

README_CL.TXT for

IBM Network Station Manager Command Line Utility version 1.5

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Product description

IBM Network Station Manager Command Line Utility (NSMCL) is a program that will create, update and delete configuration values in IBM Network Station Manager Version 2 Release 1 XML configuration files. NSMCL runs script files that are lists of configuration change instructions. See "Other documentation" section for more information about script files.

NSMCL runs as an interactive GUI or directly from the operating system command line without displaying a GUI. When running on AS/400 servers, NSMCL runs from the OS command line only.

Prerequisites

NSMCL is a Java(r) application and requires the Java Virtual Machine version 1.1.6 or later to run. If using the Java Runtime Engine (JRE) remember to set the CLASSPATH to your Java runtime file (rt.jar or classes.zip). See "Platform Specific Notes."

Installation

When Network Station Manager is installed, NSMCL will be installed in the ../tools directory (see "Starting and running NSMCL on..." for full path). When installation is complete, Java is installed and the CLASSPATH is set, NSMCL is ready to run. See "Platform specific notes" for more information about installing Java and setting the CLASSPATH.

NSMCL may be copied to and run from any directory. Copy the contents of ../tools to the directory you have created and change the CLASSPATH settings to your new directory.

NSMCL may also run on a PC client (Win95, Win98, WinNT Workstation), but will only manage Network Station Manager installations on AS/400 servers from a PC client. Copy the contents of ../tools directory to your PC (NSMCL or any directory name you choose), or map a network drive to ../tools. In either case NSMCL will be running on the Java Virtual Machine on the PC client. Java must be installed on the PC client and the CLASSPATH must be set. (For a mapped network drive, the CLASSPATH will be to rt.jar on the PC and to ../ibmnsml.jar and ../ibmxml.jar and ../jt400.jar on the network drive.) See "Platform specific notes" and "Starting and running NSMCL on a PC client."

Platform specific notes for AS/400, Microsoft Windows NT Server, and AIX

NSMCL is intended to run on IBM AS/400 V4R2 or later, Microsoft Windows NT Server version 4.0 or later, IBM AIX, IBM Network Station running Network Station Manager V2R1, and PC network clients running Windows 95, Windows 98 and Windows NT Workstation operating systems. The user profile running NSMCL (or logging in from NSMCL) must have admin authority on the server to be managed.

Generally when running on any of the above systems, many Network Station Manager configurations with each located on a different AS/400 server may be managed. All servers must be on the same network. That is they must be visible via NFS (network file system) paths. Network Station Manager configurations located on Windows NT Server or AIX may be managed only when NSMCL is running on the server where the Network Station Manager configuration is located.

AS/400 V4R2 or later servers all are delivered with Java but it is not always installed. Type "java" and press **Enter** at an AS/400 command line to see if Java is installed. If a "command...not found" message appears, then Java is not installed. Follow the Java installation instructions that came with the AS/400 to install Java. The Java runtime environment and the AS/400 Toolbox for Java need to be installed to run NSMCL on an AS/400.

Windows NT Server, AIX, and PC client installations require the Java Runtime Engine (JRE) 1.1.6 or later. The Java Runtime Engine is included on your AIX installation disk. The JRE is also freely available to all from <http://java.sun.com/products/index.html>. Obtain the correct version of the JRE for your operating system.

The CLASSPATH value must be set when (or before) NSMCL is started. CLASSPATH is a group of paths where the Java Virtual Machine will look for "class" files. Java class files are the executable code for both Java applications and the Java Virtual Machine. See "Starting and running NSMCL on..." information to set CLASSPATH for your platform.

See "IBM Network Station Advanced Information V2R1," Appendix A "Directory Structure," posted at <http://www.ibm.com/nc/pubs> for platform specific NSM directory path structure.

Settings

Several settings control how NSMCL operates. The settings are the same for GUI mode and OS command line mode. The settings are read at startup from the SGCL.ini file in the ../tools directory. All settings have default values. If settings are missing from SGCL.ini, default values will be used. If SGCL.ini is not found, all defaults will be used. The user may edit SGCL.ini file to set startup values. All of the settings may be set (repeatedly) in a script file. Some of the settings must be set in a specific order.

Syntax for settings in SGCL.ini is name=value. Example: TARGET_OS=AS400.

Syntax for settings in script files is set name=value. Example: SET TARGET_NAME=NSDEV.

A complete set of setting statements is in the shipped version of SGCL.ini with examples and descriptive comments. Save a copy of this file before changing it. The settings are listed below.

PATH_TO_PROFILES is the path from the root of the target server to the /profiles/... directory. This is where the Network Station Manager XML configuration files are located and NSMCL must be able to find them. This is a platform specific path. Use all "\" path separators on Windows NT and Windows 95 clients. On AS/400 servers, this value will be "/QIBM/UserData/NetworkStationV2/". On Windows NT, this value will be "<your drive & dir>\NetworkStationV2\userbase\". On AIX, this value will be "/usr/NetworkStationV2/userbase/". Remember this is the path to Network Station Manager XML configuration files on the target server that may or may not be the same machine (only AS/400 servers may be configured from remote servers or clients) as the one where NSMCL is running.

TARGET_OS is the operating system on the computer where the target Network Station Manager configuration is located. This may or may not be the same as the operating system on the computer where NSMCL is running. Possible values are AS400, AIX, WIN_NT and TEST.

TARGET_NAME is the name of the computer where the target Network Station Manager configuration is located. Each time TARGET_NAME is set, a new server object is created in NSMCL and is used for all configuration file access until TARGET_NAME is set again. Therefore, when changes are made from a script file, it is important to change PATH_TO_PROFILES and TARGET_OS first (if needed), then change TARGET_NAME.

PATH_TO_SCRIPTS is the path from the root of the computer where NSMCL is running (may or may be the same as TARGET_NAME) to a directory where script files are located. This defaults to the current directory. This setting is used to look for any script file name unless there are "/" or "\" characters in the script file name. Then the script file name is assumed to be a complete path and name, and the PATH_TO_SCRIPTS value is ignored. PATH_TO_SCRIPTS may NOT be changed in a script file. Set PATH_TO_SCRIPTS in the SGCL.ini file.

PATH_TO_LOG is the path to the log file on the server where NSMCL is running. Defaults to the current directory (.../tools/).

