A blue-tinted photograph of a person in a suit standing on a wooden deck, looking out a large window at a city skyline. The image is partially obscured by a white and green geometric shape in the bottom right corner.

Self-Hosted Application: All-In-One (AIO) for
GovCloud Customers

GETTING STARTED GUIDE

Version 16.5

CloudCheckr

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INTRODUCTION

This guide describes how to configure the **All-In-One (AIO) self-hosted application**, which launches CloudCheckr in a virtual private cloud (VPC) where your data and security is completely protected.

The AIO version is the easiest version to set up because you only need to configure one Elastic Compute Cloud (EC2) instance which contains all the necessary components:

- **Web Console:** where you will log in to and use the application
- **Scheduler and workers:** the background processes that collect and store your AWS data
- **Elastic Block Store (EBS) volume:** a Microsoft SQL® server database that stores your data
- **IAM role:** allows you to connect to your AWS account(s)

We recommend that you record key information generated during your AWS configuration to the [Required Information](#) section. You will need this information for your CloudCheckr setup and for troubleshooting. Items you may wish to record are highlighted in **yellow**.

CONFIGURE SERVICES AND RESOURCES IN AWS

Before the self-hosted application can access your AWS accounts, you need to create AWS credentials.

Your first step is to create **three** AWS Identity and Access Management (IAM) users. AWS will generate a unique access key and secret key for each user. When you plug these keys into CloudCheckr, you enable the self-hosted application to collect the latest AWS pricing data.

This section will show you how to:

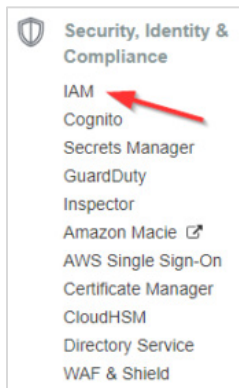
- create an IAM policy that enables the self-hosted application to access AWS pricing data
- create an IAM user and attach them to your pricing policy

To ensure that your self-hosted application contains a good cross-section of availability zones and pricing data, you must create each IAM user in **three separate AWS accounts**.

Create an IAM Policy

In this procedure, you will create an IAM policy that will give the self-hosted application the permissions it needs to access the AWS pricing data.

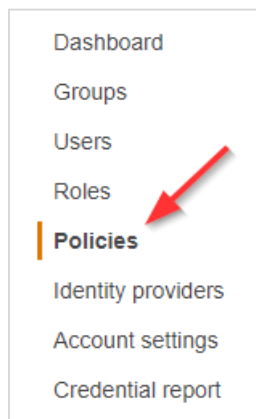
1. Launch the AWS Management Console associated with your first AWS account.
2. On the AWS Services page, scroll down to Security, Identity & Compliance and select **IAM**.



The Welcome to Identity and Access Management screen displays.

The screenshot shows the AWS IAM console's welcome page. At the top, it says 'Welcome to Identity and Access Management'. Below this, it provides a sign-in link for IAM users: <https://cloudcheckrdev.signin.aws.amazon.com/console>, with a 'Customize' link to the right. The 'IAM Resources' section displays statistics: 164 Users, 81 Groups, 318 Customer Managed Policies, 310 Roles, and 0 Identity Providers. The 'Security Status' section features a progress bar indicating '4 out of 5 complete'. Below the progress bar is a list of five security tasks: 'Activate MFA on your root account' (marked with a warning icon), 'Create individual IAM users' (checked), 'Use groups to assign permissions' (checked), 'Apply an IAM password policy' (checked), and 'Rotate your access keys' (checked). Each task has a dropdown arrow on the right.

3. From the dashboard, click **Policies**.



A list of policies displays.

4. Click **Create policy**.

The Create Policy page opens.

The screenshot shows the 'Create policy' page in the AWS Management Console. At the top, there are two numbered steps: 1 (active) and 2. Below the title, a description states: 'A policy defines the AWS permissions that you can assign to a user, group, or role. You can create and edit a policy in the visual editor and using JSON. [Learn more](#)'. There are two tabs: 'Visual editor' (selected) and 'JSON'. To the right is a link 'Import managed policy'. Below the tabs are links 'Expand all' and 'Collapse all'. A large box contains a 'Select a service' dropdown and four sections: 'Service' (with a 'Choose a service' link), 'Actions' (with text 'Choose a service before defining actions'), 'Resources' (with text 'Choose actions before applying resources'), and 'Request conditions' (with text 'Choose actions before specifying conditions'). At the bottom right of this box are 'Clone' and 'Remove' links. At the bottom right of the entire page is a link 'Add additional permissions'.

5. Follow the example in this step to see how to create the pricing policy:

a. Copy this pricing policy to your clipboard:

```
{
  "Version": "2012-10-17",
  "Statement": [
    {
      "Sid": "Stmt1470231538000",
      "Effect": "Allow",
      "Action": [
        "ec2:DescribeSpotPriceHistory",
        "ec2:DescribeAvailabilityZones"
      ],
      "Resource": "*"
    }
  ]
}
```

- b. Return to the Create Policy page in the AWS Management Console.
- c. Click the **JSON** tab.

This screenshot is similar to the previous one, but the 'JSON' tab is now selected and highlighted with a red circle. The 'Visual editor' tab is now disabled. The rest of the page content remains the same.

- d. Replace the text in the JSON tab with the policy you just copied.
- e. Click **Review policy**. The Review policy page opens.
- f. Type a name for the policy and click **Create policy**.

Create policy

Review policy

Name* pricing Use alphanumeric and "+=, @ _" characters. Maximum 128 characters.

Description Maximum 1000 characters. Use alphanumeric and "+=, @ _" characters.

Summary

Service	Access level	Resource	Request condition
Allow (1 of 200 services) Show remaining 199			
EC2	Limited: List	All resources	None

* Required

Cancel Previous **Create policy**

A message indicates that AWS has created your policy.

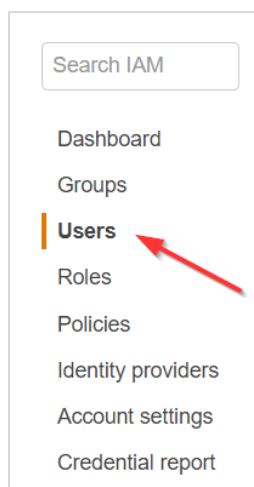
6. Repeat steps 1-5 to create a pricing policy for the remaining two AWS accounts.

7. Copy the names of each pricing policy to the [Required Information](#) section.

Create an IAM User

This procedure will show you how to create an IAM user in AWS.

1. Return to the IAM dashboard and click **Users**.



A list of users displays.

2. Click **Add user**. The Add User wizard opens.
3. On this screen:
 - Type a username.
 - Select the **Programmatic access** check box so you can generate access and secret keys.
 - Click **Next: Permissions**.

Add user 1 2 3 4 5

Set user details

You can add multiple users at once with the same access type and permissions. [Learn more](#)

User name* [Add another user](#)

Select AWS access type

Select how these users will access AWS. Access keys and autogenerated passwords are provided in the last step. [Learn more](#)

Access type* ☒ **Programmatic access**
Enables an **access key ID** and **secret access key** for the AWS API, CLI, SDK, and other development tools.

☐ **AWS Management Console access**
Enables a **password** that allows users to sign-in to the AWS Management Console.

* Required

[Cancel](#) [Next: Permissions](#)

4. Click **Attach existing policies directly**, select your pricing policy, and click **Next: Tags**.

Add user 1 2 3 4 5

▼ **Set permissions**

[Add user to group](#) [Copy permissions from existing user](#) [Attach existing policies directly](#)

[Create policy](#) [Refresh](#)

Filter policies Showing 1 result

	Policy name	Type	Used as	Description
<input checked="" type="checkbox"/>	pricing	Customer managed	Permissions policy (1)	pricing

[Cancel](#) [Previous](#) [Next: Tags](#)

The optional Add tags page displays. For the purposes of this procedure, we will not add tags.

5. Click **Next: Review**.

This page displays the name of your user and verifies that you attached the pricing policy to them.

6. Click **Create user**.

Add user 1 2 3 4 5

Review
Review your choices. After you create the user, you can view and download the autogenerated password and access key.

User details

User name	pricing_user
AWS access type	Programmatic access - with an access key
Permissions boundary	Permissions boundary is not set

Permissions summary
The following policies will be attached to the user shown above.

Type	Name
Managed policy	pricing

Tags
No tags were added.

Cancel Previous **Create user**

A message lets you know that AWS successfully created the user and the access and secret keys.

Add user 1 2 3 4 5

Success
You successfully created the users shown below. You can view and download user security credentials. You can also email users instructions for signing in to the AWS Management Console. This is the last time these credentials will be available to download. However, you can create new credentials at any time.
Users with AWS Management Console access can sign-in at: <https://ccselfhosted.signin.aws.amazon.com/console>

Download .csv

User	Access key ID	Secret access key
pricing_user	AKIAI44QH8DHBEXAMPLE	***** Show

Close

7. Click **Download .csv** to save the keys to a secure location and click **Close**.

Note: This is the only time you can download or copy these keys. If you misplace them, you can create new keys. See [Resetting Your Lost or Forgotten Passwords or Access Keys](#) for details.

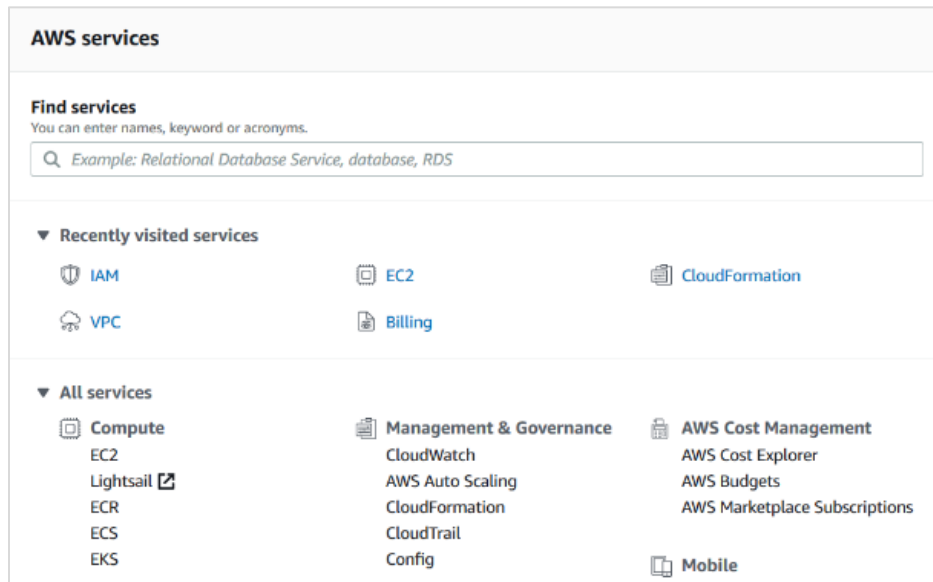
8. Repeat steps 1-7 for the remaining two AWS accounts.
9. For each of the three IAM users, copy the username, access key, and secret key to the [Required Information](#) section.

LAUNCH THE SELF-HOSTED AMI

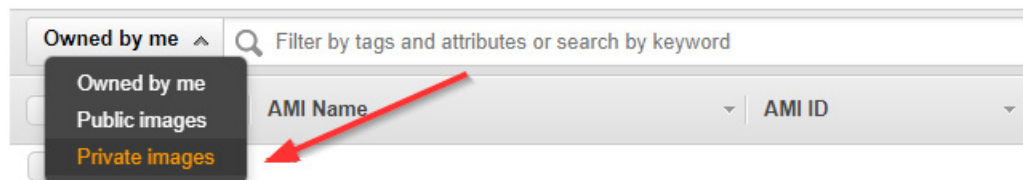
CloudCheckr will let you know when the self-hosted **Amazon Machine Image (AMI)** is available in the AWS Management Console. The AMI contains all the information you need to launch your **EC2 instance**, which is the virtual server where you will run the self-hosted application.

1. Log in to the AWS Management Console.

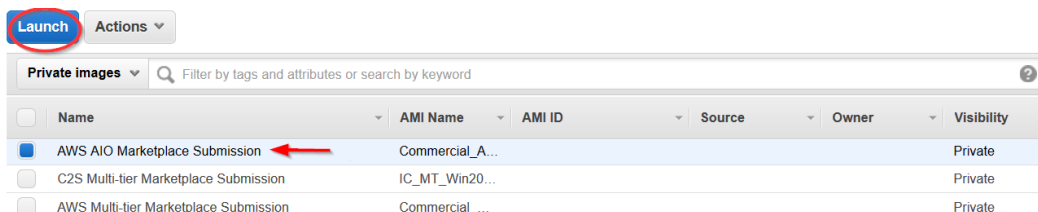
The AWS services page opens.



2. From the middle of the page, choose **Compute > EC2**.
3. From the EC2 Dashboard, select **Images > AMIs**.
4. Click the drop-down arrow next to **Owned by me** and select **Private images**.



5. Select the radio button next to the AMI and click **Launch**.



CONFIGURE THE EC2 INSTANCE

After you click **Launch**, AWS opens a wizard where you will configure your EC2 instance settings.

Since you already selected the AMI, AWS directs you to Step 2: **Choose an Instance Type**. This is where you choose the type of EC2 instance from where you will run the self-hosted application.

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)

	Family	Type	vCPUs	Memory (GiB)	Instance Storage (GB)	EBS-Optimized Available	Network Performance	IPv6 Support
<input type="checkbox"/>	General purpose	t2.nano	1	0.5	EBS only	-	Low to Moderate	Yes
<input checked="" type="checkbox"/>	General purpose	t2.micro Free tier eligible	1	1	EBS only	-	Low to Moderate	Yes
<input type="checkbox"/>	General purpose	t2.small	1	2	EBS only	-	Low to Moderate	Yes
<input type="checkbox"/>	General purpose	t2.medium	2	4	EBS only	-	Low to Moderate	Yes
<input type="checkbox"/>	General purpose	t2.large	2	8	EBS only	-	Low to Moderate	Yes
<input type="checkbox"/>	General purpose	t2.xlarge	4	16	EBS only	-	Moderate	Yes
<input type="checkbox"/>	General purpose	t2.2xlarge	8	32	EBS only	-	Moderate	Yes
<input type="checkbox"/>	General purpose	t3.nano	2	0.5	EBS only	Yes	Up to 5 Gigabit	Yes
<input type="checkbox"/>	General purpose	t3.micro	2	1	EBS only	Yes	Up to 5 Gqibabit	Yes

Cancel Previous Review and Launch Next: Configure Instance Details

1. Select the checkbox next to **c5.large**.

Note: CloudCheckr recommends **c5.large** as the best way to keep your costs down without sacrificing any performance. However, you should continue to monitor the cost and performance of your EC2 instance and modify the instance type for what works best in your deployment.

2. Click. **Next: Configure Instance Details**.

Step 3: Configure Instance Details is where you configure your software and network requirements.

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

Configure the instance to suit your requirements. You can launch multiple instances from the same AMI, request Spot instances to take advantage of the lower pricing, assign an access management role to the instance, and more.

Number of instances ⓘ 1 Launch into Auto Scaling Group ⓘ

Purchasing option ⓘ ☐ Request Spot instances

Network ⓘ vpc-f41b3a8f (default) [Create new VPC](#)

Subnet ⓘ No preference (default subnet in any Availability Zone) [Create new subnet](#)

Auto-assign Public IP ⓘ Use subnet setting (Enable)

Placement group ⓘ ☐ Add instance to placement group

Capacity Reservation ⓘ Open [Create new Capacity Reservation](#)

Domain join directory ⓘ No directory [Create new directory](#)

IAM role ⓘ None [Create new IAM role](#)

CPU options ⓘ ☐ Specify CPU options

Shutdown behavior ⓘ Stop

Enable termination protection ⓘ ☐ Protect against accidental termination

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

3. At a minimum, configure the following settings:

Option	Description	Action
Network	An isolated virtual network dedicated to your AWS account where you will launch your EC2 instance	Select the network that contains your virtual private cloud (VPC)
Subnet	A range of IP addresses in your VPC	Choose a public subnet so you can access your EC2 Instance from the public internet

You can leave all other settings in their default state.

- Click **Next: Add Storage**. Step 4: Add Storage displays. This step is where you verify that you have the right volume and device, which act as the D: drive for your self-hosted application.
- Verify the settings in their default state and modify as necessary:
 - Volume Type: EBS
 - Device: xvdf
 - Size: 500 GiB

6. Click **Next: Add Tags**.

Step 5: Add Tags displays. This step is where you configure tags that will allow you to label and better manage your resources. For the purposes of this procedure, we will not add any tags.

