An Open Source SDN Platform

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We reached 2 Gbps from São Paulo to Pittsburgh

- The Bandwidth Challenge Demo reached ~100 Gbps at the showfloor
We reached **16 Gbps** from São Paulo to Pittsburgh

- The Bandwidth Challenge Demo reached ~120 Gbps at the showfloor
We reached **1 Tbps** at the showfloor.
SC16 SDN-WAN Demonstration End-Points
Caltech, UM, Vanderbilt, UCSD, Dell, 2CRSI, KISTI, StarLight, PRP, FIU, RNP, UNESP, CERN
We reached **100 Gbps** from São Paulo to Salt Lake City

- The Bandwidth Challenge Demo reached ~2 Tbps at the showfloor
What is Kytos?

- An SDN Platform at early, but heavy stage of development since Jan/2016
  - Event Handler with "Pub&Sub" methods and decorators
  - High Level Language API to write Network applications
  - Event Driven
  - Ecosystem with Plug&Play Network Applications repository
  - User friendly with a Nice and Responsive web UI
  - 100% Open Source (MIT License)
  - Always with "keep it simple" paradigm in mind
  - Designed to be vendor and protocol agnostic

**Definition:** Cyto-: Prefix denoting a cell. 'Cyto-' is derived from the Greek 'kytos', meaning 'hollow, as a cell or container.'
What can Kytos do?

- Orchestrate OpenFlow (<=1.3 spec) switches
- Delegate OF messages to network applications
- Be easily extended to support other protocols and versions
- Help network engineers to debug SDN problems
- Make it simple to create and share Network Applications (NApps):
  - High-level code abstractions for beginners
  - Tool for downloading NApps and sharing your own
Kytos distributions (aka "flavors")

- Kytos core + Kytos team NApps = Kytos Controller
- Kytos core + Kytos team, community, your NApps = Your Controller
Using Kytos - Try first

$ docker run --privileged -it kytos/tryfirst
Using Kytos - Installing

$ sudo pip3.6 install kytos
Using Kytos - Starting

# kytosd -f

Welcome to Kytos SDN Platform!

We are doing a huge effort to make sure that this console will work fine. But for now is still experimental.

Kytos website.: https://kytos.io/
Documentation.: https://docs.kytos.io/
OF Address....: tcp://0.0.0.0:6633
WEB UI........: http://0.0.0.0:8181/
kytos $>
Using Kytos - NApps Management

- NApps are simple Python modules in a .napp package
- NApps have a unique identifier: `[protocol][repo]/author/napp[:tag]`
- Examples:
  - huawei/l2ls
  - kytos/of_core:latest
  - https://napps.kytos.io/repo/kytos/of_core
Welcome to Napp repository
Before coding your app, check if someone else has already solved your problem.

Search napps repository

Featured Napps

**kytos/web_topology_layout**
- ★★★★★
- Manage endpoints related to the web interface settings and layout.

**kytos/of_ipv6drop**
- ★★★★★
- Install flows to DROP IPv6 packets on all switches.

**kytos/of_stats**
- ★★★★★
- Provide statistics of openflow switches.

**kytos/of_flow_manager**
- ★★★★★
- NApp that manages switches flows.

Trending now

**kytos/web_topology_layout**
- ★★★★★ (1880 reviews)
- topology  web  interface  layout
- Manage endpoints related to the web interface settings and layout.

**kytos/of_ipv6drop**
- ★★★★★ (1880 reviews)
- openflow  ipv6
- Install flows to DROP IPv6 packets on all switches.
Using Kytos - NApps Management

```
$ kytos napps search l2ls

<table>
<thead>
<tr>
<th>Status</th>
<th>NApp ID</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>[--]</td>
<td>jab1982/l2ls</td>
<td>My L2LS implementation</td>
</tr>
<tr>
<td>[--]</td>
<td>kytos/of_l2ls</td>
<td>A L2 learning switch ap...</td>
</tr>
<tr>
<td>[--]</td>
<td>kytos/of_l2lsloop</td>
<td>A L2 learning switch app...</td>
</tr>
</tbody>
</table>

Status: (i)nstalled, (e)nabled
```
Using Kytos - NApps Management

$ sudo kytos napps install huawei/l2ls
Using Kytos - NApps Management

$ sudo kytos napps upload
Contributing / Become a member

- Main website
  - [https://kytos.io](https://kytos.io)
- Source Code
  - [https://github.com/kytos](https://github.com/kytos)
- Documentation
  - [https://docs.kytos.io](https://docs.kytos.io)
  - [https://tutorials.kytos.io](https://tutorials.kytos.io)
- Mailing list:
  - [https://lists.kytos.io](https://lists.kytos.io)
- IRC:
  - #kytos @ freenode
Kytos Partners

3 partners doing tests and contributing with bug reports and code
Kytos Sponsors

Huawei is supporting us since Jan/2016
Kytos Releases Cycle

- 2 stable releases / year
  - Kytos summit (1 week)
  - beta1, beta2, beta3 (6 weeks each)
  - Release Candidate (3 weeks)
  - Official Stable Release
You are welcome to join us during the Kytos summit 2017.

Sao Paulo, Brazil | 2th - 5th August
An Open Source SDN Platform - Thank you

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