LAVAL VIRTUAL | WORLDS

TECHNICAL INFORMATION

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Technical Information

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HARDWARE AND SOFTWARE REQUIREMENTS

Operating Systems Supported
- Windows 7 SP1+ or newer
- Mac OS X 10.11 or newer*
- Currently not compatible with Chromebooks or Linux based computers

*with the exception of Mojave [10.14] users. Mojave users are recommended to upgrade to a newer version of Mac OS
Voice connection times significantly longer than other versions of OSX therefore upgrade is recommended

Minimum PC Requirements	Recommended PC Requirements	Minimum Mac Requirements	Recommended Mac Requirements
CPU: 1.8GHz Intel Core i5 or 2GHz AMD Phenom II	**CPU:** 2.5GHz Intel Core i7 or 2.2GHz AMD A8	**CPU**: 2GHz Intel Core i5	**CPU**: 2.5GHz Intel Core i7
Memory: 4GB	**Memory:** 8GB	**Memory**: 4GB	**Memory:** 8GB
Graphics: Graphics device with DX10 (shader model 4.0)	**Graphics:** Dedicated graphics device with DX11 (shader model 4.0) and at least 1GB of on-board memory	**Graphics:** Intel HD Graphics 4000	**Graphics**: GeForce GT 750M or better
Storage: 5GB will be used, but you will need around 10GB available during installation	**Storage:** 5GB will be used, but you will need around 10GB available during installation	**Storage:** 5GB will be used, but you will need around 10GB available during installation	**Storage:** 5GB will be used, but you will need around 10GB available during installation

Note
The minimum requirements are the very least necessary to run the virtual worlds. If your computer does not meet these requirements, we can make no guarantee that your computer will be able to run the virtual worlds. In order to get the best performance out of the virtual worlds, we suggest meeting or exceeding the "recommended requirements."

FIREWALLS AND ANTIVIRUS

As a social business platform, **unimpeded connection to the internet** is vital to a positive user experience. **Firewalls**, although necessary to protect networks from malicious attacks, **may also interfere with the application's ability to communicate with other users.**

To facilitate download and installation of the applications for your employees, we highly recommend working with your IT team to :

a. **Open up ports 80 & 5060 in UDP**
b. **Add the application to your antivirus whitelist**

a *These ports are often filtered or may be blocked entirely and thus might prevent **Laval Virtual Green Center's** voice protocols from functioning. In the next slide, you will find a list of Ports and IP Addresses you need to enable on your firewall.*

b

C:\Program Files (x86)\Laval Virtual Green Center\Laval Virtual Green Center.exe
C:\Users\"Username"AppData\Local\Laval Virtual Green Center\Laval Virtual Green Center.exe
C:\Users\"Username"AppData\Local\Laval Virtual Green Center\UnityCrashHandler32.exe
C:\Users\"Username"AppData\Local\Laval Virtual Green Center\Laval Virtual Green Center_Data\Plugins\ZFGameBrowser.exe

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FIREWALLS AND ANTIVIRUS (REQUIREMENTS TO CONNECT TO A VIRTUAL WORLD)

Below is a list of Ports and IP Addresses you need to enable on your firewall depending on the rules you have implemented for the application to work properly. **The IP addresses are not fixed and may change.**

Host	IP	Port	Services
vw12.virbela.io	54.191.212.254	TCP 443, TCP 8443	World Server
talk1.virbela.com	35.180.208.46	UDP 80	Voice Server
	54.187.240.47	UDP 80	Auditorium Voice Server
	34.214.22.182	UDP 80	Teamsuite Voice Server 1
	52.33.225.126	UDP 80	Teamsuite Voice Server 2
builds.virbela.com	172.67.33.158,	TCP 443	Patch
api.virbela.com		TCP 443	Database
assets.virbela.com	104.20.125.63,	TCP 443	
gamegui.virbela.com		TCP 443	Log in Page
game.virbela.com	104.20.124.63	TCP 443	Campus Flags
uploads.virbela.com		TCP 443	WebBoard Uploads

