

Installation Document

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Deploy Architecture

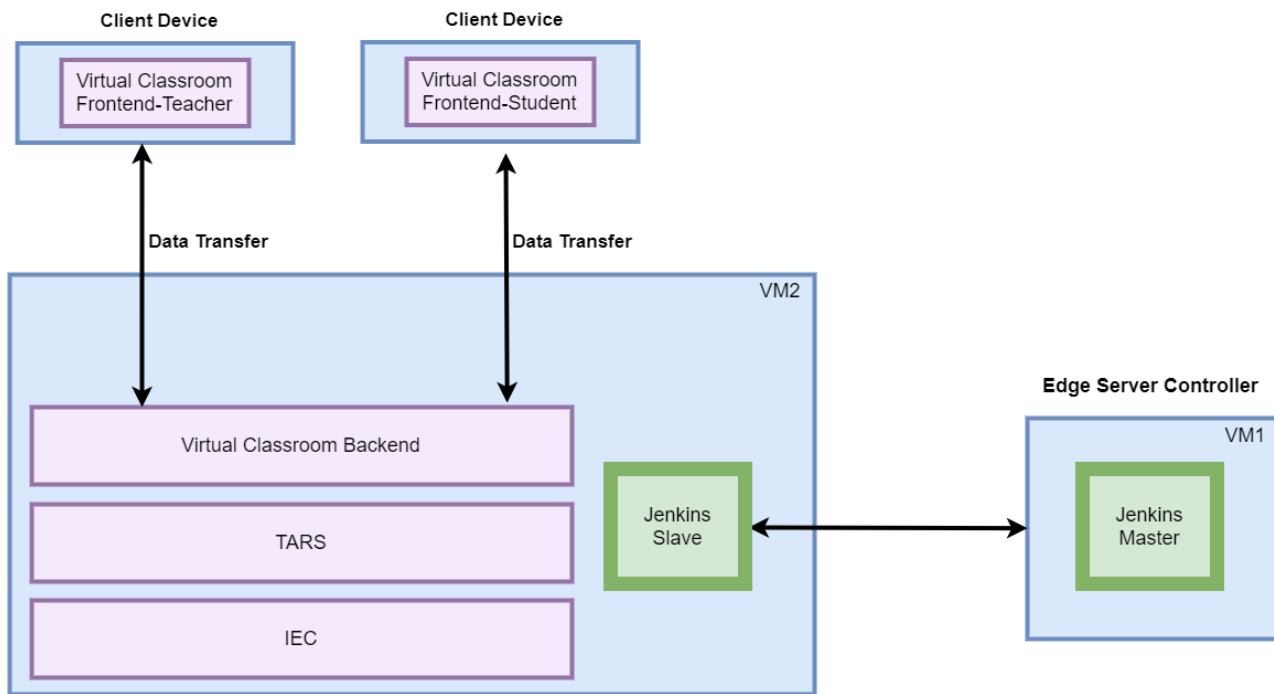
To make the system deploy, the minimum deployment architecture is shown below, which consist of:

Hardware

- Wearable Glass (Optional)
- Teacher Client-Side — Personal Computer with Camera
- Student Client-Side — Personal Computer with Camera
- Server Side — 8 Core 16G Virtual Machine on ARM or x86 Platform

Software

- Teacher Side: Windows 10 with a Web Browser that supports WebSockets.
- Student Side: Windows 10 with a Web Browser that supports WebSockets.
- Server Side: CentOS 7
- Virtual Classroom
- Tars
- IEC



Installation on the Client PC side(Teacher/Student Client)

Note well: No special software to access the application. The general software is itemized below:

- Install Windows 10
- Install camera driver
- Install Firefox browser

Create two Virtual Machines in the Cloud

For Tencent Cloud, refer to the following link to apply new instance:

<https://intl.cloud.tencent.com/document/product/213/9384?lang=en>

For AWS A1, apply new instance, refer to the following link to apply new instance:

