix pack contd..

- Stop the TDS Server and Administration Server daemons

```
bash-3.2# ibmslapd -I ldapdb2 -k
GLPSRV176I Terminated directory server instance 'ldapdb2' normally.
bash-3.2# idsdiradm -I ldapdb2 -k
GLPADM034I Stopped Admin server instance: 'ldapdb2'.
bash-3.2#
```

Installation of fix pack contd..

- Go to the extracted directory and execute *idsinstall -u -f*

```
bash-3.2# ls
6.3.0.0-TIV-ITDS-AIX-IF0002      6.3.0.0-TIV-ITDS-AIX-IF0002.tar
bash-3.2# cd 6.3.0.0-TIV-ITDS-AIX-IF0002
bash-3.2# ls
idsinstall  images      whitepages
bash-3.2# ./idsinstall -u -f

  Force downlevel updating package=idsldap.cltbase63 to version=
06.03.0000.0002.

  Force downlevel updating package=idsldap.msg63.en_US to versio
n=06.03.0000.0002.
```

Installation of fix pack completed

```
  Force downlevel updating package=idsldap.srvproxy64bit63 to ve
rsion=06.03.0000.0002.

  Force downlevel updating package=idsldap.srv64bit63 to version
=06.03.0000.0002.

  Force downlevel updating package=idsldap.webadmin63 to version
=06.03.0000.0002.

  Force downlevel updating package=idsldap.webadmin_max_crypto63
 to version=06.03.0000.0002.

All packages were installed successfully!
See the log file: /tmp/idsinstall_05-18-11_08-40-21.log for more
 details
bash-3.2#
```

Verifying if the installation is successful

- On AIX, Linux, Solaris, and HP-UX systems, the log file is /tmp/idsinstall_<timestamp>.log
- On Windows systems, the log file is <install_directory>\var\ldapinst.log. (For example, if you installed in the default location, the log file is c:\Program Files\IBM\LDAP\V6.3\var\ldapinst.log.)

Deploying Web Admin Tool updates

- If the Web Administration Tool is installed on your system, after you install the fix, check the version of the Web Administration Tool to see if it was updated.
  - Go to the home directory
    - AIX / Solaris / HP-UX => /opt/IBM/ldap/V6.3
      - deploy_IDSWebApp.sh -v
    - Linux => /opt/ibm/ldap/V6.3
      - deploy_IDSWebApp.sh -v
    - Windows => c:\Program Files\IBM\LDAP\V6.3
      - deploy_IDSWebApp.bat -v

Deploying updates to the web admin tool

- If the version and date for the new IDSWebApp.war file is different from the version and date for the currently deployed IDSWebApp.war file, you must deploy the new Web Administration Tool into the application server.

Deploying Web Admin Tool Updates contd..

- Below actions would be performed
- Remove the previous Web Administration Tool (the IDSWebApp.war file) from the embedded version of WebSphere Application Server (Express)
- Deploy the updated Web Administration Tool into the embedded version of WebSphere Application Server (Express)
  - Discussed in the next slide
- Start the Application Server If there were any configuration settings for the Web Administration Tool, these settings are retained for the new version
  - <App Server Directory> / bin startServer server1

Deploying Web Admin Tool to the Application Server contd..

- On Windows systems:
  - deploy_IDSWebApp.bat -w <path_to_war_file> -p <emb_WAS_installed_path>
- On AIX, Linux, Solaris, or HP-UX systems
  - deploy_IDSWebApp.sh -w <path_to_war_file> -p <emb_WAS_installed_path>

Updating the White Pages Tool

- Updates to the White Pages tool are installed via ISMP
  - AIX / Solaris / HP-UX
    /opt/IBM/ldap/V6.3/idsapps/deploy_WhitePages
  - Linux
    /opt/ibm/ldap/V6.3/idsapps/deploy_WhitePages
  - Windows systems
    c:\Program Files\IBM\LDAP\V6.3\idsapps\deploy_WhitePages.bat

Backout the installation of fix pack

- To uninstall the fix pack installation you would need to uninstall the Tivoli Directory Server completely. Please refer to the slide number 64 for uninstalling the Tivoli Directory Server. Reinstall the product again by following the installation instructions again.

Beginning with Migration

- Collecting the TDS instances information

```
# idsilist -a
Instance 1
Name: ldapdb2
Version: 6.3
Location: /home/ldapdb2
Description: IBM Tivoli Directory Server Instance V6.3
IP Addresses: All available
Port: 1389
Secure Port: 1636
Admin Server Port: 3540
Admin Server Secure Port: 3541
Type: Directory Server
```

Collecting instance and DB2 information contd..

- Collecting DB2 instance information

```
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}mPsca8da2gkjVnjgiCeDUQ==
```

Migration contd..

