

SATEL NETCO DEVICE CE CLI

USER GUIDE v1.4.0

NETCO DEVICE CE CLI USER GUIDE

- NETCO DEVICE CE CLI USER GUIDE
 - 1. Software packaging
 - 2. Operating principle
 - 3. Known feature limitations in this version
 - 4. Command line options
 - 4.1. Standard options
 - 4.2 Advanced options
 - 4.3 Using NMS Port or NARS-adapter
 - 4.4 Porting from Configuration Manager (CM) to NDCLI
 - 5. General requirements and recommendation for operations to succeed
 - 6. Examples
 - 6.1. Identify device-product in serial port
 - 6.2. Copyconfig from file to device with Satel Configuration manager file
 - 6.3. Copyconfig from NETCO DEVICE file to device (w/o User Permission files)
 - 6.4 Copyconfig from NETCO DEVICE file to device with User Permission files
 - 6.5 Update firmware from file to device
 - 6.6. List connected modem-product information in Configuration Manager-compatible format
 - 6.7 Reset connected modem-product's configuration to factory defaults
 - 7. Troubleshooting
 - 7.1 "Network error"

1. Software packaging

SATEL NETCO DEVICE CE CLI (later: "NDCLI") is delivered included into the GUI software package. Its component code is in the root folder of the software package with the name `ndcli.exe`. `Ndcli.exe` is a frontend application which needs to start backend services, which are located in the 'backend' folder. Therefore it doesn't work if copied to outside of the original directory tree. The same holds true for the `netco_device.exe` graphical user interface application.

2. Operating principle

Commandline application's main goal is to enable automation use cases. In these use cases, the most common operations are copying configuration ('copyconfig') from file to device and updating firmware ('update') from firmware file to device.

For the most common operations, the common factor is that data is moved from a source endpoint to a destination endpoint. Furthermore, typically source endpoint is a file and destination endpoint is a device connected to a serial port.

Operation is defined with "--oper operation". Source endpoint is defined with "--from source_endpoint" and destination endpoint with "--to destination_endpoint".

If a user is operating as a part of organization, which uses User Permission files and need to use advanced privileges, then commandline operations involving reading or writing NETCO DEVICE configuration file (.ncfg) require using of additional User Permission file (--up upfile) option and its associated password (--filepass upfilepwd) option. These must be provided on the same commandline as the actual operation parameters. For security reasons it is not possible to import and persist permissions in the commandline application.

3. Known feature limitations in this version

- **IMPORTANT:** It is not possible to run any two (or more) NETCO DEVICE applications in the same pc at the same time. This includes graphical UI applications and command line applications. Doing so may result unexpected results.
- Absolute filesystem paths must be provided when source-endpoint or destination endpoint is a file
- when starting the commandline, the working directory must be set `./backend` (`cd backend`)
- Copyconfig from device to file is not supported and would anyways lack security-sensitive configuration settings, since they cannot be read from the device.
- HTTP-protocol endpoints are currently not supported.

In the future versions of NETCO DEVICE variants our goal is to reduce the number of these limitations and further develop its usability and capabilities.

4. Command line options

4.1. Standard options

Please use the "--help" commandline option to list all currently supported operations and options list. At the time of writing this guide, the supported options are as below. The "*" indicates default value for that option:

OPTION	TYPE	DESCRIPTION
--help	INFO	shows this help.
--help endpoint	INFO	Show detailed help for endpointstring
--help more	INFO	shows even more options
--version false* true	INFO	shows version information for frontend CLI only
--list-versions false* true	INFO	shows version information, incl. backend services
--list-products false* true	INFO	list supported products
--list-ports false* true	INFO	list available serial ports
--list-system-info false* true	INFO	together with --from lists product info in CSV-format
--list-element-info false* true	INFO	Same as list-system-info, but more data and JSON-format
--info false* true	INFO	display organizational and other app. info
--up filepath	XFER	specify User Perm. file path (use w/ --filepass)
--filepass filepassword	XFER	password for User Perm.file import or use FILEPASS env. var.
--oper(ation) operation	XFER	identify copyconfig update resetfactorydefaults
--from endpointstring	XFER	specify detail conn.params file path of 'from'
--to endpointstring	XFER	specify detail conn.params file path to 'to'
--steps false* true	OPT.	show internal text commands level progress
--elem_idx 0*...n	OPT.	for element-operatione like resetfactorydefaults
--progress true* false	INFO	show long-running operation progress

4.2 Advanced options

The more rarely needed, advanced commandline options can be asked with "--help more". For these options, we recommend the default value unless there is a problem with it and using a non-default value can help. Some of these options are applicable to only some operations.

OPTION	TYPE	DESCRIPTION
--mute *false true	OPT	output suppression main switch (false=default,true=max.)
--show-start-be *true false	OPT	output backend services start (sub-switch under mute)
--show-session-id *true false	OPT	output session id (sub-switch under mute)
--stepgapms 200*	OPT	time gap between internal operation steps in ms
--startdelay 3500*	OPT	time after which backend services are assumed ready
--product	XFER	set/select product (profile) name to expect/use
--list-manageropts	INFO	list extra options to configure for the ndcli
--list-manageropts-full	INFO	list details of extra options to configure for the ndcli
--measure-runtime *false true	INFO	measure and output total program runtime in seconds
--backend directory	OPT	SPECIAL opt. Do not use. Reserved for future use cases.
--start-backend false* true	OPT	SPECIAL opt. Do not use. Reserved for future use cases.

