WCS in Amazon EC2

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

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			Continue to Subscribe
	By: Flashphoner Latest Version: 5.2.26	7		Save to List
Flashphoner	WebRTC streaming media server designed native mobile apps, having SDKs for Web, i ~ Show more	for real-time low-latency s OS and Android. WCS uses	treaming in browsers and a wide range of	Typical Total Price \$0.100/hr
	Linux/Unix <mark>☆☆☆☆☆ (0)</mark>	BYOL Free Tier		Total pricing per instance for services hosted on c4.large in US East (N. Virginia). View Details
Overview	Pricing	Usage	Support	Reviews
Product Over Web Call Server is a Webf latency streaming in brow SDKs (Software Developm has a dozen of open sour three SDKs with convenie streaming applications as screen sharing, live video to desktop and mobile br SIP protocol and can ope Using these features, dev applications such as web- VoIP integrations for calli processing of VoIP calls o WCS supports RTSP proto WCS, developers can creat application for low-latent RTSP support. WCS uses a wide range of WebRTC, RTMP, RTMFP, V	RTC streaming media server designed for real- vsers and native mobile apps. WCS is supplied ment Kit) for Web, Android and iOS platforms. ce samples presenting server capabilities. Usin mt API, developers can create such low-latency svideo chats, live broadcasting, video conferer transcoding, and low-latency audio and video owsers on Android and iOS platforms. WCS su- rate as a WebRTC-SIP gateway or RTMP-SIP ga- elopers can implement own browser-based or -phone, click-to-call, and various telephony ca- ing to external mobile or landline phones or for in browsers and mobile apps. bool for work with IP cameras and CCTV syster te a cross-platform WebRTC mobile or browser cy video playback from IP cams and media ser f communication technologies and protocols s VebSocket, WebSocket streaming, HLS, RTSP, s	time low- with Highl Each SDK by broa ncing, reco o delivery later upports Web ateway. RTSI med ses and Web for Web for Web for t ms. Using er-based vers with	ights RTC streaming with low-latency dcasting, video chats, conferen rding, streaming from RTMP liv ncy streaming to IOS Safari, HLS RTC re-streaming to YouTube L P-HTML5 streaming from IP can ia servers to browsers and mok RTC, RTMP and WebSocket stre RTC-SIP gateway and RTMP-SIF wo-way audio and video SIP cal ser or mobile app and standato ronment	y: web cam cing, stream e encoders, low- 5 streaming, ive neras, CCTV and ile apps using technologies P gateway features Ils between a one SIP and VoIP
Version	Show other	5.2.267 versions		

2. Product description page with hourly pricing depending on selected instance will be

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snown	LIICK		tο	Continuration
5110 111.	Onor	CONCENTE	ιu	ooningunation.

Flashphoner V	Veb Call Server 5		
< Product Detail Subscribe	1		
Subscribe to	this software		
You're subscribed to this configure your software	s software. Please see the t	terms and pricing details be	elow or click the button above to
Terms and Conditior	IS		
-lashphoner Offer			
You have subscribed to and the seller's End Use Agreement.	this software and agree th r License Agreement (EUL/	at your use of this software A). Your use of AWS service	e is subject to the pricing terms s is subject to the AWS Customer
Web Call Server 5	6/23/2016	N/A	Action
The following table show of each component.	vs pricing information for the l	isted software components. Yo	u're charged separately for your use
Web Call Server 5 BYC	Additional taxe	es or fees may apply.	
	Web Call	Server 5	
	EC2 Instanc	e Type Software/h	r
	t2.micro	\$0	^
	t2.small	\$0	

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

Flashphoner Web Call Server 5	Continue to Launch
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.	Pricing information This is an estimate of typical software and infrastructure costs based on your configuration. Your actual charges for
Fulfillment Option 64-bit (x86) Amazon Machine Image (AMI)	each statement period may differ from this estimate. Software Pricing Web Call Server 5 \$0/hr BYOL running on c4.large
Software Version 5.2.267 (Aug 02, 2019) ~	Infrastructure Pricing EC2: 1 * c4.large Monthly Estimate: \$72.00/month
Region US East (N. Virginia)	