7. Click **Next: Configure Security Group**.

Step 6: Configure Security Group displays. This step is where you can configure the security group that will control traffic in and out of your EC2 instance. If users can access your EC2 instance from the public internet, it is very important that you use security groups to manage access.

8. Select one of the configuration methods:

To create a new security group:

- a. Select the **Create a new security group** radio button.
- b. Click **Add Rule** and create each of the following rules:

Rule	Purpose	Type	Protocol	Port Range	Source
1	Access self-hosted from a remote desktop	RDP	TCP	3389	Your IP address
2	Access self-hosted version from a browser	HTTP	TCP	80	0.0.0.0/0
3	Access self-hosted version from a browser	HTTPS	TCP	443	0.0.0.0/0
4	Required for Web installer to run in on this port in HTTP	Custom TCP Rule	TCP	8080	0.0.0.0/0
5	Required for Web installer to run on this port in HTTPS	Custom TCP Rule	TCP	8443	0.0.0.0/0

Note: Your security configuration may include the RDP rule by default; if that is true, make sure to add your IP address in the Source text field.

Note: For all rules, keep the default setting of **Custom** in the Source column.

This screenshot shows what the page should display if you add the recommended rules:

Type ⓘ	Protocol ⓘ	Port Range ⓘ	Source ⓘ
RDP ▾	TCP	3389	Custom ▾ 0.0.0.0/0, ::/0
HTTP ▾	TCP	80	Custom ▾ 0.0.0.0/0, ::/0
HTTPS ▾	TCP	443	Custom ▾ 0.0.0.0/0, ::/0
Custom TCP F ▾	TCP	8080	Custom ▾ 0.0.0.0/0, ::/0
Custom TCP F ▾	TCP	8443	Custom ▾ 0.0.0.0/0, ::/0

To use an existing security group:

- Select the **Select an existing security group** radio button.
- Select the checkbox(es) next to the security group you want to associate with your instance.

☒ Select an existing security group

Security Group ID	Name	Description
<input type="checkbox"/> sg-3474bb7c	default	default VPC security group
<input checked="" type="checkbox"/> sg-078381c		ELB created security group
<input type="checkbox"/> sg-034b5fd5		launch-wizard-1

- Once you have configured your security group(s), click **Review and Launch**.

Step 7: Review Instance Launch is where you will finalize your EC2 configuration.

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

Please review your instance launch details. You can go back to edit changes for each section. Click **Launch** to assign a key pair to your instance and complete the launch process.

▼ AMI Details [Edit AMI](#)

AIO
AWS AIO Marketplace Submission
Root Device Type: ebs Virtualization type: hvm
If you plan to use this AMI for an application that benefits from Microsoft License Mobility, fill out the [License Mobility Form](#). Don't show me this again

▼ Instance Type [Edit instance type](#)

Instance Type	ECUs	vCPUs	Memory (GiB)	Instance Storage (GB)	EBS-Optimized Available	Network Performance
	13	4	16	EBS only	Yes	High

▼ Security Groups [Edit security groups](#)

Security group name launch-wizard-73

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

- Click **Launch**.

The Select an existing key pair or create a new key pair dialog box opens.

Select an existing key pair or create a new key pair X

A key pair consists of a **public key** that AWS stores, and a **private key file** that you store. Together, they allow you to connect to your instance securely. For Windows AMIs, the private key file is required to obtain the password used to log into your instance. For Linux AMIs, the private key file allows you to securely SSH into your instance.

Note: The selected key pair will be added to the set of keys authorized for this instance. Learn more about [removing existing key pairs from a public AMI](#).

Choose an existing key pair ▼

Select a key pair ▼

☐ I acknowledge that I have access to the selected private key file (DatadogProd.pem), and that without this file, I won't be able to log into my instance.

Cancel Launch Instances

To choose an existing key pair:

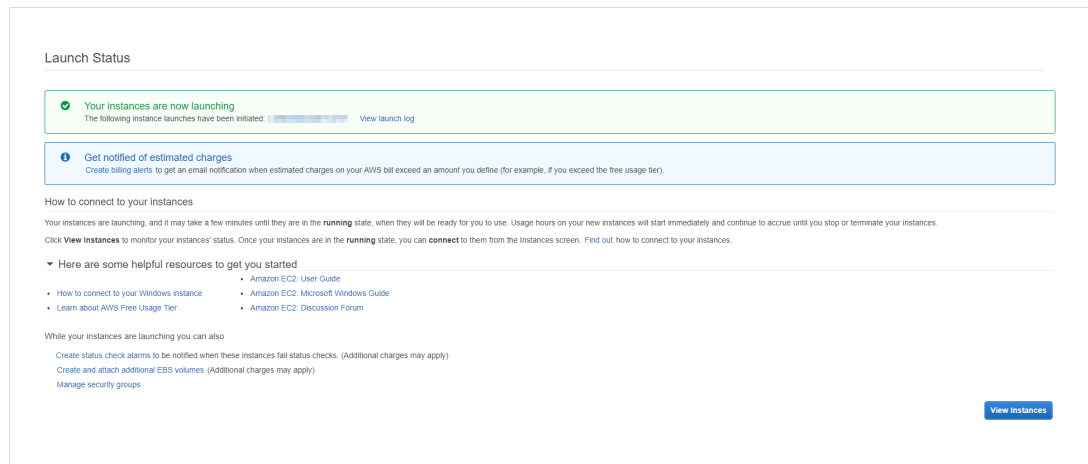
- a. Verify that **Choose an existing key pair** is selected in the top drop-down menu.
- b. In the Select a key pair drop-down menu, select an existing key pair.
- c. Select the **I acknowledge...** checkbox.

To create a new key pair:

- a. In the top drop-down menu, select **Create a new key pair**. The Key pair name text box displays.
- b. In the Key pair name text box, type the name of the key pair.
- c. Click **Download Key Pair**. A .PEM file will download to your desktop.
- d. Save the .PEM file because you will not be able to generate it again.

11. Click **Launch Instances**.

12. The Launch Status screen opens and will let you know when your instance is ready.



Depending on the size and scale of your deployment, it should be ready in 5 to 10 minutes.

13. Once your instance is ready, return to the EC2 dashboard and select **Instances > Instances**.

14. Select the checkbox next to your EC2 instance to see details about your selected EC2 instance.

Description	
Instance ID	Public DNS (IPv4) compute-1.amazonaws.com
Instance state	running
Instance type	IPv4 Public IP 3.90.130.240
Elastic IPs	IPv6 IPs -
Availability zone	us-east-1a
Security groups	Private DNS
Scheduled events	Private IPs
AMI ID	Secondary private IPs
Platform	VPC ID
IAM role	Subnet ID
Key pair name	Network interfaces
Owner	Source/dest. check
Launch time	T2/T3 Unlimited
Termination protection	EBS-optimized
Lifecycle	Root device type
	Root device
	Block devices

15. Copy the following values to the Required Information section:

- Instance ID
- Instance type
- Availability zone
- Key pair (PEM file) name
- Public DNS
- Private DNS
- Subnet ID

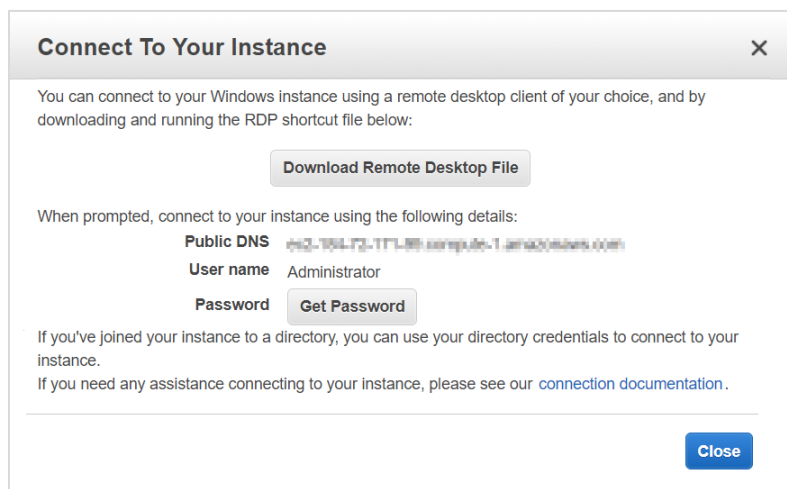
INSTALL THE SELF-HOSTED APP

This section shows you how to install the EC2 instance.

By connecting to each EC2 instance through a Remote Desktop session, you can better manage the installation process and troubleshoot any issues that may occur.

1. From your EC2 list in AWS, make sure that you selected your EC2 instance.
2. Right-click and select **Connect** from the fly-out menu.

The Connect To Your Instance dialog box opens.



Connect To Your Instance [X]

You can connect to your Windows instance using a remote desktop client of your choice, and by downloading and running the RDP shortcut file below:

Download Remote Desktop File

When prompted, connect to your instance using the following details:

Public DNS	ec2-54-173-117-88.compute-1.amazonaws.com
User name	Administrator
Password	Get Password

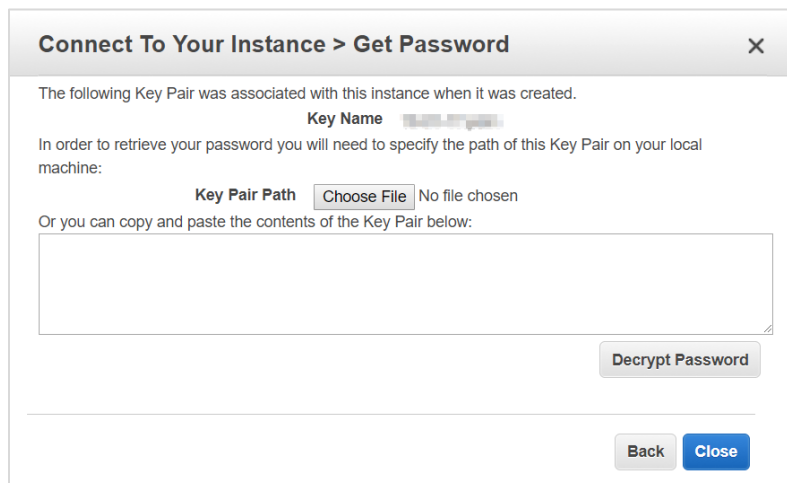
If you've joined your instance to a directory, you can use your directory credentials to connect to your instance.

If you need any assistance connecting to your instance, please see our [connection documentation](#).

Close

3. Click **Get Password**.

The Connect Your Instance > Get Password dialog box opens.



Connect To Your Instance > Get Password [X]

The following Key Pair was associated with this instance when it was created.

Key Name	key-12345678
-----------------	--------------

In order to retrieve your password you will need to specify the path of this Key Pair on your local machine:

Key Pair Path	Choose File No file chosen
----------------------	-----------------------------------

Or you can copy and paste the contents of the Key Pair below:

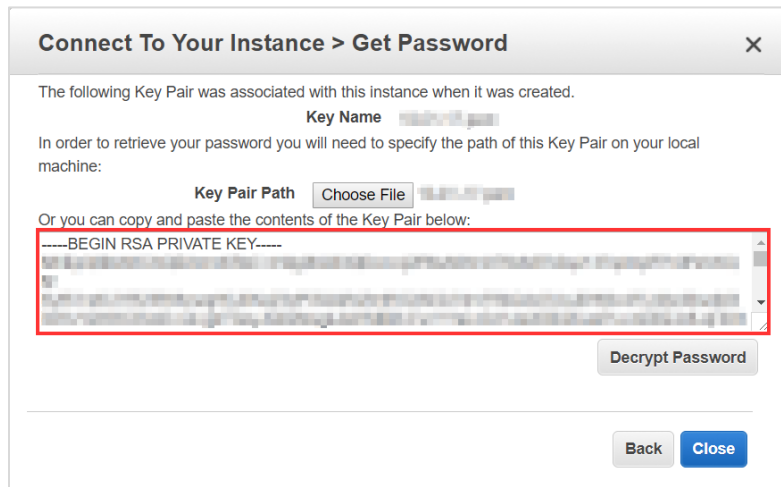
Decrypt Password

Back **Close**

4. Click **Choose File** and navigate to location where you saved the .PEM file.

5. Click **Open**.

The contents of the file are copied over to the blank text box in the dialog box.

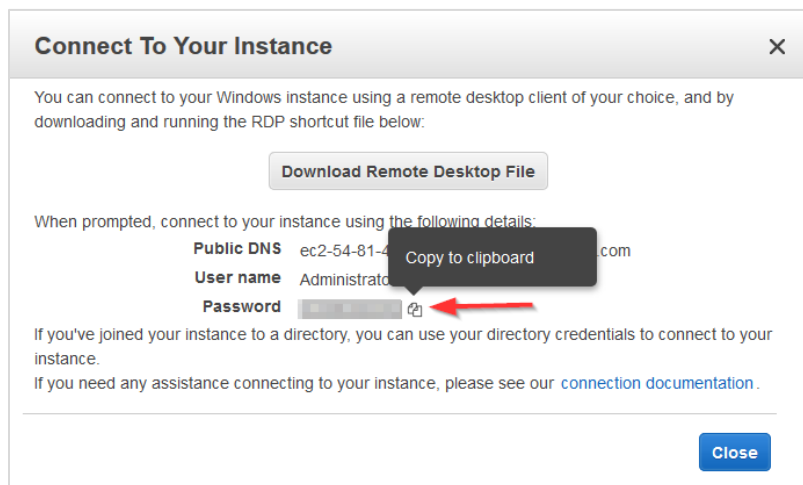


6. Click **Decrypt Password**.

The default administrator password displays.

7. Hover to the right of the administrator password to display the **Copy to clipboard** icon.

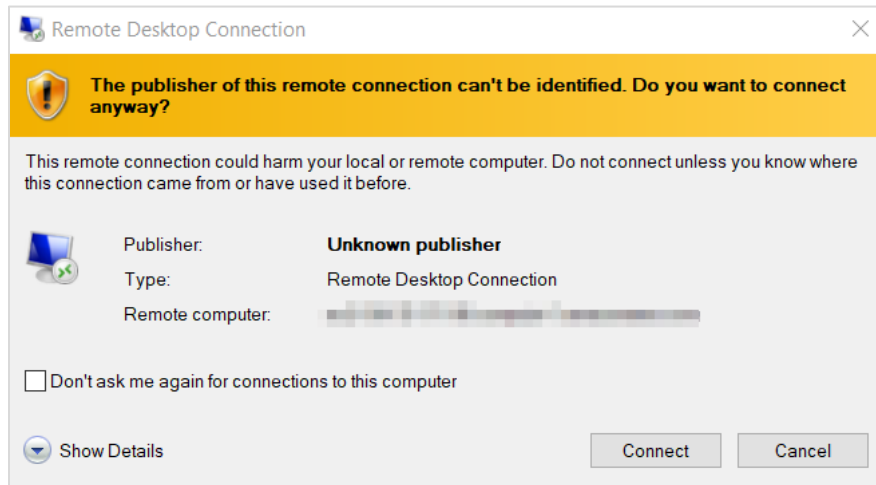
8. Click  to save the password.



9. Click **Download Remote Desktop File**.

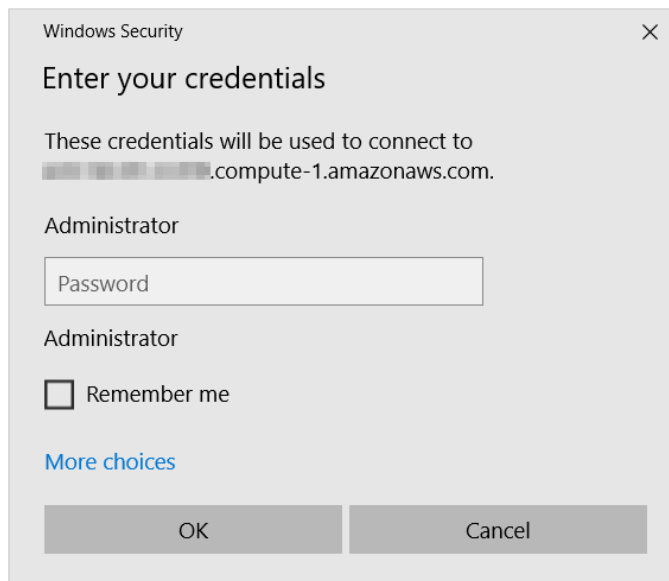
10. Open or save the .RDP file.

The Remote Desktop Connection dialog box opens.



