Heavy Reading Study on CSPs and OpenStack

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Operator type

- Fixed-line telecom network operator: 17%
- Mobile operator with network assets: 15%
- Converged operator (fixed and mobile network assets): 46%
- Virtual network operator (no network assets): 4%
- Cable network operator: 10%
- Other broadband service provider: 5%
- Other CSP: 3%
- Other CSP: 3%

Source: Heavy Reading service provider survey, August 2016, n=113
Operator location

- U.S. 54%
- Canada 9%
- Central/South America (including Mexico & the Caribbean) 9%
- Europe 14%
- Middle East 3%
- Asia/Pacific (including Australia) 11%

Source: Heavy Reading service provider survey, August 2016, n=113
Operator size

Source: Heavy Reading service provider survey, August 2016, n=113
Respondent roles

- R&D technical strategy: 23%
- Network planning: 12%
- IT operations: 12%
- Network engineering: 23%
- Product/Service management: 12%
- Sales & marketing: 4%
- Corporate management: 8%
- Other: 3%
- Software developer: 1%
- Customer support: 2%
- Other: 3%

Source: Heavy Reading service provider survey, August 2016, n=113
Familiarity with OpenStack

Very familiar
27%

Somewhat familiar
73%

Source: Heavy Reading service provider survey, August 2016, n=113
**NFV strategy execution status**

- We are already executing our NFV strategy: 40%
- We have an NFV strategy but we haven’t started executing it yet: 18%
- We are now developing our NFV strategy: 26%
- We have no plans to adopt NFV: 2%
- We are just starting to consider an NFV strategy: 14%

*Source: Heavy Reading service provider survey, August 2016, n=113*
Cloud strategy execution status

Source: Heavy Reading service provider survey, August 2016, n=109-111
Experience with open source software

Source: Heavy Reading service provider survey, August 2016, n=113
Level of engagement with OpenStack

- It is actively involved and contributes directly to OpenStack (e.g., via OPNFV) 17%
- It is actively involved and contributes indirectly to OpenStack (e.g., via OPNFV) 20%
- It actively follows OpenStack, but is not contributing yet 37%
- It is not engaged with OpenStack and has no plans to get involved 4%
- It is not yet engaged with OpenStack but would like to be 22%

Source: Heavy Reading service provider survey, August 2016, n=113
Nature of engagement with OpenStack

- Contribute requirements and use cases: 80%
- Attend events: 80%
- Follow openstack.org, superuser.openstack.org, and other Internet: 70%
- Contribute to the software: 60%
- On mailing lists (e.g., operator, user committee, Foundation, community): 60%
- Participate in IRC meetings: 50%

Source: Heavy Reading service provider survey, August 2016, n=41
OpenStack project contributions

Source: Heavy Reading service provider survey, August 2016, n=26
OpenStack event participation

Source: Heavy Reading service provider survey, August 2016, n=30
How to increase engagement

- More mature underlying technology
- More telecom operator support of the project
- More vendor support of the project
- More/better documentation specific to telecoms
- More targeted telecom-specific use cases/activities
- Dedicated meetups for telecom operators
- Dedicated mailing lists to for telecoms
- Other

Source: Heavy Reading service provider survey, August 2016, n=107
Importance of OpenStack

Essential 28%
Important, but not essential 58%
Marginal 13%
Not important at all 1%

Source: Heavy Reading service provider survey, August 2016, n=113
OpenStack usage by service type

- To manage our internal cloud: 32% already using, 32% testing, 26% considering, 8% no plan to use
- As the basis for NFV: 22% already using, 39% testing, 38% considering, 9% no plan to use
- To manage our customer-facing public cloud: 19% already using, 30% testing, 36% considering, 5% no plan to use
- As the basis for IoT: 12% already using, 29% testing, 50% considering, 9% no plan to use
- As the basis for 5G: 3% already using, 28% testing, 49% considering, 5% no plan to use

Source: Heavy Reading service provider survey, August 2016, n=108-111
## OpenStack benefits by service type

<table>
<thead>
<tr>
<th>Benefit</th>
<th>To manage our internal cloud</th>
<th>To manage our customer-facing public cloud</th>
<th>As the basis for NFV</th>
<th>As the basis for IoT</th>
<th>As the basis for 5G</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>Respond to changing service demand</td>
<td>39%</td>
<td>37%</td>
<td>39%</td>
<td>41%</td>
<td>36%</td>
<td>4%</td>
</tr>
<tr>
<td>Offer new services more quickly</td>
<td>53%</td>
<td>62%</td>
<td>54%</td>
<td>52%</td>
<td>48%</td>
<td>3%</td>
</tr>
<tr>
<td>More rapid virtualization of the data center</td>
<td>44%</td>
<td>34%</td>
<td>50%</td>
<td>41%</td>
<td>35%</td>
<td>2%</td>
</tr>
<tr>
<td>Reduced software costs</td>
<td>43%</td>
<td>39%</td>
<td>49%</td>
<td>31%</td>
<td>29%</td>
<td>2%</td>
</tr>
<tr>
<td>Reduced operational costs</td>
<td>43%</td>
<td>42%</td>
<td>43%</td>
<td>34%</td>
<td>41%</td>
<td>2%</td>
</tr>
</tbody>
</table>
OpenStack procurement

- We will use a vendor-supported distribution of OpenStack: 65%
- We will get OpenStack as part of the OPNFV reference architecture: 21%
- We will download a freely available version of OpenStack: 14%

Source: Heavy Reading service provider survey, August 2016, n=108
Making OpenStack NFV-ready

<table>
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<tr>
<th>Item</th>
<th>Score*</th>
<th>Overall Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scalability of the controller(s)</td>
<td>103</td>
<td>1</td>
</tr>
<tr>
<td>Service chain modification</td>
<td>74</td>
<td>2</td>
</tr>
<tr>
<td>Securing OpenStack over the Internet</td>
<td>61</td>
<td>3</td>
</tr>
<tr>
<td>Backward compatibility between releases</td>
<td>35</td>
<td>4</td>
</tr>
<tr>
<td>Binding virtual NICs to VNFs</td>
<td>28</td>
<td>5</td>
</tr>
<tr>
<td>Start-up storms (or stampedes)</td>
<td>10</td>
<td>6</td>
</tr>
</tbody>
</table>

*Score is a weighted calculation. Items ranked first are valued higher than the following ranks, the score is the sum of all weighted rank counts.
Container usage by service type

For VNFs
- Will definitely use containers: 29%
- Will probably use containers: 40%
- May or may not use containers: 31%

For business applications
- Will definitely use containers: 22%
- Will probably use containers: 42%
- May or may not use containers: 36%

Source: Heavy Reading service provider survey, August 2016, n=110-111
Questions?