

Software-Defined Infrastructure at RNP

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In this talk, we will describe the software-defined infrastructure and the corresponding orchestrator deployed at RNP, the Brazilian NREN. This infrastructure is composed by a completely virtualizable SDN Overlay Network and a two-tier private cloud. The orchestrator is based on ONOS and it is responsible for the lifecycle management of virtual resources such as SDN/L2 software switches, NSI/VXLANS/VLANs circuits, VMs/containers, and storage blocks. The presentation will contain an overview of the architecture and its main features, along with the description of two use cases: dynamic provisioned CDN on SDN and containers; and Softwarization of Science DMZ Infrastructure.

Besides this infrastructure, RNP is deploying a testbed composed by SDMZ 100G DTN nodes on top of SDN whiteboxes and an emulated optical layer. This testbed will allow the remote experimentation on SDN Multilayer for the fast provisioning of network services, optimization of resources and, in particular, complete automation of the network. The emulated optical layer will be composed by disaggregated whiteboxes from different vendors. In this talk, we will report on the status of this project and look for possible international collaborations in this field.