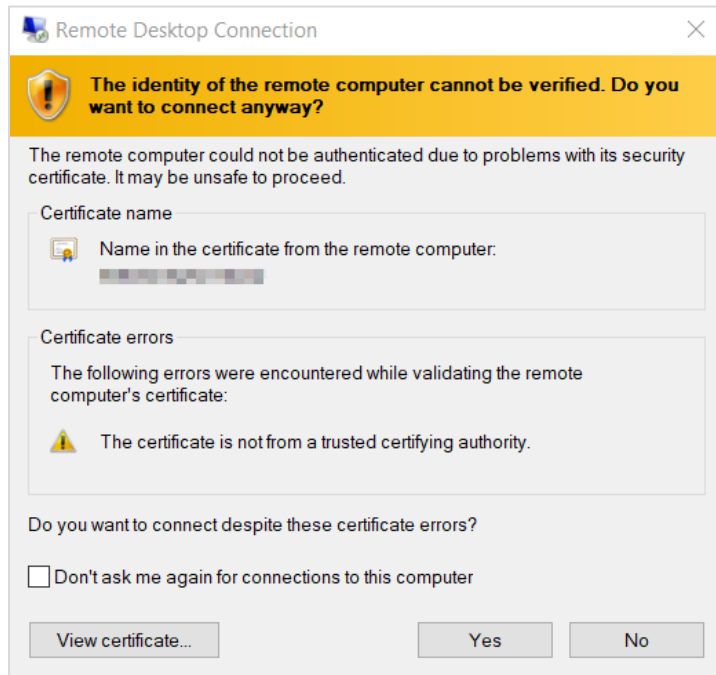
12. Click **Connect**.

The next dialog box prompts you to provide your password.



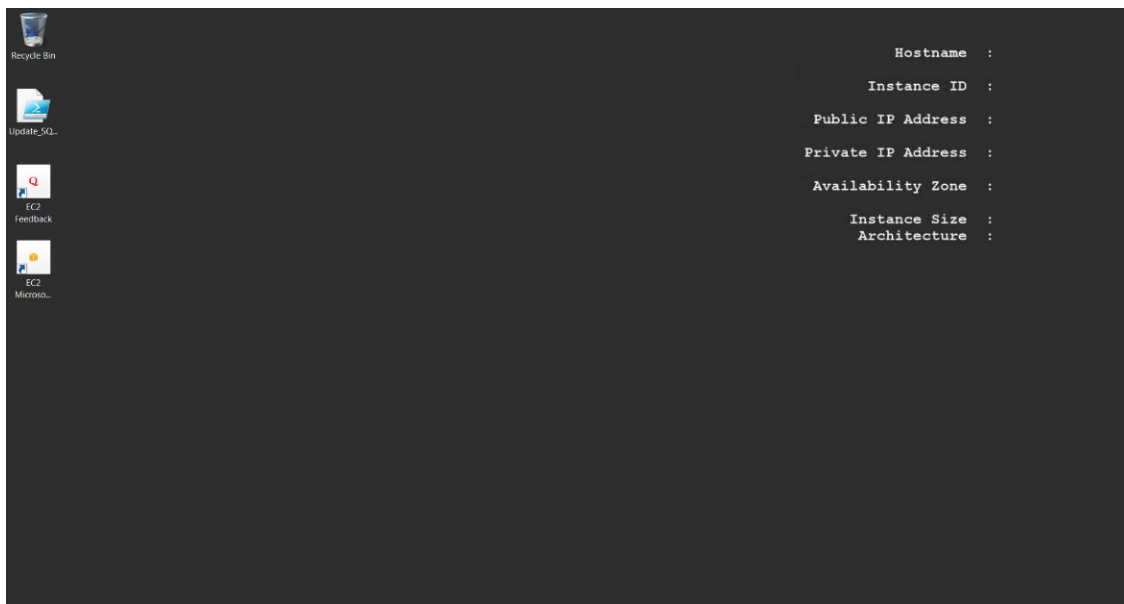
13. In the Administrator text field, paste the password you copied earlier and click **OK**.

The next dialog box prompts you to verify that you want to connect remotely.

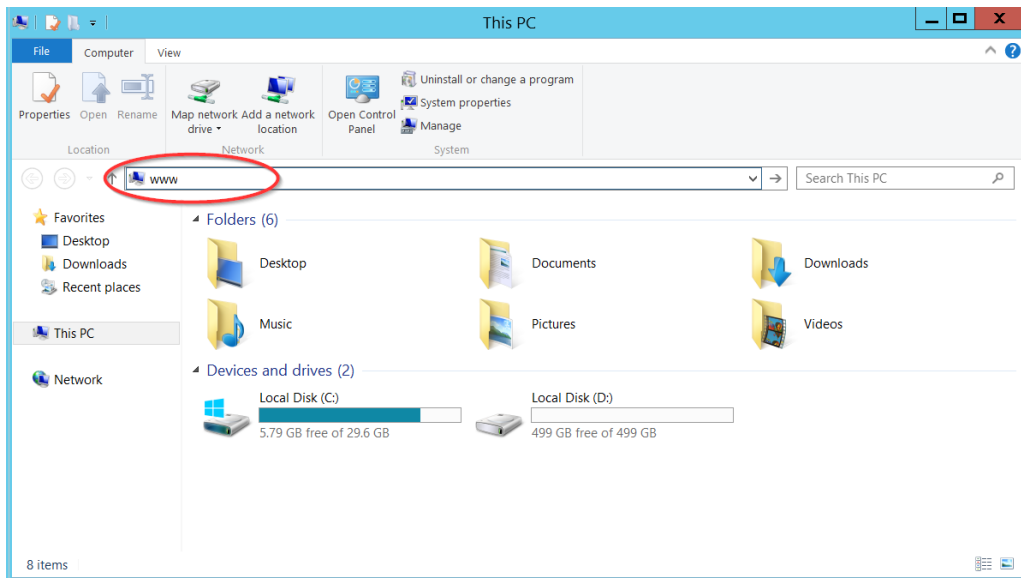


15. Click **Yes**.

Your Remote Desktop session launches.



16. From the taskbar, click the **Folder** icon.
17. Type **www** in the search bar to open your browser and press **Enter**.

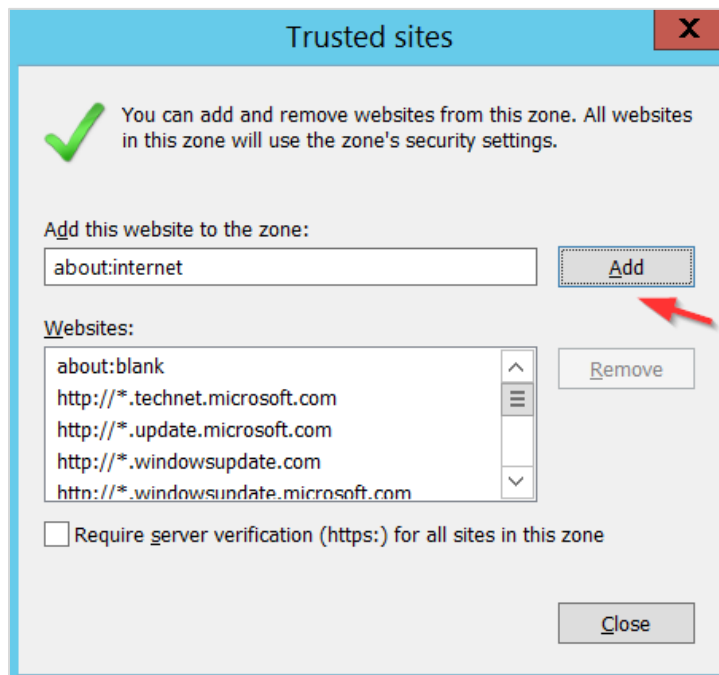


A message indicates that your browser is blocking you from reaching the internet.



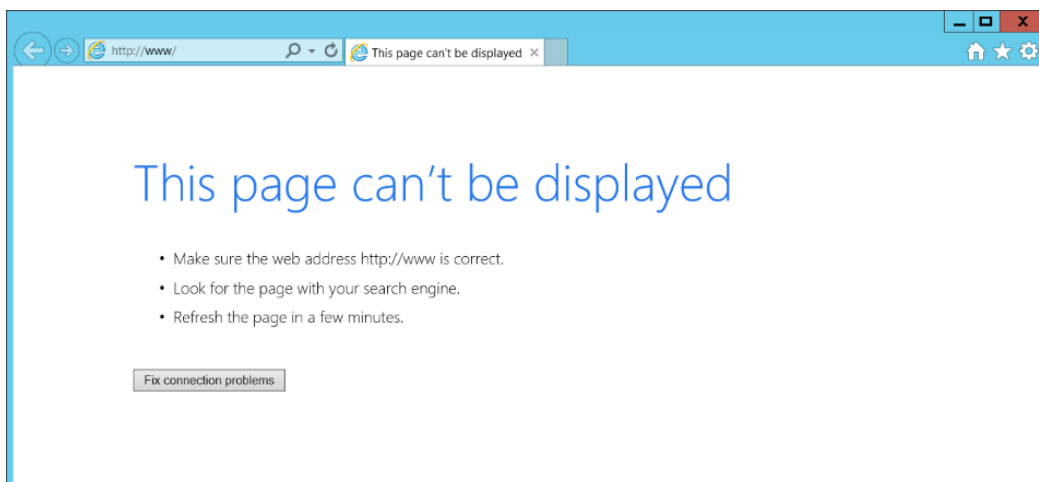
18. Click **Add**. The Trusted sites dialog box opens.

19. Click **Add** again to add this website to your list of trusted sites.



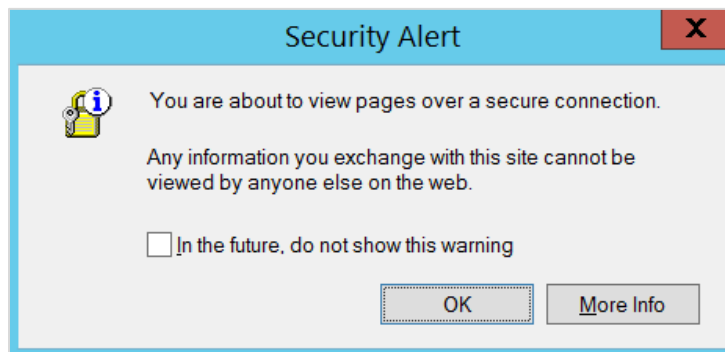
20. Click **Close**.

The browser will attempt to establish a connection with the localhost.



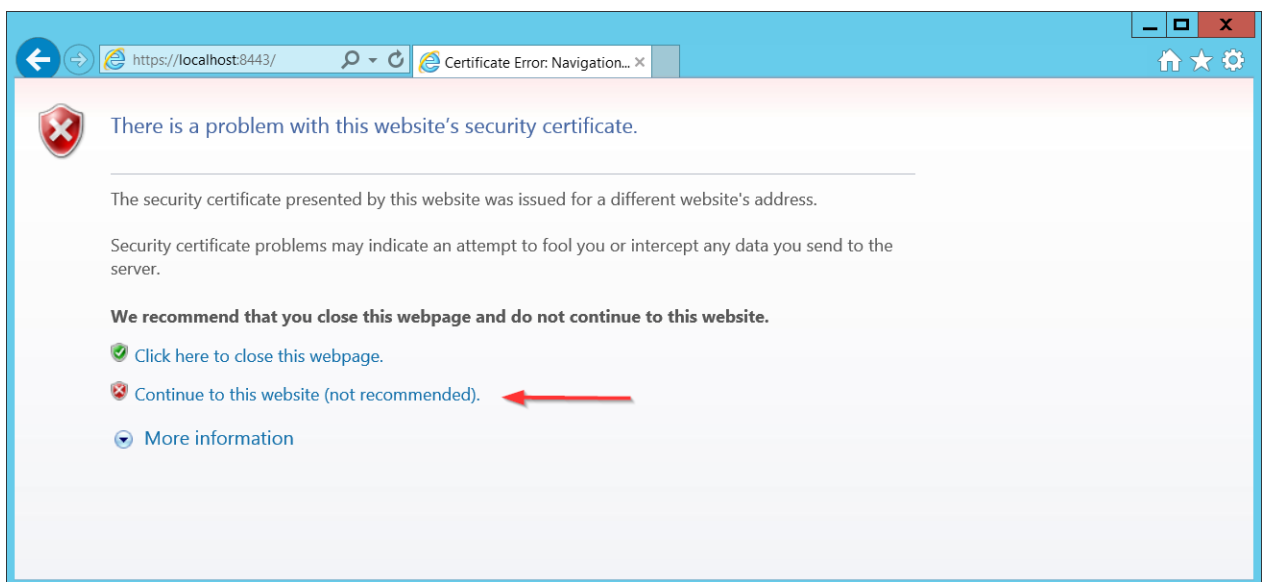
21. In the address bar, type **http://localhost:8080** and press **Enter**.

22. Click **OK** to close the security alert.



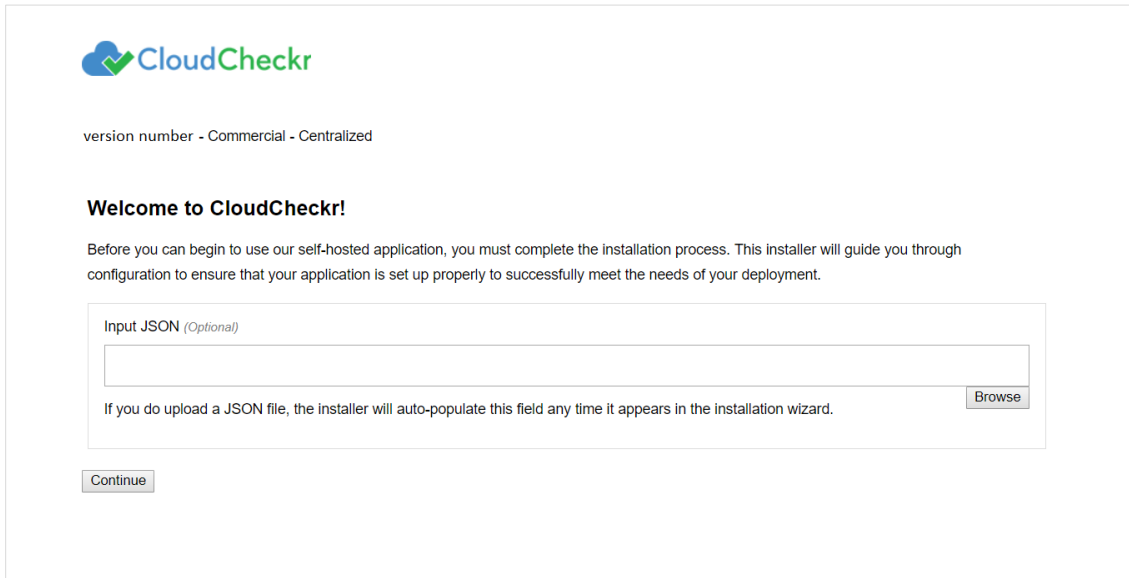
A warning about your security certificate displays.

23. Click **Continue to this website.**



24. Click **OK** to close the security alert.

The Web installer opens. The first screen is where you can upload a JSON file if you want the Web installer to auto-populate this field any time it appears in the installation wizard.



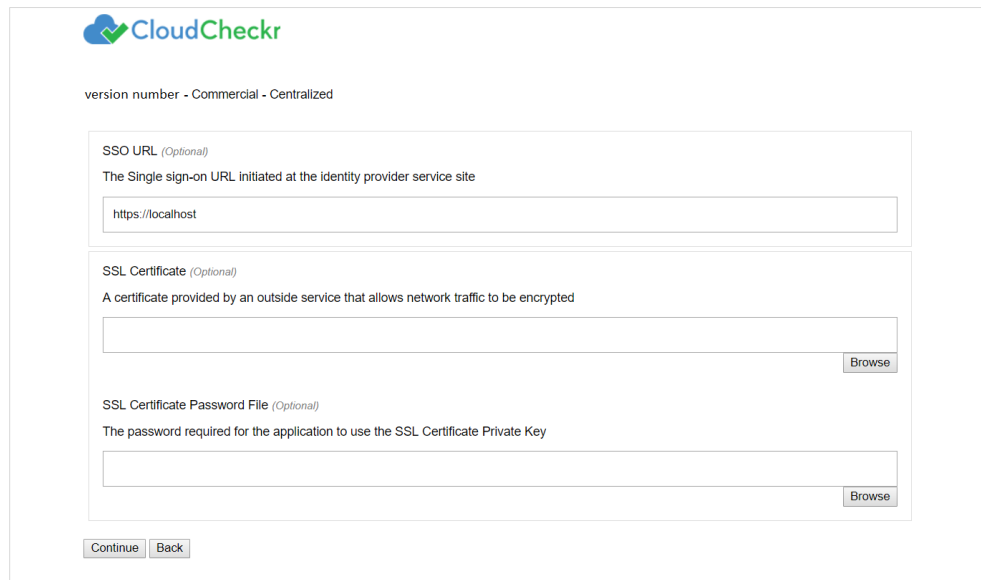
The screenshot shows the CloudCheckr logo at the top left. Below it, the text "version number - Commercial - Centralized" is displayed. A heading "Welcome to CloudCheckr!" is followed by a paragraph explaining that the user must complete the installation process and that the installer will guide them through configuration. Below this is a section titled "Input JSON (Optional)" which contains a large text input field and a "Browse" button. A note states: "If you do upload a JSON file, the installer will auto-populate this field any time it appears in the installation wizard." At the bottom left of this section is a "Continue" button.

