SpectraLogic Monitoring

Conférence Stockage de Masse

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Storage and Servers Team

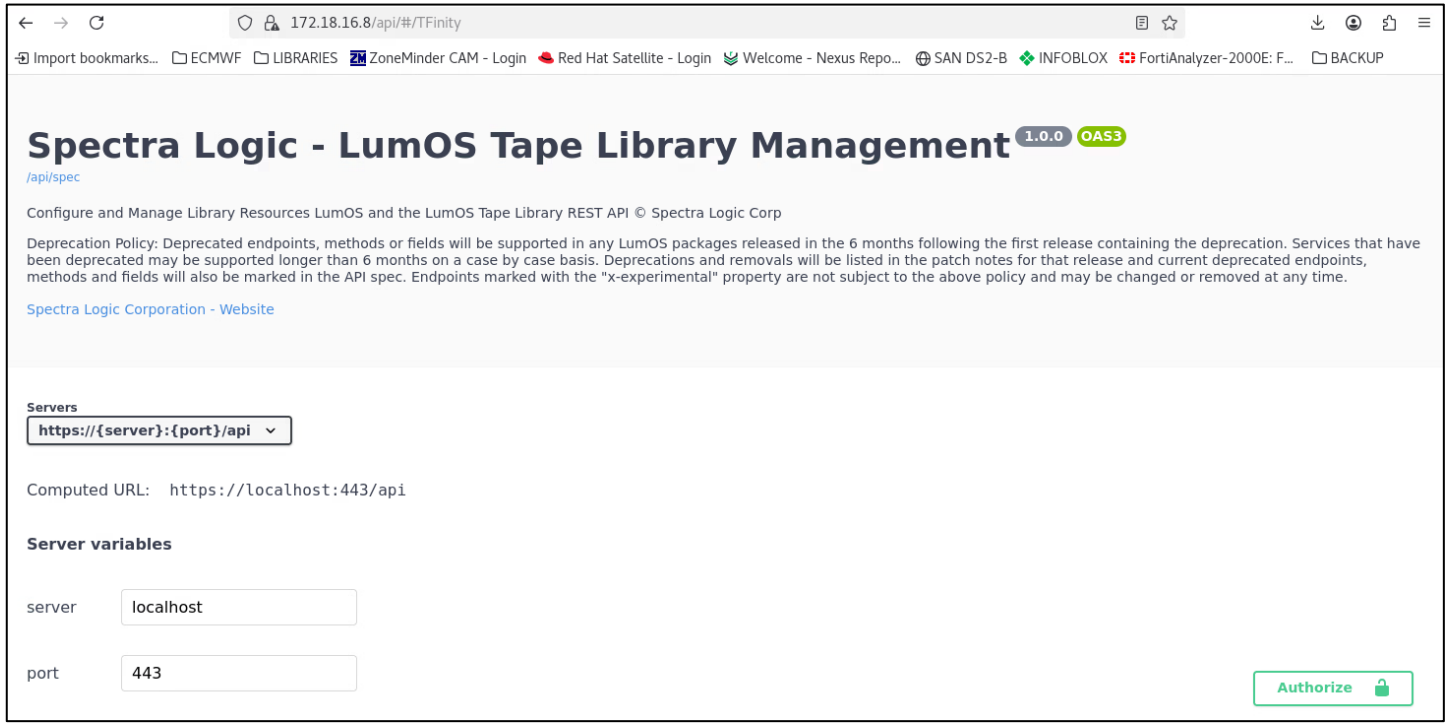
Spectra Logic Tfinity Monitoring

- BlueScale : Historic operating system of T950/Tfinity libraries
  - Windows CE based
  - XML API
  - LLNL Slapi : https://github.com/llnl/slapi/tree/bluescale

- LumOS : Modern operating system of Tfinity **Plus** libraries
  - Complete redesign of the operating system
  - Hardware upgrade of the library
  - REST API
  - https://spectralogic.com/features/spectra-library-management-software/lumos/`

