Overview RV

Remote Visualization (RV) describes the process of rendering images in real-time based on data, which is not stored locally on the system where you are observing the rendering with the possibility of interaction. To achieve this, two different approaches are common. The first approach is remote computation, where the data is kept remotely but the rendering is performed locally. The second approach is the actual remote visualization, where data and rendering are performed remotely and the images are transmitted afterwards to the local system.

Requirements and Use Cases

No special requirements are needed on the local system, but accounts to the remote systems of either Linux Cluster or SuperMUC are required. For some systems/work flows, a VNC client is required (TigerVNC (I recommend the Java VNC client), RealVNC, TightVNC).

Typical use cases for RV comprise post-processing and handling of large data sets in the location where they were generated, e.g on the LRZ HPC clusters. Usage of licensed software with no permission to install it on local machines, or having no local access to license servers.

Disclaimer

The network connection quality in terms of transmission bandwidth and latency - also geographical distance - might affect the RV image quality and the ability to smoothly interact with the graphics visualization. Furthermore, the RV system at the LRZ represents a limited resource which is shared by many users. An immediate availability cannot be granted.

Visualization Hardware

<table>
<thead>
<tr>
<th>System</th>
<th>RVS subsystem</th>
<th>OS</th>
<th>GPUs/Node</th>
<th>Cores/Node</th>
<th>Memory/Node</th>
<th>Submit RV job via</th>
<th>Submit Command</th>
</tr>
</thead>
<tbody>
<tr>
<td>Linux Cluster</td>
<td>rvs1, ..., rvs7</td>
<td>SLES 12</td>
<td>NVidia Tesla K20Xm</td>
<td>16 (SandyBridge)</td>
<td>128 GB</td>
<td>lxlogin5.lrz.de, ..., lxlogin10.lrz.de</td>
<td>module: rvsvnc</td>
</tr>
<tr>
<td>SuperMUC Phase 2</td>
<td>vis01, ..., vis03</td>
<td>SLES 11</td>
<td>NVidia Tesla K40m</td>
<td>28 (Haswell)</td>
<td>512 GB (480 GB)</td>
<td>hw.supermuc.lrz.de</td>
<td>rstartvnc</td>
</tr>
</tbody>
</table>

Depending on the Operating System (OS), different software stacks are present.
The 480 GB of memory in parentheses on SuperMUC Phase 2 are the effectively usable memory. The rest is reserved for the system.