Note: The Input JSON text field is an **optional** feature. If you do not want to use the website to configure the self-hosted application, you can load the file using the command line:

```
"C:\CloudCheckr\Package\Installer\CC.AmazonInstaller.exe - inputFile (path-to-input-file)"
```

25. Click **Browse** to navigate to the JSON file if you want to upload it. See the [Input JSON File](#) section.

26. Click **Continue**. The next screen is where you configure your security features.



The screenshot shows the CloudCheckr web installer interface for configuring security features. At the top, the CloudCheckr logo is displayed. Below it, the text "version number - Commercial - Centralized" is shown. The main configuration area contains three sections:

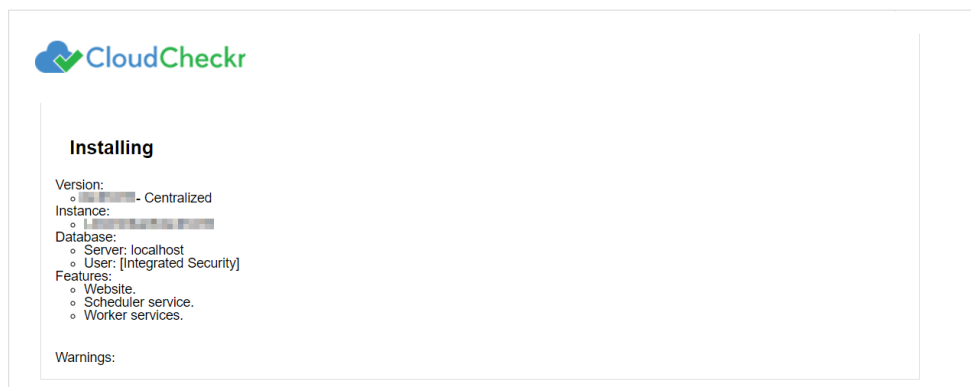
- SSO URL (Optional)**: A text input field with the value "https://localhost". Above the field is the text "The Single sign-on URL initiated at the identity provider service site".
- SSL Certificate (Optional)**: A text input field with a "Browse" button to its right. Above the field is the text "A certificate provided by an outside service that allows network traffic to be encrypted".
- SSL Certificate Password File (Optional)**: A text input field with a "Browse" button to its right. Above the field is the text "The password required for the application to use the SSL Certificate Private Key".

At the bottom of the form, there are two buttons: "Continue" and "Back".

27. Click **Continue**.

The next screen in the Web installer opens. The first section in this screen:

- identifies the version number of the self-hosted application
- provides the EC2 Instance ID
- verifies that the Microsoft SQL® server is available to communicate with the application
- identifies that the website (Web Console) is being installed



The screenshot shows the CloudCheckr web installer interface during the installation phase. The CloudCheckr logo is at the top. Below it, the word "Installing" is displayed in bold. The main content area shows the following information:

- Version:** 1.0.0 - Centralized
- Instance:** i-12345678901234567890
- Database:**
 - Server: localhost
 - User: [Integrated Security]
- Features:**
 - Website.
 - Scheduler service.
 - Worker services.
- Warnings:**

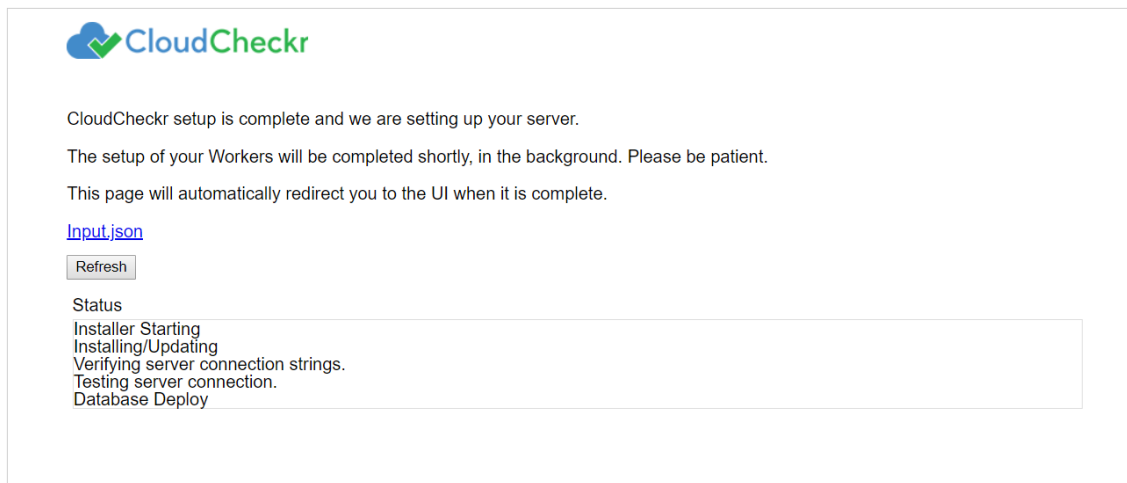
- The second section shows the default number of **workers**—the Microsoft Windows® services that collect your data from AWS



A screenshot of a web form titled "Workers Count". It features a single text input field containing the number "5".

28. Leave the worker count of **5** and click **Install**.

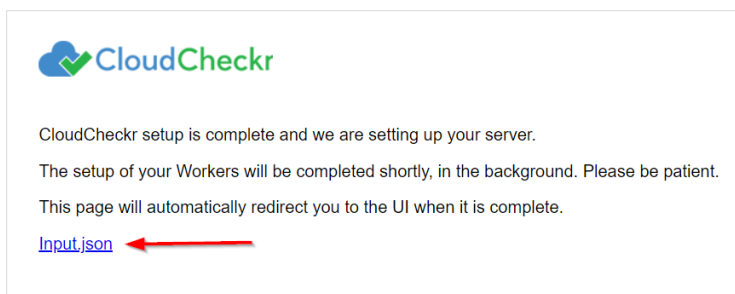
The next screen provides status updates as the web installer completes its configuration task.



A screenshot of the CloudCheckr status screen. At the top is the CloudCheckr logo. Below it, the text reads: "CloudCheckr setup is complete and we are setting up your server. The setup of your Workers will be completed shortly, in the background. Please be patient. This page will automatically redirect you to the UI when it is complete." There is a blue hyperlink labeled "Input.json" and a "Refresh" button below it. A "Status" section contains a list of progress steps: "Installer Starting", "Installing/Updating", "Verifying server connection strings.", "Testing server connection.", and "Database Deploy".

Input JSON File

Click the **Input.json** link to download the JSON file:



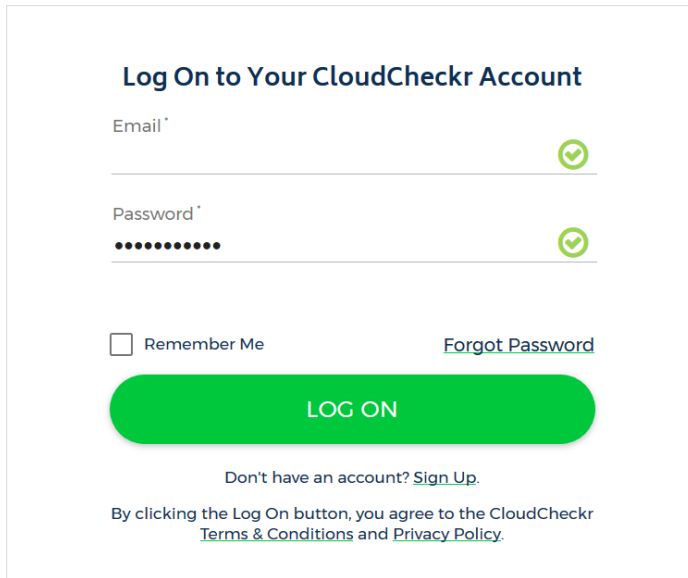
A screenshot of the CloudCheckr status screen, identical to the one above. A red arrow points to the blue hyperlink labeled "Input.json".

If you uploaded the file earlier, it will retain that same configuration. Since the filename is not important, you can rename the file to suit your needs. If you forget to click the link and you want to use the file later, go to:

C:\CloudCheckr\Input.JSON

Note: Installation may take a few minutes because the application must install the Microsoft Windows® services and deploy and populate the databases.

The log in screen of the application opens.



The screenshot shows the login interface for CloudCheckr. At the top, the heading "Log On to Your CloudCheckr Account" is displayed. Below it are two input fields: "Email" and "Password". Each field has a green checkmark icon to its right, indicating successful validation. The password field is masked with dots. Below the password field, there is a checkbox labeled "Remember Me" and a link "Forgot Password". A large green button labeled "LOG ON" is centered below these options. At the bottom, there is a link "Don't have an account? Sign Up." and a disclaimer: "By clicking the Log On button, you agree to the CloudCheckr Terms & Conditions and Privacy Policy."

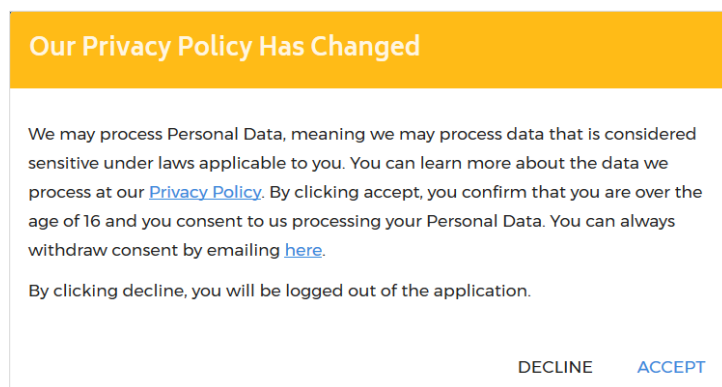
29. In the Email text field, type **sysuser**

30. In the Password text field, paste the **EC2 instance ID** of the Web console.

31. Click **LOG ON**.

When you install the self-hosted application for the first time, you will see our privacy notice.

32. Click **ACCEPT** to acknowledge the changes to our privacy policy.



The screenshot shows a privacy policy notice with an orange header that reads "Our Privacy Policy Has Changed". The main text states: "We may process Personal Data, meaning we may process data that is considered sensitive under laws applicable to you. You can learn more about the data we process at our [Privacy Policy](#). By clicking accept, you confirm that you are over the age of 16 and you consent to us processing your Personal Data. You can always withdraw consent by emailing [here](#)." Below this, it says: "By clicking decline, you will be logged out of the application." At the bottom right, there are two buttons: "DECLINE" and "ACCEPT".

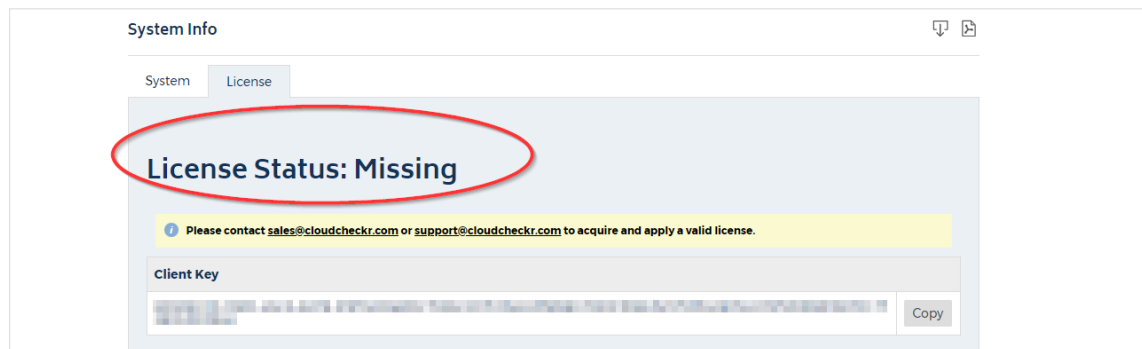
CONFIGURE THE SELF-HOSTED APP

License Your App

Note:

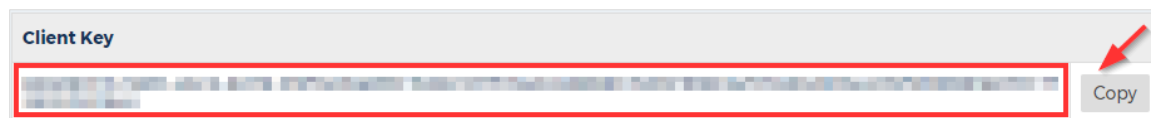
- If you purchased the AMI from AWS Marketplace, you are **not required** to license the self-hosted application. Skip this section and go to the [Create a Partner](#) section.
- If you purchased the AMI privately from CloudCheckr, you are **required** to license the self-hosted application for all versions from the 12.4 release moving forward.

After you log in, you will see the System Info screen indicating that the license is **Missing**:



Before you can configure the self-hosted application, you must get a license file from sales.

1. In the License tab, go to the Client Key section, and click **Copy**.



2. Email your sales representative to request a new license. Be sure to include your client key.

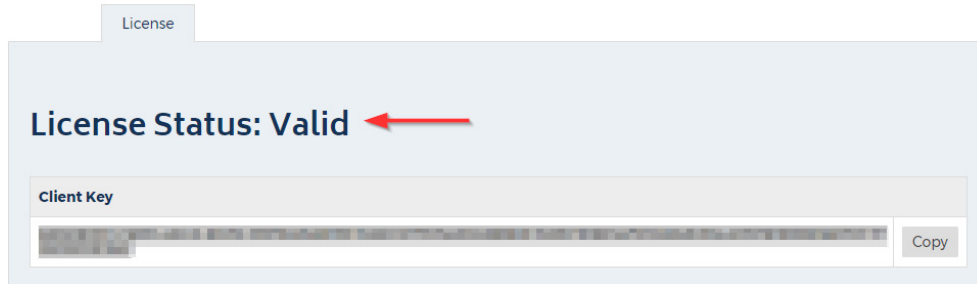
Note: If you don't have a sales representative or you can't reach your assigned representative, email the [sales team](#). We prefer that you contact sales first rather than our support team so that we don't add to support's workload and overcomplicate the license process.

Note: If your organization does not allow email for security reasons, you can provide the Client UID to your sales representative over the phone.

3. Once your sales representative provides you with a new license file, upload the license file:

- a. Save the license file, with an **LIC** extension, to a location in your self-hosted application.
 - o If you save the file to your local desktop, you won't be able to access the file when you remote into your self-hosted application.
 - o The upload will fail if you don't save it with the correct extension.
- b. Navigate to the License tab on the System Info page.
- c. In the Update License section, click **Browse** to locate your license file.
- d. Click **Save**.

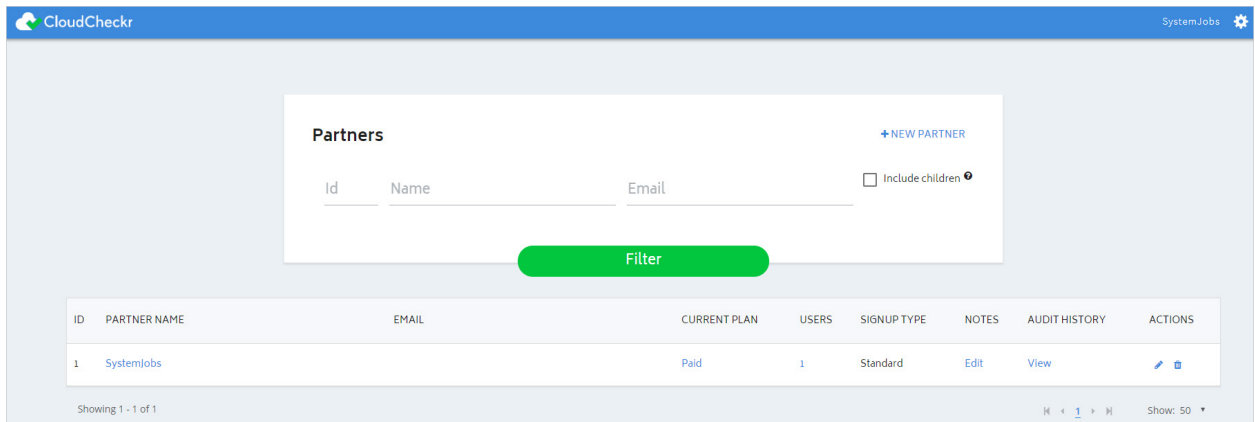
Once the application loads the license file, the License Status changes to **Valid**.