LumOS Monitoring

- What can I get from the API ?
  - Everything !
  - All UI commands could be run using the API (POST)



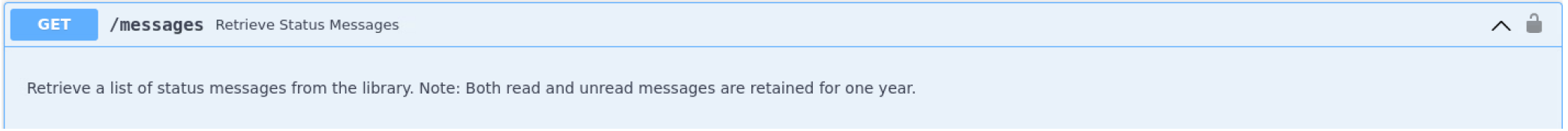
- The API Documentation is embedded in Lumos itselfs
  - https://<LIBRARY-IP>/api/
  - Warning : The API might change with LumOS (2.3.0 / 3.0.1 / 3.1.1)
  - All call can be tests directly on this page

A simple CLI Tool demo

- Lumos-cli : Bash script to query LumOS trought REST-API
  - https://github.com/pbrinette/lumos-cli
  - Written with chatGPT/ Codex
  - Use curl / jq / column

```
To connect to another library, set the environment variables:

  LUMOS_HOSTNAME
  LUMOS_USERNAME
  LUMOS_PASSWORD
  LUMOS_DOMAIN
  LUMOS_API_PORT
  LUMOS_CURL_INSECURE

Usage: lumoscli.sh CMD

Options:
  -k  Use insecure TLS mode for curl
  -n  Do not print table headers

  getToken
  getInventory
  getPartition
  getMagazines
  getMessages [count]
  getDrives

$ ./lumoscli.sh
```

Endpoint : /messages



- Retrieve last status messages :

```
$ ./lumoscli.sh -k getMessages
CREATED                  ID                                                    SEVERITY  MESSAGE
2026-06-10T15:04:40.9392Z  Lumos_39_AUTO_CLEAN_SUCCEEDED                       INFO      Auto cleaning of Drive:2:3:2 succeeded.
2026-06-10T15:00:07.4699Z  Lumos_36_DRIVE_NEEDS_CLEANING                       WARNING   Drive:2:3:2 needs to be cleaned.
2026-06-10T04:23:02.8759Z  Lumos_37_DRIVE_IO_ERROR                             WARNING   Drive YF9097008889 and tape with barcode K03468JE experien
ced I/O error. Encountered 1 hard read error on tape.
2026-06-09T17:27:03.2499Z  Lumos_37_DRIVE_IO_ERROR                             WARNING   Drive YF1097001559 and tape with barcode J19087JE experien
ced I/O error. Encountered 1 hard read error on tape.
2026-06-09T16:43:18.3468Z  Lumos_37_DRIVE_IO_ERROR                             WARNING   Drive YF1097003466 and tape with barcode K03253JE experien
ced I/O error. Encountered 4 hard read errors on tape.
2026-06-09T11:43:27.1449Z  Motion_104_MOTION_MSG_HYDRA_ROBOT_INITIALIZATION_SUCCESSFUL  INFO       Robot 2 has initialized successfully.
2026-06-09T04:21:23.3084Z  Lumos_39_AUTO_CLEAN_SUCCEEDED                       INFO      Auto cleaning of Drive:4:4:2 succeeded.
2026-06-09T04:16:56.2943Z  Lumos_36_DRIVE_NEEDS_CLEANING                       WARNING   Drive:4:4:2 needs to be cleaned.
2026-06-09T04:16:53.008Z   Lumos_37_DRIVE_IO_ERROR                             WARNING   Drive YF9097002206 and tape with barcode J18543JE experien
ced I/O error. Encountered 1 hard read error on tape.
2026-06-09T02:27:43.1999Z  Lumos_39_AUTO_CLEAN_SUCCEEDED                       INFO      Auto cleaning of Drive:4:6:3 succeeded.
$
```