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

Web Call Se	erver 5			
<pre>< Product Detail Subscribe Configure La Launch this software</pre>	unch			
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 running on c4.large Software Version 5.2.267 Region US East (N. Virginia)				
Choose Action Launch from Website	Choose this action to launch from this website			
EC2 Instance Type	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 contr	ols the traffic allowed to reach one or more instances. You can create a new
security group based on seller-recommende	d settings or choose one of your existing groups. Learn more
,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	5 55 1
default	▼ <i>Q</i>
Create New Pered On Coller Cattings	
I Create New Based On Setter 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

WCS 5.2

WCS server 5.2

Connection Method	Protocol	Port Range	Source (IP or Group)
SSH	tcp	22	Anywhe ~ 0.0.0.0/0
	tcp	554	Anywhe 🖌 0.0.0/0
	udp	30000-33000	Anywhe > 0.0.0/0
	tcp	8080-8084	Anywhe 🖌 0.0.0/0
	tcp	8443-8445	Anywhe 🖌 0.0.0/0
	tcp	8888	Anywhe 🖌 0.0.0/0
	tcp	9091	Anywhe 🖌 0.0.0/0
	tcp	1935	Anywhe > 0.0.0/0
	udp	1935	Anywhe > 0.0.0.0/0

Cancel

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

Security Group Settings		
A security group acts as a firewall that contro security group based on seller-recommended	ls the settir	e traffic allowed to reach one or more instances. You can create a new ngs or choose one of your existing groups. Learn more
WCS 5.2	\sim	0
Create New Based On Seller Settings		

8. Click	Launch:
----------	---------

Socurity Group So	tings
Security Group Se	tings
A security group acts	is a firewall that controls the traffic allowed to reach one or more instances. You can create a new
security group based	in selecter econimended sectings of choose one of your existing groups, cean more
WCS 5.2	× 0
Create New Bas	od Op Seller Settings
Create New Das	a on setter settings
Key Pair Settings	
Key Pair Settings To ensure that no oth	er person has access to your software, the software installs on an EC2 instance with an EC2 key pai
Key Pair Settings To ensure that no oth that you created.	er person has access to your software, the software installs on an EC2 instance with an EC2 key pai
Key Pair Settings To ensure that no oth that you created. test_key_pair	er person has access to your software, the software installs on an EC2 instance with an EC2 key pai
Key Pair Settings To ensure that no oth that you created. test_key_pair	er person has access to your software, the software installs on an EC2 instance with an EC2 key pai
Key Pair Settings To ensure that no oth that you created. test_key_pair Create a key pair in El (Ensure you are in the	er person has access to your software, the software installs on an EC2 instance with an EC2 key pai 2 C region you wish to launch your software)

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-Obcc3eccd8134e445 (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

 Name
 Instance ID
 Instance Type
 Availability Zone
 Instance State
 Status Checks
 Alarm Status
 Public DNS (IPv4)
 IPv4 Public IP

 Image: Provide a state
 i-0edecdee2/e0b2bb3
 t2.micro
 us-east-1d
 Image: running
 2/2 checks passed
 None
 ec2-62-91-19-223.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:

😯 Flashphoner Web Call Server 🗙 🕂			_			×
← → C ▲ Not secure ec2-52-91	-19-223.compute-1.amazonaws.com:8888	8/admin/	Q	☆	•	:
	Please sign in					
	admin					
	•••••					
	Login					