The `--product` parameter should be set only if automatic detection or identification of the `--from` or `--to` endpoint fails, or if multiple possible products are detected. In case of multiple identified products (e.g. Sateline EASy family) and if `--product` parameter is not specified, then NETCO uses first identified product from the the list.

Use `--list-products` option to get all product names. When using a product name, which contains spaces, as a value of `--product` switch, replace all spaces with underscore character ('_').

4.3 Using NMS Port or NARS-adapter

NETCO DEVICE forces a device into programming mode before accessing it. However, if you connect your device via NMS port or you use NARS-adapter, communication can work faster as switching to programming mode can be skipped.

Use parameter `'manager_connection_option1'` with value `'none'` to skip switching to programming mode:

```
--manager_connection_option1 none
```

4.4 Porting from Configuration Manager (CM) to NDCLI

CM-operation (old)	NDCLI-operation (new)
LOAD_CONFIG	--oper copyconfig --from datafile --to media
LOAD_FIRMWARE	--oper update --from fwfile --to media
GET_SYSTEM_INFO	--oper list-system-info --from media --mute true
RESTORE	--oper resetfactorydefaults --to media

"media" in above typically serial port name and its parameters i.e. "to"-endpoint:
`--to serial:port=COM1,baud=115200,data=8,stop=1,parity=N`

CM supported also a special feature, called a device proxy in between the manager and managed device. In such case the manager cannot directly communicate with the target device, but needs to make a transaction to open connection and to close connection. Opening the connection is called prefix and closing the connection is called suffix. Both operations can have response-expectation from the proxy. In CM these were configured as files in the directory structure, but in NETCO DEVICE CLI `prefix`, `prefix_res`, `suffix` and `suffix_res` optional settings can be configured as extra endpoint string parameters for the endpoint. The line format of these is binary (8-bit bytes), but they are configured for the software as two-digit HEX sequences. See `--help endpoint` for example.

5. General requirements and recommendation for operations to succeed

- Source or destination file must exist and be accessible
- Source or destination serial port must exist, be correct and be correctly parameterized
- Source or destination file paths must be enclosed in double quotes if they contain spaces
- Serial port parameters (configuration details) must not contain any spaces and must match the device requirements
- We recommend providing full file paths and to enclose file paths in double quotes.
- We also recommend setting the current process working directory (CWD or PWD) to the directory root of application.

6. Examples

6.1. Identify device-product in serial port

```
.\ndcli.exe --oper identify --from serial:port=COM1,baud=115200,data=8,stop=1,parity=N
```

6.2. Copyconfig from file to device with Satel Configuration manager file

```
.\ndcli.exe --oper copyconfig --from "C:\path\to\cmfile.cfg" --to  
serial:port=COM1,baud=115200,data=8,stop=1,parity=N
```

(!)the above only works, if device in serial port is compatible with the file.

6.3. Copyconfig from NETCO DEVICE file to device (w/o User Permission files)

```
.\ndcli.exe --oper copyconfig --from "C:\path\to\file.ncfg" --to  
serial:port=COM1,baud=115200,data=8,stop=1,parity=N
```

(!)the above only works, if file is also created with NETCO DEVICE that was not using permission files. Other general requirements also apply.

6.4 Copyconfig from NETCO DEVICE file to device with User Permission files

```
.\ndcli.exe --oper copyconfig --up "C:\path\to\permissionfile.up" --filepass ac346gs34345  
--from "C:\path\to\file.ncfg" --to serial:port=COM1,baud=115200,data=8,stop=1,parity=N
```

(!) for the above operation to succeed, the filepass must match permissionfile. Other general requirements also apply

6.5 Update firmware from file to device

```
.\ndcli.exe --oper update --from "C:\path\to\fwupdatefile.pff" --to  
serial:port=COM2,baud=38400
```

or

```
.\ndcli.exe --oper update --from "C:\path\to\fwupdatefile.s29" --to  
serial:port=COM2,baud=38400
```

6.6. List connected modem-product information in Configuration Manager-compatible format

```
.\ndcli.exe --oper list-system-info --from  
serial:port=COM1,baud=115200,data=8,stop=1,parity=N --mute true
```

6.7 Reset connected modem-product's configuration to factory defaults

```
.\ndcli.exe --oper resetfactorydefaults --to  
serial:port=COM1,baud=115200,data=8,stop=1,parity=N
```

NOTE!: if the connected product has more than one module or "element", each element should be operated separately using --elem_idx 0..n option, where the index is 0 for the first element, 1 and larger for the next ones. Default value for elem_idx is 0, so there is no need to specify it for simple single-element products.

7. Troubleshooting

7.1 "Network error"

If you see the following error message, it may indicate that backend services are not yet ready.

Solution: Increase the --startdelay parameter.

```
+-----  
| ERROR    : IDENTIFICATION FAILED:  
|  
| Network error: http://127.0.0.1:9100/msg.cgi?src=devui_0&dst=ss_0  
| caused error: webclient: error connect ECONNREFUSED 127.0.0.1:9100  
| in 3 ms, timeout: 149000 ms when timeout was 149000 ms  
| Possibly service has failed to start (i.e. port conflict), is not  
| running or the address and/or port is wrong. Lastly maybe you  
| should use 127.0.0.1 as a Gateway IP address and if you intend  
| to use non-local IP, you should enable service to listen to  
| LAN IP (Run As Administrator or equivalent)  
| Try fixing the problem and retry.  
+-----
```