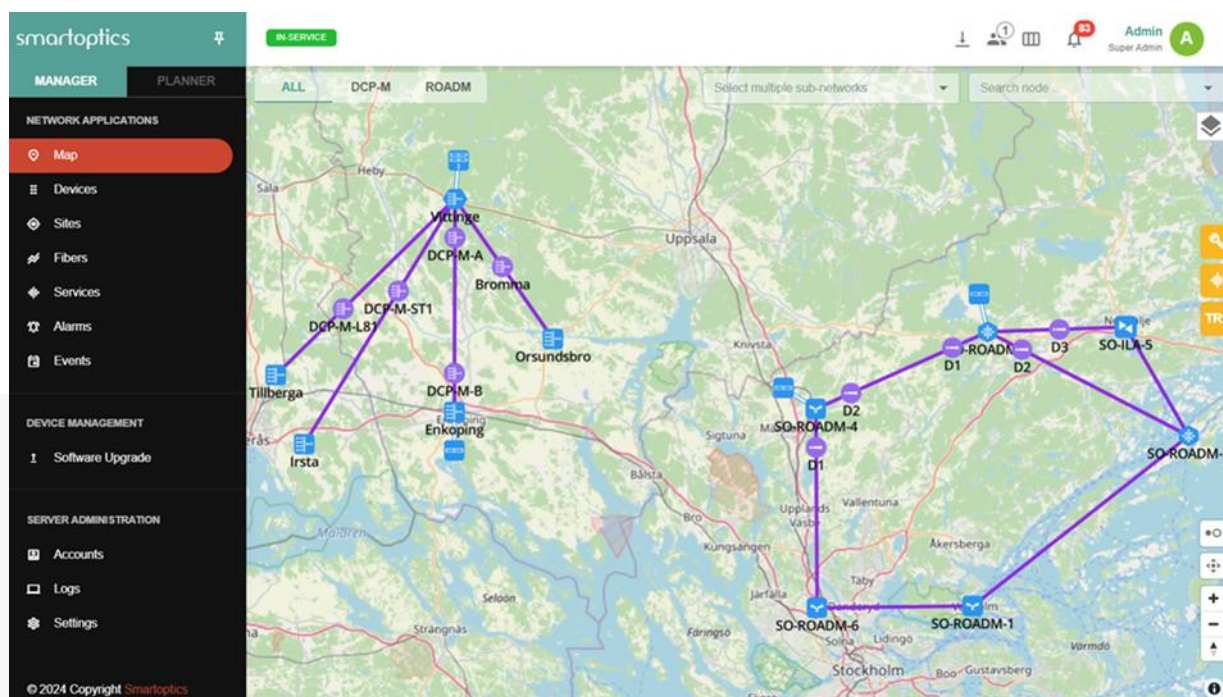


# SOSMART SOFTWARE SUITE

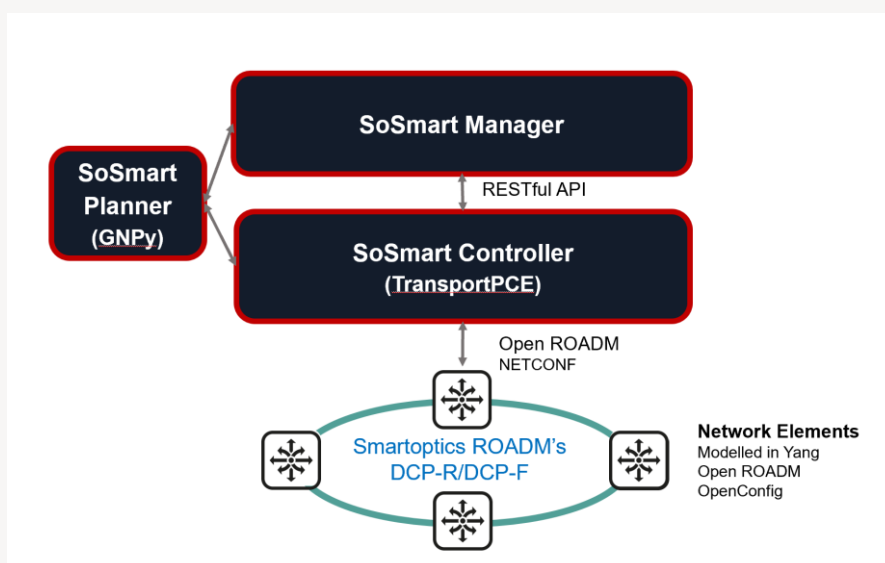
Management Suite to support Smartoptics Products in an Open environment