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

New EC2 Experience Tell us what you think	Launch Instance Connect Actions	∆ ⊙ ♦ Ø
EC2 Dashboard New	Q. Filter by tags and attributes or search by keyword	None found > >
Events New	You do not have any running instances in this region.	
Tags	First time using EC2? Check out the Getting Started Guide.	
Limits	Click the Launch Instance button to start your own server.	
▼ Instances	Launch Instance	
Instances		
Instance Types		

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

1. Choose AMI 2. Choose Insta	nce Type 3. Config	gure Instance 4. Add Storage	5. Add Tags	6. Configure Security Group	7. Review		
Step 1: Choose an An AMI is a template that contain	Amazon Ma s the software config	uchine Image (AMI) guration (operating system, appl	ication server, a	and applications) required to I	aunch your ins	Cancel and ance. You can select an AMI provided by AWS, our user community, or the AWS Marketplace; or you can select one of your own AMIs.	.d Exit
Q, Web Call Server							×
						Search by Systems Manager p	parameter
Quick Start (0)						I< < 1 to 10 of 55 Products	5 > >
My AMIs (0)	6	Web Call Server 5				Select	
AWS Marketplace (55)	Flashphoner	★★★★★ (0) 5.2.629 Previous ve	rsions By Flashpl	noner			
		Starting from \$0.01 to \$31.21/hr for s	ioftware + AWS usa	ge fees			
Community AMIs (6)	Free ber eligible	Linux/Unix, Amazon Linux 2018.03	64-bit (x86) Amazo	n Machine Image (AMI) Updated: 5/	7/20		

3. Review AMI information

	Web Call Server 5	Pricing Details					
Flashphoner	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	Hourly Fees					
	Web, Android and iOS platforms. Each SDK has a	t2 micro	\$0.012	\$0.013	\$0.025/br		
	dozen of open source samples presenting server	t2 small	\$0.072	\$0.075	\$0.048/br		
	capabilities. Using these three SDKs with convenient API	t2 medium	\$0.046	\$0.025	\$0.096/br		
	More info	t2 large	\$0.093	\$0.101	\$0.194/hr		
Product Details	View Additional Details in AWS Marketplace	t2.xlarge	\$0.186	\$0.202	\$0.388/hr		
		t2.2xlarge	\$0.371	\$0,403	\$0.774/hr		
		t3a.micro	\$0.009	\$0.01	\$0.019/hr		
Ву	Flashphoner	t3a.small	\$0.019	\$0.02	\$0.039/hr		
Customer Rating	★★★★★ (0)	t3a.medium	\$0.038	\$0.041	\$0.079/hr		
Latest Version	5.2.629	t3a.large	\$0.075	\$0.082	\$0.157/hr		
Base Operating System	Linux/Unix, Amazon Linux 2018.03	t3a.xlarge	\$0.15	\$0.163	\$0.313/hr		
Delivery Method	64-bit (x86) Amazon Machine Image (AMI)	t3a.2xlarge	\$0.301	\$0.326	\$0.627/hr		
License Agreement	End User License Agreement	t3.micro	\$0.01	\$0.011	\$0.021/hr		
On Marketplace Since	11/19/19	t3.small	\$0.021	\$0.023	\$0.044/hr		
AWS Services Required	EC2, EBS	t3.medium	\$0.042	\$0.046	\$0.088/hr		
Highlights		t3.large	\$0.083	\$0.091	\$0.174/hr		
- WebDTC streamin-	th law latency web cam breadcasting wid-s -t-t-	t3.xlarge	\$0.166	\$0.182	\$0.348/hr		
 WebRTC streaming w 	ith low-latency: web cam broadcasting, video chats,	10 0.4	@0.333	CO 200	60 C00/L-		