<https://docs.aws.amazon.com/AWSEC2/latest/UserGuide/concepts.html>

<input type="checkbox"/> ins-ovulmxwv Jenkins_Master	运行中	硅谷二区	标准型S2	4核 16GB 1Mbps 系统盘: 高性能云硬盘 网络: Default-VPC	49.51.199.68 (公) 172.26.0.40 (内)	按量计费 2019-12-09 16:50:00创建	按流量计费	默认项目	-	登录 更多
<input type="checkbox"/> ins-iktqncd4 Jenkins_Slave	运行中	硅谷二区	标准型S2	4核 16GB 1Mbps 系统盘: 高性能云硬盘 网络: Default-VPC	49.51.200.250 (公) 172.26.0.17 (内)	按量计费 2019-12-09 16:49:59创建	按流量计费	默认项目	-	登录 更多

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Installation on VM1(Jenkins Slave)

- Install CentOS 7, refer to <https://phoenixnap.com/kb/how-to-install-centos-7>
- Install IEC, refer to [IEC Type1&2 Installation Guide for R2](#)
- Install Tars, refer to <https://github.com/TarsCloud/Tars/blob/master/Install.md>
- Install Virtual Classroom BackEnd

```
cd /root

yum install -y npm

yum install -y git

yum install -y docker

yum update -y

systemctl restart docker

sleep 3

npm install http-server -g

rm -rf openvidu-vr

git clone https://github.com/OpenVidu/openvidu-vr.git

cd /root/openvidu-vr/openvidu-vr-room/

sed -i 's/demos.openvidu.io/${Local_IP_Address}/g' app.js

sleep 3

docker run --rm --name openvidu_server -d -p 4443:4443 -e openvidu.secret=MY_SECRET -e openvidu.publicurl=https://${Local_IP_Address}:4443/ openvidu/openvidu-server-kms

sleep 6
```

- Install Java for Jenkins Slave

For Slave Mode, install Java will be ok.

```
sudo yum install -y java-1.8.0-openjdk-devel
```

Installation on VM2(Jenkins Master)

Jenkins is a Java application, so the first step is to install Java. Run the following command to install the OpenJDK 8 package:

```
sudo yum install -y java-1.8.0-openjdk-devel
```

The next step is to enable the Jenkins repository. To do that, import the GPG key using the following curl command:

```
curl --silent --location http://pkg.jenkins-ci.org/redhat-stable/jenkins.repo | sudo tee /etc/yum.repos.d/jenkins.repo
```

And add the repository to your system with:

```
sudo rpm --import https://jenkins-ci.org/redhat/jenkins-ci.org.key
```

Once the repository is enabled, install the latest stable version of Jenkins by typing:

```
sudo yum install -y jenkins
```

After the installation process is completed, start the Jenkins service with:

```
sudo systemctl start jenkins
```

To check whether it started successfully run:

```
systemctl status jenkins
```

You should see something similar to this:

```
# systemctl status jenkins
* jenkins.service - LSB: Jenkins Automation Server
   Loaded: loaded (/etc/rc.d/init.d/jenkins; bad; vendor preset: disabled)
   Active: active (running) since Tue 2019-10-15 11:16:26 CST; 1min 15s ago
     Docs: man:systemd-sysv-generator(8)
  Process: 489 ExecStart=/etc/rc.d/init.d/jenkins start (code=exited, status=0/SUCCESS)
    CGroup: /system.slice/jenkins.service
            ^-510 /etc/alternatives/java -Dcom.sun.akuma.Daemon=daemonized -Djava.awt.headless=true -
DJENKINS_HOME=/var/lib/jenkins -jar /usr/l...

Oct 15 11:16:25 VM_0_4_centos systemd[1]: Starting LSB: Jenkins Automation Server...
Oct 15 11:16:26 VM_0_4_centos runuser[491]: pam_unix(runuser:session): session opened for user jenkins by
(uid=0)
Oct 15 11:16:26 VM_0_4_centos runuser[491]: pam_unix(runuser:session): session closed for user jenkins
Oct 15 11:16:26 VM_0_4_centos jenkins[489]: Starting Jenkins [ OK ]
Oct 15 11:16:26 VM_0_4_centos systemd[1]: Started LSB: Jenkins Automation Server.
```

Finally enable the Jenkins service to start on system boot.

```
sudo systemctl enable jenkins
```

output

```
# sudo systemctl enable jenkins
jenkins.service is not a native service, redirecting to /sbin/chkconfig.
Executing /sbin/chkconfig jenkins on
```

Adjust the Firewall If you are installing Jenkins on a remote CentOS server that is protected by a firewall you need to port 8080.