- You can use
  - `idsimigr, idsdbmigr, idswmigr` (Command Line utilities for Migration / Upgrade)
  - `idsxinst` (Instance Administration Tool)
- Do not unconfigure or uninstall DB2 and ldap instance
- After upgrade previous version can be uninstalled
- The post upgrade process needs to be followed for DB2, otherwise it might lead to TDS starting in config only mode

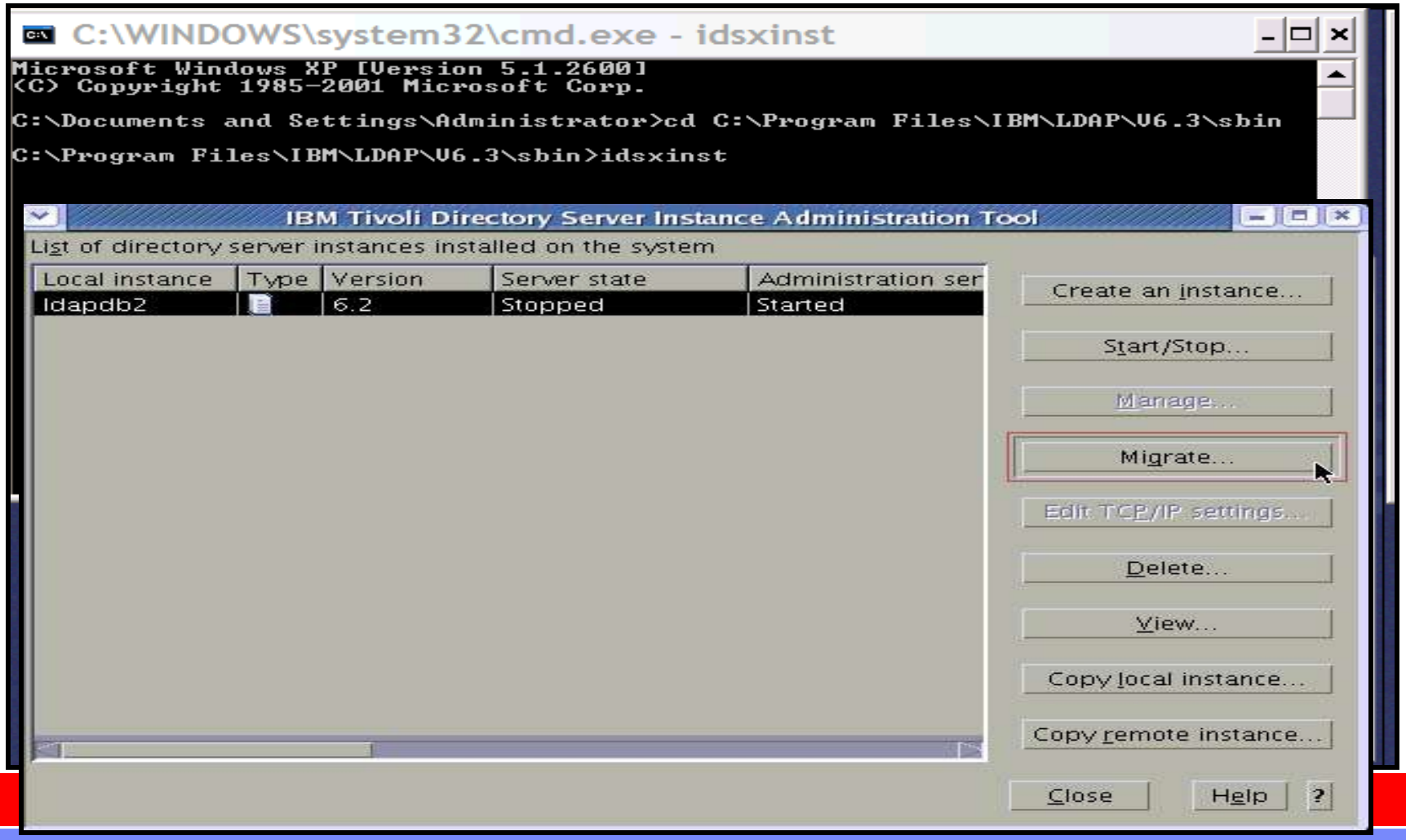
  http://www-01.ibm.com/support/docview.wss?rs=767&uid=swg21217323

Migration contd..