LOG_FILE_NAME is the name (not including path) of log file. The default is "SGCL_log.txt."

LOG_MODE is how to log. "FILE" means log to file. "STREAM" logs to GUI screen or operating system standard out. "BOTH" is default and logs to both.

LOG_APPEND - True (default) adds to existing log. False replaces log file at start up.

LOG_TIMESTAMP - This value could be true or false. True (the default) places a timestamp before each statement in the log file.

SELECT_FILE_NAME may be any file path and name for select statement output, which will be created if needed, and defaults to current directory if name only without path. Default file is "select.txt" in the current directory. Will be ignored if SELECT_MODE=log.

SELECT_APPEND - True (default) adds to existing file. False replaces select file at start up, if SELECT_MODE=log, then SELECT_APPEND is ignored.

SELECT_MODE controls both the location and format of select statement output. A value of "LOG" sends select statement to the regular log. A value of "FILE" sends select statement output to the file [and path] named in SELECT_FILE_NAME. A value of "SCRIPT" formats the select statement output into SGCL INSERT statements, then sends them to SELECT_FILE_NAME. The file created is a runnable script and may be used for full or partial backup and restore.

TIME_IN_SELECTS - True (default) places timestamp before each result in select file. False places no timestamp, when selects are sent to "log." Timestamp is controlled by LOG_TIMESTAMP value. When SELECT_MODE=script, then timestamp never appears.

CONTINUE_ON_ERROR - False stops all processing on first error. The default is true. File not found errors stop processing even if CONTINUE_ON_ERROR is true.

DEFAULT_USER is a holder for the "current" user name. Set DEFAULT_USER to some user name (must be a valid user name on the TARGET_NAME server) and then use DEFAULT_USER in the name field of any command.

Example: SELECT IBMNSM/USER/DEFAULT_USER/WORKSTATION/ALL/

Standard scripts may be written and run over after each setting of DEFAULT_USER.

DEFAULT_WORKSTATION is a holder for "current" machine name. See DEFAULT_USER description.

DEFAULT_USER_GROUP is a holder for "current" usergroup name. See DEFAULT_USER description.

Starting and running NSMCL on AS/400

On AS/400 servers, the case sensitive path to the NSMCL installation will be:
/QIBM/ProdData/NetworkStationV2/nsm/tools/.

Make the ../tools directory the current directory by typing the following at an AS/400 command line.

```
cd /  
cd '/QIBM/ProdData/NetworkStationV2/nsm/tools/'
```

The following AS/400 command line will start NSMCL and run "MyScript.txt."

```
JAVA CLASS(com.ibm.nsm.cl.SGCL) PARM(MyScript.txt) CLASSPATH(  
'/QIBM/ProdData/NetworkStationV2/nsm/tools/ibmnsml.jar:  
'/QIBM/ProdData/NetworkStationV2/nsm/tools/ibmxml.jar:  
'/QIBM/ProdData/NetworkStationV2/nsm/tools/jt400.jar')
```

The command below will produce the same results.

```
JAVA CLASS(com.ibm.nsm.cl.SGCL) PARM(MyScript.txt) CLASSPATH(  
'ibmnsml.jar:ibmxml.jar:jt400.jar')
```

The command below (same as above without PARM) will start interactive command line mode. A prompt will appear (IBMCLI>) and any SGCL commands or settings may be entered. Type "bye" or "exit" to end an interactive command line session and return to the OS prompt.

```
JAVA CLASS(com.ibm.nsm.cl.SGCL) CLASSPATH('ibmnsml.jar:ibmxml.jar:jt400.jar')
```

There should be no spaces in the CLASSPATH. If your script file name contains any "/" characters, the name is assumed to be a complete path and name. Otherwise the name is added to the end of the PATH_TO_SCRIPTS setting. If PATH_TO_SCRIPTS is allowed to default (to the current dir) and there is no path in the PARAM(...) value, then script files will be searched for in the current directory (../tools). When the above AS/400 command is typed, the Java virtual machine will start, then the settings in SGCL.ini will be listed. Then a message that the script file has started will appear and finally a message that the script file has ended. If a script file name does not appear after SGCL in the AS/400 command, then a prompt (IBMCLI>) will appear and commands may be entered at the prompt. XML configuration changes will occur only if COMMIT is the last line in your script file or is entered at the IBMCLI> prompt. The log of all activity will be located at PATH_TO_LOG + LOG_FILE_NAME. The default is ".../tools/SGCL_Log.txt". To run another script, press **F12** to exit the Java Shell Command Entry window to the AS/400 command line, then press **F9** to recall the last command, change the script file name and press **Enter**. It may be convenient to create a new directory for your script files and set "PATH_TO_SCRIPTS=/MyScriptsDir/". See "Settings" for important information about the PATH_TO_PROFILES setting. See "Settings" for information about managing Network Station Manager configurations on remote AS/400 servers when NSMCL is running on an AS/400. Also see the help file appended to this readme_cl.txt file.

An individual command may replace "MyScript.txt" on the command line. The command will run but not commit; so nothing is written to disk. This is useful only to test individual commands from the OS command line.

From the interactive command line prompt type "HELP" to see help command syntax.

The user profile starting NSMCL must have *SECADM and *ALLOBJ special authorities. Multiple AS/400 servers may be configured from one script file by setting TARGET_NAME in the script file. Each server will require a signon unless the same user name password combination that started NSMCL exists on all servers.

