

IBM Tivoli Network Manager 3.9

IBM Informix Dynamic Server basic troubleshooting and performance tuning for IBM Tivoli Network Manager



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In this module, you learn about IBM Informix® Dynamic Server (IDS) Basic troubleshooting and performance tuning for IBM Tivoli® Network Manager.

Assumptions

You are familiar with Tivoli Network Manager

Assumptions.

An assumption for this module is that you are familiar with Tivoli Network Manager.

Objectives

When you complete this module, you can perform these tasks:

- Describe an Informix Dynamic Server (IDS) installation
- Troubleshoot an installation
- Troubleshoot a postinstallation
- Identify useful IDS references and links

Objectives.

When you complete this module, you can describe an IDS installation, troubleshoot an installation, troubleshoot a postinstallation, and identify useful IDS references and links.

Requirements for installing Informix

- You must have root (or administrator) user authority to install IDS
- For non-root installations, perform these steps:
 - Exit the installation after the other components are installed
 - Log back in as root to complete the installation
- Perform the pre-installation tasks to ensure this information is complete:
 - OS version, patch level, and kernel parameters are correct
 - See machine notes and server requirements on the Useful Links slide at the end of this module
 - Directory has sufficient space for installation
 - 4 GB under \$NCHOME or C:\IFMXDATA
 - 500 MB in root and tmp directories
 - Sufficient free memory is available
 - Minimum of 400 MB
 - Port 9088, the default port number, is available
- If you install on UNIX® or Linux®, where an IDS other than IBM Tivoli Network Manager is installed, use these settings:
 - Non-default port
 - SERVERNUM value
 - SERVERNAME value

Installing Informix: Requirements.

You must be a root or administrator user to install IDS. For non-root installations, you must exit the installation after you install the other components and log back in as root to complete installation. During preinstallation, you must ensure that the OS version, patch level, and kernel parameters requirements are met. You must also make sure that you have a directory with sufficient space for the installation, you have sufficient free memory, and you can use port 9088. If you install on UNIX/Linux, where an IDS other than IBM Tivoli Network Manager is installed, use a non-default port and the SERVERNUM and SERVERNAME values.

Troubleshooting an Informix installation (1 of 2)

- Check these items:
 - Scripts: `$NCHOME/precision/install/scripts`
 - `install_ids_root.ksh`
 - `install_ids_informix.ksh`
 - Installation parameters file: `$NCHOME/precision/install/data/ids.properties`
 - Logs: `$NCHOME/log/install`
 - `Configuration.log`
 - `ids_install.log`
- Compare the error code in the log with the position in the installation ksh script
 - Log: Install Failed with error code 6
 - Script: `abort 6 "Installation of Informix has failed."`
- If `ncim` user exists, the password entered into the installer must match the OS password of the user

Installing Informix: Troubleshooting.

The installation scripts are located in the `$NCHOME/precision/install/scripts` directory. The `install_ids_root.ksh` calls the `install_ids_informix.ksh` file to perform the installation. Some Informix installation issues are the result of the steps in these scripts. The scripts use the parameter values in the parameter file, `$NCHOME/precision/install/data/ids.properties`. The log files are in the `$NCHOME/log/install` directory. Basic installation error messages are in the `Configuration.log` file, and more detailed information is stored in the `ids_install.log` file. You can compare error code logs to positions in the installation script. If an `ncim` user exists, the password entered into the installer must match the OS password of that user.

Troubleshooting an Informix installation (2 of 2)

- If Informix does not initialize, check for these items:
 - Existing oninit processes or Windows® service
 - Free disk space and \$INFORMIXDIR/databases (or C:\IFMXDATA)
 - Shared memory not already allocated, for example, ipcs -a
 - Errors in \$INFORMIXDIR/online.log
- Try manual initialization
oninit -iv

Installing Informix: Troubleshooting (continued).

If Informix does not initialize during the installation, check for existing oninit processes. Also make sure that you have enough free disk space and that the shared memory is not already allocated. You can check for errors in the INFORMIX/online.log file. You can use oninit -iv to perform a manual initialization.

Troubleshooting post-installation

NCP processes cannot connect to the database

- Test the database connection: `$NCHOME/precision/scripts/perl/scripts/ncp_db_access.pl`
- Ensure that the ncim OS password matches the DbLogins.conf password
- On UNIX/Linux, check the \$INFORMIXSQLHOSTS file for the correct parameters, especially host name and port number
ITNM onsoctcp erik-blade.sbank.uk.ibm.com 9088
- Check online.log for listener error
stop/restart Informix
- On Windows, check the ports that are in use: `C:\WINDOWS\system32\drivers\etc\services`
svc_ids_1150_0 9088/tcp

Troubleshooting postinstallation.

You can test the database connection with the script `$NCHOME/precision/scripts/perl/scripts/ncp_db_access.pl`. If the NCP logs are showing incorrect user or password errors, verify that the OS password matches the DbLogins.conf password. Verify that the host name and port number are correct in the `INFORMIXSQLHOSTS` file, and verify the IP address for that host name. Check the `online.log` file for listener error, and stop and restart Informix to correct the error. On Windows, you can check the ports in `C:\WINDOWS\system32\drivers\etc\services`.

