

SPICE Investigation Report

June 30, 2016

Version



A. Document Scope

This document is the report for the investigation of SPICE. The results of the investigation and the collected information here are intended for the benefit of the XSEDE project and the general eScience community.

B. Executive Summary

SPICE was selected for review to determine if it met the XSEDE users' requirements to open and maintain an interactive graphical session to a remote resource for a period of at least several days.

There are several methods for using SPICE as a remote desktop connection. For this investigation we used the OpenStack remote console access using SPICE.

In general, SPICE worked well to connect to an OpenStack instance at a remote site and provided a remote connection to its desktop. Video playback did not work well but it is a known issue with the SPICE web client. Audio requires more effort to get working and was not implemented during this investigation.

As we reached the end of the TIS no-cost extension we did not have the time to complete a full evaluation of SPICE. We found nothing to prevent it from being used to meet XSEDE's requirements but we don't know for sure that it would meet all of the requirements.

C. Investigation Results

The members of the investigation team were Peter Enstrom and Susan Litzinger.

Spice is an open remote computing solution, providing client access to remote machine display and devices (e.g., keyboard, mouse, audio). Spice achieves a user experience similar to an interaction with a local machine, while trying to offload most of the intensive CPU and GPU tasks to the client. Spice is suitable for both LAN and WAN usage without compromising on the user experience. Developed to run on top of QEMU which is a generic and open source machine emulator and virtualizer. SPICE can also be used with OpenStack instead of QEMU which is what was used in this investigation.

SPICE could meet XSEDE's requirements for remote desktop access. There are other methods to use SPICE besides using it to connect to OpenStack consoles. The XSpice XServer allows connections to Linux systems running XWindows and could be a more general solution to remote desktop access. While we were able to get the XSpice XServer built on a test machine we did not have sufficient time to debug problems with the installation and were unable to connect to it through SPICE.

SPICE was very intuitive to use through the OpenStack implementation. Unfortunately, the video was jerky at best and the audio did not work.

D. Installation

The installation process was fairly simple. The following steps should be taken to complete the installation on an OpenStack cluster:

On Controller Node:

- Install spice-html5
- Install nova-spiceproxy
- Edit nova.conf:
 - Under [DEFAULT]:
 - vnc_enabled=False
 - web=/usr/share/spice-html5
 - Comment out everything under [vnc]
 - Under [SPICE]:
 - html5proxy_host=0.0.0.0
 - html5proxy_port=6082
 - html5proxy_base_url=[http://\\$\(PUBLIC_URL\):6082/spice auto.html](http://$(PUBLIC_URL):6082/spice auto.html)
 - enabled=True
 - agent_enabled=true
 - keymap=en-us

- Restart all nova

On all compute nodes:

- Install spice-html5
- Edit nova.conf:
 - Under [DEFAULT]:
 - vnc_enabled=False
 - web=/usr/share/spice-html5
 - Comment out everything under [vnc]
 - Under [SPICE]:
 - html5proxy_base_url=[http://\\$\(PUBLIC_URL\):6082/spice auto.html](http://$(PUBLIC_URL):6082/spice_auto.html)
 - server_listen=0.0.0.0
 - server_proxyclient_address=\$(myIP)
 - enabled=True
 - agent_enabled=true
 - keymap=en-us
- Restart nova-compute