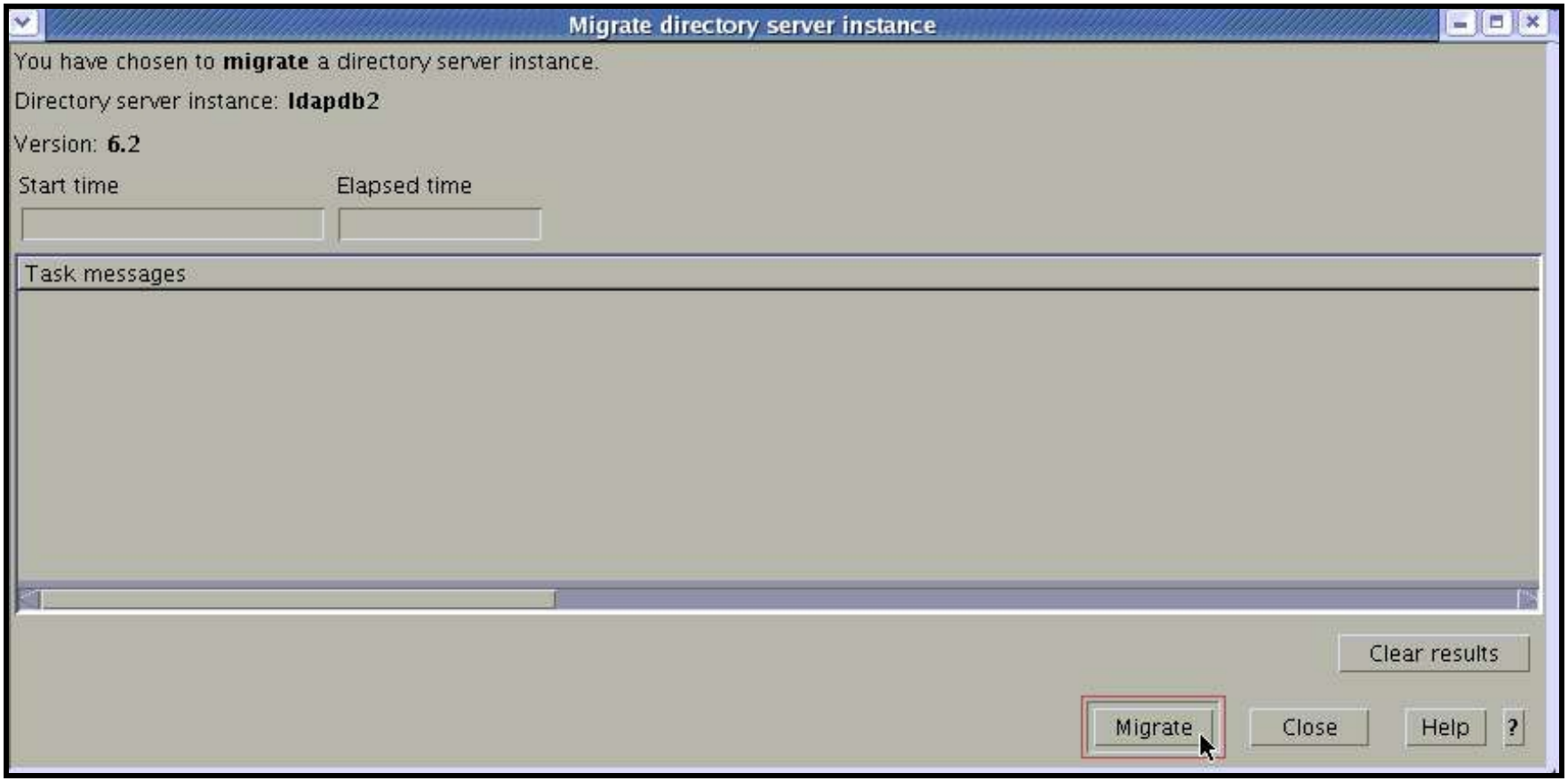
- Stop ibmslapd and ibmdiradm processes
  - `ibmslapd -I ldapdb2 -k`
  - `ibmdiradm -I ldapdb2 -k`
- If you would like to go for command line method for upgrade then run *idsimigr* utility, ignore the warning messages shown
  - `idsimigr -I ldapdb2 -n`
- Start the ibmslapd process
  - `ibmslapd -I ldapdb2`