## A MODERN, OPEN AND FLEXIBLE MANAGEMENT SOLUTION

SoSmart is a modular software suite for SDN-based management of Smartoptics products in an open, multi-layer and multi-vendor optical networking environment. The management suite has a new and modern software architecture with open API:s that enable a high level of management flexibility, modularity, multiple integration possibilities and openness. The Smartoptics SoSmart Software Suite includes the following building blocks:

- The SoSmart Manager – The management application for optical network provisioning, also including fault, configuration, administration, performance, and security (FCAPS) functions, and operated via an advanced graphical user interface (GUI).
- The SoSmart Controller – An open source SDN controller based on TransportPCE.
- The SoSmart Planner – An optical planning and simulation tool with the same GUI as the SoSmart Manager and using the open-source module GNPpy for path simulations.

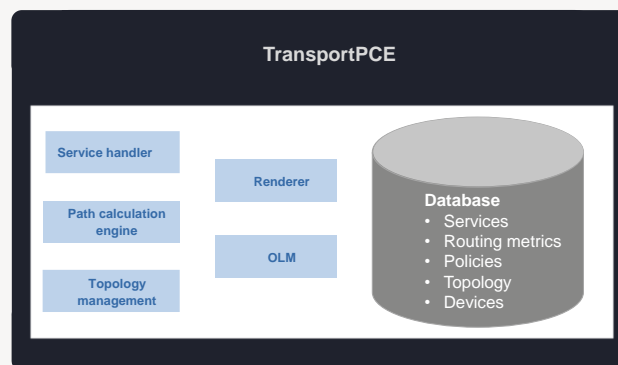


## SOSMART MANGAGER IN SHORT

- Provides an intuitive and easy to use graphical user interface, GUI.
- Use Open APIs and is integrated towards Transport PCE.
- Graphical network visualization based on geographical locations. KMZ, KML and GeoJSON formats are supported.
- Optical point-and-click service provisioning with flexgrid support.
- End to end service monitoring visibility (DCP products).
- FCAPS (Fault, Configuration, Administration, Performance, Security).
- Supporting DCP-R ROADMs (9D & 34D) and DCP-F ILAs today via NETCONF.
- DCP-M and DCP-2 graphical representation, inventory, alarm and service support. DCP-F support coming soon.
- Support for Raman amplifiers and passive filters, including graphical representation and inventory information.
- Centralized SW Upgrade support.

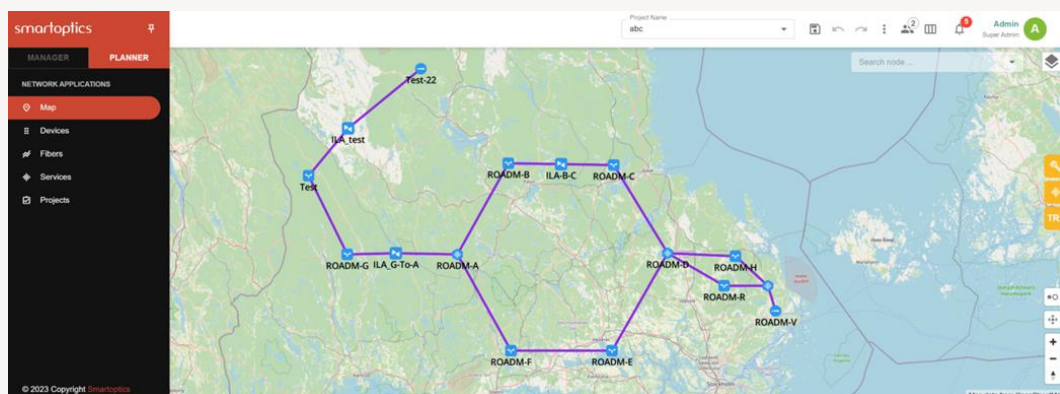
## SOSMART CONTROLLER IN SHORT

- SDN controller based on open-source TransportPCE.
- Provides a standardized path calculation engine (PCE), a service handler and topology management.
- Communicates with network elements through a standardized NetConf interface that complies to the Open ROADM API.
- Communicates with SoSmart Manager via a RESTful API.
- Contains a database with services, routing metrics, policies, topology, and devices.