Starting and running NSMCL on Microsoft Windows NT Server

On Windows NT servers, the NOT case sensitive path to the NSMCL installation will be:

```
<drive & directory(s)>\NetworkStationV2\servbase\tools\
```

In this section “...” represents the installation drive and directory path to \NetworkStationV2\Servbase\tools\ on this Windows NT server installation. Set the CLASSPATH environment variable or use the -cp option on the cmd.exe command line to set the classpath. Using the -cp option will not interfere with other Java applications that are using the CLASSPATH environment variable. First make ...tools\ the current directory and then on a Windows NT command line type the following.

```
jre -cp  
C:\jre\lib\rt.jar;...\NetworkStationV2\Servbase\tools\ibmnsocl.jar;  
...\NetworkStationV2\Servbase\tools\ibmxml.jar;  
...\NetworkStationV2\Servbase\tools\jt400.jar com.ibm.nsm.cl.NSM_CL
```

The path to rt.jar may be different. Creating a batch file named run.bat or cl.bat containing the above line is convenient. The above line starts the NSMCL GUI interface. The line below runs a script file directly from the Windows NT command line.

```
jre -cp  
C:\jre\lib\rt.jar;...\NetworkStationV2\Servbase\tools\ibmnsocl.jar;  
...\NetworkStationV2\Servbase\tools\ibmxml.jar;  
...\NetworkStationV2\Servbase\tools\jt400.jar com.ibm.nsm.cl.SGCL <script  
file [path] name>
```

If <script file name> on the above line contains any “\” characters, it is assumed to be a complete path and file name. Otherwise it is assumed to be a file name only and will be added to the end of PATH_TO_SCRIPTS path. If PATH_TO_SCRIPTS is allowed to default (to the current dir) and there is no path in the <script file name> value, script files will be searched for in the current directory (...tools\). It may be convenient to create a new directory for your script files and set PATH_TO_SCRIPTS=c:\MyScriptsDir\.

The command below (same as above without <script file name>) will start interactive command line mode. A prompt will appear (IBMCLI>) and any SGCL commands or settings may be entered. Type "bye" or "exit" to end an interactive command line session and return to the OS prompt.

```
jre -cp C:\jre\lib\rt.jar;ibmnsocl.jar;ibmxml.jar;jt400.jar com.ibm.nsm.cl.SGCL
```

Individual commands or script files may be run from the GUI interface. Press the GUI **Help** button for more information. The help file is also appended to this readme_cl.txt file.

When started from the OS command line, the settings in SGCL.ini will be listed. Then a message that the script file has started will appear and finally a message that the script file has ended. XML configuration changes will occur only if "COMMIT" is the last line in your script file or is entered at the IBMCLI> prompt. The log of all activity will be located at PATH_TO_LOG + LOG_FILE_NAME. The default is ...NetworkStationV2\Servbase\tools\SGCL_Log.txt. See "Settings" for important information about the PATH_TO_PROFILES setting.

From the interactive command line prompt, type "HELP" to see help command syntax. The user profile starting NSMCL must have admin authority.

Starting and running NSMCL on AIX

On AIX servers, the case sensitive path to the NSMCL installation will be:
`/usr/NetworkStationV2/servbase/tools/`

In this section "." represents the installation drive and directory structure to `/tools/` on this AIX Server installation. Set the CLASSPATH environment variable or use the `-cp` option on the command line to set the classpath. Using the `-cp` option will not interfere with other Java applications that are using the CLASSPATH environment variable. First make `.../tools/` the current directory. Then on an AIX command line type the following.

```
jre -cp /usr/jdk_base/lib/classes.zip:.../tools/ibmnsml.jar:  
.../tools/ibmxml.jar:.../tools/jt400.jar com.ibm.nsm.cl.NSM_CL
```

The command below will produce the same results.

```
jre -cp /usr/jdk_base/lib/classes.zip:./ibmnsml.jar:./ibmxml.jar:./jt400.jar  
com.ibm.nsm.cl.NSM_CL
```

The path to `classes.zip` may be different. Java runtime (`classes.zip`) may be installed from your AIX install CD. Creating a shell script named `run` or `cl` containing the above line is convenient. The above line starts the NSMCL GUI interface. The line below runs a script file directly from the AIX command line.

```
jre -cp /usr/jdk_base/lib/classes.zip:.../tools/ibmnsml.jar:  
.../tools/ibmxml.jar:.../tools/jt400.jar  
com.ibm.nsm.cl.SGCL <script file [path] name>
```

If `<script file name>` on the above line contains any "/" characters, it is assumed to be a complete path and file name. Otherwise it is assumed to be a file name only and will be added to the end of `PATH_TO_SCRIPTS` path. It may be convenient to create a new directory for your script files and set `PATH_TO_SCRIPTS=/MyScriptsDir/`. An individual command may replace `<script file name>`. The command will run but not commit; so nothing is written to disk. This is useful only to test individual commands from the OS command line.

The command below (same as above without `<script file name>`) will start interactive command line mode. A prompt will appear (`IBMCLI>`) and any SGCL commands or settings may be entered. Type "bye" or "exit" to end an interactive command line session and return to the OS prompt.

```
jre -cp /usr/jdk_base/lib/classes.zip:ibmnsml.jar:ibmxml.jar:jt400.jar  
com.ibm.nsm.cl.SGCL
```

Individual commands or script files may be run from the GUI interface. Press the GUI **Help** button for more information. The help file is also appended to this `readme_cl.txt` file.

When started from the OS command line, the settings in `SGCL.ini` will be listed. Then a message that the script file has started will appear, and finally a message that the script file has ended. XML configuration changes will occur only if "COMMIT" is the last line in your script file or is entered at the `IBMCLI>` prompt. The log of all activity will be located at `PATH_TO_LOG + LOG_FILE_NAME`. The default is `.../tools/SGCL_Log.txt`.

See "Settings" for important information about the `PATH_TO_PROFILES` setting.

From the interactive command line prompt type "HELP" to see help command syntax.

The user profile starting NSMCL must have the authority read, write and change file authorities.

Starting and running NSMCL on a PC Client

Commands to start NSMCL on a PC client are the same as commands for Windows NT Server. Multiple AS/400 server installations of Network Station Manager may be configured from one PC client. Windows NT Server and AIX installations may not be configured from any remote machine. NSMCL may be installed on the PC or a network drive may be mapped to any server where NSMCL is located. When a mapped network drive is used, that drive and directory path to NSMCL must be used in the CLASSPATH values. Java classes will be loaded as needed from the server and run on the Java Virtual Machine on the PC. See "Settings" for important information about the PATH_TO_PROFILES setting.

Test Network Station Manager configurations may be created on a PC. Create a "profiles" directory on the PC and create "users," "groups," and "ncs" directories in ...profiles\. Set PATH_TO_PROFILES to the path to the profiles directory. Set TARGET_OS to TEST. Any NSMCL script may be run and Network Station Manager XML configuration files will be created in the PC ...profiles\ directory structure. These are valid Network Station Manager XML configuration files and could be FTP'd to a remote server and used for Network Station Manager, but only if file access permissions are set for each file on the new server.