Migration using graphical method

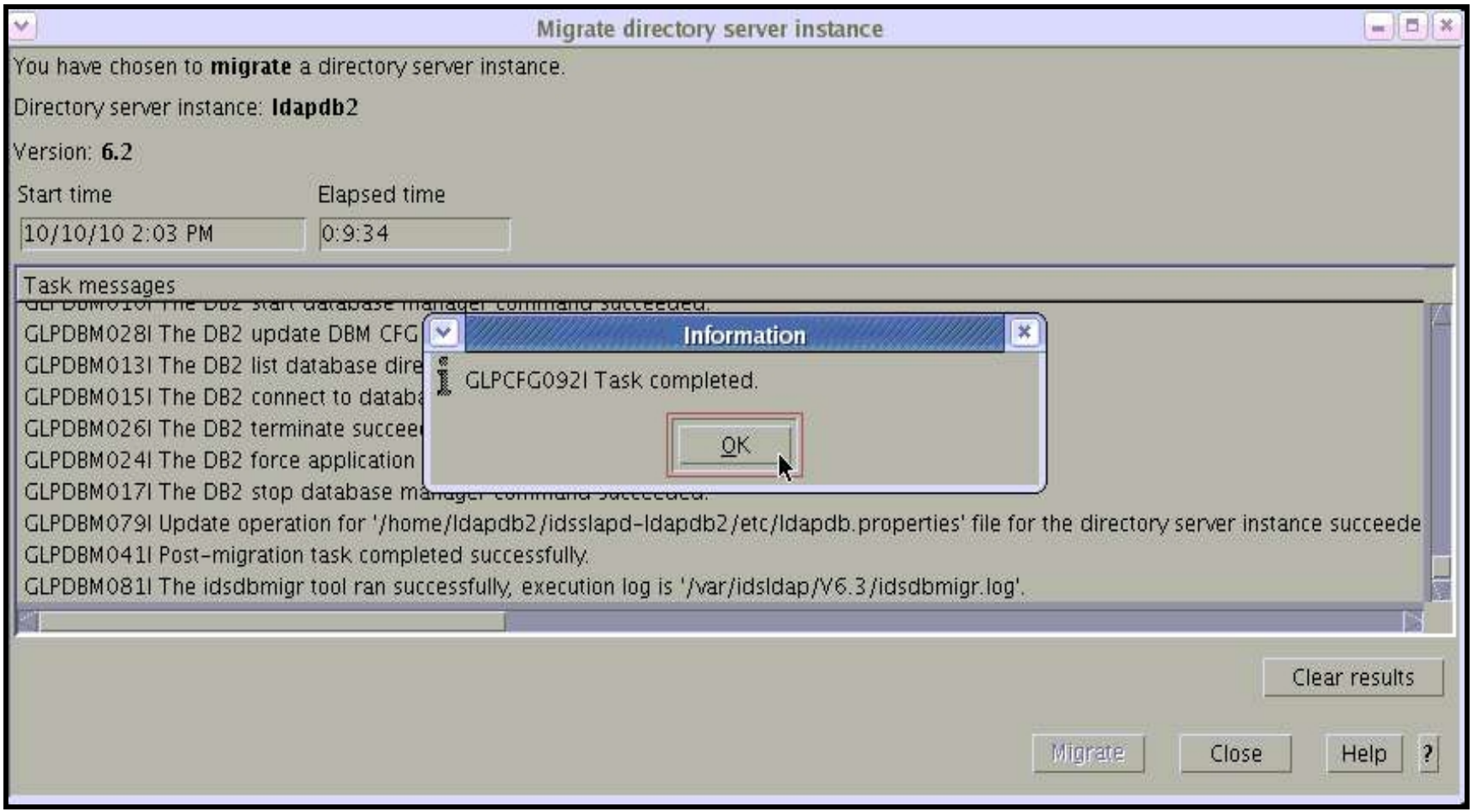
- Launch the Instance Administration Tool - idsxinst



Migration using graphical method contd..