## SOSMART PLANNER IN SHORT

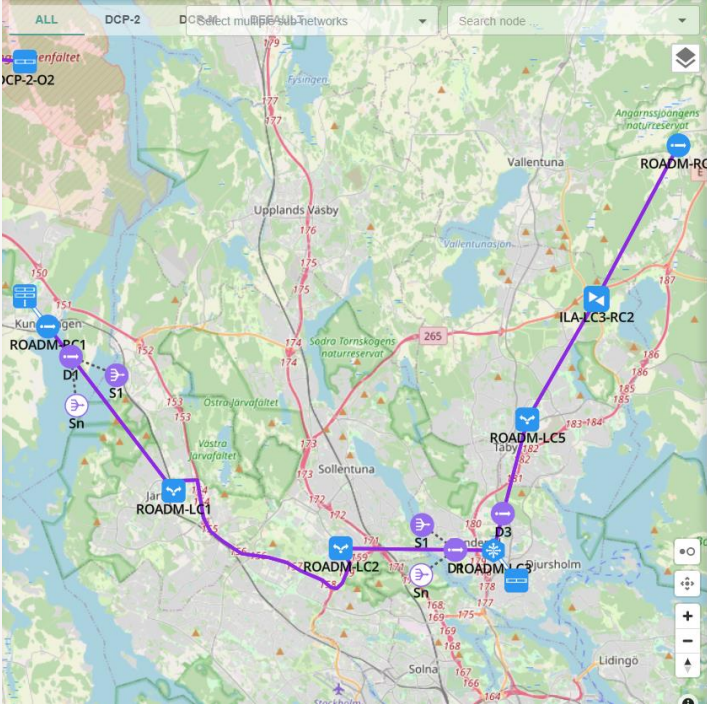
- SoSmart Planner uses the same GUI framework as SoSmart Manager.
- Service feasibility simulations with flexgrid support, performed under end-of-life (EOL) conditions.
- Optical performance validation based on OSNR and GSNR QoT parameters is done with the Open-Source SW GNPpy (Gaussian Noise Model in Python).
- Capacity Planning with the option to reserve spectrum during service creation.
- Efficient network design with support for both online and offline optical planning.
- Nodes and fibers in map GUI based on Open Street Map.
- Project management features, e.g. load, save, export, import real network.





OPTICAL POINT AND CLICK PROVISIONING

Smartoptics DCP-R family is a disaggregated multi-degree ROADM platform used for Open Line Systems. This platform has a high level of automation, but it is still important that the SoSmart Manager can provide a good network representation and an easy way to configure network. Optical channels can easily be configured and activated by using the point-and-click provisioning feature in the SoSmart Manager. The SoSmart Manager provides the GUI for provisioning while the SoSmart Controller will conduct the path calculation and communication to the network elements.



Map view showing the network topology with ROADMs (ROADM-LC1, ROADM-LC2, ROADM-LC3, ROADM-RC1, ROADM-RC2, ROADM-RC3) and optical paths. The map includes geographical features like lakes and roads, and a search bar at the top.

