

# WCS in Amazon EC2

WCS server can be deployed in Amazon Elastic Compute Cloud (EC2) by the following ways:

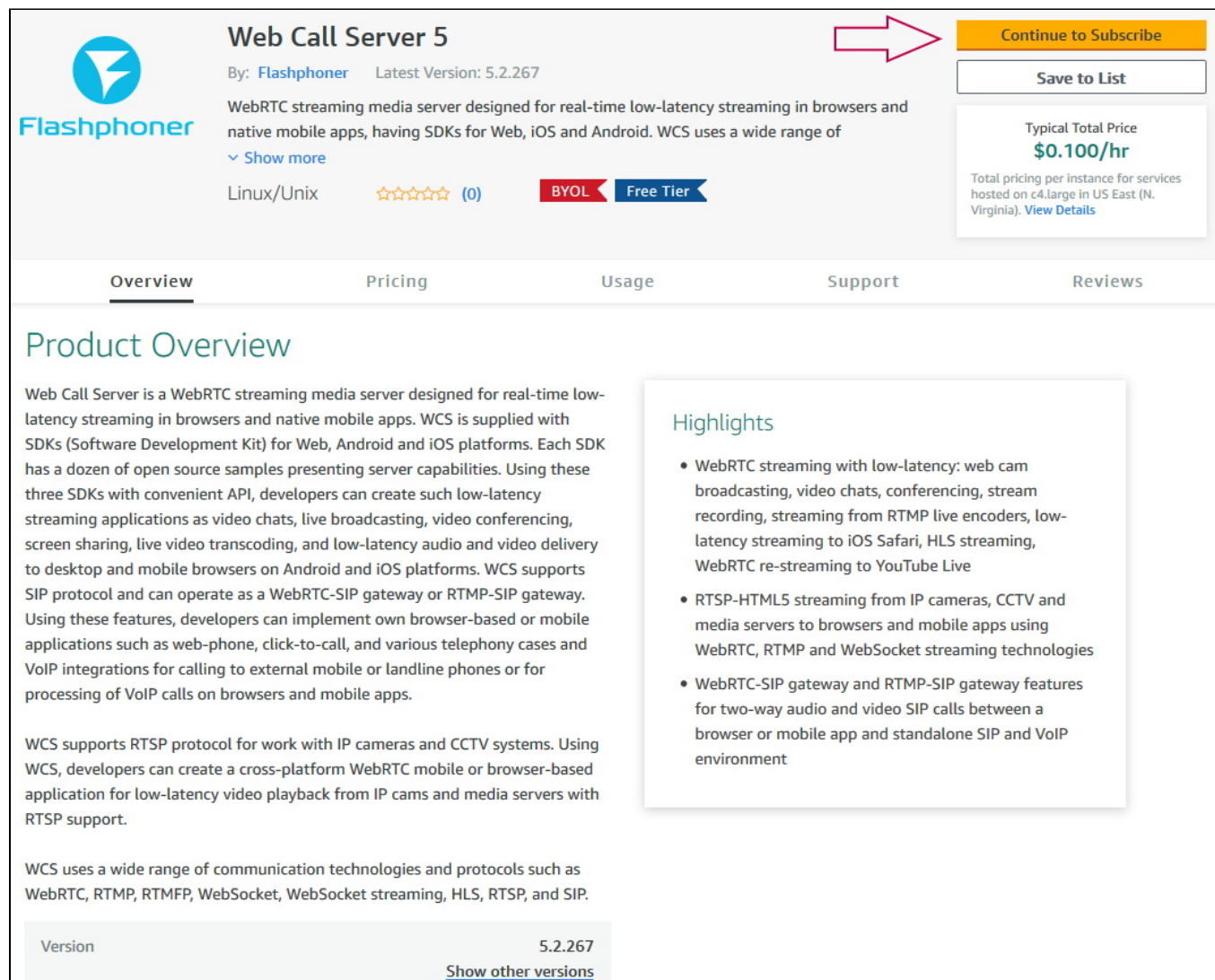
- [Setting up Linux virtual machine and installing WCS from the scratch](#)
- [WCS automatic deployment from Amazon AWS Marketplace](#)
- [WCS deployment from AWS Marketplace image with custom settings](#)
- [Known issues](#)

## Setting up Linux virtual machine and installing WCS from the scratch

This way is useful if you need fine OS tuning, additional modules installation and so on. Launch a Linux virtual machine by [this AWS manual](#), set it up on your need, then install WCS by [quick](#) or [detailed](#) installation manual.