Starting and running NSMCL on a Network Station client - AS/400

The IBM Network Station uses the server file system mounted at startup as its local file system. The server file system mount point for the NSMCL user must be changed with Network Station Manager as follows. Start Network Station Manager and log on with administrator authority. Set level to USER and user name to the administrator authority user name that will be used to run NSMCL. Click Environment/Network (if Network is not visible then you do not have administrator authority). Scroll down to "Additional mount points" to define a new mount point. For AS/400, set Mount type = RFS, Mount point = /QIBM, Local mount point = /tmp/QIBM; then click **Save**. Log off and then back on to see the new mount point. From the Network Station desktop click **Toolkit > Advanced diagnostics** to see an xterminal window.

Type "cd /"; then type "cd tmp"; then type "ls -al" to see the new mount point.

Type "cd /QIBM/ProdData/NetworkStationV2/nsm/tools" to make tools the current directory.

Type "echo \$CLASSPATH" to be sure Java is in the classpath and that the current directory "." is in the classpath.

Type "export CLASSPATH=\$CLASSPATH:ibmnsml.jar:ibmxml.jar:jt400.jar" to add the NSMCL files to the classpath (or use the -classpath setting in the Java command).

Then start the NSMCL GUI by typing "java com.ibm.nsm.cl.NSM_CL",

... or run a script by typing "java com.ibm.nsm.cl.SGCL myScript.txt" ,

... or start an interactive command line session by typing "java com.ibm.nsm.cl.SGCL".

The PATH_TO_PROFILES setting will be the same on the mounted and other remote AS/400 servers to be configured: "/QIBM/UserData/NetworkStationV2/". Also a 5250 emulator session will run NSMCL on an AS/400 from an IBM Network Station.

Starting and running NSMCL on a Network Station client - Windows NT, AIX

The instructions for running NSMCL on a Network Station to manage NSM configurations on Windows NT or AIX is the same as the AS/400 description above, except change the mount point type to NFS(TCP) or NFS(UDP) depending on your network topography and use the correct paths as listed in "IBM Network Station Advanced Information," Appendix A posted at <http://www.ibm.com/nc/pubs>.

Other documentation

See document "IBM Network Station Advanced Information" posted at <http://www.ibm.com/nc/pubs> for detailed information about the script language syntax for NSMCL and a current list of Network Station Manager property names and possible values. In the same document look at Appendix A "Directory Structure" to see the platform specific directory structure for IBM Network Station Manager installations.

HELP.TXT for IBM Network Station Manager Command Line Utility Version 1.5 - January 7, 2000

This is the same file seen when the GUI **Help** button is pressed.
Instructions for Using IBM Network Station Manager Command Line Utility:

- Using the graphical interface
- Using the operating system command line interface
- Settings for the Network Station Manager Command Line Utility
- Creating and using script files
- Command syntax for Standard General Configuration Language
- Property names - how to find them and what they do
- Special notes on configuring the Launchbar

Using the graphical interface.

Network Station Manager Command Line (NSMCL) is a utility used to make individual property or batch changes directly to Network Station Manager XML configuration files. NSMCL can display an interactive GUI interface or run from the operating system command line only. NSMCL can run on an AS/400 (no GUI), Windows NT, or AIX server. NSMCL can also run on a PC or Network Station client. Configuration change commands may be run individually or from script files containing many commands. Both ways of running commands are available from the operating system command line and the GUI interface. Changes may be made to Network Station Manager configurations on the server where NSMCL is running (AS/400, Windows NT, and AIX) and on multiple remote AS/400 servers (but not remote Windows NT or AIX servers) from one script file. Commands are written in a scripting language designed for NSMCL named Standard General Configuration Language (SGCL). NSMCL is written in Java.

Type "java com.ibm.nsm.cl.NSM_CL" (or "jre com.ibm.nsm.cl.NSM_CL") at the operating system command prompt to start the GUI. See the "readme_cl.txt file" (in ../tools/) for platform specific installation and setup information.

The text field at the top is the command line. Any SGCL command may be typed on the command line, then press **Enter** or click the **Run command** button to run the command. Press **F9** or down arrow to recall previous commands.

Press the **Run batch** button and a file selection dialog will appear. Select any file containing SGCL commands and the file will be run. The effect is the same as typing "CALL <file name>" on the command line and pressing **Enter**.

The text area below the command line displays a log of all commands run and all values and errors returned. Press the **Save log as** button to save the log to a file and clear the text area. See "Settings" below for information on how to set logging to FILE or SCREEN or BOTH and how to set a default log file path and name.

Press the **Cmd help** button to see (this file) a brief description of SGCL command keywords and syntax. Type **HELP** on the command line to see help command syntax. Press the **Exit** button or **F3** or the **X** in the upper right corner to close this session of NSMCL.

Press the **Clipboard** button on the NSMCL GUI and the clipboard will appear. This clipboard is a list of the last twenty unique commands that have been run from the current session of the GUI command line. Highlight any clipboard command and press **Enter** or click **Paste selected item** and the command will be pasted on the GUI command line. The **Edit clipboard list** button will display a popup menu with item that will display "Clear clipboard list", "Delete selected item", "Save clipboard list to file", or "Restore clipboard list from file." The clipboard list may also be managed with function keys. Press **F5** to add the GUI command line command to clipboard list above the highlight. Press **F6** to replace the highlighted item with the GUI command. Press **F7** to delete the highlighted item from the clipboard list.

Using the operating system command line interface

The language layer may also be used directly from the operating system command line bypassing the GUI interface layer. See the "readme_cl.txt" file (in ../tools/) for platform specific installation and setup information. The syntax on the OS command line:

"java SGCL" (starts an interactive command line session) or

"java SGCL scriptFile.txt" (runs any SGCL script file) or

"java SGCL SELECT IBMNSM/USER/joe/WORKSTATION/pref-mouse-arrangement/"
(runs any SGCL command)

If there is one parameter after SGCL, the parameter is assumed to be a SGCL script file name. If there is more than one parameter (any spaces), then all the parameters together are run as one SGCL command. Running one command is useful only to test the success of that command. Because a COMMIT is required to write changes to disk, the results of one command will not be written to disk. COMMIT should be the last line in your script file unless the script file is run for test. See SGCL language specification.