FIREWALLS AND ANTIVIRUS (REQUIREMENTS FOR SCREEN SHARING AND WEBCAM)

Below is a list of Ports and IP Addresses you need to enable on your firewall depending on the rules you have implemented for the application to work properly. **The IP addresses are not fixed and may change.**

Host	IP	Port
agora.io	52.53.64.174	TCP 1080; 8000 UDP 1080; 4000 to 4030; 8000; 9700; 25000
qoslbs.agoralab.co	107.155.14.132, 184.72.16.87, 209.177.94.19, 35.169.70.181, 69.172.244.42	
qos.agoralab.co	107.155.5.220, 128.1.75.151	
ap.agoraio.cn	35.169.70.181, 3.0.213.60, 164.52.122.53, 184.72.16.87, 52.68.71.190, 148.153.116.174	
vocs1.agora.io	209.177.94.19, 184.72.16.87, 107.155.14.132, 35.169.70.181, 69.172.244.42	
vocs2.agora.io	209.177.94.19, 69.172.244.42, 107.155.14.132, 35.169.70.181, 184.72.16.87	
vocs3.agora.io	209.177.94.19, 107.155.14.132, 184.72.16.87, 35.169.70.181, 69.172.244.42	
vocs4.agora.io	209.177.94.19, 107.155.14.132, 184.72.16.87, 35.169.70.181, 69.172.244.42	
vocs5.agora.io	35.169.70.181, 184.72.16.87, 69.172.244.42, 107.155.14.132, 209.177.94.19	

FIREWALLS AND ANTIVIRUS

- The game server is a system built with SmartFox which runs on AWS and uses TCP/IP port 443.

- World and voice servers have specific IP addresses assigned by AWS and can change over time.

- Patches come from build.virbela.com on TCP port 443.

- The screen share is built on Agora ; you will find complementary information on their Developer Center website:

 https://docs.agora.io/en/Agora%20Platform/firewall?platform=%20%20All%20Platforms#native-sdk%60

/ RE-INSTALL THE APPLICATION ON MAC

To perform a new application installation, you have to delete properly the first one :

ⓘ *If your applications version appears corrupted, or an error message repeatedly appears, you should remove all files and caches related to it.*

a. Open the Finder application

b. Open the "Go" dropdown menu and select "Go to folder"

c. Type in ~/Library and press "Go"

d. Search through the folders and delete any folder that is related to a virtual world