Endpoint : /inventory

- Retrieve library inventory :
  - Partition
  - SCSI Element
  - Type
    - Slot
    - Drive
  - Status
  - Cartridge
  - Media

```
$ ./lumoscli.sh -k getInventory | tail
Lib5       10899    SLOT            ACCESSIBLE       -              TS
Lib5       10900    SLOT            ACCESSIBLE       -              TS
Lib5       10901    SLOT            ACCESSIBLE       -              TS
Lib5       10902    SLOT            ACCESSIBLE       -              TS
Lib5       10903    SLOT            ACCESSIBLE       -              TS
Lib5       10904    SLOT            ACCESSIBLE       -              TS
Lib5       10905    SLOT            ACCESSIBLE       -              TS
Lib5       10906    SLOT            ACCESSIBLE       -              TS
Lib5       10907    SLOT            ACCESSIBLE       -              TS
Lib5       10908    SLOT            ACCESSIBLE       -              TS
$ ./lumoscli.sh -k getInventory | grep DRIVE | grep -v "-" | head
Lib5       298      DRIVE           ACCESSIBLE       K07307JE       TS
Lib5       312      DRIVE           ACCESSIBLE       K07950JE       TS
Lib5       333      DRIVE           ACCESSIBLE       J18685JE       TS
Lib5       337      DRIVE           ACCESSIBLE       K04865JE       TS
$ ./lumoscli.sh -k getInventory | grep CLEAN | head
zClean     4096     SLOT            ACCESSIBLE       CLN0240JA      TS_CLEAN
zClean     4097     SLOT            ACCESSIBLE       CLN0241JA      TS_CLEAN
zClean     4098     SLOT            ACCESSIBLE       CLN0242JA      TS_CLEAN
zClean     4099     SLOT            ACCESSIBLE       CLN0243JA      TS_CLEAN
zClean     4100     SLOT            ACCESSIBLE       CLN0244JA      TS_CLEAN
zClean     4101     SLOT            ACCESSIBLE       CLN0245JA      TS_CLEAN
zClean     4102     SLOT            ACCESSIBLE       CLN0246JA      TS_CLEAN
zClean     4103     SLOT            ACCESSIBLE       CLN0247JA      TS_CLEAN
zClean     4104     SLOT            ACCESSIBLE       CLN0248JA      TS_CLEAN
zClean     4105     SLOT            ACCESSIBLE       CLN377JA       TS_CLEAN
$
```