Troubleshooting post-installation performance issues (1 of 2)

Cannot open or create temporary file

- Add more temporary table space
 - touch \$NCHOME/platform/arch/informix/databases/tempdbspace_002
 - chown informix:informix \$NCHOME/platform/arch/informix/databases/tempdbspace_002
 - chmod 660 \$NCHOME/platform/arch/informix/databases/tempdbspace_002
 - onspaces -a tempdbspace -p
\$NCHOME/platform/arch/informix/databases/tempdbspace_002 -o 0 -s 2048000

where

 - _002 uniquely identifies the path name from existing files
 - arch is the name of your system architecture; for example, linux2x86
- See the Release Note at this website:
http://publib.boulder.ibm.com/infocenter/idshelp/v115/topic/com.ibm.admin.doc/ids_admin_0572.htm

Troubleshooting postinstallation performance issues.

If more than 2 GB of additional space is needed, you might get the error, Cannot open or create temporary file. You can add more temporary tablespace. Information about this process is available at the link shown on the slide. Use the touch, chown, and chmod commands to create an empty file with the correct permissions. Use the onspaces command to add more temporary space. Use `-a` for the space to add to, use `-p` for the pathname for the space, use `-o` for the offset (which is always zero), and use `-s` for the size.

Troubleshooting post-installation performance issues (2 of 2)

- Identifying long running queries
 - onstat –g act to identify active thread
 - onstat –u to associate thread with user session
 - onstat –g ses to get session informationSee <https://wikidev.hursley.ibm.com/wiki/bin/viewauth/NCP/InformixAdmin>
- Identifying one session locking another
 - onstat –k to see locks
 - onstat –u to associate lock with user session
 - onstat –g ses to get session informationSee http://publib.boulder.ibm.com/infocenter/ids/v115/topic/com.ibm.perf.doc/ids_prf_436.htm
- Running update statistics
 - Typically performed automatically by an internal scheduler
 - Sometimes performed manually if there is a large change in the data in the database and user must run queries on itecho "execute procedure update_statistics()" | dbaccess <database_name>

Troubleshooting postinstallation performance issues (continued).

The utility, onstat, is an Informix reporting status utility. You can use onstat to identify long-running utilities and identify one session locking another. More information about the onstat commands is available at the link shown on the slide. Update statistics are typically completed automatically by an internal scheduler. You might need to run update statistics manually if the changes to the data in the database are large and a user wants to run queries on it. To perform this manual update, you use the echo command that is shown on the slide.

Additional troubleshooting

- Error when selecting from polldata table: Lock or cannot position in table error
 - SET ISOLATION TO DIRTY READ
- Disk I/O is high or disk space is limited
 - Stop IDS
 - Move database files from \$INFORMIXDIR/databases to faster disks
 - Create symbolic links with the same name from \$INFORMIXDIR/databases to a new location
 - In `–s /my/new/location/ncimdbspace $INFORMIXDIR/databases/ncimdbspace`
 - Restart IDS
- SQL interface: dbaccess <database> [-]
- IDS configuration parameters in \$INFORMIXDIR/etc/\$ONCONFIG
- Full diagnostic dump:
 - `onstat –a > file`
 - `onstat –g all > file`

Additional troubleshooting.

Informix locks uncommitted data. The error, lock or cannot position in table, occurs when you select from a polldata table. You can use the SET ISOLATION TO DIRTY READ command to fix the error. In high use or systems with limited disk space, you can stop Informix. Then, you can move database files to faster disks and create symbolic links with the same name to a new location. You restart Informix to move databases to faster or larger disks. The SQL interface dbaccess runs SQL commands. You can specify the database, and you can use the dash to specify a command-line interface instead of a graphical user interface. The location of the IDS configuration parameters is \$INFORMIXDIR/etc/\$ONCONFIG. You can use the two onstat commands to dump a full diagnostic to a file.

Informix Open Admin Tool (OAT)

- Tool for administering Informix databases

The left screenshot displays the 'System Usage' section of the OAT interface. It features a pie chart showing the distribution of space usage: Data space used (orange), Data space free (green), Temp space used (blue), Temp space free (light blue), Blob space used (red), and Blob space free (light red). Below the chart is a table with columns for Database, Tables, Indexes, Compresses, Paths, Space Remaining, and Status. The right screenshot shows the 'Tables and Indexes' section for a database named 'db1'. It includes a table with columns for Name, Type, Rows, Extents, Space Usage, Compressed, and Used Pages. Below this is a detailed view of table partitions with columns for Partition Number, Partition Name, Rows, Extents, Compressed, Used Pages, and Space Usage.

- More information and a free download are available from: <http://www.openadmintool.org/>

Informix Open Admin Tool (OAT).

You can obtain the free Informix Open Admin Tool at the location shown on the slide.

Useful links

- Informix 11.5 Information Center online manuals
<http://publib.boulder.ibm.com/infocenter/idshelp/v115/index.jsp>
- IDS server requirements
<https://www-304.ibm.com/support/docview.wss?rs=630&uid=swg27013343>
- IDS machine notes
http://publib.boulder.ibm.com/infocenter/idshelp/v115/topic/com.ibm.relnotes.doc/machnotes_ids1150xc6WE.html
- IDS support portal
http://www-947.ibm.com/support/entry/portal/Overview/Software/Information_Management/Informix_Servers
- Onstat Quick Reference Guide
http://www.drap.homelinux.com/docu/onstat_ref.pdf

Useful links.

Links to several useful resources are shown on the slide. These resources include an online manual, server requirements, machine notes, a support portal, and an onstat quick reference guide.

Summary

Now that you have completed this module, you can perform these tasks:

- Describe an Informix Dynamic Server installation
- Troubleshoot an installation
- Troubleshoot postinstallation
- Identify useful references and links

Summary.

Now that you have completed this module, you can perform the tasks identified in the module.



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This module is also available in PDF format at: [./ids_overview.pdf](#)

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