## WCS automatic deployment from Amazon AWS Marketplace

1. Open [Web Call Server](#) page on Amazon AWS Marketplace and click 'Continue to Subscribe':



**Web Call Server 5**  
By: [Flashphoner](#) Latest Version: 5.2.267

WebRTC streaming media server designed for real-time low-latency streaming in browsers and native mobile apps, having SDKs for Web, iOS and Android. WCS uses a wide range of

✓ [Show more](#)

Linux/Unix ☆☆☆☆☆ (0) **BYOL** **Free Tier**

[Continue to Subscribe](#)

[Save to List](#)

Typical Total Price  
**\$0.100/hr**  
Total pricing per instance for services hosted on c4.large in US East (N. Virginia). [View Details](#)

**Overview** Pricing Usage Support Reviews

### Product Overview

Web Call Server is a WebRTC streaming media server designed for real-time low-latency streaming in browsers and native mobile apps. WCS is supplied with SDKs (Software Development Kit) for Web, Android and iOS platforms. Each SDK has a dozen of open source samples presenting server capabilities. Using these three SDKs with convenient API, developers can create such low-latency streaming applications as video chats, live broadcasting, video conferencing, screen sharing, live video transcoding, and low-latency audio and video delivery to desktop and mobile browsers on Android and iOS platforms. WCS supports SIP protocol and can operate as a WebRTC-SIP gateway or RTMP-SIP gateway. Using these features, developers can implement own browser-based or mobile applications such as web-phone, click-to-call, and various telephony cases and VoIP integrations for calling to external mobile or landline phones or for processing of VoIP calls on browsers and mobile apps.

WCS supports RTSP protocol for work with IP cameras and CCTV systems. Using WCS, developers can create a cross-platform WebRTC mobile or browser-based application for low-latency video playback from IP cams and media servers with RTSP support.

WCS uses a wide range of communication technologies and protocols such as WebRTC, RTMP, RTMFP, WebSocket, WebSocket streaming, HLS, RTSP, and SIP.

Version 5.2.267  
[Show other versions](#)

### Highlights

- WebRTC streaming with low-latency: web cam broadcasting, video chats, conferencing, stream recording, streaming from RTMP live encoders, low-latency streaming to iOS Safari, HLS streaming, WebRTC re-streaming to YouTube Live
- RTSP-HTML5 streaming from IP cameras, CCTV and media servers to browsers and mobile apps using WebRTC, RTMP and WebSocket streaming technologies
- WebRTC-SIP gateway and RTMP-SIP gateway features for two-way audio and video SIP calls between a browser or mobile app and standalone SIP and VoIP environment

2. Product description page with hourly pricing depending on selected instance will be shown. Click 'Continue to Configuration':



## Web Call Server 5

[Continue to Configuration](#)[< Product Detail](#) [Subscribe](#)

### Subscribe to this software

You're subscribed to this software. Please see the terms and pricing details below or click the button above to configure your software.

#### Terms and Conditions

##### Flashphoner Offer

You have subscribed to this software and agree that your use of this software is subject to the pricing terms and the seller's End User License Agreement (EULA). Your use of AWS services is subject to the [AWS Customer Agreement](#).

Product	Effective date	Expiration date	Action
Web Call Server 5	6/23/2016	N/A	<a href="#">^ Hide Details</a>


The following table shows pricing information for the listed software components. You're charged separately for your use of each component.


##### Web Call Server 5 **BYOL**

Additional taxes or fees may apply.

Web Call Server 5	
EC2 Instance Type	Software/hr
t2.micro	\$0
t2.small	\$0
t2.medium	\$0

3. Server configuration page will be shown. Select region and click 'Continue to Launch':

**Web Call Server 5**




[< Product Detail](#) [Subscribe](#) [Configure](#)


## Configure this software

Choose a fulfillment option below to select how you wish to deploy the software, then enter the information required to configure the deployment.


**Fulfillment Option**

64-bit (x86) Amazon Machine Image (AMI) 

**Software Version**

5.2.267 (Aug 02, 2019) 

**Region**

US East (N. Virginia) 

Ami Id: ami-0bcc3eccd8134e445

**Pricing information**

This is an estimate of typical software and infrastructure costs based on your configuration. Your actual charges for each statement period may differ from this estimate.

**Software Pricing**

Web Call Server 5

**BYOL**

running on c4.large

\$0/hr

**Infrastructure Pricing**

EC2:

Monthly Estimate:

1 \* c4.large

\$72.00/month

4. Instance launch page will be shown. Select the instance type.



## Web Call Server 5

[< Product Detail](#) [Subscribe](#) [Configure](#) [Launch](#)

### Launch this software

Review your configuration and choose how you wish to launch the software.

#### Configuration Details

Fulfillment Option	64-bit (x86) Amazon Machine Image (AMI) Web Call Server 5 <i>running on c4.large</i>
Software Version	5.2.267
Region	US East (N. Virginia)

[Usage Instructions](#)

#### Choose Action

Launch from Website

Choose this action to launch from this website

#### EC2 Instance Type

c4.large

**Memory:** 3.75 GiB  
**CPU:** 8 EC2 Compute Units (2 virtual cores with 4.0 Compute Units each)  
**Storage:** EBS storage only  
**Network Performance:** Moderate

5. Then scroll page down to Security Group Settings and click 'Create New Based On Seller Settings':

#### Security Group Settings

A security group acts as a firewall that controls the traffic allowed to reach one or more instances. You can create a new security group based on seller-recommended settings or choose one of your existing groups. [Learn more](#)

default



[Create New Based On Seller Settings](#)










6. Security Group creation page will be shown. Set the group name, description and click Save.

### Create new based on seller settings

A new security group will be generated by AWS Marketplace. It is based on recommended settings for Web Call Server 5 version 5.2.267.