Endpoint : /magazines

- Retrieve Terapack information :
  - Terapack label
  - position
  - SCSI Element ID
  - Cartridge
  - Type
  - Status
  - Partition

```
JU9KLSX          9:f:1:8    10863    F04100JF      TS          ACCESSIBLE      Lib5
JU9KQIX          9:b:1:2    10864    F04171JF      TS          ACCESSIBLE      Lib5
JU9KQIX          9:b:1:2    10865    F04170JF      TS          ACCESSIBLE      Lib5
JU9KQIX          9:b:1:2    10866    F04169JF      TS          ACCESSIBLE      Lib5
JU9KQIX          9:b:1:2    10867    F04168JF      TS          ACCESSIBLE      Lib5
JU9KQIX          9:b:1:2    10868    F04167JF      TS          ACCESSIBLE      Lib5
JU9KQIX          9:b:1:2    10869    F04166JF      TS          ACCESSIBLE      Lib5
JU9KQIX          9:b:1:2    10870    F04165JF      TS          ACCESSIBLE      Lib5
JU9KQIX          9:b:1:2    10871    F04164JF      TS          ACCESSIBLE      Lib5
JU9KQIX          9:b:1:2    10872    F04163JF      TS          ACCESSIBLE      Lib5
JU9JR7X          9:f:1:2    10873    F04144JF      TS          ACCESSIBLE      Lib5
JU9JR7X          9:f:1:2    10874    F04143JF      TS          ACCESSIBLE      Lib5
JU9JR7X          9:f:1:2    10875    F04142JF      TS          ACCESSIBLE      Lib5
JU9JR7X          9:f:1:2    10876    F04141JF      TS          ACCESSIBLE      Lib5
JU9JR7X          9:f:1:2    10877    F04140JF      TS          ACCESSIBLE      Lib5
JU9JR7X          9:f:1:2    10878    F04139JF      TS          ACCESSIBLE      Lib5
JU9JR7X          9:f:1:2    10879    F04138JF      TS          ACCESSIBLE      Lib5
JU9JR7X          9:f:1:2    10880    F04137JF      TS          ACCESSIBLE      Lib5
JU9JR7X          9:f:1:2    10881    F04136JF      TS          ACCESSIBLE      Lib5
JU9JBMX          5:b:1:20   10882    F04153JF      TS          ACCESSIBLE      Lib5
JU9JBMX          5:b:1:20   10883    F04152JF      TS          ACCESSIBLE      Lib5
JU9JBMX          5:b:1:20   10884    F04151JF      TS          ACCESSIBLE      Lib5
JU9JBMX          5:b:1:20   10885    F04150JF      TS          ACCESSIBLE      Lib5
JU9JBMX          5:b:1:20   10886    F04149JF      TS          ACCESSIBLE      Lib5
JU9JBMX          5:b:1:20   10887    F04148JF      TS          ACCESSIBLE      Lib5
JU9JBMX          5:b:1:20   10888    F04147JF      TS          ACCESSIBLE      Lib5
JU9JBMX          5:b:1:20   10889    F04146JF      TS          ACCESSIBLE      Lib5
JU9JBMX          5:b:1:20   10890    F04145JF      TS          ACCESSIBLE      Lib5
$ ./lumoscli.sh -k getMagazines | grep -v "-"
```

