OVS-DPDK for IP-TV live at Swisscom

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IP TV architecture at Swisscom

Simplified, per TV channel

- Active mcast switch
- Backup mcast switch
- Record / time-shift
- Video transcoding
- Swisscom logo
- House with devices connected to mcast switch
- Satellite dish
Zoom on one (active VM)

One VM == one TV channel == one input mcast stream + one output mcast stream

10 vCPUs VM

Video Transcoding

Housekeeping:
ssh, SNMP, logs

- eth0
- eth1
- eth2

200 Mbps

OVS-DPDK bridge, NORMAL action with IGMP SNOOPING

```bash
[output]
```

ovs-vsctl set Bridge br-int mcast_snooping_enable=true
ovs-vsctl set Bridge br-int other_config:mcast-snooping-disable-flood-unregistered=true

```bash
[root]# ovs-appctl mdb/show br-int
```

<table>
<thead>
<tr>
<th>port</th>
<th>VLAN</th>
<th>GROUP</th>
<th>Age</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>2</td>
<td>239.186.60.1</td>
<td>14</td>
</tr>
<tr>
<td>8</td>
<td>2</td>
<td>239.186.60.1</td>
<td>1</td>
</tr>
<tr>
<td>3</td>
<td>1</td>
<td>querier</td>
<td>27</td>
</tr>
</tbody>
</table>
OVS-DPDK

Why?

- Kernel OVS performances were fine but...
- ...Kernel OVS came with spurious packet loss that were not identified

How many cores?

- 1 core (so 2 PMDs, two hyperthreads) only!

How many queues?

- Just one per vNIC, as we have only one flow in and only one flow out
Key Takeaways

Customers are watching TV thanks to OVS-DPDK and its multicast support

OVS-DPDK usage make sense even with moderate traffic workload when zero packet loss matters

Thanks to the OVS community for keeping multicast working fine (and possibly better) in the future :-)
Thank you!

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