Create a Partner

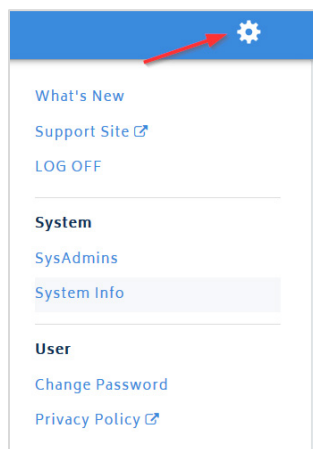
The first step in the configuration of your self-hosted application is to create a **partner**—the top-level container where you will store your accounts. More than likely, you will only need one partner—especially if you want all your accounts in one location.

The main landing page is the Partners page:



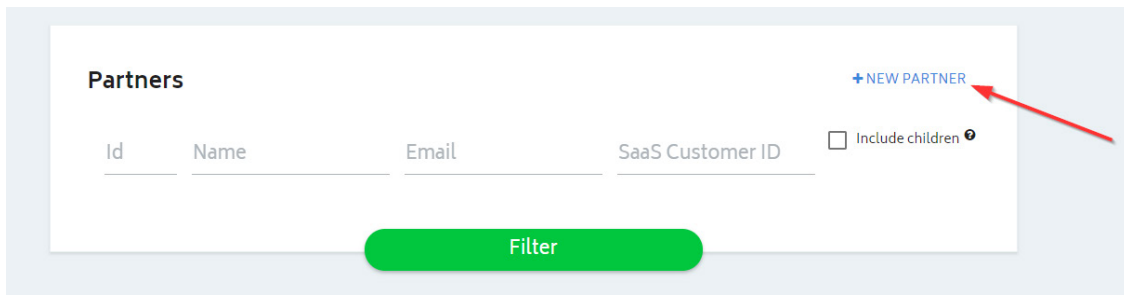
- If you just finished licensing your self-hosted application, click the **Back to Partners List** button in the License tab to return the Partners page.

Because you have not configured the application, you will only see the Settings icon in the header bar. If you clicked **Settings** at this point, you would only have access to basic functions like viewing your system and license information and changing your password:



After you create your partner, more functionality will become available to you.

1. Click **+ NEW PARTNER**.



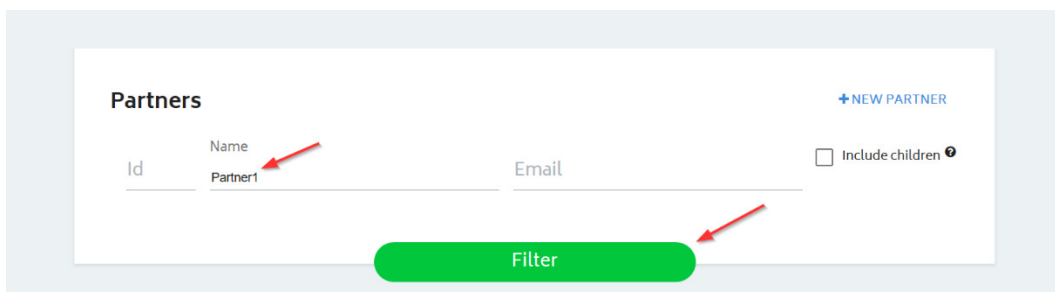
The Add Partner dialog box opens.

A screenshot of the "Add Partner" dialog box. It has a blue header with the title "Add Partner". The dialog is divided into two sections: "Partner Information" and "Initial User". The "Partner Information" section has a text input field for "Partner Name" and another for "Partner Email". Below this is a horizontal line. The "Initial User" section has a checkbox labeled "Add an initial user to the partner". At the bottom right of the dialog are "CANCEL" and "CREATE" buttons.

2. In the Partner Name text field, type a partner name.
3. In the Partner Email text field, type an email address.
4. Click **Create**.

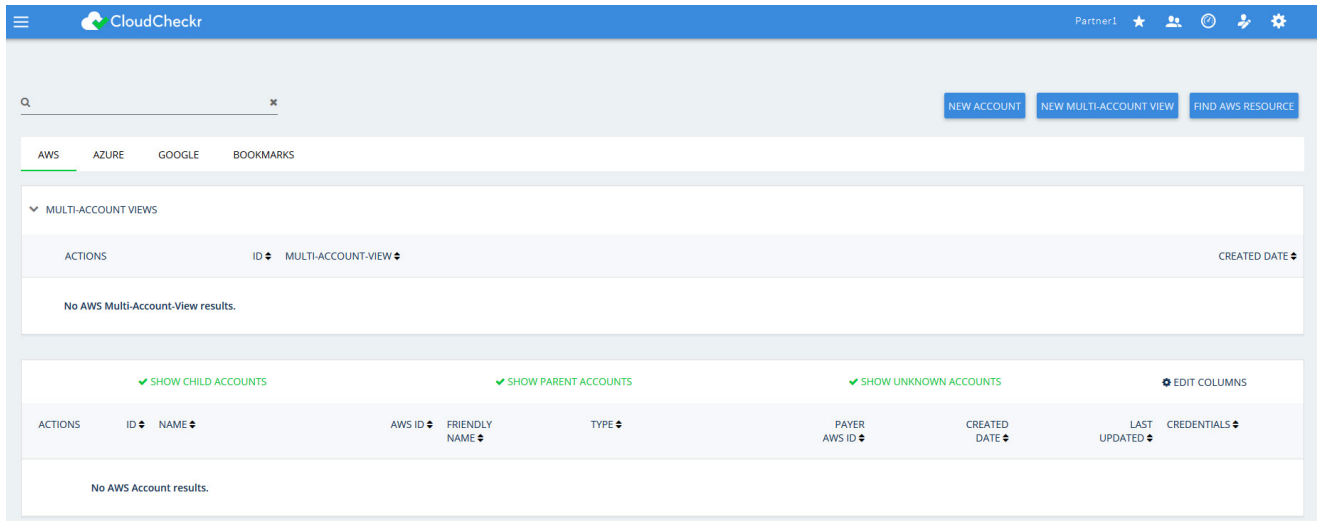
A message indicates that the application added the partner successfully.

5. Click **OK**.
6. Type the name of your new partner and click **Filter**.



CloudCheckr adds your new partner to the partner list.

- Click the **partner name** to open the Accounts page. This is where you will add the accounts you want to associate with your partner.



Because you configured a partner, you now have access to more functions in the header bar:

New	Description
	Create or access bookmarks to application features.
	Return to the Partners landing page.
	Create or access custom dashboards.
	Modify or view application settings.

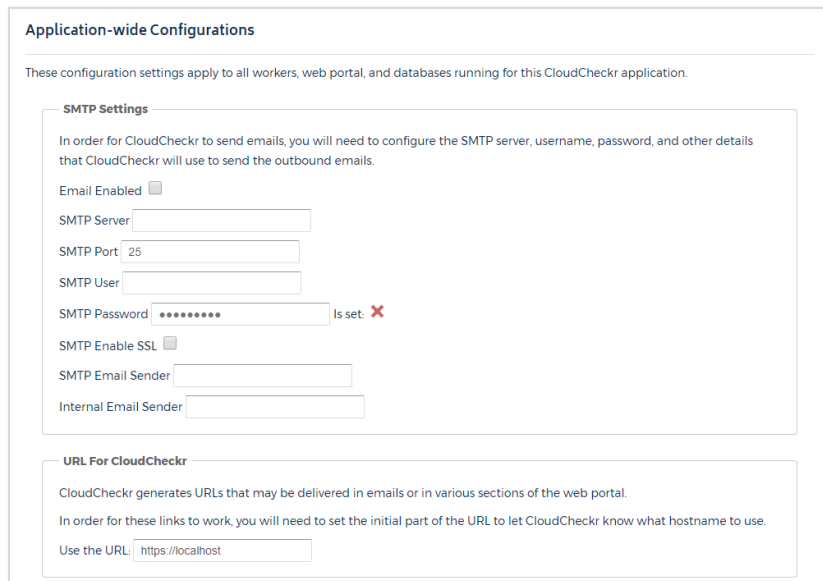
Before you can create your account(s), you need to finish some back-end configuration steps.

Complete the Back-End System Configuration

Out of the box, the self-hosted application does not have the same functionality as CloudCheckr's SaaS version. Follow these instructions to complete the application configuration.

1. From the menu bar, click the **Settings** icon and choose **System > Configuration**.

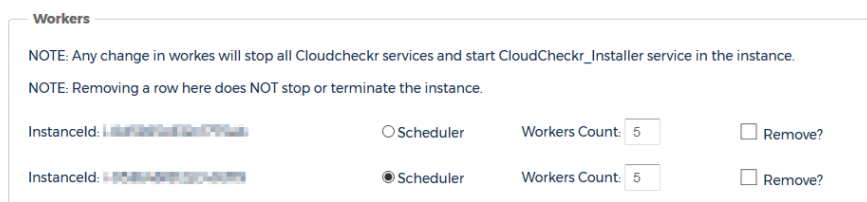
The Application-wide Configurations page opens.



2. Scroll down to the SMTP section and configure the settings that will allow the self-hosted application to send emails on new user activations, alerts, and report data.
3. Scroll down to the URL For CloudCheckr section and provide the URL that you want to display on any system-generated emails.

Note: The default **localhost** will display the DNS for the EC2 instance that is hosting your self-application. This URL is external-facing so you can use it to send emails.

4. Scroll down to the Workers section to see the default number of workers.



Note: If you change and save the workers count, CloudCheckr will re-install the workers to match the new counts. This will stop data from being processed and may render the UI unresponsive for a few minutes. You can use the application once the screen becomes responsive again.

5. Scroll down to the Contact Info for CloudCheckr section and change the default email addresses and phone number if you want your users to contact you directly.

Contact Info For CloudCheckr

CloudCheckr displays warn messages and help text from time to time, with our Email and Phone Number. If this contact info needs to be updated so your users can contact you directly, you can edit that contact info here.

Sales Email Address:

Support Email Address:

Development Email Address:

Phone Number:

6. Scroll down to the Proxy section to enable your proxy configuration settings.

Proxy

If you are running CloudCheckr on a network that requires proxy configuration to reach the AWS API, you can enable those settings here.

Proxy Credentials Domain

Proxy Credentials UserName

Proxy Credentials Password

Proxy Host

Proxy Port

Ignore Certificate Validation when proxying connections ☐

7. Scroll down to the Credentials for Updating AWS Prices section and paste the values of the access and secret keys you created in the [Create an IAM User](#) section.

Credentials for Updating AWS Prices

In order for CloudCheckr to stay up-to-date with the AWS pricing, CloudCheckr needs to connect to the AWS API and pull down the latest pricing. CloudCheckr will need credentials to do that.

The credentials you enter should have access to:

ec2.DescribeAvailabilityZones
ec2.DescribeReservedInstancesOfferings

Credential 1

AWS Account:

Access Key ID

Secret Access Key

☐ Credentials are for a GovCloud account

Credential 2

AWS Account:

Access Key ID

Secret Access Key

☐ Credentials are for a GovCloud account

Credential 3

AWS Account:

Access Key ID

Secret Access Key

☐ Credentials are for a GovCloud account

Create a Trusted User

When you assume a role, AWS gives you temporary security credentials to access other AWS accounts. This functionality is referred to as a **cross-account role**. To create a cross-account role, you must first create a **Trusted User**—an IAM user whose credentials enable the cross-account role to work with the self-hosted application.

Follow these instructions to create a trusted user:

1. Copy this Trusted User policy and replace **AWS ACCOUNT ID** with your 12-digit AWS account ID.

```
{
  "Version": "2012-10-17",
  "Statement": [
    {
      "Sid": "Stmt1474398174000",
      "Effect": "Allow",
      "Action": [
        "sts:AssumeRole"
      ],
      "Resource": [
        "arn:aws-us-gov:iam::AWS ACCOUNT ID:user/root"
      ]
    }
  ]
}
```

2. Create the Trusted User policy using the instructions in the [Create an IAM Policy](#) section.
3. Create a trusted user and attach it to the Trusted User policy using the instructions in the [Create an IAM User](#) section.
4. Paste the access and secret keys of the Trusted User into the AssumeRole section.

AssumeRole
Enter the default AWS Credentials that will be used to assume role in your accounts.
IMPORTANT! If this credentials are to assume role in a **Custom Region**, make sure you first set and save that region.

Credential
AWS Account:
Access Key ID
Secret Access Key

5. Click **Save Settings** to save all the configuration changes you made to the self-hosted application.
6. Copy the name of the Trusted User Policy and Trusted User to the [Required Information](#) section.

Create Trusted User Not in a Standard Region

If you need to credential an account that is **not** in a standard AWS region, such as Hong Kong, you must complete these additional steps when configuring your trusted user:

1. From the IAM dashboard, click **Account settings**.

The middle of the right pane now displays a section on global and regional endpoints.

Session Tokens from the STS endpoints

AWS recommends using regional STS endpoints to reduce latency. Session tokens from regional STS endpoints are valid in all AWS Regions. If you use regional STS endpoints, no action is required.

Session tokens from the global STS endpoint (<https://sts.amazonaws.com>) are valid only in AWS Regions that are enabled by default. If you intend to enable a new Region for your account, you can use session tokens from regional STS endpoints or activate the global STS endpoint to issue session tokens that are valid in all AWS Regions. [Learn more](#)

Endpoints	Region compatibility of session tokens	Actions
Global endpoint	Valid in all AWS Regions	Edit
Regional endpoints	Valid in all AWS Regions	

2. In the Global endpoint row, go the Actions column and click **Edit**.
3. In the dialog box, select the **Valid in all AWS Regions** and click **Save Changes**.

Change region compatibility of session tokens for global endpoint ×

Session tokens valid in all AWS Regions are larger. If you store session tokens, these larger tokens might affect your systems. [Learn more](#)

Session token's from the global endpoint (<https://sts.amazonaws.com>):

☐ Only valid in AWS Regions enabled by default

☒ Valid in all AWS Regions ←

Cancel Save changes

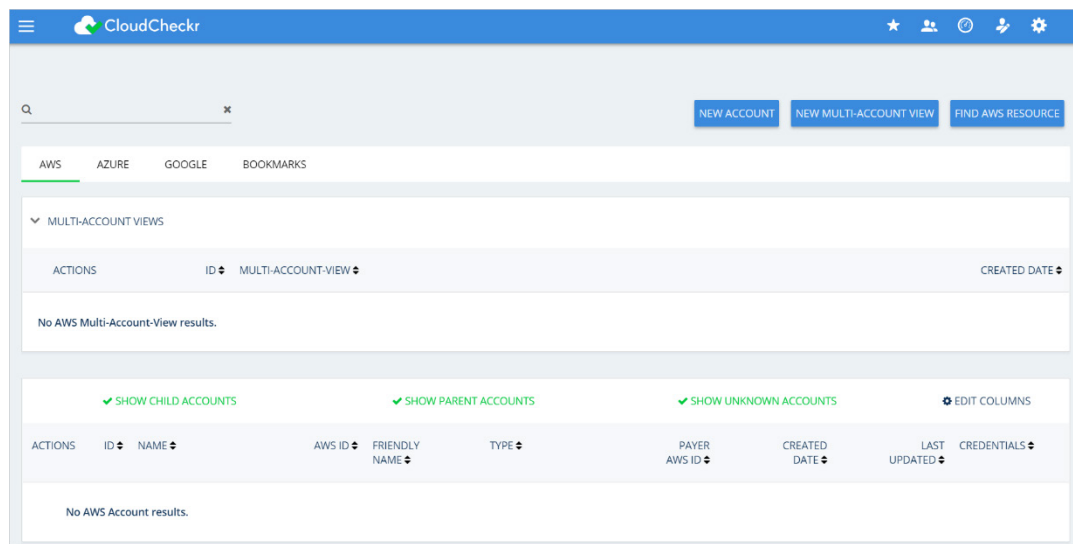
Create an Account

Now that you have configured all the back-end settings, you can create an account or accounts. The account is where you will perform all your work in the self-hosted application—such as running reports, configuring alerts, and creating invoices.

1. From the Application-wide Configurations page, click **Back to Accounts**.

Note: You can also go to the Partners landing page and click **your partner name**.

The Accounts page for your partner displays.



2. From the right side of the screen, click **NEW ACCOUNT**.

The New Account screen displays.