The file name may include any accessible network path, such as mapped drives or network paths. If the file name includes any "/" or "\" characters, it is assumed to be a complete path and file name. Otherwise it is assumed to be a file name only and is added to the end of the "PATH_TO_SCRIPTS" setting. The script file may use any extension. The extension must be included. All script files are plain text files. Log output will be directed by LOG_MODE to LOG_FILE_PATH and LOG_FILE_NAME (see "Settings").

Interactive command line sessions display a prompt (IBMCLI>) at which any SGCL command or setting may be entered. Output will be controlled by LOG_MODE and SELECT_MODE settings. Type "HELP" to see help command syntax. Type "bye" or "exit" to end an interactive command line session.

Settings for the Network Station Manager Command Line Utility

Several settings control how NSMCL operates. The settings are the same for GUI mode and OS command line mode. The settings are read at startup from the SGCL.ini file in the ../tools/ directory. All settings have default values. If settings are missing from SGCL.ini, default values will be used. If SGCL.ini is not found, all defaults will be used. The user may edit SGCL.ini file to set startup values. All of the settings may be set (repeatedly) in a script file. Some of the settings must be set in a specific order.

In SGCL.ini, syntax for settings is name=value. Example: TARGET_OS=AS400.

Syntax for settings in script files is set name=value. Example: SET TARGET_NAME=NSDEV.

A complete set of setting statements is in the shipped version of SGCL.ini with descriptive comments. Save a copy of SGCL.ini file before changing it. Type "HELP SET" on GUI command line or at IBMCLI> prompt to see a full list of settings and their possible values. The settings are listed below.

PATH_TO_PROFILES is the path from the root of the target server to the /profiles/... Directory. This is where the Network Station Manager XML configuration files are located and NSMCL must be able to find them. This is a platform specific path. Use all "\" path separators on Windows NT and Windows 95 clients. On AS/400 servers this value will be "/QIBM/UserData/NetworkStationV2/". On Windows NT this value will be "<your drive & dir>\NetworkStationV2\userbase\". On AIX this value will be "/usr/NetworkStationV2/userbase/". Remember this is the path to Network Station Manager XML configuration files on the target server that may or may not be the same machine (only AS/400 servers may be configured from remote servers or clients) as the one where NSMCL is running.

TARGET_OS is the operating system on the computer where the target Network Station Manager configuration is located. This may or may not be the same as the operating system on the computer where NSMCL is running. Possible values are AS400, AIX, WIN_NT and TEST. TEST turns off checking for server user profiles and does not set file access authorities for new files.

TARGET_NAME is the name of the computer where the target Network Station Manager configuration is located. Each time TARGET_NAME is set, a new server object is created in NSMCL and is used for all configuration file access until TARGET_NAME is set again. Therefore, it is important to change PATH_TO_PROFILES and TARGET_OS first (if needed), and then change TARGET_NAME from a script file.

PATH_TO_SCRIPTS is the path from the root of the computer where NSMCL is running (may or may not be the same as TARGET_NAME) to a directory where script files are located. This defaults to the current directory. This setting is used to look for any script file name, unless there are "/" or "\" characters in the script file name. Then the script file name is assumed to be a complete path and name. PATH_TO_SCRIPTS may NOT be changed in a script file. Set PATH_TO_SCRIPTS in the SGCL.ini file.

PATH_TO_LOG is the path to the log file on the server where NSMCL is running. Defaults to the current directory (.../tools/).

LOG_FILE_NAME is the name (not including path) of log file. The default is "SGCL_log.txt."

LOG_MODE is how to log. "FILE" means log to file. "STREAM" logs to GUI screen or to IBMCL I>prompt. "BOTH" is default.

LOG_APPEND - True (default) adds to existing log. False replaces log file at start up.

LOG_TIMESTAMP - This value is true or false The default option true places a timestamp before each statement in the log file.

SELECT_FILE_NAME may be any file path and name for select statement output, which will be created if needed and defaults to current directory if name only without path. This setting will be ignored if SELECT_MODE=log.

SELECT_APPEND - True (default) adds to existing file. False replaces select file at start up, if SELECT_MODE=log, then SELECT_APPEND is ignored.

SELECT_MODE controls both the location and format of select statement output. A value of "LOG" sends select statement to the regular log. A value of "FILE" sends select statement output to the file [and path] named in SELECT_FILE_NAME. A value of "SCRIPT" formats the select statement output into SGCL INSERT statements, then sends them to SELECT_FILE_NAME. The file created is a runnable script and may be used for full or partial backup and restore.

TIME_IN_SELECTS - True (default) places timestamp before each result in select file. False places no timestamp, when selects are sent to "log." TIME_IN_SELECTS is ignored.

CONTINUE_ON_ERROR - False stops all processing on first error. The default is true. File not found errors stop processing even if CONTINUE_ON_ERROR=true.

DEFAULT_USER is a holder for the "current" user name. Set DEFAULT_USER to some user name (must be a valid user name on the TARGET_NAME server). Then use DEFAULT_USER in the name field of any command. Example: SELECT IBMNSM/USER/DEFAULT_USER/WORKSTATION/ALL/. Standard scripts may be written and run over after each setting of DEFAULT_USER.

DEFAULT_WORKSTATION is a holder for "current" machine name. See "DEFAULT_USER" description.

DEFAULT_USER_GROUP is a holder for "current" usergroup name. See "DEFAULT_USER" description.

Creating and using script files

NSMCL script files are plain text files containing SGCL (Standard General Configuration Language) commands. Each line contains one complete command. Full line comments start with "/" and are ignored. Blank lines are ignored. Any number of "CALL <script file name>" commands may appear in a script file. Called files may call other files to any depth. Recursive calls will create infinite loops so must be avoided.

Read the command syntax section. Note the description of COMMIT and ROLLBACK. No configuration changes will be written to disk until a COMMIT command. Changes remain in memory until a COMMIT command is run (all changes are written to Network Station Manager configuration files on disk) or a ROLLBACK command is run (all changes in memory are discarded) or program exit (all changes in memory are discarded).

NSMCL will automatically create script files from any select statement output. Set SELECT_MODE to "script" and SELECT_FILE_NAME to the some file name for the script to be created. The output of one or many select statements will be written to the file as valid SGCL insert statements. The file may then be run at any time to restore the values. The current state of a complete configuration or any part of a configuration may be saved and later restored.