Use the following commands to open the necessary port:

```
sudo firewall-cmd --permanent --zone=public --add-port=8080/tcp
sudo firewall-cmd --reload
```

Setting Up Jenkins To set up your new Jenkins installation, open your browser and type your domain or IP address followed by port 8080:

```
http://your_ip_or_domain:8080
```

You will see the website itemized below: [blocked URL](#)

Select the left option and install the plugin later: [blocked URL](#)

Automatic install process: [blocked URL](#)

Configure username/password: [blocked URL](#)

Visit Website: [blocked URL](#)

Jenkins is ready: [blocked URL](#)

I

Deploy Architecture

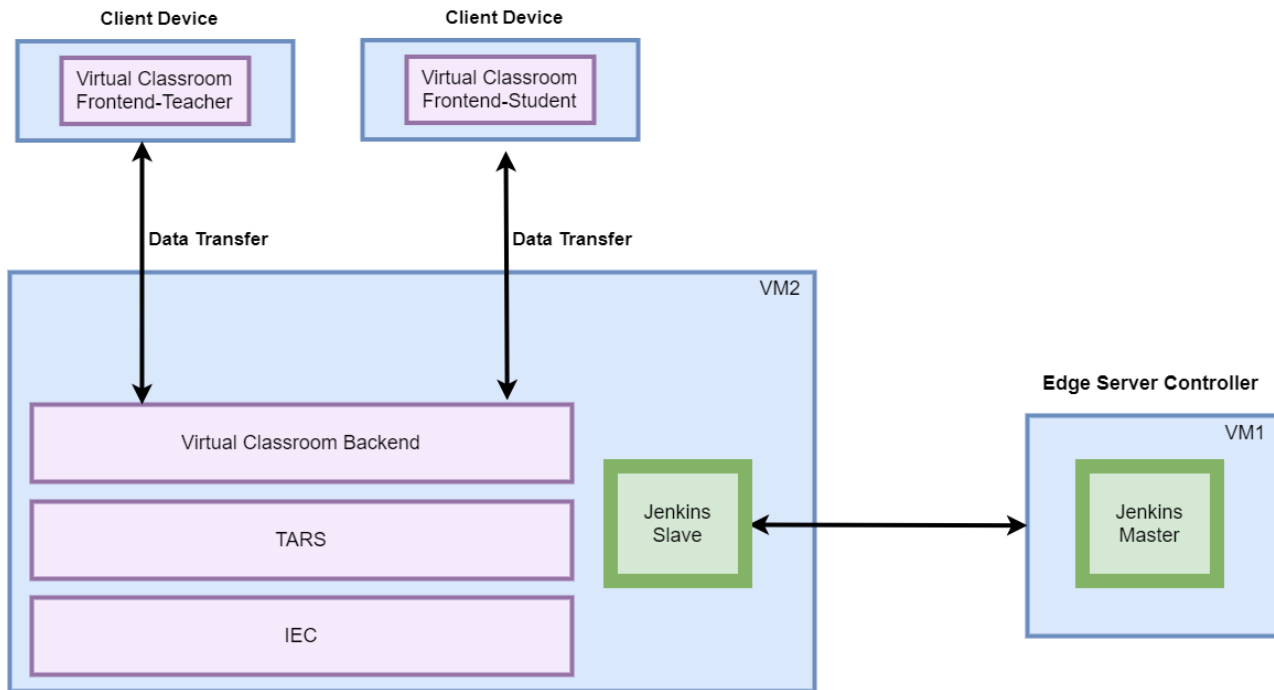
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sleep 6
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```
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```

Installation on VM2(Jenkins Master)

Jenkins is a Java application, so the first step is to install Java. Run the following command to install the OpenJDK 8 package:

```
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```

The next step is to enable the Jenkins repository. To do that, import the GPG key using the following curl command:

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And add the repository to your system with:

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