A screenshot of the 'New Account' form in the CloudCheckr application. The form has a title 'New Account' and a text input field for 'Enter a name for your Account' with a character count '0 / 256'. Below this is a 'Cloud Provider' section with a dropdown menu currently set to 'Amazon Web Services'. Underneath is a 'Navigation Visibility' section with a heading 'Select the sections you want users to see in this account. You can change these settings at any time.' and a list of checkboxes: 'Recently Viewed', 'Savings', 'Best Practices', 'Cost', 'Inventory', 'Security', 'Utilization', and 'Automation'. All checkboxes are checked. At the bottom of the form are two buttons: 'Create' (in green) and 'Cancel' (in grey).

3. Type a unique name for your account and in the Cloud Provider section, select **Amazon Web Services**.
4. Scroll down to the Navigation Visibility section, and select the modules that you want your account to have access to:
 - **Recently Viewed**: shows the 10 reports that were most recently accessed
 - **Savings**: shows you how to save the most amount of money in the shortest amount of time
 - **Best Practices**: lists more than 550 recommendations based on industry compliance standards
 - **Cost**: includes reports on daily spend, Reserved Instances (RIs), access to billing data, and more
 - **Inventory**: contains Summary, Detail, and Trending reports on your cloud provider's offerings
 - **Security**: helps you audit, conduct forensics, and manage other security issues
 - **Utilization**: provides metrics, visualization, analysis, and right-sizing recommendations
 - **Automation**: helps automate administrative tasks related to security and maintenance
5. At the bottom of the New Account page, click **Create**.

The Configure Account page opens, and the Use a Role for Cross-Account Access tab is visible because you added a [trusted user](#).

Configure Account [Show Help](#) ☆

Use a Role for Cross-Account Access Use an IAM Access Key Map To Payer

Select the AWS Account type below:

☒ Credentials are for a Standard (Commercial) account

[Toggle Manual vs. CloudFormation](#)

1. In the Billing & Cost Management Dashboard of the AWS Management Console, verify that the **Receive Billing Alerts** checkbox is selected. (optional)
2. Click the [Launch CloudFormation Stack](#) link.
3. Type a new name for your stack
4. For each of the separate policies—Inventory, Billing, Security, and CloudWatch Flow Logs—select **True** or **False** if you want to include that policy in your template.
 1. For Billing, type the name of your AWS Detailed Billing Report bucket.
 2. For Security, type the name of your AWS CloudTrail bucket.
5. Select the **I Acknowledge that AWS CloudFormation might create IAM resources** checkbox and click **Create**.
6. When the stack creation is complete, select your stack name from the list and click the **Resources** tab.
7. Click the **Physical ID** link for the IAM role.
8. From the Summary page, copy the Role ARN value.
9. Select the checkbox if this is an account from India managed by Amazon Internet Services Pvt. Ltd ([AISPL](#)).

☐ This account is managed by AISPL

10. Paste the Role ARN value in the field:

AWS Role ARN

[Update](#)

Create Least Privilege Policies

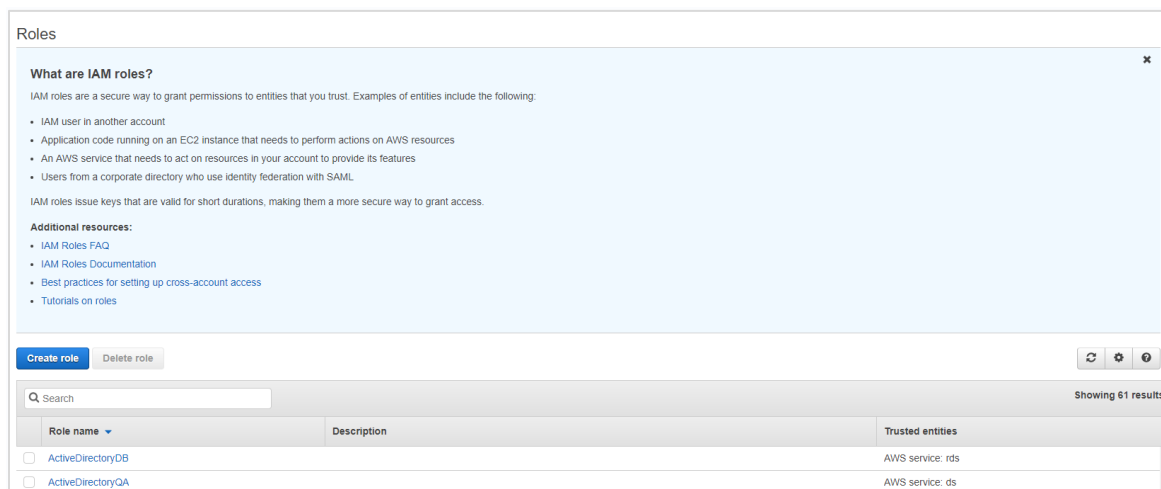
As part of your configuration, you must create **least privilege policies**, which are documents you will attach to your cross-account role that enable CloudCheckr to access the AWS data it needs to create its reports. Each least privilege policy provides permissions to a core function in our application:

- Cost
 - Billing
 - Security/Compliance
 - Inventory
 - CloudWatch Flow Logs
 - CloudTrail
1. Using the instructions in the [Create an IAM Policy](#) section, create the least privilege policies based on the documents found in the [Appendix: IAM Policies](#).
 2. Copy the names of the least privilege policies to the [Required Information](#) section.

Create a Cross-Account Role

To finish your account configuration, you must create a cross-account role in AWS and apply those credentials in CloudCheckr.

1. In the AWS Management Console, scroll down to the Security, Identity & Compliance section and select **IAM**.
2. From the dashboard, click **Roles**. The Roles page opens.



3. From the middle of the page, click **Create role**.
4. In the Select type of trusted entity section, click **Another AWS account**.

Select type of trusted entity

AWS service
EC2, Lambda and others

Another AWS account
Belonging to you or 3rd party

Web identity
Cognito or any OpenID provider

SAML 2.0 federation
Your corporate directory

Allows AWS services to perform actions on your behalf. [Learn more](#)

The screen prompts you to add an Account ID value.

Create role

Select type of trusted entity

AWS service
EC2, Lambda and others

Another AWS account
Belonging to you or 3rd party

Web identity
Cognito or any OpenID provider

SAML 2.0 federation
Your corporate directory

Allows entities in other accounts to perform actions in this account. [Learn more](#)

Specify accounts that can use this role

Account ID*

Options ☐ Require external ID (Best practice when a third party will assume this role)
☐ Require MFA

* Required

[Cancel](#) [Next: Permissions](#)

5. Get the account ID from the self-hosted application:
 - a. Return to the Configure Accounts page.
 - b. Click **Toggle Manual vs CloudFormation** to see the manual cross-account instructions.
 - c. Copy the Account ID.

Use a Role for Cross-Account Access

Select the AWS Account type below:

☒ Credentials are for a Standard (Commercial) account

[Toggle Manual vs. CloudFormation](#)

1. Log in to your AWS Management Console and access the [IAM dashboard](#).
2. Select **Policies** from the left menu and click the **Create policy** button.
3. Go to our [support site](#) and copy the policy or policies that apply to your business needs.
4. For each policy, follow these steps:
 1. Click the **JSON** tab, and paste the new policy into the tab.
 2. Click **Review Policy**.
 3. Type a name for the policy and click **Create policy**.
 4. Select the policy from the list and from the Policy actions drop-down menu, select **Attach**.
- Note:** For any DBR and CloudTrail policies that you create, make sure that you replace the default S3 bucket with the name of the new S3 bucket identified in the policy
5. Select **Roles** from the left menu and click the **Create role** button.
6. Select **Another AWS account**.
7. Select the Require external ID checkbox next to Options.
8. Copy these values to the corresponding fields in AWS:

Account ID

External ID

- Paste the Account ID.
- In the Options section, select the **Require external ID** checkbox.

Options

☒ Require external ID (Best practice when a third party will assume this role)

You can increase the security of your role by requiring an optional external identifier, which prevents "confused deputy" attacks. This is recommended if you do not own or have administrative access to the account that can assume this role. The external ID can include any characters that you choose. To assume this role, users must be in the trusted account and provide this exact external ID. [Learn more](#)

External ID

Important: The console does not support using an external ID with the Switch Role feature. If you select this option, entities in the trusted account must use the API, CLI, or a custom federation proxy to make cross-account `iam:AssumeRole` calls. [Learn more](#)

- Return to the [Configure Accounts](#) page.
- Copy the external ID identified in the instructions.

Use a Role for Cross-Account Access

Select the AWS Account type below:


☒ Credentials are for a Standard (Commercial) account

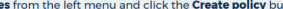
Toggle Manual vs. CloudFormation

1. Log in to your AWS Management Console and access the [IAM dashboard](#).
2. Select **Policies** from the left menu and click the **Create policy** button.
3. Go to our [support site](#) and copy the policy or policies that apply to your business needs.
4. For each policy, follow these steps:
 1. Click the **JSON** tab, and paste the new policy into the tab.
 2. Click **Review Policy**.
 3. Type a name for the policy and click **Create policy**.
 4. Select the policy from the list and from the Policy actions drop-down menu, select **Attach**.

Note: For any DBR and CloudTrail policies that you create, make sure that you replace the default S3 bucket with the name of the new S3 bucket identified in the policy.

5. Select **Roles** from the left menu and click the **Create role** button.
6. Select **Another AWS account**.
7. Select the Require external ID checkbox next to Options.
8. Copy these values to the corresponding fields in AWS:

Account ID: 

External ID: 

- Return to the AWS Management Console and paste the external ID value.
- Verify that the Require MFA radio button is not selected.
- Click **Next: Permissions**.
- Select the checkbox next to each [least privilege policy](#) and click **Next: Tags**.
- Click **Next: Review**.

The Review page opens.

13. Type a name for the role and click **Create role**.
14. Select the checkbox next to your new role and click the **role name**.

At the top of the Summary page, you will see the Role ARN value.

15. Click the **Copy** icon next to the Role ARN value.
16. Return to Configure Accounts page in the self-hosted application and perform the following steps:
 - a. Paste the Role ARN value in the AWS Role ARN field.
 - b. Click **Update** to complete the configuration of your cross-account role.

17. Copy the name of the cross-account role to the [Required Information](#) section.

UPGRADE THE SELF-HOSTED APP

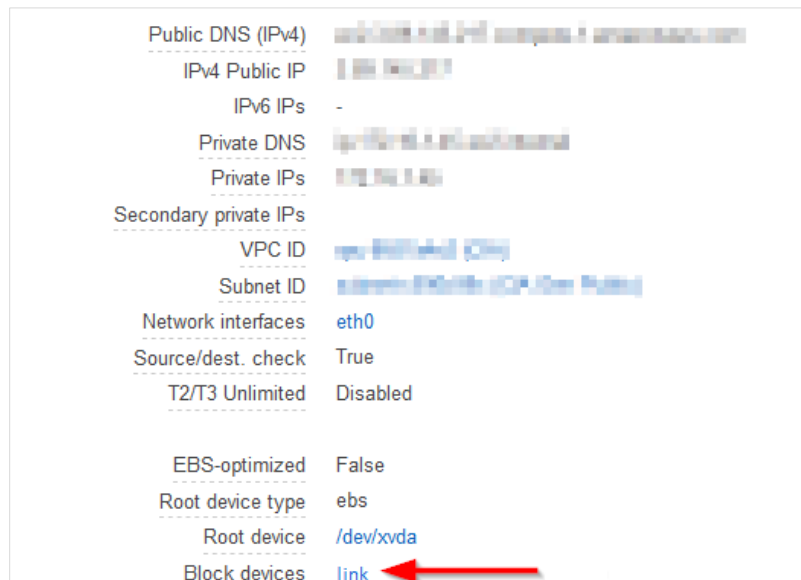
In this procedure, we identify the steps you must perform to upgrade the self-hosted application:

- create a snapshot in AWS
- launch the new AMI and add a new volume
- install the new application
- license the new application

Create a Snapshot in AWS

AWS houses your self-hosted data in an **EBS volume**—an AWS storage device attached to your EC2 instance. Since your EBS volume is essentially your D: drive, you must create a snapshot of that volume to ensure that your data gets transferred over when you upgrade to a new self-hosted version.

1. From the EC2 list in AWS, select your EC2 instance.
2. Scroll down to the tabbed section.
3. In the Description tab, click the **link** to the right of Block Devices:



Public DNS (IPv4)	[redacted]
IPv4 Public IP	[redacted]
IPv6 IPs	-
Private DNS	[redacted]
Private IPs	[redacted]
Secondary private IPs	
VPC ID	[redacted]
Subnet ID	[redacted]
Network interfaces	eth0
Source/dest. check	True
T2/T3 Unlimited	Disabled
EBS-optimized	False
Root device type	ebs
Root device	/dev/xvda
Block devices	link

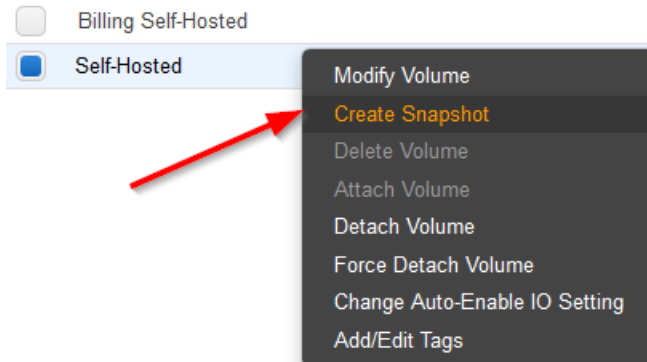
4. From the fly-out menu, click the **link** to the EBS ID.

Block devices

Block Device	
EBS ID	vol-098c65c90146604a9
Root device type	EBS
Attachment time	2018-11-12T16:46:51.000Z
Block device status	attached
Delete on termination	True

The Elastic Block Storage page opens and displays a list of EBS volumes.

5. Right-click the row of the selected volume and from the fly-out menu, select **Create Snapshot**.



The Create Snapshot page opens.

Volumes > Create Snapshot

Create Snapshot

Volume

Description

Encrypted ☐ Not Encrypted ☐

Key (127 characters maximum) Value (255 characters maximum)

This resource currently has no tags

Choose the Add tag button or [click to add a Name tag](#)

Add Tag 50 remaining (Up to 50 tags maximum)


* Required

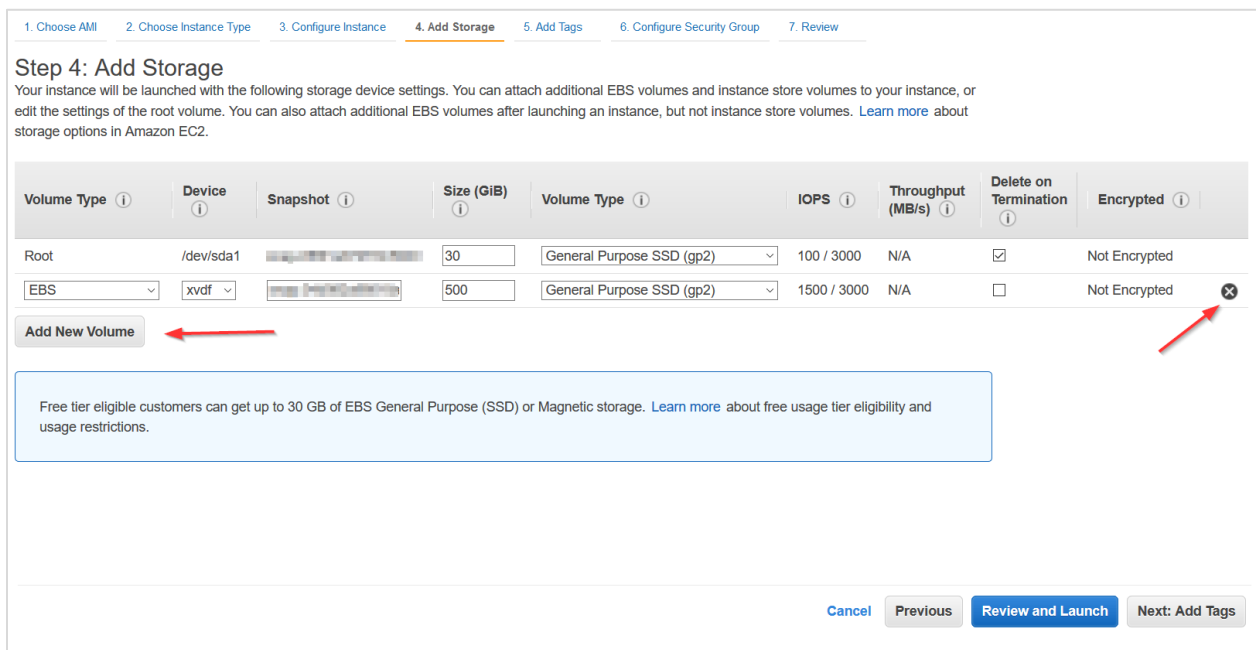
Cancel Create Snapshot

6. Click **Create Snapshot**.
7. Copy the snapshot ID found in the success message to your clipboard.

Launch the New AMI and Add a New Volume

In this procedure, you will launch the latest version of the self-hosted AMI and replace the existing EBS volume with a new volume.

