NAT-MCH-Gen4
CLI and Script
User Guide V1.0

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Note:

The release of the User Manual is related to a certain HW board revision.
For HW revisions earlier than the one given chapter “Supported HW Revisions“ please contact N.A.T. for the corresponding older Manual release.

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Es konnten keine Einträge für ein Abbildungsverzeichnis gefunden werden.

Conventions

If not specified otherwise, addresses and memory maps are provided in hexadecimal notation, identified by *0x*. Table 1 lists the abbreviations used in this document:

Table 1: List of used abbreviations

Abbreviation	Description
AMC	Advanced Mezzanine Card
ATCA	Advanced Telecommunications Computing Architecture
CRC	Cyclic Redundancy Check
DIP SW	Dual In-Line Switch
EEPROM	Electrically Erasable PROM
FPGA	Field Programmable Gate Array
GbE	Gigabit Ethernet
HS	Hot Swap
I^2C	Inter-Integrated Circuit
I/O	Input/Output
IP	Internet Protocol
IPMB	Intelligent Platform Management Bus
IPMI	Intelligent Platform Management Interface
JTAG	Joint Test Action Group
µC	Microcontroller
µTCA	Micro Telecommunications Computing Architecture
MUX	Multiplexer
PCB	Printed Circuit Board
PCI(e)	Peripheral Component Interconnect (Express)
Rx	Receiver
RAM	Random Access Memory
(P)ROM	(Programmable) Read Only Memory
PLL	Phase Locked Loop
SFP	Small Form-Factor Pluggable
TCKL	Telecom Clock

1 INTRODUCTION

The NAT-MCH-G4 CLI provides a modern Linux style **C**ommand **L**ine **I**nterface for monitoring and configuring the MCH via a serial console type interface.

This manual provides a short introduction to the CLI, the associated script language and explains its basic functionality.

The CLI can be used via the following interfaces:

- USB-Console
- Telnet
- Live Log of the web interface

Compared to the LCI of the 3rd generation NAT-MCH, the new CLI of the 4th generation NAT-MCH-G4 provides:

- A reduced number of first level key words
- A help functionality at any command level
- A flexible and adaptable support of parameters and options

1.1 BASIC COMMANDS:

The syntax of all CLI commands is as follows:

command [parameter 1] … [parameter n] -[option 1] … -[option n]

The following basic commands are supported:

set – manipulates the value described in parameter section

get – retrieves the value described in parameter section

print – prints information and/or values described in parameter section

help – the basic CLI help command

ifconfig **-** TCP/IP interface configuration

script – script support

ping – pings another network node in the network

2 USING THE CLI

A good starting point for using the CLI always is invoking the <help> command at the CLI prompt:

nat> help

The <help> command will display all commands with their respective parameters.

More detailed information abaout a specific function can be obtained by the sub level help system by adding the <-help> option:

Example:

nat> set fan level -help

Output:

usage: set fan level [<params>]
params:
[<site_number>]
[<dev_id>]
<level>

Set fan speed level of cooling units

2.1 USAGE OF OPTIONS AND PARAMETERS:

The CLI supports mandatory and optional parameters.

Optional parameters are shown in square brackets, i.e.: [site_number]

Options must be placed at the end of the command string:

Example:

Nat> set debug ipmi min -p

Sets the debug level for the IPMI interface to minimum and **p**ersistently stores the value.

Persistently stored values are safe against power cycles and re-boots.

2.2 FURTHER DOCUMENTATION

This CLI manual is supposed to only provide a short introduction to and overview of the operation of the CLI.

If you are looking for a more specific description of certain sets of commands for certain hardware submodules of the NAT-MCH-G4, i.e. how to configure the clock or hub modules, please refer to the user manual for the respective submodule.

3 MCH GEN4 SCRIPT SUPPORT

The script support of the MCH uses the available CLI commands. Thus, a script consists of several CLI commands and can be edited and stored. The configuration scripts are divided into so-called domains which can be individually edited/stored/deleted. Any individual script is loaded during the start-up phase of the MCH, respectively the start-up of its submodules. i.e. the clock configuration is loaded when the clock module is recognized and initialized.

Table 2: Configuration Domains

Domain	Description
system	basic system configuration: executed during start-up
user	user space configuration: executing immediately after start-up
base1	Base configuration: Ethernet switch initialization of the Base-MCH (side 1)
base2	Base configuration: Ethernet switch initialization of the Base-MCH (side 2)
hub1	Switch configuration: Ethernet switch initialization of the hub module (side 1)
hub2	Switch configuration: Ethernet switch initialization of the hub module (side 2)
clk1	Clock configuration: Initialization of the clock module (side 1)
clk2	Clock configuration: Initialization of the clock module (side 2)

3.1 SCRIPT COMMANDS

The MCH supports the following CLI commands to create and clear a script configuration:

- script start <domain>
- script end
- script clear <domain | all>

The console interface can be used to enter a new script line-by-line. It is “best practice” Bu to create/edit the script offline and then download it to the MCH via the web-interface.

3.2 SHOW CONFIGURATION/AGGREGATED CONFIGURATION

The MCH supports the CLI command “print config <domain>” to display the possible configurations available for this particular domain:

Example:

nat> print config base1

Output:

set switchport state AMC1/0 ena

set switchport state AMC2/0 ena
set switchport state U1 ena
set switchport state CPU_1 ena

Use “print config all” instead of the ““print config <domain>” to show the *aggregated configurations* of the MCH:

Nat> print config all

Output:

script start system
ifconfig te0 192.168.1.41 255.255.255.0 0.0.0.0
set ekey ignore false xaui
script end

script start user
script end

script start base1
set switchport state AMC1/0 ena
set switchport state AMC2/0 ena
set switchport state U1 ena
set switchport state CPU_1 ena
script end

script start base2
script end

script start hub1
script end

script start hub2
script end

script start clk1
script end

script start clk2
script end

The *aggregated configuration* consists of all available configurations, concatenated by special *script commands*. It is “best practice” again to use the aggregated configuration for configuring your MCH line-by-line and to store the respective configuration.

3.3 SCRIPT COMMANDS

The MCH supports the following CLI commands to manage the script configuration:

- script start <domain>
- script end
- script clear <domain | all>

3.4 CREATING A NEW CONFIGURATION

Creating a new script configuration is done in three steps:

Step 1 - Open a script configuration for writing: Please, enter “script start <domain>” to open appropriated script for writing mode.

Step 2 - add command to a script: All following commands will be added to <domain>.

NOTE: The commands are only in the script only, they are not executed at this point. The script configuration is applied after the next restart only!

Step 3 - close and store the script: Please use CLI command “script end” to close a script configuration for writing and to store it in non-volatile memory.

Appendix A: Known issues

#	Firmware Version	Description
1	V3.0.8	Command options are not shown correctly

Appendix B: Document's History

Revision	Date	Description	Author
1.0	10.08.25	initial release	hl