



Creative Emotional Reasoning Computational Tools Fostering Co-Creativity in Learning Processes

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# C<sup>2</sup>SPACE VM INSTALLATION GUIDE

C<sup>2</sup>LEARN TECHNICAL DOCUMENT

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**Dissemination level:** Public

*The C<sup>2</sup>Learn project has been supported by the European Commission through the Seventh Framework Programme (FP7), under grant agreement no 318480 (November 2012 – October 2015). The contents of this document do not represent the views of the European Commission and the Commission cannot be held responsible for any use which may be made of the information contained therein. Responsibility for the information and views set out in this document lies entirely with the authors. © C<sup>2</sup>Learn Consortium, 2013. Reproduction is authorised provided the source is acknowledged.*



## HOST SERVER RECOMMENDED REQUIREMENTS

**Operating System:** Latest version of CentOS (tested in version CentOS 7.0)

**RAM:** 4 GB

**HD Space:** 80 GB

## VM INSTALLATION PROCESS

1. Install KVM and configure Bridge Networking in the Host Server. Instructions can be found at: [http://www.server-world.info/en/note?os=CentOS\\_7&p=kvm](http://www.server-world.info/en/note?os=CentOS_7&p=kvm)
2. Download the ZIP file with the C2Space VM dump, available at: <https://onedrive.live.com/redirect?resid=42A1506A5752199B!106&authkey=!ABIDrtNnVXOjGrs&ithint=file%2ccrar>
3. Unzip the downloaded ZIP file and place the contained VM image (c2learn\_en1.img) in any directory of the host server (from here on, **IMG\_DIR**)
4. Copy the configuration file c2learn\_vm.xml, included in the VM installation package
5. Paste the configuration XML file in the following directory: `/etc/libvirt/qemu` of the host server
6. Edit the configuration file, changing the values in the fields highlighted with red on figures 1 and 2. **IMG\_DIR** is the directory where the VM image is located, and **br0** is the name of the bridge configured during the KVM installation.

```
...
<devices>
  <emulator>/usr/libexec/qemu-kvm</emulator>
  <disk type='file' device='disk'>
    <driver name='qemu' type='raw' cache='none' />
    <source file='IMG_DIR/c2learn_en1.img' />
    <target dev='vda' bus='virtio' />
    <address type='pci' domain='0x0000' bus='0x00'
slot='0x04' function='0x0' />
  </disk>
```

Figure 1: definition of the location of the VM image

```
...
<interface type='bridge'>
  <mac address='52:54:00:c1:71:1e' />
  <source bridge='br0' />
  <model type='virtio' />
  <address type='pci' domain='0x0000' bus='0x00'
slot='0x03' function='0x0' />
</interface>
```

Figure 2: Definition the bridge name used by KVM

7. From the command line of the Host Server give the command `virsh` to start the virsh command line environment
8. From the virsh environment, give the following commands to start the VM:

```
> define c2learn_en1.xml
> start c2learn_en1
```

- To access the VM from the virsh environment, give the following command:

```
> console c2Learn_en1
```

## VM HARD DISK RESIZE

- Start the virsh command line environment.
- Stop the VM giving the following order

```
> shutdown c2Learn_en1
```

- Give the following order to increase the size of the hard disk by n GB

```
> qemu-img resize 'IMG_DIR/c2learn_en1.img' +nG
```

- Start the VM giving the following order

```
> start c2learn_en1
```

- Resize the partition as desired. Instructions can be found at <http://www.howtogeek.com/114503/how-to-resize-your-ubuntu-partitions/>

## VM COMPONENTS

Operating System Component	C2learn Component
Tomcat 7.0	C2Learn Computational Tools
	Assistances Implementing PSG
	Creativity Profiling Server
nginx	C2Space