Endpoint : /drives

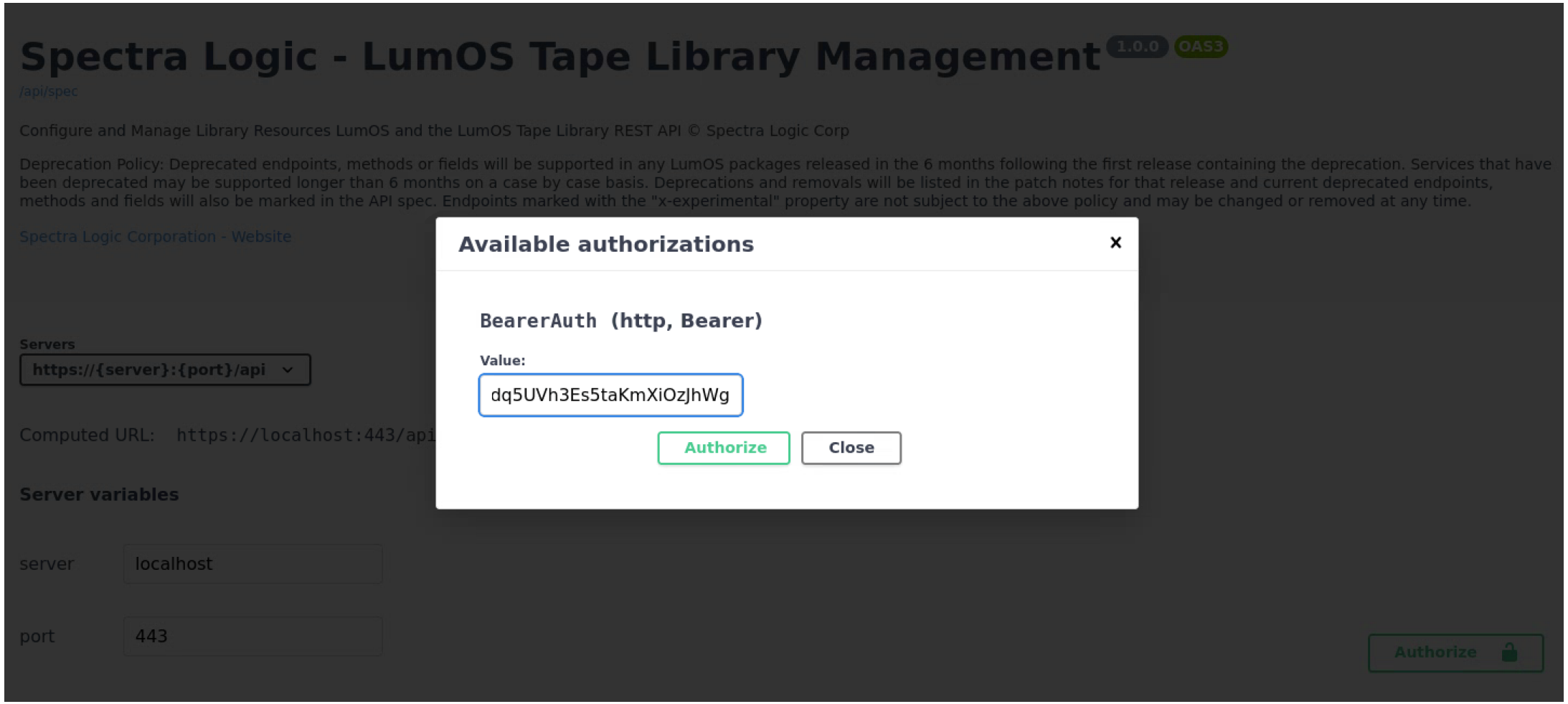
- Retrieve Drive information :
  - Parition
  - SCSI Element ID
  - Drive ID
  - Gendration
  - Product
  - Firmware
  - Serial Number
  - Manufacturer S/N
  - Physical Location *

```
$ ./lumoscli.sh -k getDrives
PARTITION  ADDRESS  DRIVE_PATH  GENERATION  PRODUCT   FIRMWARE  SERIAL_NUMBER  MANUFACTURER_SERIAL_NUMBER  PHYSICAL_LOCATION
Lib5       256      1:1:1       TS1170      0359270S  662E      10110068F100   YT1097001298                F03B1D1
Lib5       257      1:1:2       TS1170      0359270S  662E      10120068F100   YT1097001160                F03B1D2
Lib5       258      1:1:3       TS1170      0359270S  662E      10130068F100   YT1097001292                F03B1D3
Lib5       259      1:1:4       TS1170      0359270S  662E      10140068F100   YT1097001290                F03B1D4
Lib5       260      1:2:1       TS1170      0359270S  662E      10210068F100   YT1097001156                F03B2D1
Lib5       261      1:2:2       TS1170      0359270S  662E      10220068F100   YT1097001215                F03B2D2
Lib5       262      1:2:4       TS1170      0359270S  662E      10240068F100   YT1097001152                F03B2D4
Lib5       263      1:3:2       TS1160      0359260F  5B14      10320068F100   YF9097004935                F03B3D2
Lib5       264      1:3:3       TS1160      0359260F  5B14      10330068F100   YF9097009913                F03B3D3
Lib5       265      1:3:4       TS1160      0359260F  5B14      10340068F100   YF1097002164                F03B3D4
Lib5       266      1:4:1       TS1160      0359260F  5B14      10410068F100   YF9097006747                F03B4D1
Lib5       267      1:4:2       TS1160      0359260F  5B14      10420068F100   YF9097006698                F03B4D2
Lib5       268      1:4:3       TS1160      0359260F  5B14      10430068F100   YF1097003401                F03B4D3
Lib5       269      1:4:4       TS1160      0359260F  5B14      10440068F100   YF1097003404                F03B4D4
Lib5       270      1:5:1       TS1160      0359260F  5B14      10510068F100   YF1097003402                F03B5D1
Lib5       271      1:5:2       TS1160      0359260F  5B14      10520068F100   YF1097003456                F03B5D2
Lib5       272      1:5:3       TS1160      0359260F  5B14      10530068F100   YF1097002936                F03B5D3
Lib5       273      1:6:1       TS1160      0359260F  5B14      10610068F100   YF1097003384                F03B6D1
Lib5       274      1:6:2       TS1160      0359260F  5B14      10620068F100   YF1097003392                F03B6D2
Lib5       275      1:6:3       TS1160      0359260F  5B14      10630068F100   YF1097003400                F03B6D3
Lib5       276      1:6:4       TS1160      0359260F  5B14      10640068F100   YF1097002932                F03B6D4
Lib5       277      2:1:1       TS1170      0359270S  662E      201100695900   YT1097001296                F04B1D1
Lib5       278      2:1:2       TS1170      0359270S  662E      201200695900   YT1097001213                F04B1D2
Lib5       279      2:1:3       TS1170      0359270S  662E      201300695900   YT1097001148                F04B1D3
Lib5       280      2:1:4       TS1170      0359270S  662E      201400695900   YT1097001246                F04B1D4
Lib5       281      2:2:1       TS1170      0359270S  662E      202100695900   YT1097001155                F04B2D1
Lib5       282      2:2:2       TS1170      0359270S  662E      202200695900   YT1097001291                F04B2D2
```