4. Choose instance type

1. Choose Step 2	AMI 2. Choose Instance Type 3. Confi 2: Choose an Instance Typ	gure Instance 4. Add Storag	e 5. Add Tags 6. Configure	a Security Group 7. Review				
Amazon E for your ap	C2 provides a wide selection of instance type	pes optimized to fit different i es and how they can meet yo	use cases. Instances are virtual ur computing needs.	servers that can run applications.	They have varying combinations of CPU, me	mory, storage, and networking capacity, and	I give you the flexibility to choose the approp	riate mix of resources
Current	All instance types Current Cur	PUs, 2.5 GHz, Intel Xeon Fai	nily, 1 GiB memory, EBS only)					
Note: TI	ne vendor recommends using a c4.large ins	stance (or larger) for the best	experience with this product.					
	Family	- Type -	vCPUs (j) ~	Memory (GiB) ~	Instance Storage (GB) (i)	EBS-Optimized Available (i) ~	Network Performance (i)	IPv6 Support (i) +
0	General purpose	t2.nano	1	0.5	EBS only		Low to Moderate	Yes
	General purpose	t2.micro Free tier eligible	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	12.2xlarge	8	32	EBS only		Moderate	Yes
0	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
	Canarol numnea	10 s visions		40	EDC ank	Var	Lin in & Canhit	Var
						Cancel Previo	us Review and Launch Next: Cor	figure Instance Det

5. Scroll down Configure Instance Details page to 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 🧃	V1 and V2 (token optional)	
Metadata token response hop limit ()	1 4	
User data 🧃	● As text ○ As fite □ Input is already base64 encoded	
	#Ibin/bash ^	
	# 810p WCB before reconfiguring PIID=*fgpre# / com.flashphones.server.Server1 grep -v bash)*	
	If (-n 'SPIC)'; then service webcaliserver's top	
	8	
	# Update VCS to the latest build (optionally, set to false if you don't) UPDATE-Hune	
	i dovčavic, uteri od milji me se poslava poslav	
	wgs - an edu - jo - incorrect-central en impo manipulate componentiation access to a gradient and a second access and access and a second access and a second acces	
	n man service and the service of the	
	Jinstallish-silent of a	
	rmrf.FlashphonerWebCaltiServer-5.2-tatest wcs5-server.far.gz	
	# Configuration setup WCS_CONFic=visit/coafFiashphoner/vebCallServer/confilashphoner properties	
	JVM_CONFIG=/usr/local/Flashphoner/WebCall/Server/conflwcs-core properties	
	I#CDN settings CDN_ROLE=religin	
	CDN.JP-0.0.0 educe-incat.JprsCDN_JP*>> SWCS_CONFIG	
	echo e "notar loite scutu kolle">> WVCS CONFIG echo e "notar loites echo e "notar loites">> WVCS CONFIG	
	#. Renuest keyframes from WebRTC publishers every 5 seconds	

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

??? example "Origin setup script"

#!/bin/bash PID="\$(pgrep -f 'com.flashphoner.server.Server' | grep -v bash)" service webcallserver stop fi if \$UPDATE; then cd /tmp wget --timeout=10 --no-check-certificate https://flashphoner.com/download-wcs5.2-server.tar.gz -0 wcs5server.tar.gz if [\$? -eq 0]; then mkdir -p FlashphonerWebCallServer-5.2-latest && tar xzf wcs5server.tar.gz -C FlashphonerWebCallServer-5.2-latest -<u>strip-components 1</u> cd FlashphonerWebCallServer-5.2-latest chmod +x install.sh ./install.sh -silent rm -rf FlashphonerWebCallServer-5.2-latest wcs5-server.tar.gz fi WCS_CONFIG=/usr/local/FlashphonerWebCallServer/conf/flashphoner.properties JVM_CONFIG=/usr/local/FlashphonerWebCallServer/conf/wcs-core.properties 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