CREATE SERVICE

START POINT

END POINT

Node Name

ROADM-RC1

Degree Name

DEG1

Add Drop Unit

SRG3-XC2

Port

PP1-TXRX

TRx Type

Smartoptics QSFP-DD SO-TQSFDD4CCZRP

Traffic Format

OpenZR+ 400G

Slot Width

125 GHz

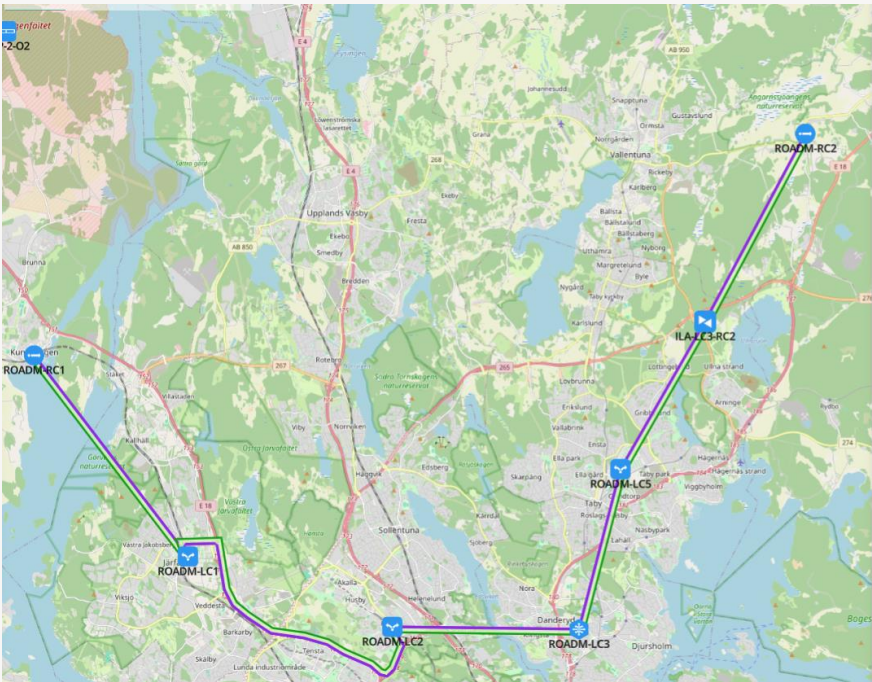
Center Frequency

192.5 THz

192.4 THz

192.6 THz

After a service is configured, the information is stored in the SoSmart Controller database. All provisioned services can be viewed in a detailed service list in a separate window or in a miniature list in the network window.



Map view showing the network topology with ROADMs (ROADM-LC1, ROADM-LC2, ROADM-LC3, ROADM-RC1, ROADM-RC2, ROADM-RC3) and optical paths. The map includes geographical features like lakes and roads, and a search bar at the top.

SERVICE LIST

OPTICAL SERVICES

Oper Status	Service Name	Center Frequency	Capacity	Actions
IN-SERVICE	10G_941_RC1_to_LC1	194.1 THz	10 Gbit/s	⋮
IN-SERVICE	10G_944_RC1_to_LC2	194.4 THz	10 Gbit/s	⋮
IN-SERVICE	10G_945_RC1_to_RC2	194.5 THz	10 Gbit/s	⋮
IN-SERVICE	100G_943_RC1_to_LC5	194.3 THz	100 Gbit/s	⋮
IN-SERVICE	400G_923_RC1_to_LC3	192.3 THz	400 Gbit/s	⋮
IN-SERVICE	400G_959_RC1_to_LC5	195.9 THz	400 Gbit/s	⋮

P2P SERVICES

Oper Status	Service Name	Channel	Actions
IN-SERVICE	DCP-M-B_TO_DCP-M-A-CHANNEL-9210	921	⋮
IN-SERVICE	DCP-M-B_TO_DCP-M-A-CHANNEL-9280	928	⋮
IN-SERVICE	DCP-M-B_TO_DCP-M-A-CHANNEL-9290	929	⋮

XPONDER SERVICES

Oper Status	Service Name	Channel	Actions
IN-SERVICE	Xponder_service_404to404	D9210	⋮

## ORDERING INFORMATION

SoSmart product codes	
SOSMART-MANAGER	SoSmart Manager Server License, one time entry fee
DCP-R-SML	DCP-R SoSmart Manager License, yearly subscription fee per DCP-R chassis
DCP-2-SML	DCP-2 SoSmart Manager License, yearly subscription fee per DCP-2 chassis
DCP-M-SML	DCP-M SoSmart Manager License, yearly subscription fee per DCP-M chassis

## SERVER SPECIFICATIONS

The SoSmart Software Suite runs on x86 64-bit hardware with Linux as operating system. Installing and hosting the SoSmart Software suite is as easy as operating the network. The SoSmart Manager, Controller and Planner are all installed as docker containers on standard server hardware. A docker container can package an application and its dependencies in a virtual container, isolated from other processes in the system. This is a modern way of running applications which is extremely easy to install and at the same time consumes small processing resources compared to older alternatives. Because of their isolated nature, docker containers are very well suited for running on cloud servers.

Both the SoSmart Controller and the SoSmart Manager can be hosted on Virtual Machines, and server redundancy can be achieved through modern data center technologies.

The following are the minimum and recommended server requirements for installation of the SoSmart SW suite.

- **Operating System:** Any Linux OS with Docker pre-installed.
- **Dependencies:** Docker and Docker Compose must be installed prior to installing SoSmart.
- 4 Virtual CPUs (min.) or 8 Virtual CPUs (recommended) (Intel(R) Xeon(R) Gold 6138 CPU @ 2.00GHz or similar).
- 16 GB RAM (min.).
- 100 GB disk space (min.).
- Google Chrome (recommended browser).

For customers using the **Virtual Desktop Infrastructure** (VDI) environment, **GPU with HW acceleration** is a necessity for smooth SoSmart operation.

NOTE. THE INFORMATION IN THIS DOCUMENT IS VALID FROM SOSMART RELEASE R6.1.1.