* Need to be amended in the script to reflect your configuration. Info available since Lumos 3.1

Others : getToken

- Display a token ready to be cut & paste



SLAPI

- LLNL SpectaLogic CLI Tool
  - https://github.com/llnl/slapi
  - Seems to cover all API endpoints
  - Just released, not yet tests

README Contributing GPL-2.0 license License

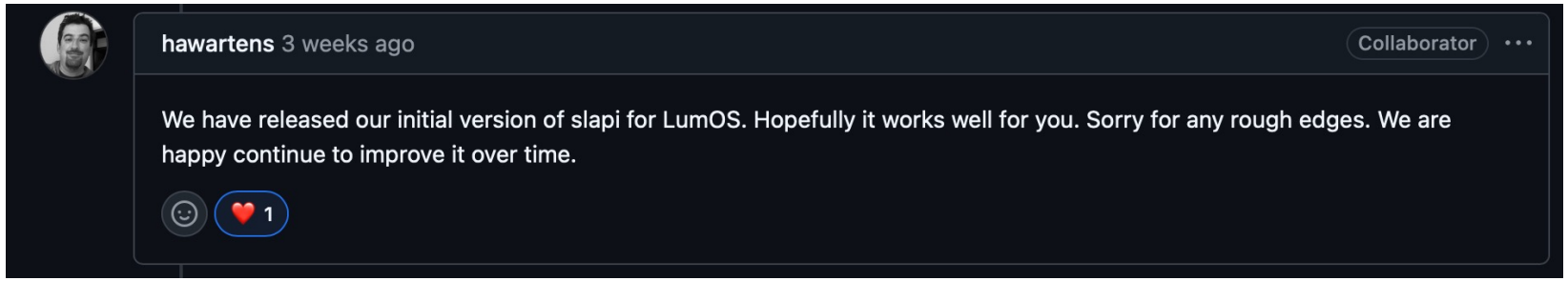
SLAPI

SLAPI is a command-line tool that communicates with Spectra Logic tape libraries using their LumOS REST API. This provides a simple way to administer and monitor Spectra Logic tape libraries in large data centers.

Getting Started

In order to use SLAPI, you must have python3.11 installed on your system.

```
$ make
$ cd src/lumosapi_client
$ python3.11 setup.py bdist_wheel
$ pip3.11 install ./dist/lumosapi_client-$(cat ../../MODULEVERSION)-py3-none-any.whl
$ pip3.11 install --upgrade requests urllib3 pandas pytz
$ cd ..
```



Thank you!

Questions?