#### Name your security Group

#### Description

Connection Method	Protocol	Port Range	Source (IP or Group)	
SSH	tcp	22	Anywhere 	<input type="text" value="0.0.0.0/0"/>
	tcp	554	Anywhere 	<input type="text" value="0.0.0.0/0"/>
	udp	30000-33000	Anywhere 	<input type="text" value="0.0.0.0/0"/>
	tcp	8080-8084	Anywhere 	<input type="text" value="0.0.0.0/0"/>
	tcp	8443-8445	Anywhere 	<input type="text" value="0.0.0.0/0"/>
	tcp	8888	Anywhere 	<input type="text" value="0.0.0.0/0"/>
	tcp	9091	Anywhere 	<input type="text" value="0.0.0.0/0"/>
	tcp	1935	Anywhere 	<input type="text" value="0.0.0.0/0"/>
	udp	1935	Anywhere 	<input type="text" value="0.0.0.0/0"/>

Rules with source of 0.0.0.0/0 allows all IP addresses to access your instance. We recommend limiting access to only known IP addresses.

7. Select the new group in the drop-down list:

### Security Group Settings

A security group acts as a firewall that controls the traffic allowed to reach one or more instances. You can create a new security group based on seller-recommended settings or choose one of your existing groups. [Learn more](#)



8. Click Launch:



## Web Call Server 5

### Security Group Settings

A security group acts as a firewall that controls the traffic allowed to reach one or more instances. You can create a new security group based on seller-recommended settings or choose one of your existing groups. [Learn more](#)

WCS 5.2



Create New Based On Seller Settings

### Key Pair Settings

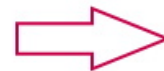
To ensure that no other person has access to your software, the software installs on an EC2 instance with an EC2 key pair that you created.

test\_key\_pair



[Create a key pair in EC2](#)

(Ensure you are in the region you wish to launch your software)



Launch

9. A message will be displayed about instance deployment. It takes about a minute.

### Congratulations! An instance of this software is successfully deployed on EC2!

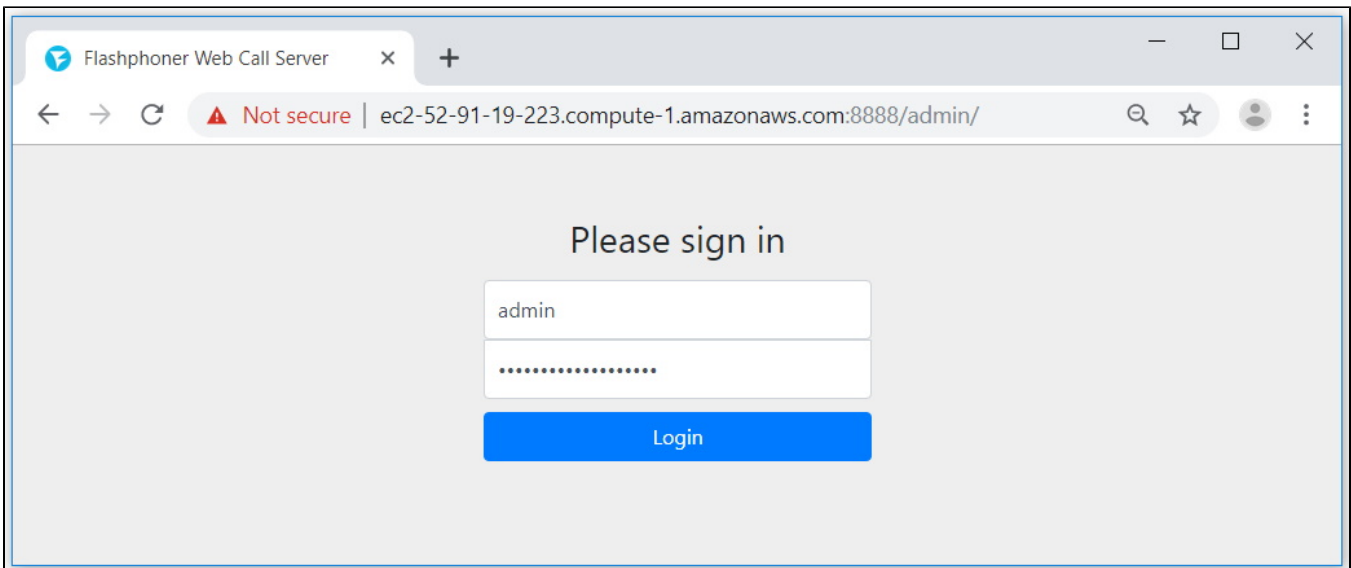
AMI ID: **ami-0bcc3eccd8134e445** [\(View Launch Configuration Details\)](#)

You can view this instance on [EC2 Console](#). You can also view all instances on [Your Software](#). Software and AWS hourly usage fees apply when the instance is running and will appear on your monthly bill.