Security group nam	Select an existing security group				
Descriptio	This security group was generated by AWS I Protocol (i)	Marketplace and is based on recomn Port Range (i)	Source (i)	Description (j)	
н •	TCP	22	Custom v 0.0.0.0/0	e.g. SSH for Admin Desktop	
stom TCP F 🗸	TCP	554	Custom V 0.0.0.0/0	e.g. SSH for Admin Desktop	- (
stom UDP I 🗸	UDP	30000 - 33000	Custom v 0.0.0.0/0	e.g. SSH for Admin Desktop	- (
stom TCP F 🗸	TCP	8080 - 8084	Custom v 0.0.0.0/0	e.g. SSH for Admin Desktop	- (
stom TCP F 🕶	TCP	8443 - 8445	Custom v 0.0.0.0/0	e.g. SSH for Admin Desktop	_ (
stom TCP F 🗸	TCP	8888	Custom v 0.0.0/0	e.g. SSH for Admin Desktop	_ (
stom TCP F 🗸	TCP	9091	Custom v 0.0.0.0/0	e.g. SSH for Admin Desktop	_ (
stom TCP F 🗸	TCP	1935	Custom v 0.0.0/0	e.g. SSH for Admin Desktop	_ (
stom UDP I 🗸	UDP	1935	Custom v 0.0.0/0	e.g. SSH for Admin Desktop	_ (
d Rule Warning Rules with source of 0.0.0.0/0 al	low all IP addresses to access your instance. We rec	ommend setting security group rules to allow access from know	wn IP addresses only.		

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

			0			A. Andrew A. andrew A.	7. Denderer		
1. Choose Avri	2. Choose insta	ince type 3.	Compute instanc	e 4. Add Storage	5. Add Tags	6. Configure Security Group	7. Review		
Step 7: R	Review Ins	tance La	unch						
AMI Deta	ails								
0	Web Call Serv	er 5							
Pleased-cover	Root Device Type: el	bs Virtualization	type: hvm						
	Hourly Software	e Fees: \$0.012	per hour on t2.	micro instance. Additio	onal taxes or fees	may apply.			
	Software charge	s will begin onc	e you launch th	his AMI and continue u	ntil you terminate	the instance.			
	By launching this	s product, you v	vill be subscribe	ed to this software and	l agree that your u	use of this software is subje	ct to the pricing	terms and the seller's	
	End User Licens	se Agreement							
Instance	Туре								
1				11	In stands of the		500 0-dation		Natural Budamana
Instance	rype	ECUS	VCPUS	Memory (GIB)	Instance a	storage (GB)	EBS-Optimize	d Available	Network Performance
t2.micro		Variable	1	1	EBS only				Low to Moderate
Security	Groups								
Pagurity a		wee							
Descriptio	n n name	This secur	ity group was g	enerated by AWS Mar	ketplace and is ba	ased on recommended set	ings for Web Ca	Server 5 version 5.2.629	provided by Flashphoner
Туре 🕕			Protocol ()		Port Range	0	Source ()		Description ()
SSH			TCP		22		0.0.0.0/0		
Custom 1	FCP Rule		TCP		554		0.0.0.0/0		
Custom L	JDP Rule		UDP		30000 - 3300	00	0.0.0.0/0		
Custom 1	CP Rule		TCP		8080 - 8084		0.0.0/0		
Custom 1	CP Rule		TCP		8443 - 8445		0.0.0/0		
Custom 1	CP Rule		TCP		8888		0.0.0/0		
Custom 1	CP Rule		TCP		9091		0.0.0/0		

Server instance will be launched

Launch Instance	Connect Actio	ns v										∆ 0	• 0
Q, Filter by tags and	attributes or search by key	word									0 K K	1 to 2 of	2 > >
Name -	Instance ID 🔺	Instance Type 👻	Availability Zone 👻	Instance State 👻	Status Checks 👒	Alarm Statu	5	Public DNS (IPv4)	* IP	v4 Public IP	 IPv6 IPs 	Ŧ	Key Name
	i-015bef2f082023811	t2.micro	eu-west-1a	🥚 terminated		None	7		-				test_userdat
	i-0f2d75e04cd193fbe	t2.micro	eu-west-1a	running	2/2 checks	None	7	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



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