A **Command Line Interface (CLI)** is a user interface used for accessing embedded devices from a console, either locally or through a network connection. NuDesign provides its highly automated Command Line Interface Agent code generation technology for developers of CLI agents for embedded OS / RTOS’es such as QNX Neutrino®, WindRiver VxWorks, numerous Linux distributions, Microsoft embedded OS’es, ENEA OSE and others.

NuDesign’s CLI solution can operate as the only management agent for the embedded device or if deployed with NuDesign’s SNMP Agent it also provides access to SNMP MIB(s) implementation via XML/RPC mechanism and the use of Get / Set keywords identifying MIB objects by their name or OID value. Future releases of CLI code generator will include an optional component for supporting IETF’s NetConf protocol containing mechanisms to install, manipulate, and delete the configuration of network devices.

The NuDesign CLI is a command shell that runs on top of a (RT)OS’s command shell. Commands are executed when the user presses the Enter key. The NuDesign’s CLI framework provides command help, command completion, and also provides keyboard sequences for moving around on a command line including scrolling through recently executed commands.

The CLI has two modes: **operational** and **configuration**. Generally speaking the operational mode is designed to offer a non-privileged access; there should be nothing a user can type that would impact the operation of the device. By contrast, the configuration mode allows all aspects of device operation to be modified.
CLI commands are organized in a hierarchy. Commands that perform similar functions may be grouped together under the same branch of the hierarchy. For example, all commands that display information about the system and the system software could be grouped under the “show system” command.

The NuDesign CLI Code Generation Framework simplifies creation of hierarchical CLI. The Framework implements command hierarchy navigation, command completion, command line editing, history and provides a basic set of common commands. It is very easy to extend this CLI with custom commands and device configuration in a few simple steps:

- Generate CLI hierarchy XML definition file (using visual editor or manually)
- Run NuDesign’s CLI code generator using generated hierarchy and produce CLI project
- Implement custom “command handler” and “validator” methods.
- Compile and run custom CLI
- Configure console, serial, Telnet or SSH access, depending on needs and system capabilities

For information and product evaluation kit please contact NuDesign at contact@ndt-inc.com

About NuDesign Technologies


The benefit of deploying NuDesign’s management software technologies are reliable, low risk, and quick-to-market solutions, supporting SNMPv3, web protocols and serial, CLI command line access. The highly automated SNMP and CLI Agent tools with associated tutorials enable fast prototyping and development, facilitate organization and design process while supporting multiple target environments with generation of very complete and ready to build SNMP and CLI agents.

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