Migration Completed



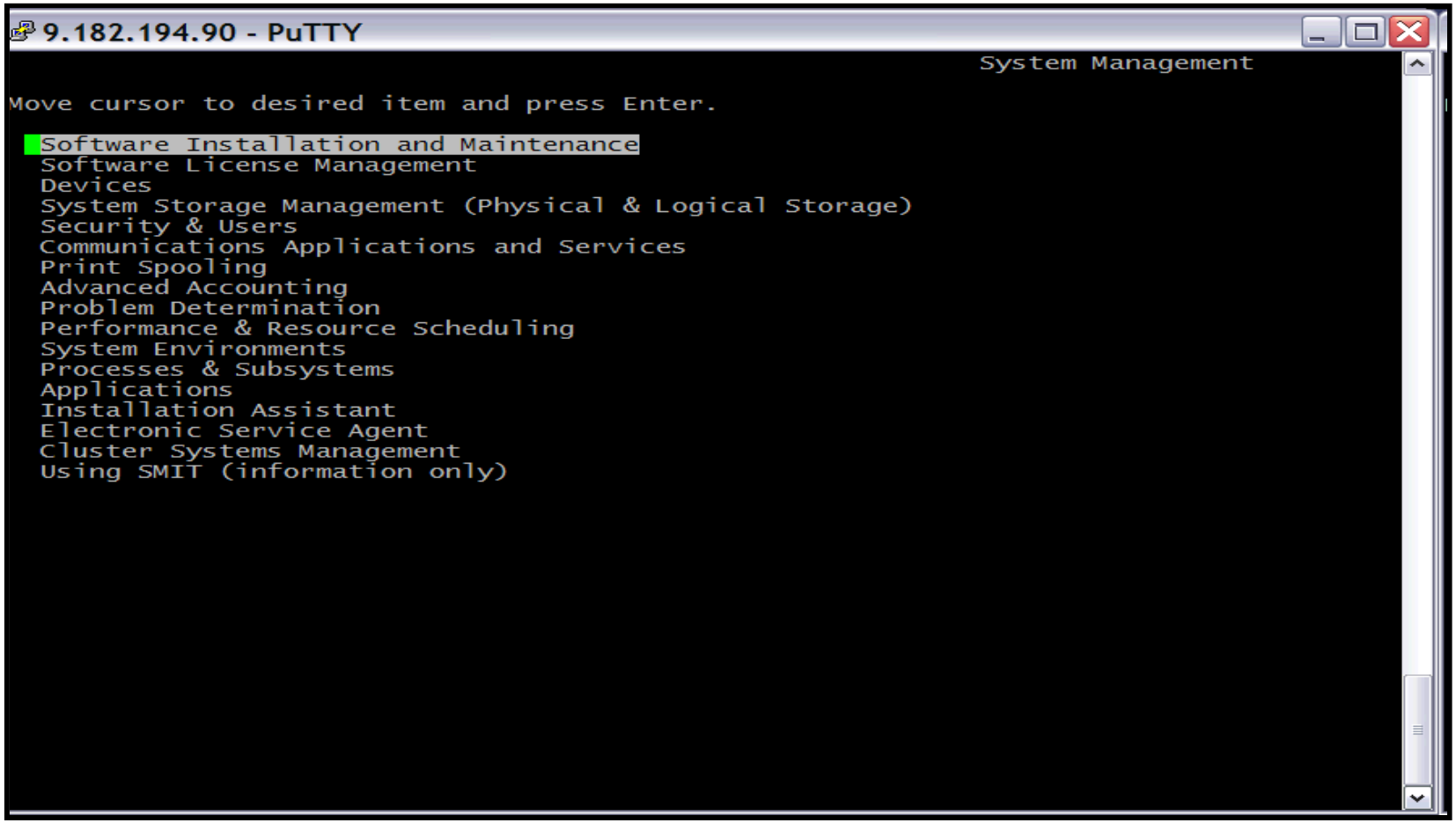
Verifying if the Migration is successful

- 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`

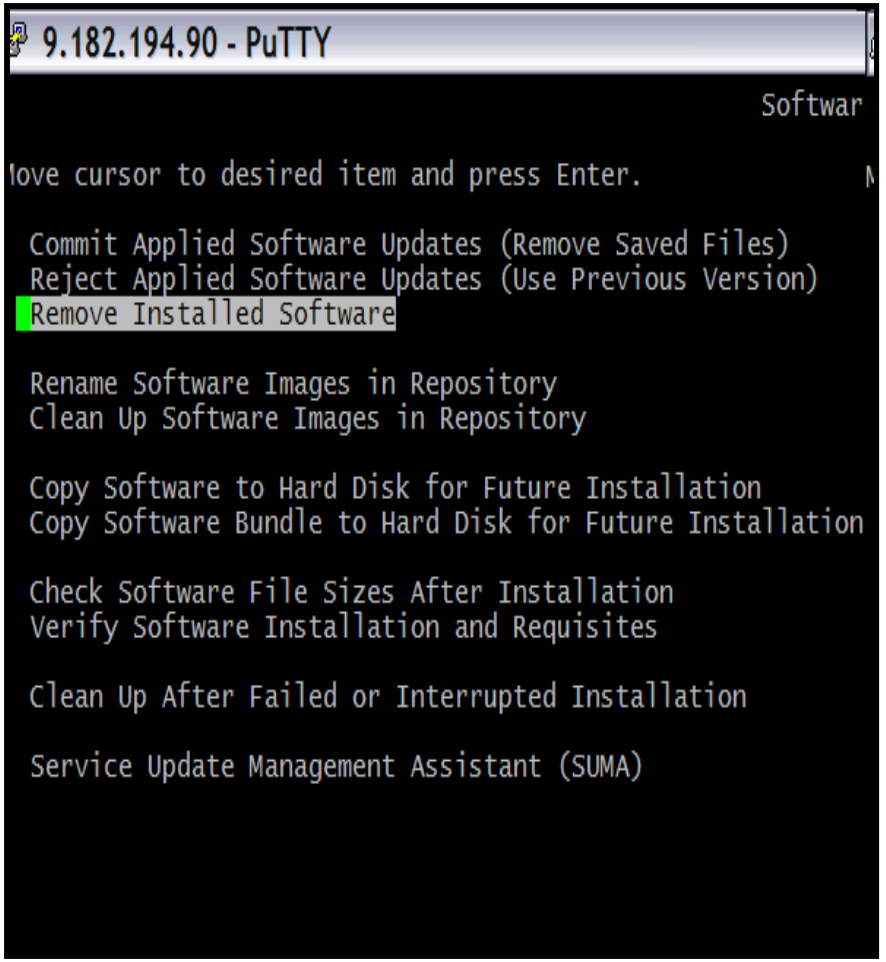
Un-installation

- Three methods of un-installation on Unix (AIX)
  - Using OS utility SMIT
  - Uninstalling from the /opt/IBM/ldap/V6.3/_uninst directory
  - Installp removal