Command syntax for Standard General Configuration Language

The following ten commands with parameters make up the SGCL language:

- UPDATE
- INSERT
- DELETE
- SELECT
- COPY
- CALL
- COMMIT
- ROLLBACK
- SET
- EXEC

Parameters accepted by the commands follow a consistent pattern where possible. Parameters are separated by forward slashes and look like a path to the Network Station Manager configuration value. All commands are checked for syntax before they are run and errors are returned for grammar or syntax. All commands may be run from script files or the GUI interface command line or the IBMCLI> interactive command line prompt or appear as a parameter after "java SGCL" on the operating system command line. In script files a double slash "/" may appear at the start of any line to indicate a full line comment. Everything on that line will be ignored. Any number of CALL commands may appear in a script file and each CALL will have the effect of adding all the commands in the called file to the calling file at the point in the calling file where the CALL command is located.

WARNING: Recursive calls may put the system into an infinite loop.

UPDATE, INSERT, DELETE and COPY commands make changes to Network Station Manager XML configuration files. However, the changes are to images of the XML files in memory. Each XML image is placed in memory when the file is first accessed with any statement. File images are written to disk from memory only when a COMMIT command is issued. If an NSMCL session ends without a COMMIT being run, then no changes will occur to XML files on disk. This is useful for test. See the log file for success and errors for each command. If XML changes are made by some other program (or another instance of NSMCL) after XML images are placed in memory and before a COMMIT, the other programs changes will be overwritten and lost. It is best to run NSMCL scripts when others will not be changing Network Station Manager XML files.

Any number of COMMITs may be run in a script file. Each COMMIT writes the changes made up to that point to disk. The XML file images are removed from memory at each COMMIT. ROLLBACK removes all XML file images from memory without writing them to disk. Changes that have been committed to disk are not affected by a ROLLBACK.

Changes remain in memory until a COMMIT command is run (then all changes are written to Network Station Manager configuration files on disk) or a ROLLBACK command is run (then all changes memory are discarded) or program exit (then all changes in memory are discarded). When NSMCL displays a value (SELECT commands) the changed value in memory is displayed. If there is no changed value in memory, then the current value from the Network Station Manager configuration files on disk is displayed.

The UPDATE command

The UPDATE command is used to change individual or sets of existing Network Station Manager configuration values. If an UPDATE command attempts to change a Network Station Manager value that does not exist, an error will be returned. UPDATE and INSERT commands do the same thing except INSERT will create new values and UPDATE will not. Wild card characters in some parameters allow sets of values to be updated.

UPDATE - Parameter syntax: the first five parameters are separated by "/" followed by optional spaces, then the sixth parameter.

General syntax:

```
UPDATE OBJECT/LEVEL/NAME/CATEGORY/configurationValueName/ configurationValue
```

Specific example:

```
UPDATE IBMNSM/USER/joe/WORKSTATION/pref-mouse-arrangement/ left-handed
```

OBJECT is the string IBMNSM for all changes to IBM Network Station Manager configuration values. A value other than IBMNSM indicates some other application is being configured and is not supported in NSMCL version 1.5.

LEVEL is the scope of the configuration change. Acceptable values are SYSTEM, ALLUSERS, ALLWORKSTATIONS, USERGROUP, USER and WORKSTATION.

SYSTEM means Network Station Manager system defaults.

NAME value is ignored, but there must be some value in the NAME location. SYSTEM will automatically be converted to ALLUSERS or ALLWORKSTATIONS whichever is correct for the configuration value name (property name) in this statement.

ALLUSERS means Network Station Manager system defaults for users.

NAME value is ignored, but there must be some value in the NAME location.

ALLWORKSTATIONS means Network Station Manager system defaults for workstations.
NAME value is ignored, but there must be some value in the NAME location.

WORKSTATION means some network device being managed by Network Station Manager.
NAME = device name or DEFAULT_WORKSTATION.

USERGROUP means some Network Station Manager defined user group.
NAME = Network Station Manager group name or DEFAULT_USERGROUP.

USER means some Network Station Manager user.
NAME = Network Station Manager user name or DEFAULT_USER.

NOTE: Any of the listed NAME values may be replaced by the keyword "ALL" or the keywords "ALL LIKE <regExp>". "RegExp" uses letters, numbers and the standard wild card characters that are available in UNIX regular expression pattern matching. Sets of users, groups, etc. with names matching the pattern will be modified. The keyword LIST <fileName> may also be used in the NAME location. FileName must refer to a file that is a text list (one name per line) of valid NAMEs for the LEVEL given. Command will be run for each NAME. Before using any of the DEFAULT_... values, they must be SET to some NAME value (see SET command).

Note: Network Station Manager does not "create" new users, it creates configuration profiles for users defined on the platforms/servers where Network Station Manager is installed. Therefore, the keyword "ALL" refers to users that have an existing Network Station Manager configuration profile, not all users defined on the host server. To create new Network Station Manager user profiles, define a new user name on the host server, then use that name in the NAME field of any INSERT or COPY statement and a new Network Station Manager XML file will be created.

CATEGORY represents Network Station Manager configuration category. Possible values are listed in "IBM Network Station Manager Advanced Information," posted at <http://www.ibm.com/nc/pubs>.

ConfigurationValueName is the name of the Network Station Manager configuration value to be changed. Value names (properties) are listed in "IBM Network Station Manager Advanced Information," a publication posted at <http://www.ibm.com/nc/pubs>.

Note: Most Network Station Manager configuration values are individual, value name - value pairs. Some Network Station Manager configuration values are lists of values where each value in the list may contain one or more "fields." For a given Network Station Manager "list" type property each entry in the list will contain the same set of field names. No two list entries can have all their field values the same. That means each list entry must be unique and NSMCL will check for uniqueness when values are added to a list. Network Station Manager configurationValueNames that represent lists of values are not allowed in UPDATE statements. To change a value in a list, first delete the value (see DELETE) then INSERT a new value (see INSERT).

ConfigurationValue is the actual value to record. This value must be formed correctly for the value type to be set. Numbers are numbers, etc. Quotes are not allowed for strings. If no value is entered for configuration value, then an error is returned and no changes are made. Any number of spaces may separate configurationValue from the last "/" character.

