

3CX Hosted on AWS EC2 Documentation

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1. Launch an AWS Instance

Required minimum specifications for 3CX Debian Instance:

3CX PBX	Linux Debian-based	Windows-based
CPU Family	Intel i3 (Gen.8) or equivalent	
vCPUs	2	2
Memory	2	2
Storage	30 GB SSD based storage	

3CX. (2023, June 11).

1.1: Launch a AWS EC2 Instance with the specifications provided above – Please store your private key for later use

*Use RSA encryption and request a .pem file

1.2: Open the following Inbound firewall ports on AWS:

Inbound rules control the incoming traffic that's allowed to reach the instance.					
Security group rule ID	Type	Protocol	Port range	Source	Description - optional
sgp-086570c31a2394b9	Custom TCP	TCP	5090	Custom	3CX Mobile Application
sgp-0f51c78a7f136358	HTTP	TCP	80	Custom	For 3CX WebSite to Work
sgp-0a5c70d6d65225	HTTPS	TCP	443	Custom	For 3CX WebSite to Work Securely
sgp-086885c5f2444465	SSH	TCP	22	Custom	Remote Access of the Instance
sgp-0a3096a5dc215ea0	Custom UDP	UDP	5090	Custom	3CX Setup Interface
sgp-0875e89333984249	Custom TCP	TCP	3015	Custom	3CX Setup Interface

1.3: Assign Elastic IP Address (Static IP Address)

Open the Elastic IP tab on AWS EC2 and create an elastic IP Address

Associate the IP Address with your EC2 Instance

2. Connecting to your Instance via SSH using PuTTY

Pre- Requisites: Have puTTY installed on your personal device

2.1: Open puTTY on your device entering the IP address of your server in the host name field

2.2: In the credentials field located in the Auth SSH tab provide the path to your private key file (.pem)

2.3: Click "Connect" and enter the username "admin" (Default Debian Password).

3. Download 3CX onto the Instance:

Paste the following lines into your command line

3.1: `sudo ln -fs /usr/share/zoneinfo/Australia/Perth /etc/localtime`

Changes time zone to Perth Western Australia – This is important in 3CX to set up office hours

(Buzdar, 2024)

3.2 `sudo apt update`

`sudo apt upgrade`

Upgrades the instance

3.3: `wget -O- https://repo.3cx.com/key.pub | gpg --dearmor | sudo tee /usr/share/keyrings/3cx-archive-keyring.gpg`

Generates the 3CX Public Key

(58VOIP, 2023)

3.4 `echo "deb [arch=amd64 by-hash=yes signed-by=/usr/share/keyrings/3cx-archive-keyring.gpg] http://repo.3cx.com/3cx bookworm main" | tee /etc/apt/sources.list.d/3cxpbx.list`

Adds the 3CX Repository

(58VOIP, 2023)

3.5: `sudo apt update`

Updates the package list

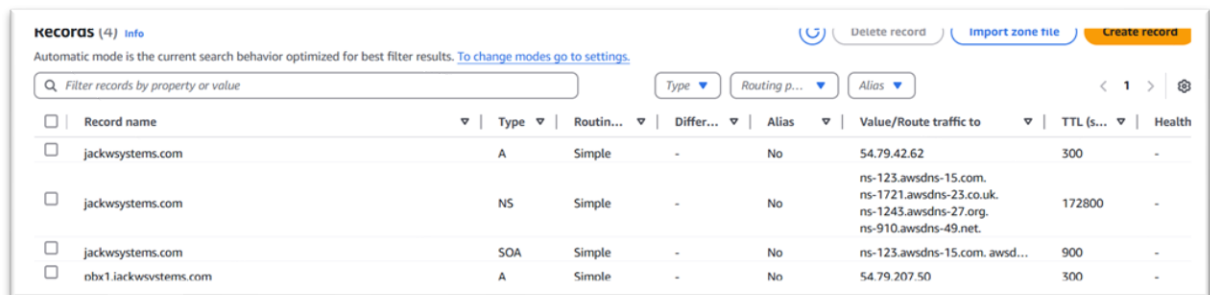
3.6: `sudo apt install 3cxpbx`

Installs 3CX onto the instance

4. Setting up DNS

4.1: Navigate to AWS Route 53 and either buy a DNS or add an A Record to an existing domain name in the record section of your DNS.