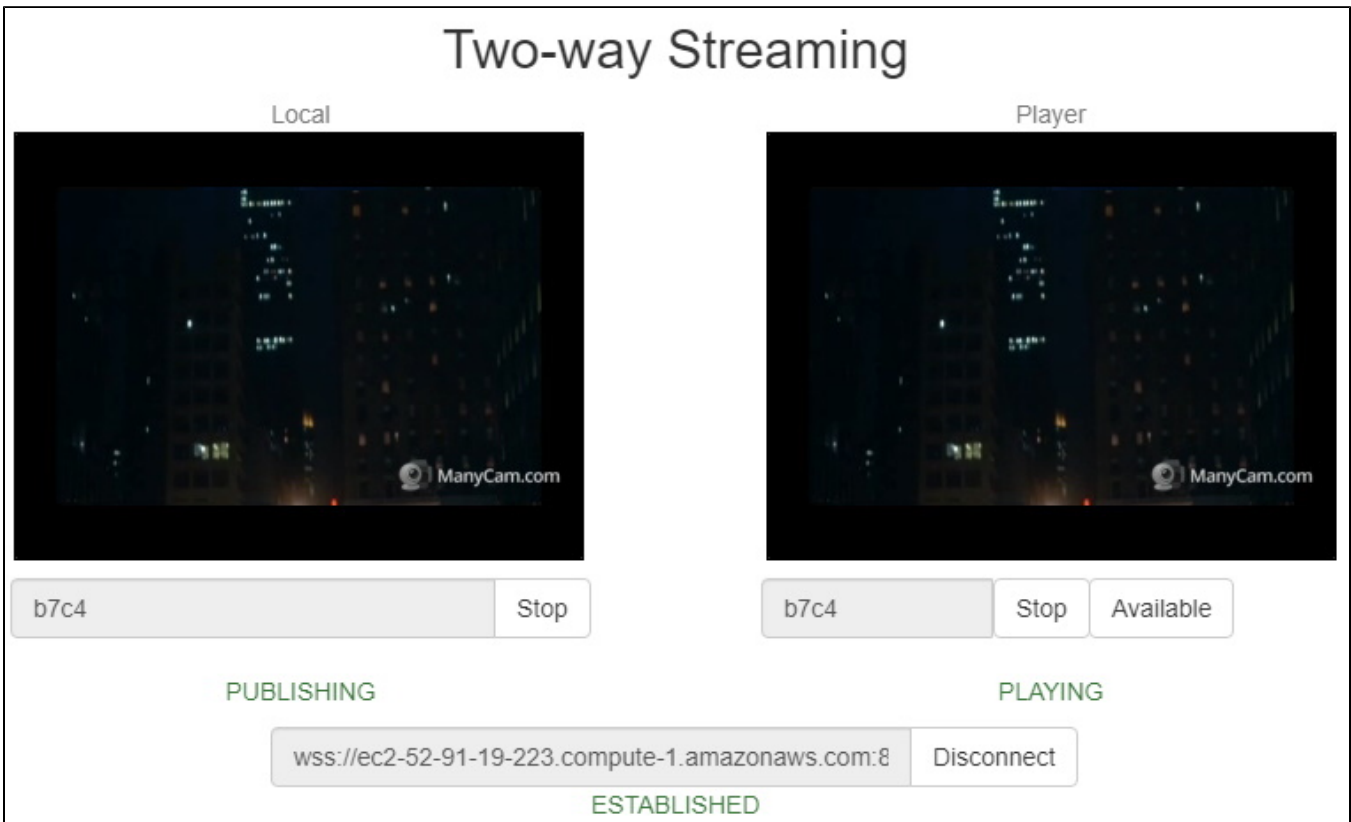
10. Click on 'EC2 Console' link. Find the launched virtual machine in the 'Instances' section. See the 'Public DNS' column for the host name.

<input type="checkbox"/>	Name	Instance ID	Instance Type	Availability Zone	Instance State	Status Checks	Alarm Status	Public DNS (IPv4)	IPv4 Public IP
<input checked="" type="checkbox"/>		i-0edecdee2fe0b2bb3	t2.micro	us-east-1d	running	2/2 checks passed	None	ec2-52-91-19-223.comp...	52.91.19.223

11. Open WCS server web interface <https://host.amazonaws.com:8888> in your browser and accept security exception. Use the Instance ID of the launched virtual machine as the administrator password:



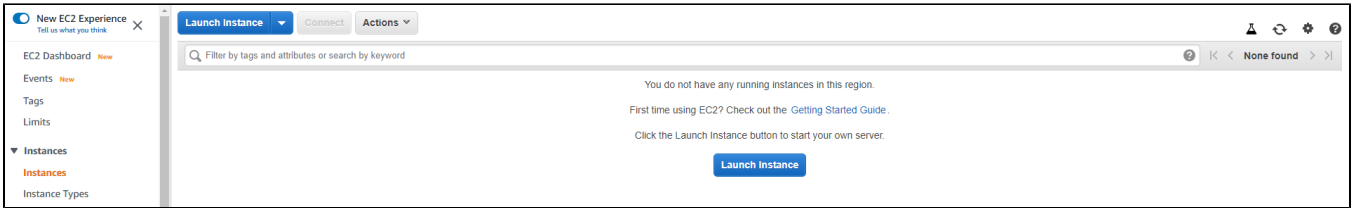
12. Check WebRTC streaming from web camera and playing the stream using Two-way Streaming web example:



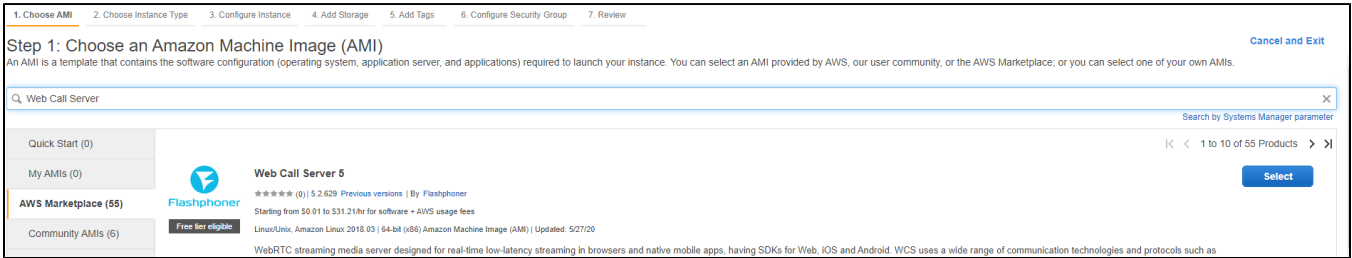
## WCS deployment from AWS Marketplace image with custom settings

AWS Marketplace image contains only basic WCS settings. To customize the server, it is necessary to connect to the instance via SSH and restart WCS. However, to get ready to launch server "out of the box", it is possible to set up user script to reconfigure the server during the first start. This can be useful, for example, to deploy [autoscaling group](#).

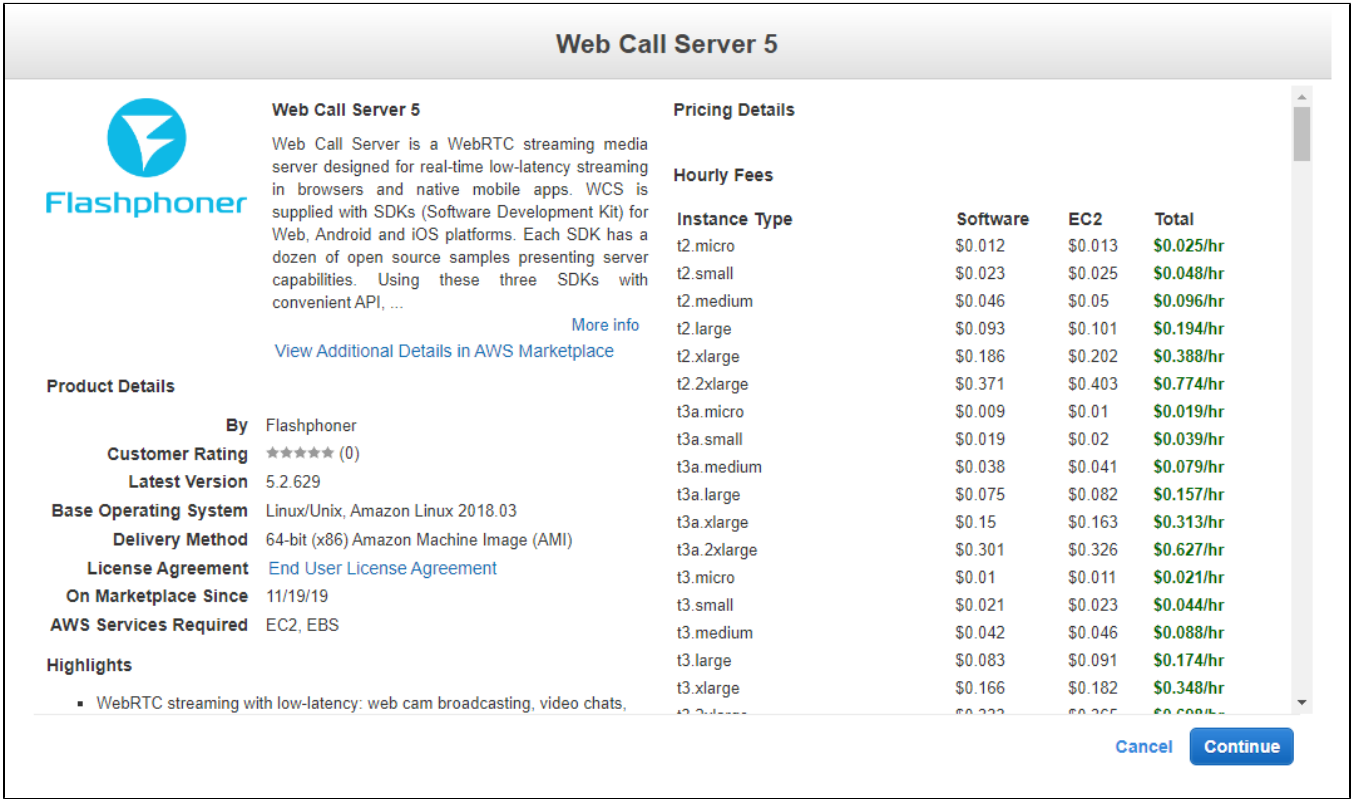
1. In EC2 Console go to "Instances - Instances" section and click "Launch instance"



2. Choose Marketplace AMI "Web Call Server" using search string



3. Review AMI information



4. Choose instance type

1. Choose AMI 2. Choose Instance Type 3. Configure Instance 4. Add Storage 5. Add Tags 6. Configure Security Group 7. Review

### Step 2: Choose an Instance Type

Amazon EC2 provides a wide selection of instance types optimized to fit different use cases. Instances are virtual servers that can run applications. They have varying combinations of CPU, memory, storage, and networking capacity, and give you the flexibility to choose the appropriate mix of resources for your applications. [Learn more](#) about instance types and how they can meet your computing needs.