e. Re-download the virtual world:
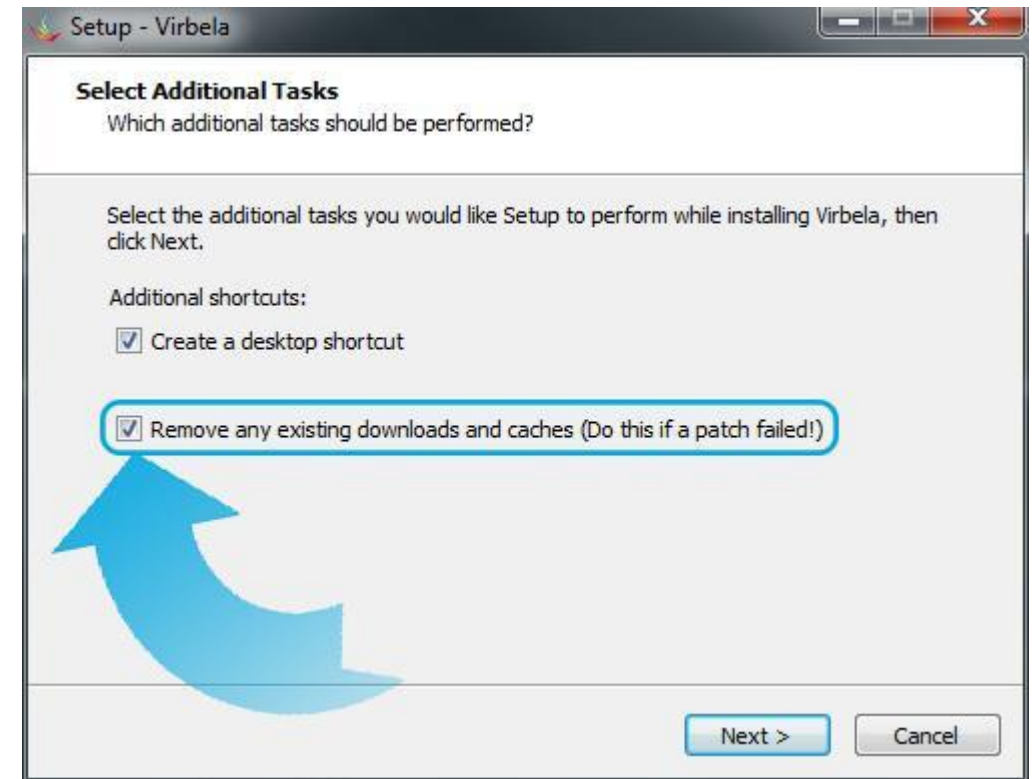https://www.virbela.com/install?id=lavalvirtualgreen
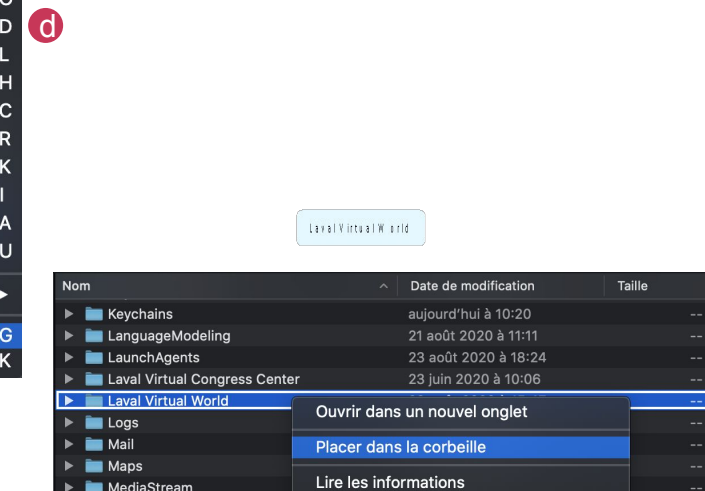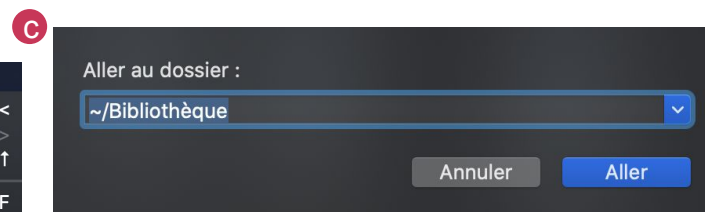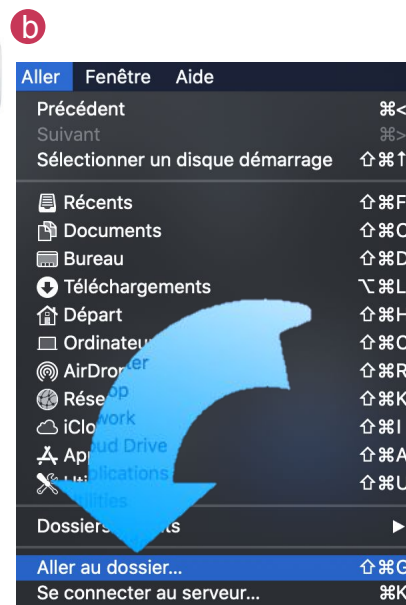
RE-INSTALL THE APPLICATION ON WINDOWS

To perform a new application installation, you have to delete properly the first one :

If your applications version appears corrupted, or an error message repeatedly appears, you should remove all files and caches related to it.

a. Redownload the app:
https://www.virbela.com/install?id=lavalvirtualgreen

a. Once the installation file is launched, check the box "delete all existing downloads and caches" .