The INSERT command

INSERT uses the same parameters and produces the same results as UPDATE. In addition, INSERT will also create values where none existed before. If the LEVEL parameter is USER, GROUP or WORKSTATION and no configuration file exists for the NAME value, then a new XML configuration file will be created. The new file will be named "<name>.nsm," where <name> is the NAME value. The file will be created under profiles/ in the directory associated with the LEVEL value. If LEVEL is USER, NSMCL will check the current server (TARGET_NAME) for a valid system username and return an error if not found. If configurationValueName represents an Network Station Manager property that is a list of values then the configurationValue parameter must have the form: "-fieldName1 fieldValue1 -fieldName2 fieldValue2 ...". All field names must be included in the correct order. Field values may be empty. Value names (properties) and field names and order are listed in "IBM Network Station Manager Advanced Information," a publication that is posted at <http://www.ibm.com/nc/pubs>. Also see "Special Notes on configuring the Launchbar" section in this document.

General syntax:

```
INSERT OBJECT/LEVEL/NAME/CATEGORY/configurationValueName/ configurationValue
```

Specific simple property example:

```
INSERT IBMNSM/USER/joe/WORKSTATION/pref-mouse-arrangement/ left-handed
```

Specific list property example (must be on one line in a script file):

```
INSERT IBMNSM/USER/joe/DEVICE/print-lpr-servers/-server dup0026 -queue-name  
itprt02 -datastream-type ps -description Bldg 30-3 printer -transform-file nil  
-dbscs-type nil -print-resolution nil -dbscs-font-encoding nil  
-request-banner-page true -use-as-default true
```

INSERT also performs one special function for Network Station Manager list type properties. List properties have an ACTION attribute in the Network Station Manager XML files. The values for action may be REPLACE (the default), APPEND or INSERT. The action attribute controls the relationship between the same list property in different level files. The replace value hides the values in the lower level files at run time. APPEND adds the values to the lower level files at runtime. INSERT places list items in specific locations in the list, but only for the "serial-interfaces-table" and "serial-daemons-table" list properties. Setting the ACTION attribute removes all entries from the property list then sets the attribute. When the ACTION attribute is set to INSERT, then each list item inserted may include the "STARTAT:x" keyword (see example).

Specific example:

```
INSERT IBMNSM/WORKSTATION/machine1/DEVICE/print-lpr-servers/ SET ACTION APPEND
```

After this command there will be no print-lpr-servers defined for WORKSTATION/machine1. When values are added to the print-lpr-servers list (in WORKSTATION/machine1), then both those values and the values defined in SYSTEM/DEF/DEVICE/print-lpr-servers will be part of the configuration for machine1.

Example for INSERT attribute:

```
INSERT IBMNSM/SYSTEM/DEFAULTS/DEVICE/serial-daemons-table/ SET ACTION INSERT  
INSERT IBMNSM/SYSTEM/DEFAULTS/DEVICE/serial-daemons-table/  
STARTAT:2 -port-number 1 -use-serial-protocol true -tcp-port 1050  
INSERT IBMNSM/SYSTEM/DEFAULTS/DEVICE/serial-daemons-table/  
STARTAT:3 -port-number 2 -use-serial-protocol true -tcp-port 1051  
INSERT IBMNSM/SYSTEM/DEFAULTS/DEVICE/serial-daemons-table/  
STARTAT:1 -port-number 3 -use-serial-protocol true -tcp-port 1052
```

The same wildcard values (ALL, ALL LIKE <regExp>, LIST <fileName>) described for the UPDATE, NAME field may appear in the INSERT, NAME field.

The SELECT command

The SELECT command uses same first parameter syntax as UPDATE except the keywords ALL, ALL LIKE <regExp>, and LIST<fileName> may be used in the NAME, CATEGORY and configurationValueName fields. No configurationValue parameter is allowed. SELECT does not change values. The values returned will be logged in sequence with all other messages in the log if the SELECT_MODE setting is LOG. If the SELECT_MODE setting is file (or script) all (and only) select statement results will be written to the file named in SELECT_FILE_NAME. If that file does not exist it will be created. If the setting SELECT_APPEND is true, then an existing (at program start) file will be added to. If false, an existing file will be replaced. If SELECT_MODE is script, then the format written to SELECT_FILE_NAME will be SGCL INSERT statements. See SET command. If a value selected is a list type value, then each value in the list will be returned on one line in braces {}. {-fieldName1 fieldValue1 -fieldName2 fieldValue2 ...}.

General syntax:

```
SELECT OBJECT/LEVEL/NAME/CATEGORY/configurationValueName/
```

Specific example:

```
SELECT IBMNSM/USER/joe/WORKSTATION/pref-mouse-arrangement/
```

NOTE: See "Creating and using script files" for information about using select statement output to create script files for backup.

The DELETE command

DELETE uses same first parameter syntax as UPDATE except the keywords ALL, ALL LIKE <regExp>, and LIST<fileName> may be used in the NAME, CATEGORY and configurationValueName fields. No configurationValue parameter is allowed, except for lists. DELETE will remove the configurationValueName property from the configuration file. If configurationValueName represents an Network Station Manager property that is a list of values, then a configurationValue is allowed. If configurationValue is an integer and configurationValueName represents a list of values, then only the list item in the location represented by the integer (1 for first item) will be removed. Use SELECT to find list item location. If there is no configurationValue and configurationValueName represents a list of values, then all values in the list will be removed. See special syntax for LAUNCHBAR and STARTUP below.

General syntax:

```
DELETE OBJECT/LEVEL/NAME/CATEGORY/configurationValueName/ [configurationValue]
```

Specific example for simple properties:

```
DELETE IBMNSM/USER/joe/WORKSTATION/pref-mouse-arrangement/
```

Specific example for list properties (remove second value):

```
DELETE IBMNSM/WORKSTATION/machine1/DEVICES/print-lpr-servers/ 2
```

Specific example for list properties (remove all values):

```
DELETE IBMNSM/WORKSTATION/machine1/DEVICES/print-lpr-servers/
```

WARNING: DELETE IBMNSM/USER/ALL/ALL/ALL/ will remove all Network Station Manager user configuration.