Filter by: **All instance types** **Current generation** [Show/Hide Columns](#)

Currently selected: t2.micro (Variable ECUs, 1 vCPUs, 2.5 GHz, Intel Xeon Family, 1 GiB memory, EBS only)

Note: The vendor recommends using a **c4.large** instance (or larger) for the best experience with this product.

	Family	Type	vCPUs	Memory (GiB)	Instance Storage (GiB)	EBS-Optimized Available	Network Performance	IPv6 Support
	General purpose	t2.nano	1	0.5	EBS only	-	Low to Moderate	Yes
	General purpose	t2.micro <b>Free tier eligible</b>	1	1	EBS only	-	Low to Moderate	Yes
	General purpose	t2.small	1	2	EBS only	-	Low to Moderate	Yes
	General purpose	t2.medium	2	4	EBS only	-	Low to Moderate	Yes
	General purpose	t2.large	2	8	EBS only	-	Low to Moderate	Yes
	General purpose	t2.xlarge	4	16	EBS only	-	Moderate	Yes
	General purpose	t2.2xlarge	8	32	EBS only	-	Moderate	Yes
	General purpose	t3a.nano	2	0.5	EBS only	Yes	Up to 5 Gigabit	Yes
	General purpose	t3a.micro	2	1	EBS only	Yes	Up to 5 Gigabit	Yes
	General purpose	t3a.small	2	2	EBS only	Yes	Up to 5 Gigabit	Yes
	General purpose	t3a.medium	2	4	EBS only	Yes	Up to 5 Gigabit	Yes
	General purpose	t3a.large	2	8	EBS only	Yes	Up to 5 Gigabit	Yes
	General purpose	t3a.xlarge	4	16	EBS only	Yes	Up to 5 Gigabit	Yes
	General purpose	t3a.2xlarge	8	32	EBS only	Yes	Up to 5 Gigabit	Yes

[Cancel](#) [Previous](#) [Review and Launch](#) [Next: Configure Instance Details](#)

5.Scroll down "Configure Instance Details" page until the end and insert custom update and setup script to "User data" text box

1. Choose AMI 2. Choose Instance Type 3. Configure Instance 4. Add Storage 5. Add Tags 6. Configure Security Group 7. Review

### Step 3: Configure Instance Details

Advanced Details

Metadata accessible ☒ Enabled

Metadata version

Metadata token response hop limit

User data ☒ As text ☐ As file ☐ Input is already base64 encoded

```
#!/bin/bash

# Stop WCS before reconfiguring
PID=$(pgrep -f 'com.flashphoner.server.Server' | grep -v bash)
if [ -n "$PID" ]; then
    service webcallserver stop
fi

# Update WCS to the latest build (optionally, set to false if you don't)
UPDATE=true
if $UPDATE; then
    cd /tmp
    wget --timeout=10 --no-check-certificate https://flashphoner.com/download-wcs5-2-server.tar.gz -O wcs5-server.tar.gz
    if [ $? -eq 0 ]; then
        mkdir -p FlashphonerWebCallServer-5.2-latest && tar xzf wcs5-server.tar.gz -C FlashphonerWebCallServer-5.2-latest --strip-components 1
        cd FlashphonerWebCallServer-5.2-latest
        chmod +x install.sh
        ./install.sh -silent
        cd ..
        rm -rf FlashphonerWebCallServer-5.2-latest wcs5-server.tar.gz
    fi
fi

# Configuration setup
WCS_CONFIG=/usr/local/FlashphonerWebCallServer/conf/flashphoner.properties
JVM_CONFIG=/usr/local/FlashphonerWebCallServer/conf/wcs-core.properties

#CDN settings
CDN_ROLE=origin
CDN_IP=0.0.0.0
echo -e "ncdn_ip=$CDN_IP" >> $WCS_CONFIG
echo -e "ncdn_role=$CDN_ROLE" >> $WCS_CONFIG
echo -e "ncdn_nodes_resolve_ip=false" >> $WCS_CONFIG

# Renew keyframes from WebRTC publishers every 5 seconds
```

[Cancel](#) [Previous](#) [Review and Launch](#) [Next: Add Storage](#)

The setup script example to update WCS to latest build and to configure Origin server for WebRTC and RTMP streams publishing