1. Complete the steps in the [Launch the Self-Hosted AMI](#) section making sure to select the **latest** version of the AMI.
2. Complete the steps 1-3 in the [Configure the EC2 Instance](#) section.
3. When you get to step 4: Add Storage in the [Configure the EC2 Instance](#) section, click  to delete the original volume and click **Add New Volume**.



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

Step 4: Add Storage

Your instance will be launched with the following storage device settings. You can attach additional EBS volumes and instance store volumes to your instance, or edit the settings of the root volume. You can also attach additional EBS volumes after launching an instance, but not instance store volumes. [Learn more](#) about storage options in Amazon EC2.

Volume Type	Device	Snapshot	Size (GiB)	Volume Type	IOPS	Throughput (MB/s)	Delete on Termination	Encrypted
Root	/dev/sda1		30	General Purpose SSD (gp2)	100 / 3000	N/A	<input checked="" type="checkbox"/>	Not Encrypted
EBS	xvdf		500	General Purpose SSD (gp2)	1500 / 3000	N/A	<input type="checkbox"/>	Not Encrypted

Add New Volume

Free tier eligible customers can get up to 30 GB of EBS General Purpose (SSD) or Magnetic storage. [Learn more](#) about free usage tier eligibility and usage restrictions.

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

A new row opens.


4. Populate the fields in the new row as follows:
 - Volume Type: leave the default setting, **EBS**
 - Device: select **xvdf**
 - Snapshot: paste the snapshot ID from the [Create a Snapshot in AWS](#) section
 - Size: 500
 - Volume Type: leave the default setting, **General Purpose SSD**

Here is what the row will look like when populated:

Volume Type ⓘ	Device ⓘ	Snapshot ⓘ	Size (GiB) ⓘ	Volume Type ⓘ
Root	/dev/sda1	snap-0b71eb35db5bbf66d	50	General Purpose SSD (gp2) ▾
EBS ▾	xvdf ▾	snap-0b31e45e6647f	500	General Purpose SSD (gp2) ▾

- Click **Next: Add Tags** and complete the remaining steps in [Configure the EC2 Instance](#) section.
- Complete the steps in the [Install the Self-Hosted App](#) section.

Upgrading is the same as installing the self-hosted application for the first time **except** that the web installer will show you the version you are installing and the version you are currently running:

 <h2 data-bbox="302 924 407 945">Installing</h2> <p data-bbox="287 974 513 1155">Version: ◦ 1.1.0.0 - Centralized Instance: ◦ 1.1.0.0 - Centralized Database: ◦ Server: localhost ◦ User: [Integrated Security] Features: ◦ Website. ◦ Scheduler service. ◦ Worker services.</p>	<h2 data-bbox="849 924 1055 945">Currently Running</h2> <p data-bbox="829 974 1166 1106">Version: ◦ 1.1.0.0 - Centralized Website: ◦ Instance: 1.1.0.0 - Centralized Scheduler: ◦ Instance: 1.1.0.0 - Centralized Workers: ◦ Instance: 1.1.0.0 - Centralized Count: 5</p>
---	---

7. If you purchased a private offering, follow the [License the App](#) section to upload the new license file.

FREQUENTLY ASKED QUESTIONS

Is There an Alternative to Remote Desktop?

If you want to connect to your EC2 instance on your local machine, you can use the external public hostname to connect to the EC2 instance to install the application.

The external public hostname resolves to the public IP address or the Elastic IP address, which allows your instance to communicate to the internet.

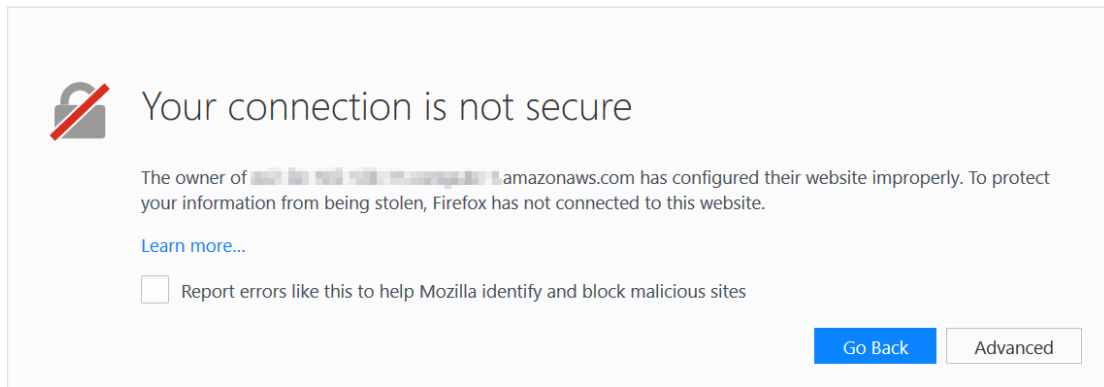
Description			
Instance ID	i-00d309a083e4f0435	Public DNS (IPv4)	ec2-0-00-000-000.compute-1.amazonaws.com
Instance state		IPv4 Public IP	0.00.000.000
Instance type	t3.small		
Elastic IPs	0.00.000.000*		

1. Open a Web browser. This procedure uses Mozilla Firefox as an example.
2. Click **+** to open a new tab.
3. In the address bar, type **http://**
4. Paste the public **DNS (IPv4)** into the address bar.
5. Add **:8080/** to the end of the host name to allow the Web installer to run on port 8080 in HTTP. You opened this port as part of your security group configuration. The format of the complete address will look like this:



6. Click **Enter**. The first screen of the Web installer opens.
7. Complete the installation steps for the Web Console in the [Install the Self-Hosted App](#) section.

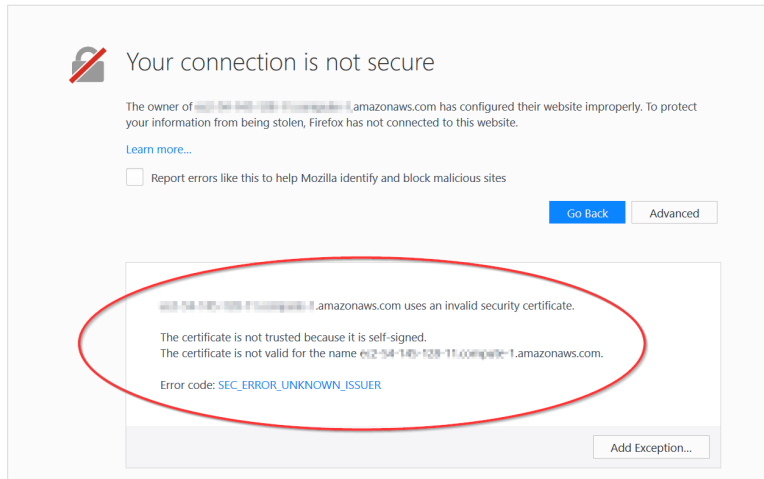
When the configuration is complete, a warning message indicates that your connection is not secure.



Note: The content and look-and-feel of the warning message depends on the browser in use. In this example, we used Mozilla Firefox.

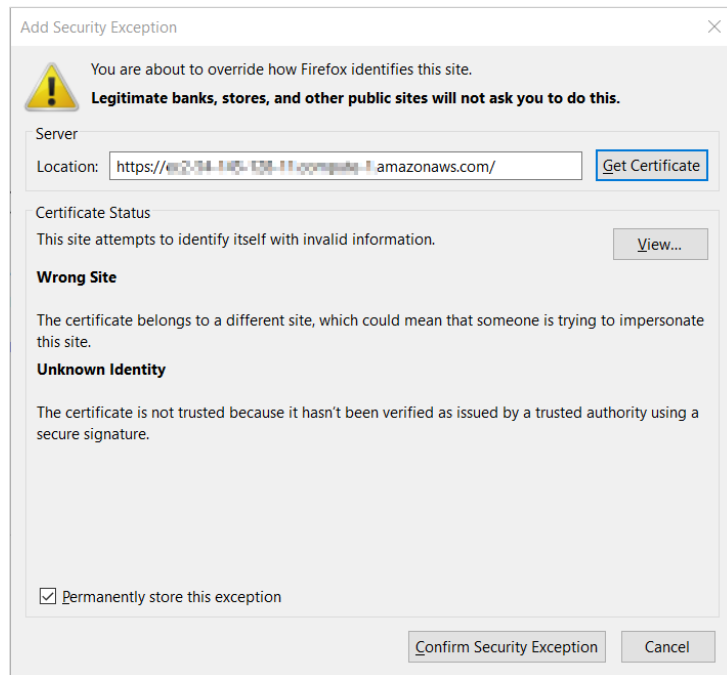
The application requires a secure connection with a certificate owned by the domain. Since you are launching the application in a self-hosted environment, it cannot automatically create a certificate.

8. Click **Advanced** to get more information about the warning. A message indicates that the certificate is not trusted or valid.



9. Click **Add Exception...** to add the EC2 instance as a security exception.

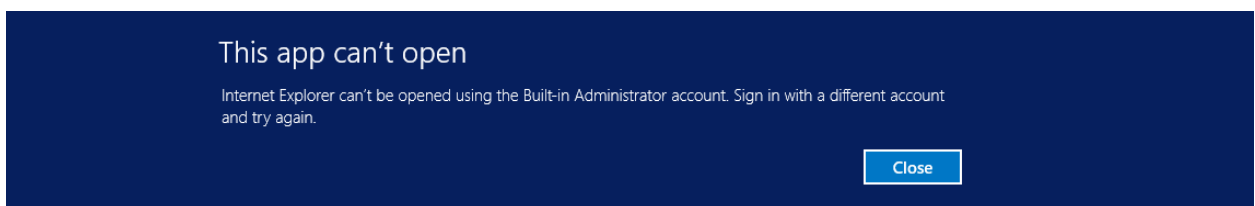
The Add Security Exception dialog box opens.



10. Verify that **Permanently store this exception** is selected and click **Confirm Security Exception**.
The log in screen of the application opens.

Why Can't I Open My Browser?

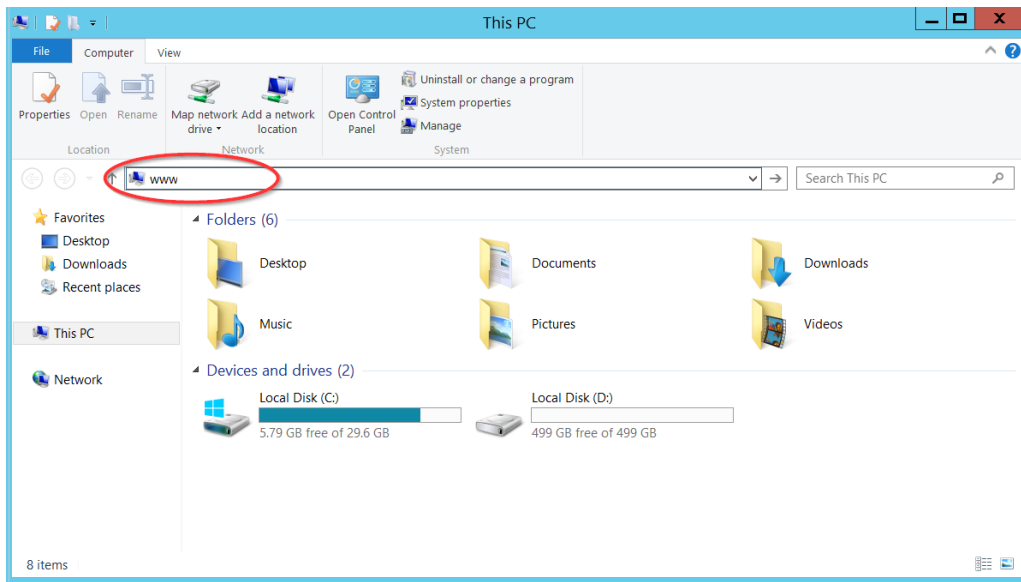
Your remote desktop session runs in a Microsoft Windows® 2012 R2 server environment, which is not compatible with newer applications like Internet Explorer. As a result, since you are logging in as an administrator, you will get an error message when you select **Start > Internet Explorer**:



Here is the workaround to open a browser session:

1. From the taskbar, click the **Folder** icon.

2. Type **www** in the search bar to open your browser.

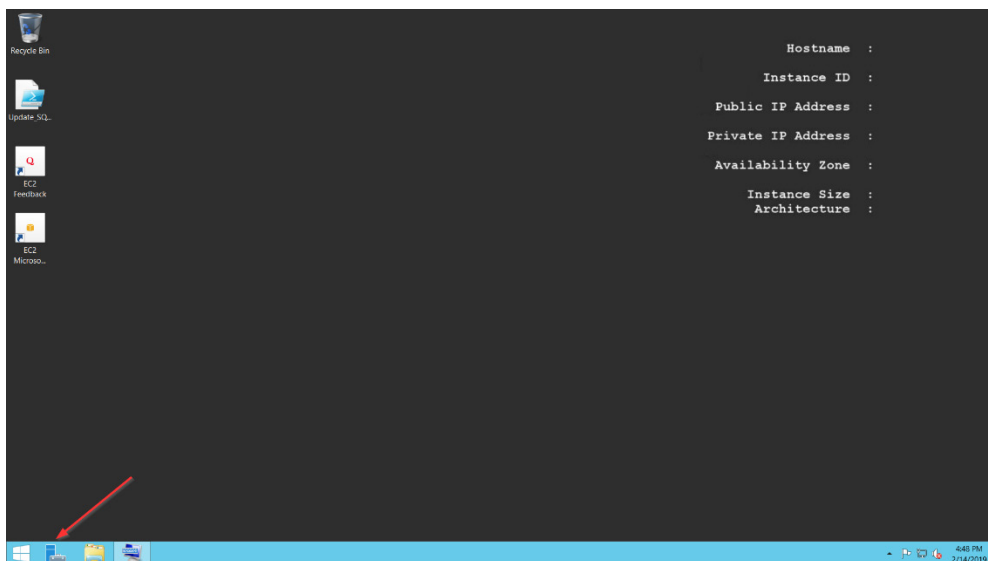


3. Follow steps 11-17 in the [Install the Self-Hosted App](#) section to complete your connection to your EC2 instance.

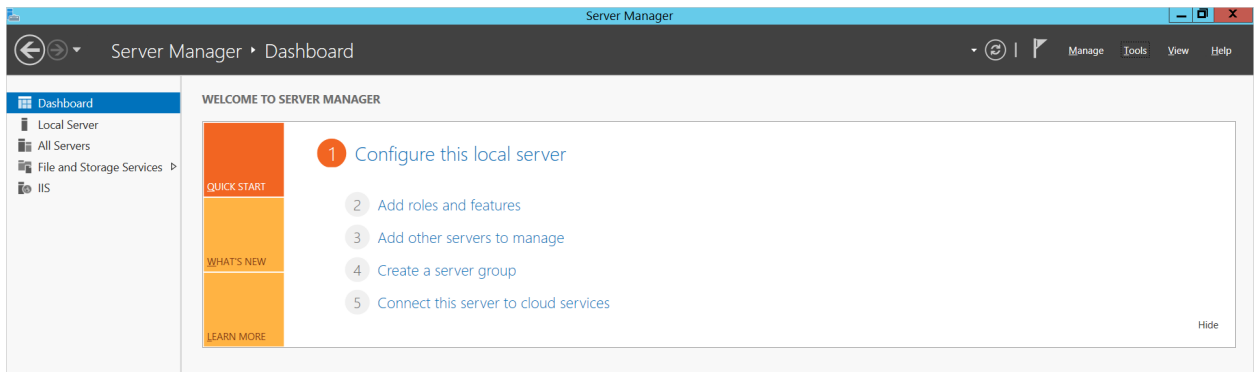
Where Is My D: Drive?