NOTE: Special syntax for configurationValue may be used only when the category value is "LAUNCHBAR" or "STARTUP." That special syntax is "-name <screen name of folder or icon to be removed> -folder <screen name of folder containing folder or item to be removed>". To remove items that are not in any folder (the root of the launchbar) place no value after -folder. The syntax described above

for list properties (an integer to remove the nth value and no configurationValue to remove all values) also work for the launchbar and startup categories.

Specific example for removing LAUNCHBAR folders:

```
DELETE IBMNSM/USER/mary/LAUNCHBAR/Folder/ -name Marys Misc -folder
```

The COPY command

The COPY command takes two sets of parameters. The first is like the "path" parameter in update and the second includes only OBJECT/LEVEL/NAME. Copies from the first "path" to the second. Accepts ALL, ALL LIKE <regExp>, or LIST <fileName> keywords in the CATEGORY and "configurationValueName" field of the first parameter. For example, copy all of one user's values to a new user. The ALL, ALL LIKE <regExp>, or LIST <fileName> keywords may be used in the NAME field of the second parameter. For example, copy one user's values to a list of users. NSMCL COPY works within one Network Station Manager configuration only. COPY may not be used to copy values from one server to another server.

General syntax:

```
COPY OBJECT/LEVEL/NAME/CATEGORY/configurationValueName/ OBJECT/LEVEL/NAME/
```

Specific example:

```
COPY IBMNSM/USER/joe/WORKSTATION/ALL/ IBMNSM/USER/LIST dept10.lst/
```

The CALL command

The CALL command runs the Network Station Manager script (batch process) file named in the parameter. All commands including CALL may appear in script files. If the CALL parameter contains any "/" or "\" characters, then it is assumed to be a complete path to the file. Otherwise, the parameter is assumed to be a file name only and is added to the PATH_TO_SCRIPTS setting to create a complete file path and name. Script file names may have any extension and the extension must be included in the fileName parameter. Script files may call other script files to any depth. Recursive calls will create infinite loops and should be avoided.

General syntax:

```
CALL <fileName>
```

Specific example:

```
CALL demo1.bp
```

The COMMIT command

The COMMIT command writes all pending (since last COMMIT or ROLLBACK or program start) changes to disk. There are no parameters.

The ROLLBACK command

The ROLLBACK command discards all pending (since last COMMIT or ROLLBACK or program start) changes. There are no parameters.

The SET command

Any setting in SGCL.ini may also be set from the GUI or IBMCLI> command line or within a script file with a SET command. Changes are not made to SGCL.ini. Changed values exist until SET again or program exit. Typing "SET" without parameters will log all current settings. Some settings affect other settings (see the "Settings" section). Type "HELP SET" to see all settings and their possible values (see description of HELP command).

Syntax : SET <valueName>=<value>

Specific examples:

```
SET DEFAULT_USER=john
SET PATH_TO_PROFILES=/nstest/
SET TARGET_OS=AS400
SET TARGET_NAME=NSDEV
```

The EXEC command

The EXEC command accepts one parameter, that is one (platform specific) operating system command. It may be any AS400 CL command (except interactive), any Windows NT Server command or any AIX command. You must have authority for the command and the command must be accessible. EXEC requires correct settings for TARGET_OS and TARGET_NAME. Windows NT and AIX are limited to running commands on the server where NSMCL is running. AS400 commands may be run from any client to multiple AS400 servers or from an AS400 to itself and multiple remote AS400 servers.

The HELP command

Type "HELP" at the GUI or interactive command line prompt (IBMCLI>) to display the following description of help syntax. Type "HELP" followed by the keywords listed to see the values.

HELP syntax for IBM Network Station Manager:

```
HELP SGCL -> list of Standard General Configuration Language command names
HELP <SGCL command name> -> description and example of this SGCL command
HELP SET -> description of SET command and list of all possible settings
HELP CATEGORY -> list of category names
HELP <category name> -> list of preference names in category
HELP <preference name> -> preference description, valid values and levels
```

Property names - how to find them and what they do

All possible Network Station Manager property names are listed in "IBM Network Station Manager Advanced Information", Appendix D, posted at <http://www.ibm.com/nc/pubs>. Also listed is the correct category, the possible values and levels (SYSTEM, USERGROUP, USER...) for each property. A brief description of what each property does and how it interacts with other properties is included. This publication is only posted on the Web and not published, so it will contain the latest information.

Special notes on configuring the Launchbar

Launchbar folders and program icons may be created and removed with the Network Station Manager Command Line Utility. Command syntax is similar to list property command syntax. The property name for folders is "Folder." The property names for all configurable types of programs are listed in "IBM Network Station Manager Advanced Information", Appendix D, posted at <http://www.ibm.com/nc/pubs>. The required fields for each folder or type of program icon are also listed there. The "command" field is required for several types of programs. The value of the command field is the startup command for that program. See both Appendix D and chapter 8 "Customizing additional values" in the Advanced Information document for program startup command syntax. Program startup commands that use '-valueName value' syntax must be enclosed in single quotes.

Existing launchbar folders or icons may not be updated. Delete, then insert a new changed folder or icon. See the DELETE command section for special launchbar syntax.

Example:

```
INSERT IBMNSM/USER/MARY/LAUNCHBAR/Folder/ -name letters -folder Marys misc
```

The folder "letters" will be created in the "Marys misc" folder. The "Marys misc" folder must exist first.

Example:

```
DELETE IBMNSM/USER/MARY/LAUNCHBAR/Folder/ -name letters -folder Marys misc
```

This statement will delete the "letters" folder. The contents of the "letters" folder will not be deleted and will appear in the root of the launchbar.

Example:

```
INSERT IBMNSM/USER/MARY/LAUNCHBAR/Java Application/ -name My Editor  
-folder Marys misc -command '-classpath ${CLASSPATH};Editor.jar Editor'
```

The statement above must be all on one line. This statement will produce a Java icon with a screen name of "My Editor" that will appear in the folder named "Marys misc." When clicked, the icon will start the "Editor" Java class contained in the Editor.jar file in Mary's current directory. The folder "Marys misc" must exist first. The environment variable CLASSPATH must be set. The value after "-command" must be in single quotes and is a standard Java startup command. All standard Java startup parameters are acceptable. Other types of applications are similar.