### Origin setup script

```
#!/bin/bash

# Stop WCS before reconfiguring
PID="$(pgrep -f 'com.flashphoner.server.Server' | grep -v bash)"
if [ -n "$PID" ]; then
    service webcallserver stop
fi

# Update WCS to the latest build (optionally, set to false if you don't)
UPDATE=true
if $UPDATE; then
    cd /tmp
    wget --timeout=10 --no-check-certificate https://flashphoner.com/download-wcs5.2-server.tar.gz -O wcs5-server.tar.gz
    if [ $? -eq 0 ]; then
        mkdir -p FlashphonerWebCallServer-5.2-latest && tar xzf wcs5-server.tar.gz -C FlashphonerWebCallServer-5.2-latest --strip-components 1
        cd FlashphonerWebCallServer-5.2-latest
        chmod +x install.sh
        ./install.sh -silent
        cd ..
        rm -rf FlashphonerWebCallServer-5.2-latest wcs5-server.tar.gz
    fi
fi

# Configuration setup
WCS_CONFIG=/usr/local/FlashphonerWebCallServer/conf/flashphoner.properties
JVM_CONFIG=/usr/local/FlashphonerWebCallServer/conf/wcs-core.properties

#CDN settings
CDN_ROLE=origin
CDN_IP=0.0.0.0
echo -e "\ncdn_enabled=true" >> $WCS_CONFIG
echo -e "\ncdn_ip=$CDN_IP" >> $WCS_CONFIG
echo -e "\ncdn_role=$CDN_ROLE" >> $WCS_CONFIG
echo -e "\ncdn_nodes_resolve_ip=false" >> $WCS_CONFIG

# Request keyframes from WebRTC publishers every 5 seconds
echo -e "\nperiodic_fir_request=true" >> $WCS_CONFIG

# Disable RTMP keepalives to publish from OBS
echo -e "\nkeep_alive.enabled=websocket,rtmfp" >> $WCS_CONFIG

# Configure heap settings
HEAP_SIZE=512m
sed -i -e "s/^\(Xmx\).*$/\1$HEAP_SIZE/" $JVM_CONFIG

# Start WCS after reconfiguring
PID="$(pgrep -f 'com.flashphoner.server.Server' | grep -v bash)"
if [ -n "$PID" ]; then
    service webcallserver restart
else
    service webcallserver start
fi

# Disable internal firewall, ports are allowed/blocked on security group level
iptables -F
```

6. Configure security group. By default, the security group will be created from AMI settings. Add the necessary ports

1. Choose AMI 2. Choose Instance Type 3. Configure Instance 4. Add Storage 5. Add Tags 6. Configure Security Group 7. Review

### Step 6: Configure Security Group

A security group is a set of firewall rules that control the traffic for your instance. On this page, you can add rules to allow specific traffic to reach your instance. For example, if you want to set up a web server and allow Internet traffic to reach your instance, add rules that allow unrestricted access to the HTTP and HTTPS ports. You can create a new security group or select from an existing one below. [Learn more](#) about Amazon EC2 security groups.

**Assign a security group:** ☒ Create a new security group ☐ Select an existing security group

**Security group name:** WCS

**Description:** This security group was generated by AWS Marketplace and is based on recommended settings for Web Call Server 5.

Type	Protocol	Port Range	Source	Description
SSH	TCP	22	Custom 0.0.0.0/0	e.g. SSH for Admin Desktop
Custom TCP Rule	TCP	554	Custom 0.0.0.0/0	e.g. SSH for Admin Desktop
Custom UDP Rule	UDP	30000 - 33000	Custom 0.0.0.0/0	e.g. SSH for Admin Desktop
Custom TCP Rule	TCP	8080 - 8084	Custom 0.0.0.0/0	e.g. SSH for Admin Desktop
Custom TCP Rule	TCP	8443 - 8445	Custom 0.0.0.0/0	e.g. SSH for Admin Desktop
Custom TCP Rule	TCP	8888	Custom 0.0.0.0/0	e.g. SSH for Admin Desktop
Custom TCP Rule	TCP	9091	Custom 0.0.0.0/0	e.g. SSH for Admin Desktop
Custom TCP Rule	TCP	1935	Custom 0.0.0.0/0	e.g. SSH for Admin Desktop
Custom UDP Rule	UDP	1935	Custom 0.0.0.0/0	e.g. SSH for Admin Desktop

**Add Rule**

**Warning**

Rules with source of 0.0.0.0/0 allow all IP addresses to access your instance. We recommend setting security group rules to allow access from known IP addresses only.

[Cancel](#)
[Previous](#)
[Review and Launch](#)

7. Click "Review and Launch". If all the parameters are correct, click "Launch"

1. Choose AMI 2. Choose Instance Type 3. Configure Instance 4. Add Storage 5. Add Tags 6. Configure Security Group 7. Review

### Step 7: Review Instance Launch

**Web Call Server 5**  
Root Device Type: ebs Virtualization type: hvm

**Hourly Software Fees:** \$0.012 per hour on t2.micro instance. Additional taxes or fees may apply. Software charges will begin once you launch this AMI and continue until you terminate the instance.

By launching this product, you will be subscribed to this software and agree that your use of this software is subject to the pricing terms and the seller's [End User License Agreement](#)

**Instance Type**

Instance Type	ECUs	vCPUs	Memory (GiB)	Instance Storage (GiB)	EBS-Optimized Available	Network Performance
t2.micro	Variable	1	1	EBS only	-	Low to Moderate

**Security Groups**

**Security group name:** WCS  
**Description:** This security group was generated by AWS Marketplace and is based on recommended settings for Web Call Server 5 version 5.2.629 provided by Flashphoner

