

## VALIDATING NOCLAND'S NETWORK MANAGEMENT SYSTEM ON OPENSTACK

As a Managed Services Provider, NOCLAND has built a flexible cloud-based integrated platform (NOCView) that streamlines the monitoring and management of critical IP network infrastructure. This project tested and validated a new OpenStack functionality for NOCView. NOCView was deployed into CENGN's OpenStack cloud tenancy and integrated with CENGN's world-class OPNFV Pharos Lab to act as an extended customer environment for NOCView.

NOCView's cloud-based NMS streamlines IP network infrastructure with a single-integrated solution proven to work regardless of an organization's size or geography. Each NOCLAND customer has their own unique secure instance of NMS (NOCView), allowing organizations the flexibility of adding devices through a secure VPN connection (or other forms of interconnectivity) and then monitoring them as a group of devices or as individual elements depending on monitoring criteria. All within a single and easy to use management interface.

As a cloud-based platform, the major benefit of NOCView is the reduction in costs associated with typical traditional licensing models such as maintenance agreements and patch management. In essence, NOCView is a one-stop shop to proactively monitor and manage networks for key performance or service-level agreement metrics instead of using a series of systems. NOCLAND's resource operations centre is a managed service offering that allows organizations the option to have their instance of NOCView monitored 24/7 (or just afterhours) by network and operations professionals. A front-line experienced team and triage alarms allows the end client's resources to be triggered only when it absolutely matters. Full reporting is part of the service, providing daily reports that can be customized to specific requirements.

### THE CHALLENGE

There are two major challenges facing NMS end-users:  
 1) Most NMSs are overly complex and difficult to navigate. Managers need detailed information displayed in a simplified manner, but traditional systems often require several programs intertwined to produce the necessary data.

2) NMSs have limited device compatibility. This forces network managers to spend more time figuring out how to connect the device to the system instead of monitoring and managing their networks. Less than compatible devices can also lag, resulting in the manager not being provided with a real-time assessment of the network.

### THE SOLUTION

NOCLAND addresses these challenges through their NMS product, NOCView, a secure cloud solution delivering a snapshot of the network's devices and an option to drill down detailing data for users.

NOCView is a real-time visual and secure NMS as a service that allows organizations to monitor and manage their networks from anywhere with any device. Each client of NOCView is provided with their own protected and isolated network slice for their systems. NOCLAND's Simple Network Management Protocol (SNMP) collects CPU utilization, bandwidth, temperature, and more from devices by connecting them to NOCView. Organizations can view their data in

traditional reports, like NOCView's asset database for location and device numbers, or customize their own reports and reporting formats tailored to organization-specific needs.

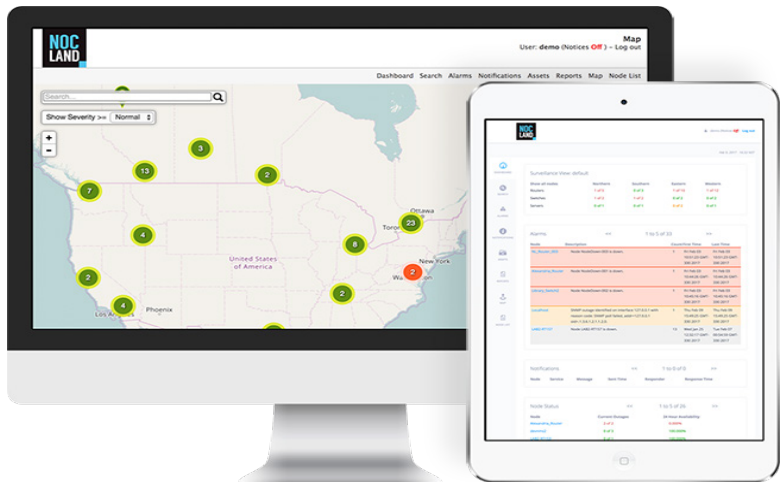


Figure 1. NOCView Dashboard

### THE PROJECT

The purpose of the project was to validate NOCView's new compatibility with OpenStack-based cloud environments. This would open their product up to new markets as many potential customers run their networks on opensource technology. To emulate an OpenStack customer environment, NOCView utilized CENGN's OPNFV Pharos Lab.