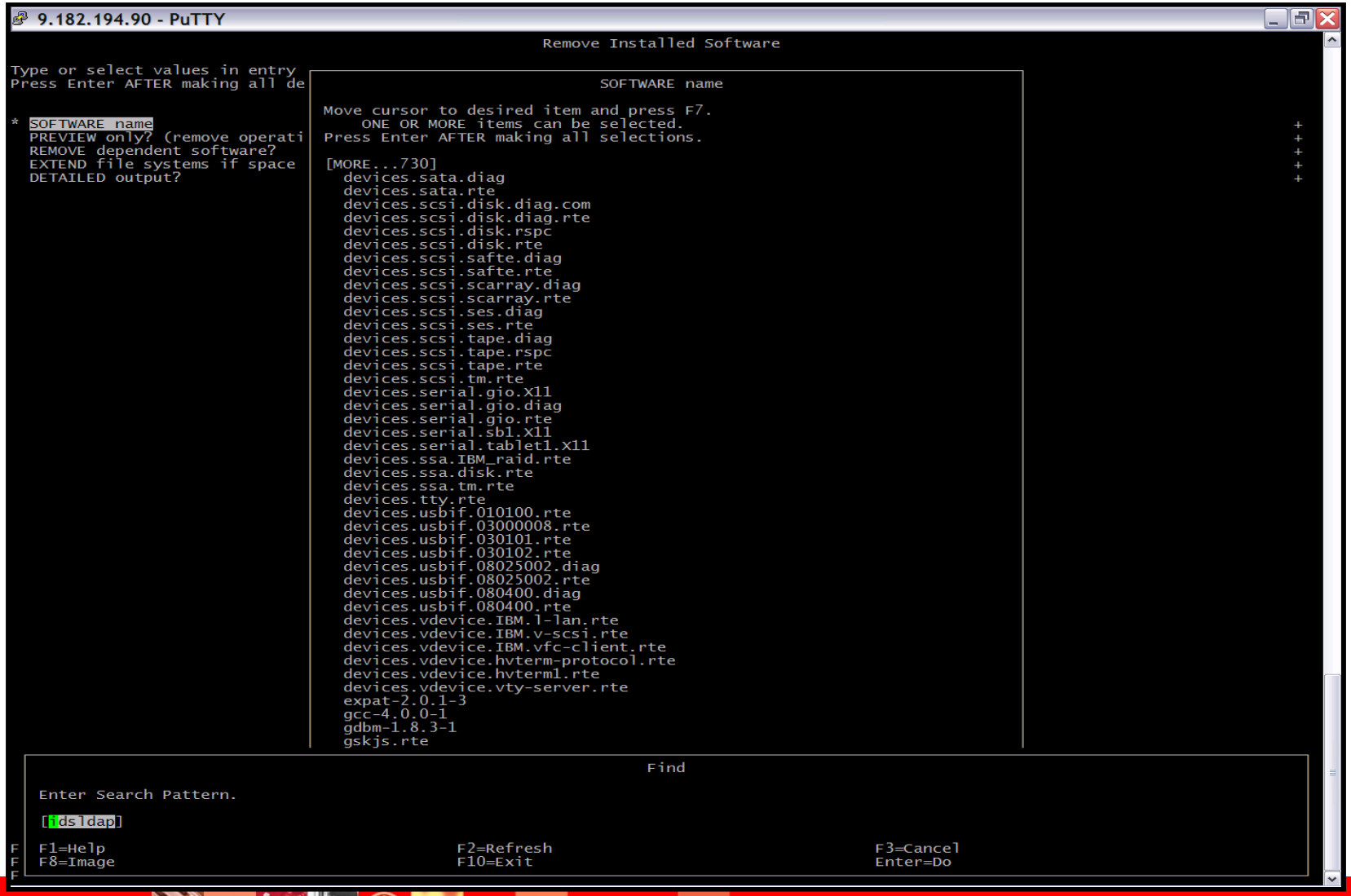
Un-installation – Using SMIT