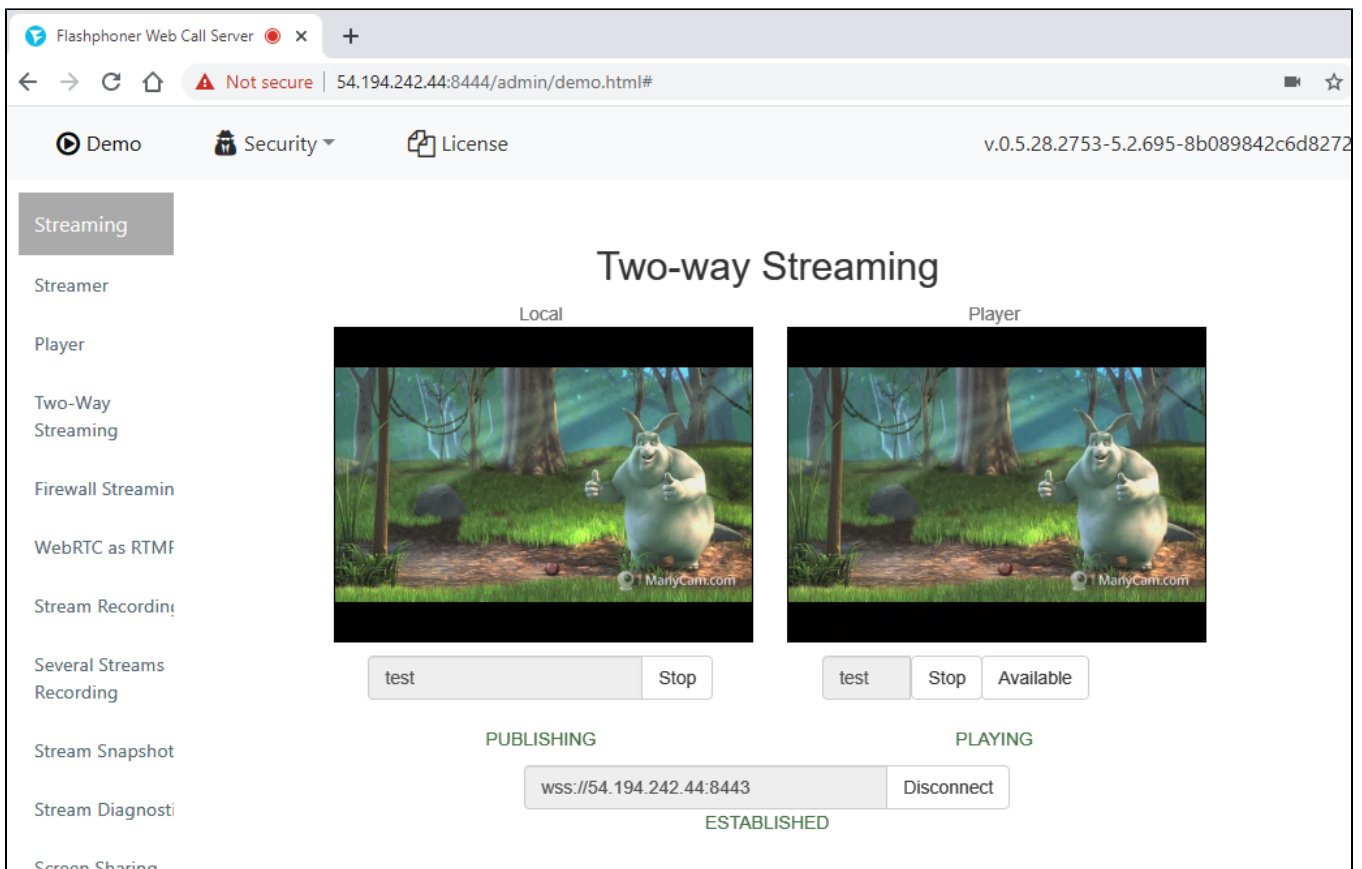
Type	Protocol	Port Range	Source	Description
SSH	TCP	22	0.0.0.0/0	
Custom TCP Rule	TCP	554	0.0.0.0/0	
Custom UDP Rule	UDP	30000 - 33000	0.0.0.0/0	
Custom TCP Rule	TCP	8080 - 8084	0.0.0.0/0	
Custom TCP Rule	TCP	8443 - 8445	0.0.0.0/0	
Custom TCP Rule	TCP	8888	0.0.0.0/0	
Custom TCP Rule	TCP	9091	0.0.0.0/0	

[Cancel](#)
[Previous](#)
[Launch](#)

Server instance will be launched

Launch Instance ▾ Connect Actions ▾									
<input type="text"/> Filter by tags and attributes or search by keyword									
Name	Instance ID	Instance Type	Availability Zone	Instance State	Status Checks	Alarm Status	Public DNS (IPv4)	IPv4 Public IP	Key Name
	i-015bef2f082023811	t2.micro	eu-west-1a	terminated		None		-	test_userdat
	i-0f2d75e04cd193f8e	t2.micro	eu-west-1a	running	2/2 checks ...	None	ec2-54-194-242-44.eu-west-1.compute.amazonaws.com	54.194.242.44	test_userdat

8. Open WCS web interface, publish test stream in Two Way Streaming example and play it



## Known issues

1. After migration to Amazon Linux 2 AMI as basic image, systemd is used for services management

Symptoms: the command

```
sudo service webcallserver start
```

returns

```
Redirecting to /bin/systemctl start webcallserver.service
```

the command

```
sudo service webcallserver check_update
```

does not work

Solution:

a) use systemctl to start, stop, restart WCS

```
sudo systemctl start webcallserver
sudo systemctl stop webcallserver
sudo systemctl restart webcallserver
```

b) use webcallserver script to check updates

```
cd /usr/local/FlashphonerWebCallServer/bin
sudo ./webcallserver check_update
sudo ./webcallserver update
```