New Horizons Labs on Demand Technical Requirements

Welcome to New Horizons Labs on Demand (abbreviated in this document as “LoD”). LoD is a cloud-based technical lab training environment designed specifically for New Horizons students to access during and after class.

To fully participate in the LoD service, a student’s system will need to meet these minimum requirements detailed below.

The LoD user interface is an HTML based application that wraps one of three virtual machine access controls. The control used depends on the type of browser, available browser add-ins and the style of lab being taken. It will be one of the following:

- The Virtual Machine Remote Control Active-X control which uses port 2179. This control has two types:
  - The Hyper-V Active-X VMRC (VMRDP over port 2179)
  - The Virtual Server Active-X VMRC (VMRDP over port 2179)
- The HyperVMRC control. The HyperVMRC control has three options:
  - HTML5 (Websockets over port 443)
  - Flash (Websockets over port 80 & 843*. *Port 843 is to connect to the Flash Websocket Policy Server)
  - Silverlight (HTML over port 443)
- The VMware Remote Console Plug-in (Port 902)**

All of the virtual machine access controls offer excellent performance, however, where a student’s Internet connection has consistency/quality of service issues, the best performance will be achieved using the Active-X plug-ins.

Connection requirements depend upon which of the LoD clients utilized. Each browser can support a different combination of clients. Use the table below to determine specific browser level requirements.

<table>
<thead>
<tr>
<th>Virtual Machine Client</th>
<th>Internet Explorer</th>
<th>Firefox</th>
<th>Chrome</th>
<th>Safari</th>
</tr>
</thead>
<tbody>
<tr>
<td>VMRC ActiveX*</td>
<td>8+</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>HyperVMRC HTML5</td>
<td>10+</td>
<td>443</td>
<td>11+</td>
<td>443</td>
</tr>
<tr>
<td>HyperVMRC Flash</td>
<td>Flash 11+</td>
<td>80 &amp; 843</td>
<td>Flash 11+</td>
<td>80 &amp; 843</td>
</tr>
<tr>
<td>HyperVMRC Silverlight</td>
<td>Silverlight 4+</td>
<td>80</td>
<td>Silverlight 4+</td>
<td>80</td>
</tr>
<tr>
<td>VMware Remote Console**</td>
<td>6+</td>
<td>902</td>
<td>11+</td>
<td>902</td>
</tr>
</tbody>
</table>

* Preferred Client

Each browser has a preferred virtual machine client order and will attempt to use its preferred client by default.

- Internet Explorer will use Active-X first, then HTML5 (IE 10 or higher), then Flash, then Silverlight.
- Chrome, Firefox and Safari will attempt to use HTML5 first, then Flash, then Silverlight.

Virtual machine interface clients can be switched in the lab interface by clicking on the Options section and then selecting the desired client from the drop down list.

Firewall Exception Rule Information

Should a firewall exception rule to allow connectivity to the LoD servers need to be created, the following information can be used to create a limited destination rule, only allow the above protocols and ports from your network to the LoD cloud.

- IP Ranges: 65.38.27.1/24 and 67.214.104.1/25

The LoD system is a cloud platform that automatically provisions and connects the student with private sandboxed resources. There is no way to predict which IP address in the cloud the student will connect to for the provisioning of their virtual machines. This is why we provide a “range” of IP addresses instead of a single IP address.

New Horizons Computer Learning Centers