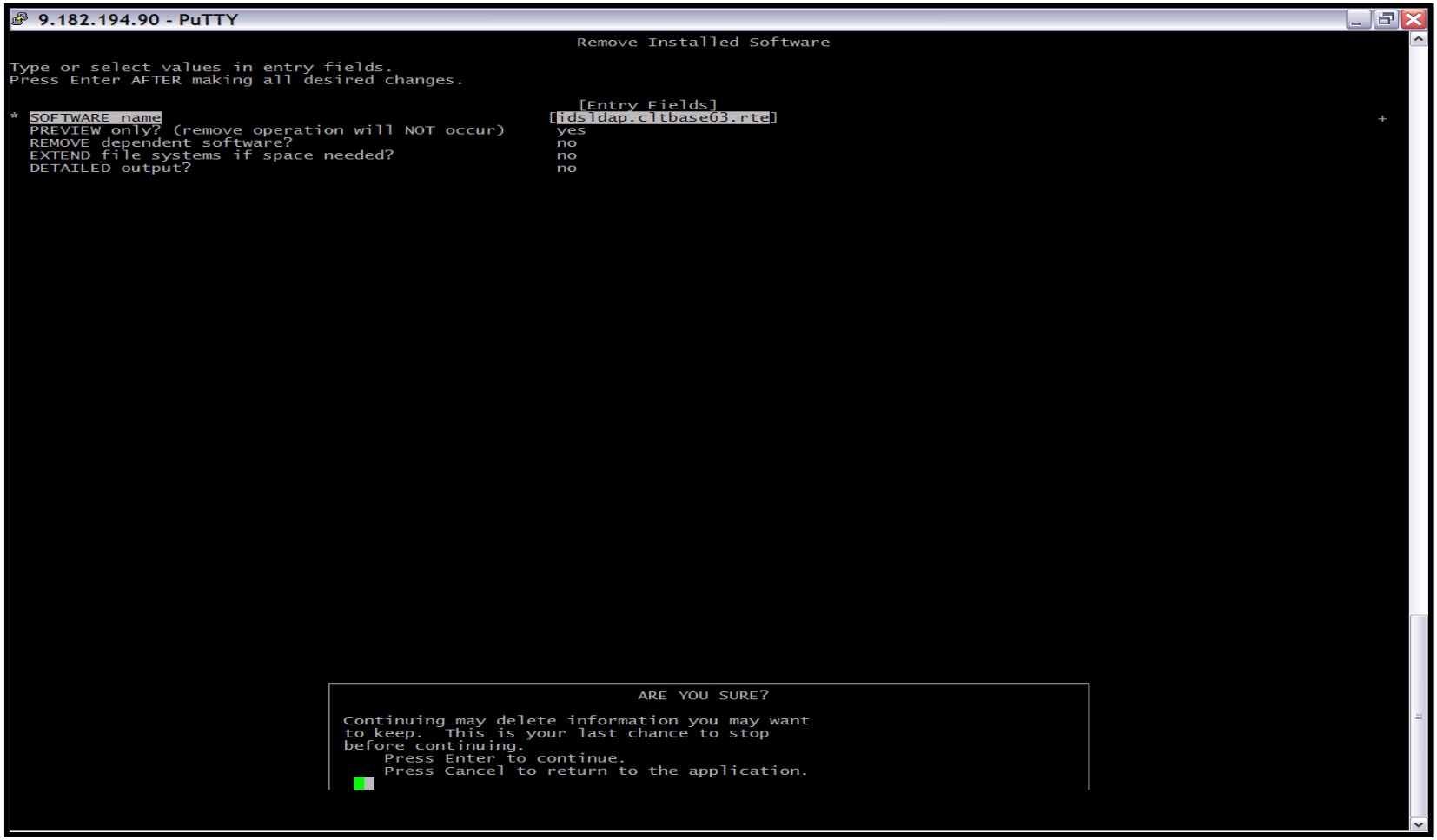
Un-installation contd..



Un-installation contd..

