



Cnuas Management Tools, Datasheet

Device and fabric management clients, inventory, telemetry and dashboards

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Item	Value
Part	cnuassmi, cnuas-cli, cnuas-link-cli, cnuas-webui, cnuas-rackmon
Type	Operator clients
Packages	cnuas-gpu-modules, cnuas-cli, cnuas-link-cli
Version	9fbdddf-dirty
Repos	PacketFive/CnuasGPU, PacketFive/CnuasSwitch, PacketFive/CnuasLink, PacketFive/cnuas

1. Overview

These are the small, focused clients that sit next to each component. They exist because an operator debugging one daemon should not have to go through the whole control plane, and because the equivalents on real hardware are the tools people already know. The unified surface across all components is the control plane; everything here is the local alternative.

Key features

- Accelerator inventory and telemetry in the familiar tabular form.
- Machine readable output for scripting, in comma separated and JSON forms.
- Repeating sampling mode for watching a value change.
- Direct clients for the fabric switch and the accelerator link switch.
- Rack power shelf client for the management controller.

2. Tool summary

Tool	Talks to	Transport
cnuassmi	Accelerators	libcnuasrt and the accelerator sysfs class
cnuas-cli	Fabric switch daemon	JSON over UNIX domain socket
cnuas-link-cli	Accelerator link switch daemon	JSON over UNIX domain socket
cnuas-webui	Fabric switch daemon	Browser dashboard over the management socket
cnuas-rackmon	Rack management daemon	JSON over UNIX domain socket

3. Accelerator management interface, cnuassmi

The equivalent of `nvidia-smi` for CnuasGPU. Called with no arguments it prints a table covering every visible accelerator: identity, revision, memory in use against memory installed, multiprocessor and lane counts, and fabric link state.



Option	Effect
--query-gpu	Select named fields instead of the table
--format	Choose csv or json output
--noheader	Omit the header row
--loop=N	Repeat every N seconds until interrupted
--version	Report tool, driver and runtime versions
--help	Usage

Queryable fields

index, name, gpu_id, revision, fw_version, sm_count, lanes_per_sm, tensor_size, memory.total, memory.used, memory.free, link.up, link.rx_ready.

Live memory usage is read from the driver sysfs attributes rather than through an extra device call, so sampling in a loop stays cheap.

4. Fabric switch client, `cnuas-cli`

Drives the CnuasSwitch management socket directly: port status and mode, link state, the Ethernet forwarding database, the InfiniBand linear forwarding table, data centre bridging settings, the subnet manager, and telemetry.

5. Accelerator fabric client, `cnuas-link-cli`

Drives the CnuasLink switch daemon: port state, the accelerator forwarding database, link state, telemetry and version.

6. Dashboard, `cnuas-webui`

A browser dashboard over the fabric switch, with a backend that speaks the management socket and a frontend that renders port state and counters. It is a laboratory tool and carries no authentication of its own.

7. Rack power client, `cnuas-rackmon`

Queries `cnuas-rackmond` over its UNIX domain socket and formats the power supply and battery backup tables for the shelf. See CnuasBMC.

8. Planned tools

These are named in the design documents and have no implementation.

Tool	Models	Blocked on
<code>cnuas-dcgmi</code> , <code>cnuas-dcgm</code>	Data centre GPU manager	Telemetry schema
<code>cnuas-prof</code>	Kernel level profiler	Performance counter interrupt path and CnuasCC

9. Validation



Tool	Coverage
cnuas-cli	Exercised through the switch management interface tests, tests/test_mgmt_api.py, 21 cases
cnuas-link-cli	src/cnuaslink/cli/tests/test_cli_e2e.py, 10 cases
cnuassmi	No automated test, requires an accelerator device
cnuas-webui	No automated test
cnuas-rackmon	No automated test

See the Validation Matrix.

10. Integration information

Item	Value
cnuassmi source	src/cnuasgpu/tools/cnuassmi/, with a manual page
cnuas-cli source	src/cnuasswitch/cli/
cnuas-link-cli source	src/cnuaslink/cli/
cnuas-webui source	src/cnuasswitch/webui/
cnuas-rackmon source	bmc/rmc/src/
Language	C, with a web frontend for the dashboard

11. Revision history

Revision	Notes
A	First publication. Options and queryable fields read from the tool sources.

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