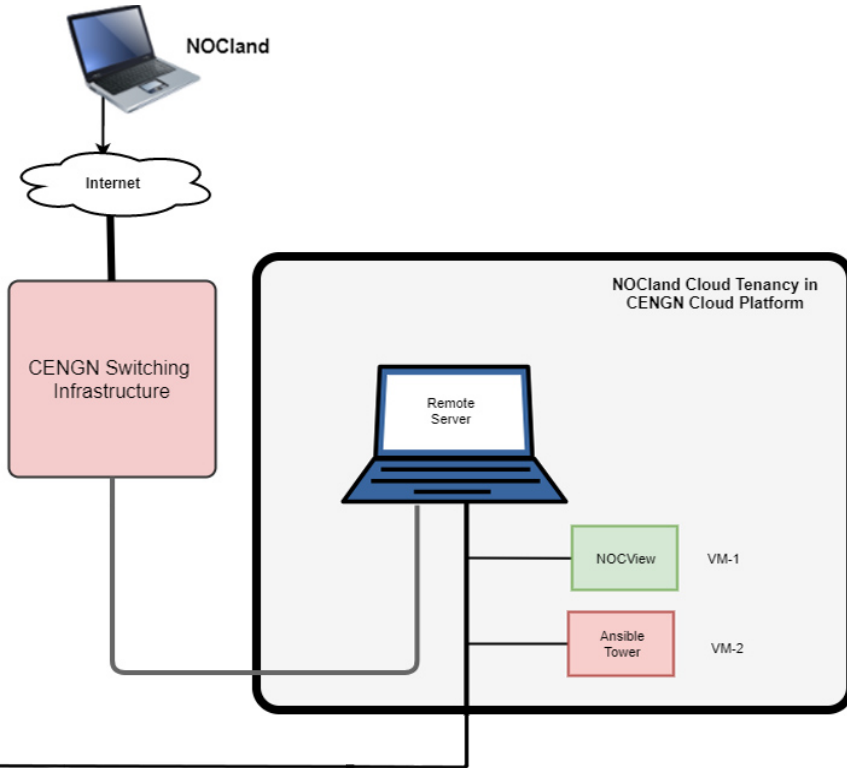
There were two major components to successfully validating the functionality of NOCView on OpenStack. First, NOCLAND deployed NOCView into a cloud tenancy on the CENGN Infrastructure. This was completed by installing and configuring NOCView through the nms.yml Ansible playbook.

The second step was to leverage CENGN's OPNFV Pharos Lab as a customer cloud environment to test and monitor NOCView's complete functionality. The OPNFV Pharos Lab was crucial to the project as it replicated a completely transparent customer environment based on OpenStack, where there is complete visibility on the OpenStack services. This is not normally available in any public cloud platform. Upon completing the testing of NOCView's integration with the Pharos Lab customer environment, NOCLAND was able to monitor and oversee the OpenStack service, Nova. This was achieved with the help of an API call from NOCView to the Openstack based customer environment.

### CENGN MEMBERS



## PROJECT TESTING



## TEST CASES

### Phase 1

To deploy NOCView in the CENGN cloud platform, the NMS was installed and configured using the nms.yml Ansible playbook.

### PHASE 2

An API call was sent from the NMS, which was in the CENGN cloud tenancy to the CENGN OPNFV Pharos Cloud representing a customer cloud based on OpenStack. The API call from the NMS device successfully ran to the OpenStack customer environment allowing real-time monitoring of OpenStack services.

### PHASE 3

An Ansible playbook was created to monitor and obtain all the information of the OpenStack Nova metrics.

