Designing Interactive Audio Experiences Using HIVE:
A Distributed Cloud Supercomputer for Real-Time Multimedia Interactions

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INSIDE HIVE

Horizontal scaling

High availability

Fig. 1 Network Topology of HIVE as seen from OpenStack dashboard

Controller node hosts all OpenStack operations needed to deploy VMs.

Network node handles networking between nodes.

Computing node host virtual instances.
Honey I shrunk the kids
Latency tests

Large initial interval

Scalable

Fast

Table 1. Overall times for latency tests (seconds)

<table>
<thead>
<tr>
<th>NUMBER OF MACHINES</th>
<th>PARALLEL</th>
<th>SERIAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>38.0</td>
<td>11.2</td>
</tr>
<tr>
<td>3</td>
<td>34.1</td>
<td>18.8</td>
</tr>
<tr>
<td>4</td>
<td>36.3</td>
<td>28.6</td>
</tr>
</tbody>
</table>
What next?

Soundcard

Minimizing network paths

Laptop Orchestra