Enter the Following Details:



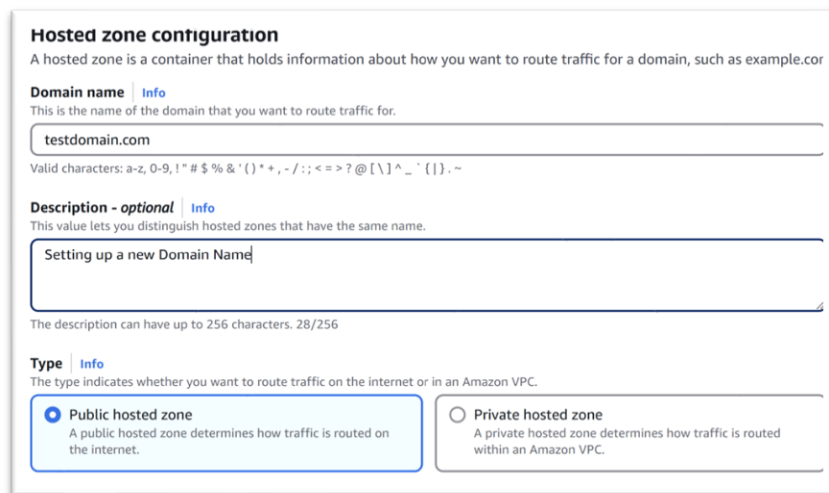
The screenshot shows the AWS Route 53 'Records' page. At the top, there are buttons for 'Delete record', 'Import zone file', and 'Create record'. Below these is a search bar and filters for 'Type', 'Routing p...', and 'Alias'. The main table lists four records for the domain 'jackwsystems.com':

Record name	Type	Routin...	Differ...	Alias	Value/Route traffic to	TTL (s...	Health
jackwsystems.com	A	Simple	-	No	54.79.42.62	300	-
jackwsystems.com	NS	Simple	-	No	ns-123.awsdns-15.com. ns-1721.awsdns-23.co.uk. ns-1243.awsdns-27.org. ns-910.awsdns-49.net.	172800	-
jackwsystems.com	SOA	Simple	-	No	ns-123.awsdns-15.com. awsd...	900	-
ns1.jackwsystems.com	A	Simple	-	No	54.79.207.50	300	-

This can take up to 48 Hours to update (Usually Faster)

*Note: The simple A Records points the DNS to your Instance

4.2: If setting up a new domain name you will need to create a new hosted zone entering the following credentials.



The screenshot shows the 'Hosted zone configuration' form. It includes fields for 'Domain name' (testdomain.com), 'Description - optional' (Setting up a new Domain Name), and 'Type' (Public hosted zone). The form also provides instructions and valid characters for the domain name and description.

Hosted zone configuration
A hosted zone is a container that holds information about how you want to route traffic for a domain, such as example.cor

Domain name | Info
This is the name of the domain that you want to route traffic for.
testdomain.com
Valid characters: a-z, 0-9, ! * # \$ % & ' () * + , - / : ; < = > ? @ [\] ^ _ ` { } , ~

Description - optional | Info
This value lets you distinguish hosted zones that have the same name.
Setting up a new Domain Name
The description can have up to 256 characters. 28/256

Type | Info
The type indicates whether you want to route traffic on the internet or in an Amazon VPC.

☒ **Public hosted zone**
A public hosted zone determines how traffic is routed on the internet.

☐ **Private hosted zone**
A private hosted zone determines how traffic is routed within an Amazon VPC.

5. Creating an SSL Certificate

Use the following commands to download LetsEncrypt CertBot to create an SSL Certificate:

5.1 : sudo snap install --classic certbot
Installs Certbot

5.2: `sudo certbot --nginx`

5.3: `sudo certbot certonly --standalone -d {FQDN}`

This will use Certbot to create a LetsEncrypt Certificate. You will be required to enter you FQDN (Let's Encrypt, n.d.)

6. Setting up 3CX Via the Configuration Website

5.1: Paste the following link into your browser (Replacing the IP to the IP Public of your Instance)

`http://[Instance IP]/?v=2`

5.2: Create a 3CX account (3cx.com) or use an existing one and select “Add self-Hosted System”. Copy and Paste the configuration URL they provide.

5.3: Enter your FQDN (Fully Qualified Domain Name) you will be using

5.3: Go back to `http://[Instance IP]/?v=2` and enter you’re and paste in the configuration link that was copied

5.4: The System will now request a Private Certificate. The following command extracts it from your instance. You will need to copy and paste this and save it in a .pem file

`cat /etc/letsencrypt/live/{dns}/priv.key`

5.5: The System will now request a Public Certificate. Follow the same commands as step 4.3 however using the following command:

`cat /etc/letsencrypt/live/{dns}/fullchain`

(Let's Encrypt Community Support, 2023)

5.6: Now upload both certificates in separate .pem files and the system should start to build

7. Configuring 3CX (Customizable)

6.1: Log into the Web Console via your FQDN (Fully Qualified Domain Name)

6.2: Log in Via Extension 100 (Admin) and enter your 3CX Password

6.2: To set up Extensions (Users) navigate to the admin tab

6.3 To create call flow navigate to the Inbound Rules Tab

Referencing:

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