- Admin Network DHCP, DNS, PXE
- Tenant Network VXLAN Tenant Traffic
- Public Network, Horizon external traffic
- Storage Network

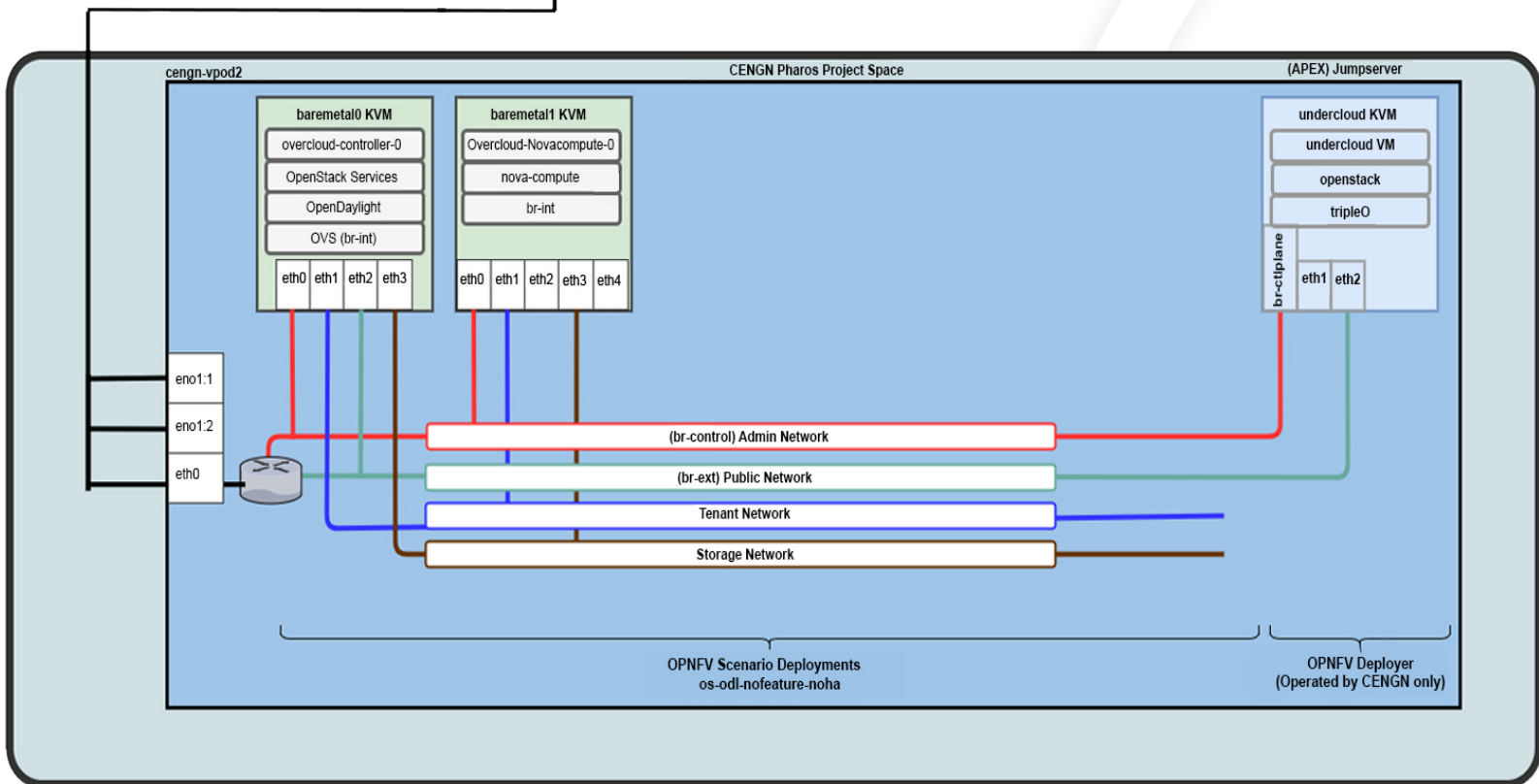


Figure 2. NOCView Deployed in CENGN Infrastructure

## CONCLUSION

By leveraging CENGN's OpenStack cloud infrastructure, NOCLAND was able to successfully test, refine, and validate the NOCView NMS as a secure and proactive system for any organization using an OpenStack network. NOCLAND has now validated its qualifications to provide complex NMS solutions to organizations of all sizes, geographies and network types, globally.