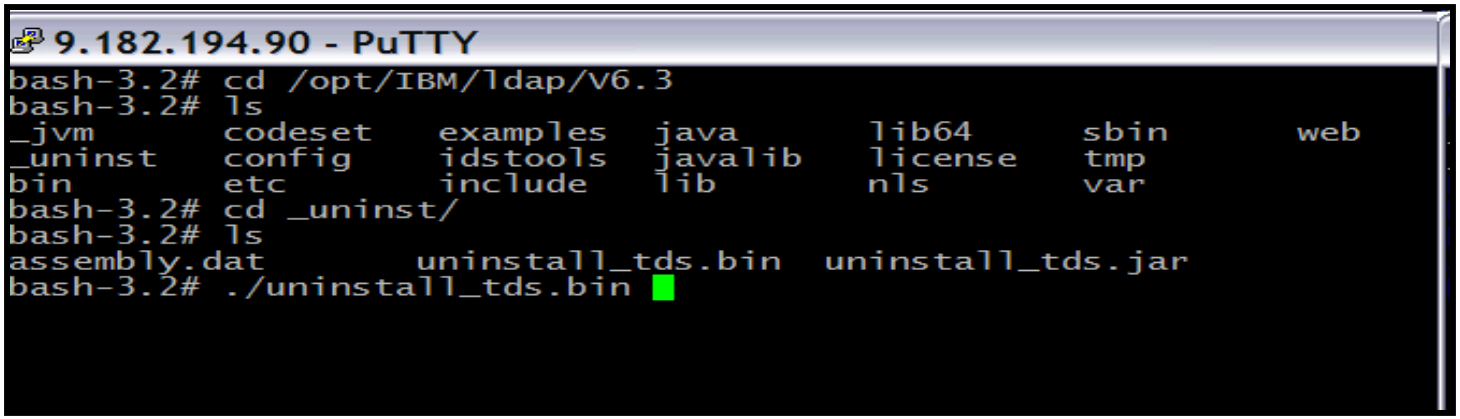


Select the all the packages and uninstall each

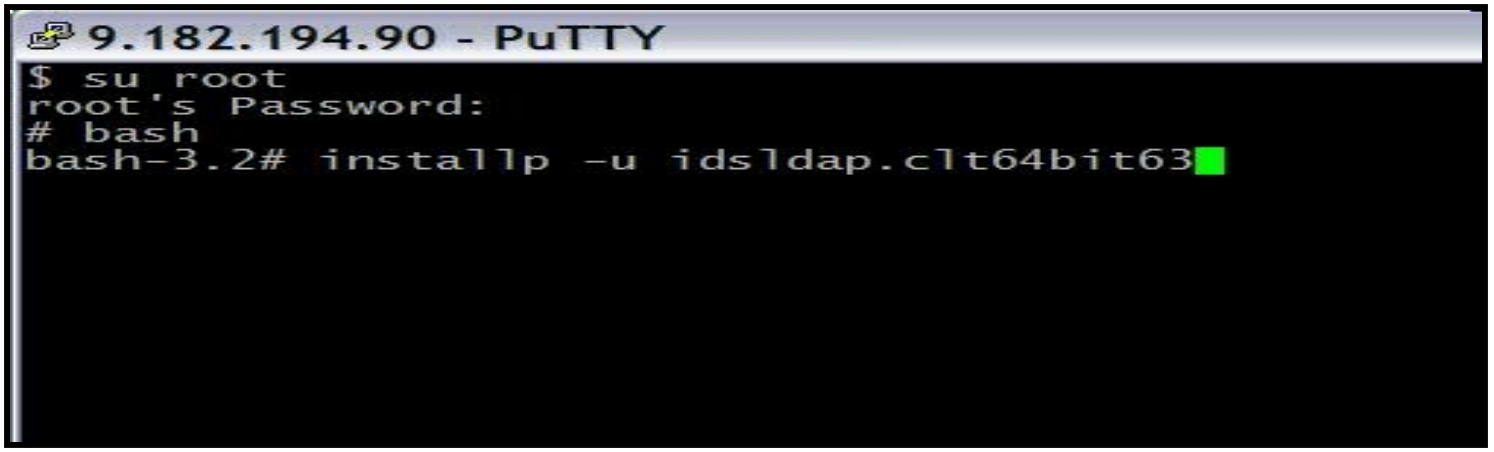


Un-installation contd..

- From the _uninst directory



- Using *installp*



Known Issues

- **Issue :** Default instance creation fails during the Typical installation
  - **Recovery:** Check the ldapinst.log file created in the <*install_location*>/var folder for debug information and take actions as necessary

- **Issue:** When installing using InstallShield GUI on an AIX system, native install packages might not get installed
  - **Recovery:** On an AIX system, GSKit should be installed before the client or base server “max_crypto” packages are installed. If GSkit is not installed, then native install packages, such as max_crypto, for client and server might not get installed and features, such as SSL, cannot be used.

Known Issues contd..

- **Issue : Installation failure due to lack of disk space**
  - **Recovery :**
  - IBM Tivoli Director Server attempts to verify that there is enough space and generates messages if the required disk space is not found, but sometimes the InstallShield GUI cannot progress far enough to issue a message.
  - Before installing, make sure you have the required free disk space available that is specified in the system requirements.
  - AIX, Linux, Solaris, and HP-UX platforms use the /var directory.The JVM is installed on the installation directory so make sure you have enough space in it

Known Issues contd..

- **Issue** : Missing files after server installation
  If there are files missing such as **idsxinst**, **idsicrt**, or **idsilist**, IBM Tivoli Directory Proxy Server feature might not have installed correctly. Ex. Web admin tool might not be available.

- **Recovery:**
  Check the list of packages that are installed, and reinstall thebase server package, or the server or proxy server packages depending on what type of server is required


Thank
You


Tivoli.
software