If your D: drive seems to be missing, follow these steps to make sure it is online:

1. From the taskbar, click the **Server Manager** icon.

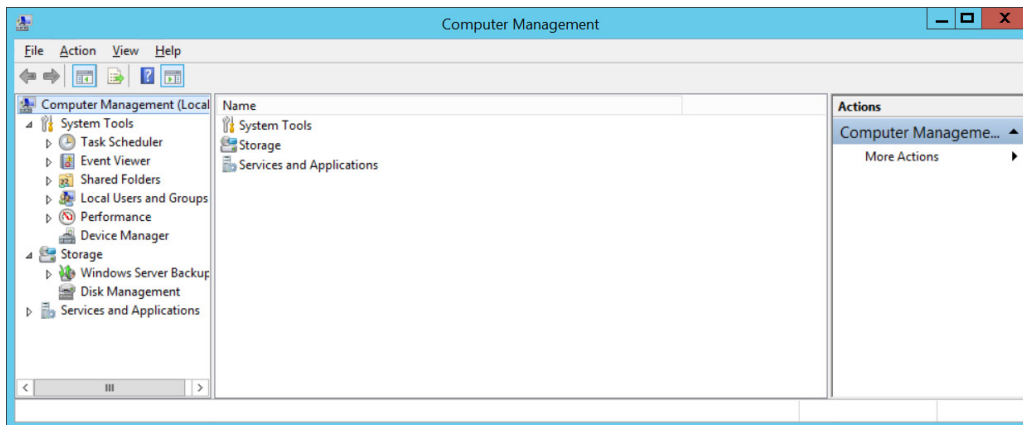


The Server Manager Dashboard opens.

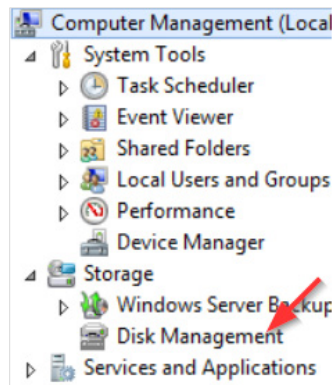


2. From the menu bar, choose **Tools > Computer Management**.

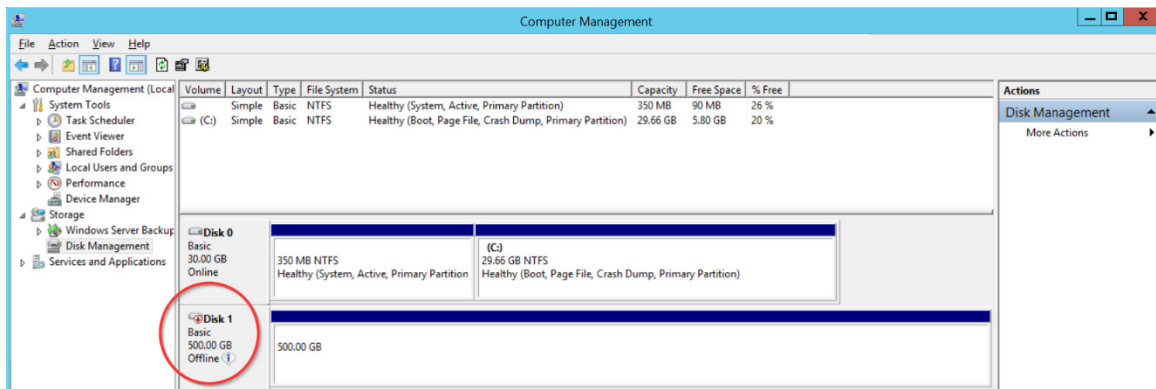
The Computer Management screen displays.



3. From the dashboard, select **Storage > Disk Management**.



Information about your disks displays. Notice that Disk 1 has a red arrow and is labeled **Offline**.

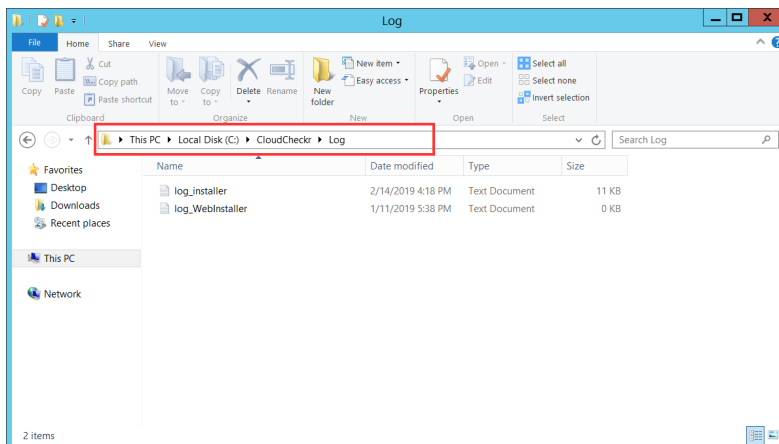


4. Right-click the **disk name** and from the fly-out menu, select **Online**. Your D: drive is now available.

How Do I Access My Log Files?

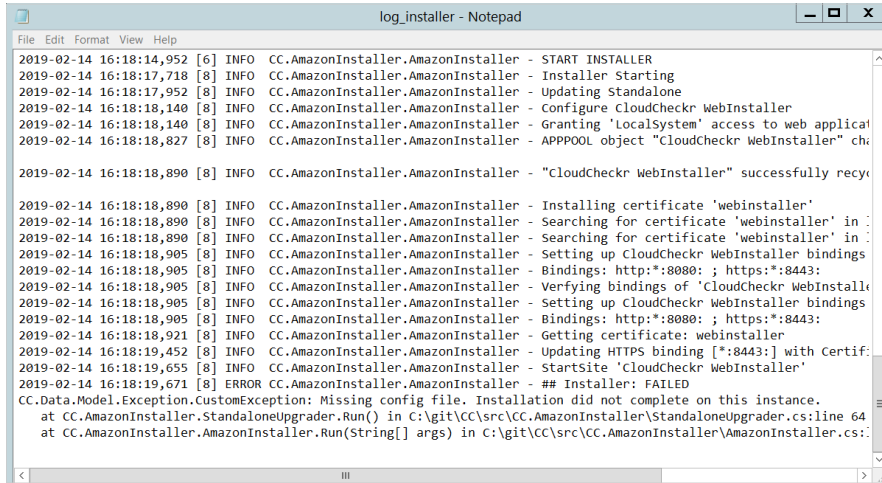
We can help you diagnose and solve the problem by reviewing your **log files**, which record every action performed within the web installer and the application. Follow these steps to access your log files:

1. From the taskbar, click **Windows Explorer**.
2. Navigate to **PC: Local C > CloudCheckr > Logs**.



3. Click one of the log files.

In this example, we opened the log file for the application installer.



```
log_installer - Notepad
File Edit Format View Help
2019-02-14 16:18:14,952 [6] INFO CC.AmazonInstaller.AmazonInstaller - START INSTALLER
2019-02-14 16:18:17,718 [8] INFO CC.AmazonInstaller.AmazonInstaller - Installer Starting
2019-02-14 16:18:17,952 [8] INFO CC.AmazonInstaller.AmazonInstaller - Updating Standalone
2019-02-14 16:18:18,140 [8] INFO CC.AmazonInstaller.AmazonInstaller - Configure CloudCheckr WebInstaller
2019-02-14 16:18:18,140 [8] INFO CC.AmazonInstaller.AmazonInstaller - Granting 'LocalSystem' access to web applica
2019-02-14 16:18:18,827 [8] INFO CC.AmazonInstaller.AmazonInstaller - APPPOOL object "CloudCheckr WebInstaller" ch
2019-02-14 16:18:18,890 [8] INFO CC.AmazonInstaller.AmazonInstaller - "CloudCheckr WebInstaller" successfully recy
2019-02-14 16:18:18,890 [8] INFO CC.AmazonInstaller.AmazonInstaller - Installing certificate 'webinstaller'
2019-02-14 16:18:18,890 [8] INFO CC.AmazonInstaller.AmazonInstaller - Searching for certificate 'webinstaller' in :
2019-02-14 16:18:18,890 [8] INFO CC.AmazonInstaller.AmazonInstaller - Searching for certificate 'webinstaller' in :
2019-02-14 16:18:18,905 [8] INFO CC.AmazonInstaller.AmazonInstaller - Setting up CloudCheckr WebInstaller bindings
2019-02-14 16:18:18,905 [8] INFO CC.AmazonInstaller.AmazonInstaller - Bindings: http*:8080: ; https*:8443:
2019-02-14 16:18:18,905 [8] INFO CC.AmazonInstaller.AmazonInstaller - Verifying bindings of 'CloudCheckr WebInstall
2019-02-14 16:18:18,905 [8] INFO CC.AmazonInstaller.AmazonInstaller - Setting up CloudCheckr WebInstaller bindings
2019-02-14 16:18:18,905 [8] INFO CC.AmazonInstaller.AmazonInstaller - Bindings: http*:8080: ; https*:8443:
2019-02-14 16:18:18,921 [8] INFO CC.AmazonInstaller.AmazonInstaller - Getting certificate: webinstaller
2019-02-14 16:18:19,452 [8] INFO CC.AmazonInstaller.AmazonInstaller - Updating HTTPS binding [*:8443:] with Certif
2019-02-14 16:18:19,655 [8] INFO CC.AmazonInstaller.AmazonInstaller - StartSite 'CloudCheckr WebInstaller'
2019-02-14 16:18:19,671 [8] ERROR CC.AmazonInstaller.AmazonInstaller - ## Installer: FAILED
CC.Data.Model.Exception.CustomException: Missing config file. Installation did not complete on this instance.
   at CC.AmazonInstaller.StandaloneUpgrader.Run() in C:\git\CC\src\CC.AmazonInstaller\StandaloneUpgrader.cs:line 64
   at CC.AmazonInstaller.AmazonInstaller.Run(String[] args) in C:\git\CC\src\CC.AmazonInstaller\AmazonInstaller.cs:
```

4. Scroll down the bottom of the list to see the most recent events.
5. Provide the log file or a screenshot of that log file to [Support](#) so they can troubleshoot your issue.

REQUIRED INFORMATION

Attribute	Value
AWS Account #1	name/availability zone
AWS Account #2	name/availability zone
AWS Account #3	name/availability zone
Pricing Policy Name	
Pricing User #1 (credentials for pricing jobs)	IAM username/access key/secret key
Pricing User #2 (credentials for pricing jobs)	IAM username/access key/secret key
Pricing User #3 (credentials for pricing jobs)	IAM username/access key/secret key
EC2 Instance ID	
EC2 Instance Type	
EC2 Availability Zone (Region Code)	
Private Key (.PEM) File Location and Name	
Public DNS Name (IPv4)	
Private DNS	
Subnet ID	
Trusted User Policy Name	
Trusted Username	

Attribute	Value
Cross-Account Role Name	
Least Privileges Policy: Cost	
Least Privileges Policy: Billing (DBR)	
Least Privileges Policy: Billing (CUR)	
Least Privileges Policy: Security/Compliance	
Least Privileges Policy: Inventory	
Least Privileges Policy: CloudWatch Logs	
Least Privileges Policy: CloudTrail	
Partner Name	
Account Name(s)	

APPENDIX

IAM Policies

To [create a cross-account role](#) manually, copy the least privilege policies, found on the next few pages, and attach them to your role.

```

{
  "Version": "2012-10-17",
  "Statement": [
    {
      "Sid": "CloudCheckrCostPermissions",
      "Effect": "Allow",
      "Action": [
        "ce:GetReservationUtilization",
        "ec2:DescribeAccountAttributes",
        "ec2:DescribeAvailabilityZones",
        "ec2:DescribeReservedInstancesOfferings",
        "ec2:DescribeReservedInstances",
        "ec2:DescribeReservedInstancesListings",
        "ec2:DescribeHostReservationOfferings",
        "ec2:DescribeReservedInstancesModifications",
        "ec2:DescribeHostReservations",
        "ec2:DescribeInstances",
        "ec2:DescribeInstanceStatus",
        "ec2:DescribeRegions",
        "ec2:DescribeKeyPairs",
        "ec2:DescribePlacementGroups",
        "ec2:DescribeAddresses",
        "ec2:DescribeSpotInstanceRequests",
        "ec2:DescribeImages",
        "ec2:DescribeImageAttribute",
        "ec2:DescribeSnapshots",
        "ec2:DescribeVolumes",
        "ec2:DescribeTags",
        "ec2:DescribeNetworkInterfaces",
        "ec2:DescribeSecurityGroups",
        "ec2:DescribeInstanceAttribute",
        "ec2:DescribeVolumeStatus",
        "elasticache:DescribeReservedCacheNodes",
        "elasticache:DescribeReservedCacheNodesOfferings",
        "rds:DescribeReservedDBInstances",
        "rds:DescribeReservedDBInstancesOfferings",
        "rds:DescribeDBInstances",
        "redshift:DescribeReservedNodes",
        "redshift:DescribeReservedNodeOfferings",
        "s3:GetBucketACL",
        "s3:GetBucketLocation",
        "s3:GetBucketLogging",
        "s3:GetBucketPolicy",
        "s3:GetBucketTagging",
        "s3:GetBucketWebsite",
        "s3:GetBucketNotification",
        "s3:GetLifecycleConfiguration",
        "s3:GetNotificationConfiguration",
        "s3:List*",
        "dynamodb:DescribeReservedCapacity",
        "dynamodb:DescribeReservedCapacityOfferings",
        "iam:GetAccountAuthorizationDetails",
        "iam:ListRolePolicies",
        "iam:ListAttachedRolePolicies"
      ],
      "Resource": "*"
    }
  ]
}

```

Billing: DBR

```
{
  "Version": "2012-10-17",
  "Statement": [
    {
      "Sid": "CostReadDBR",
      "Effect": "Allow",
      "Action": [
        "s3:GetBucketACL",
        "s3:GetBucketLocation",
        "s3:GetBucketLogging",
        "s3:GetBucketPolicy",
        "s3:GetBucketTagging",
        "s3:GetBucketWebsite",
        "s3:GetBucketNotification",
        "s3:GetLifecycleConfiguration",
        "s3:GetNotificationConfiguration",
        "s3:GetObject"
      ],
      "Resource": [
        "arn:aws-us-gov:s3:::[YOUR DETAILED BILLING REPORT BUCKET]",
        "arn:aws-us-gov:s3:::[YOUR DETAILED BILLING REPORT BUCKET]/*"
      ]
    }
  ]
}
```

Billing: CUR

```
{
  "Version": "2012-10-17",
  "Statement": [
    {
      "Sid": "CostReadCUR",
      "Effect": "Allow",
      "Action": [
        "s3:GetObject"
      ],
      "Resource": [
        "arn:aws-us-gov:s3:::[YOUR COST AND USAGE REPORT BUCKET]",
        "arn:aws-us-gov:s3:::[YOUR COST AND USAGE REPORT BUCKET]/*"
      ]
    }
  ]
}
```

```

{
  "Version": "2012-10-17",
  "Statement": [
    {
      "Sid": "SecurityPermissions",
      "Effect": "Allow",
      "Action": [
        "acm:DescribeCertificate",
        "acm:ListCertificates",
        "acm:GetCertificate",
        "cloudtrail:DescribeTrails",
        "cloudtrail:GetTrailStatus",
        "logs:GetLogEvents",
        "logs:DescribeLogGroups",
        "logs:DescribeLogStreams",
        "config:DescribeConfigRules",
        "config:GetComplianceDetailsByConfigRule",
        "config:DescribeDeliveryChannels",
        "config:DescribeDeliveryChannelStatus",
        "config:DescribeConfigurationRecorders",
        "config:DescribeConfigurationRecorderStatus",
        "ec2:Describe*",
        "iam:Get*",
        "iam:List*",
        "iam:GenerateCredentialReport",
        "kms:DescribeKey",
        "kms:GetKeyPolicy",
        "kms:GetKeyRotationStatus",
        "kms:ListAliases",
        "kms:ListGrants",
        "kms:ListKeys",
        "kms:ListKeyPolicies",
        "kms:ListResourceTags",
        "rds:Describe*",
        "ses:ListIdentities",
        "ses:GetSendStatistics",
        "ses:GetIdentityDkimAttributes",
        "ses:GetIdentityVerificationAttributes",
        "ses:GetSendQuota",
        "sns:GetSnsTopic",
        "sns:GetTopicAttributes",
        "sns:GetSubscriptionAttributes",
        "sns:ListTopics",
        "sns:ListSubscriptionsByTopic",
        "sqs:ListQueues",
        "sqs:GetQueueAttributes"
      ],
      "Resource": "*"
    }
  ]
}

```

Inventory (code block 1 of 3)

Note: Due to length of the Inventory policy, we divided it into three code blocks. Please copy all three code blocks to get the complete Inventory policy.

```
{
  "Version": "2012-10-17",
  "Statement": [
    {
      "Sid": "InventoryAndUtilization",
      "Effect": "Allow",
      "Action": [
        "acm:DescribeCertificate",
        "acm:ListCertificates",
        "acm:GetCertificate",
        "ec2:Describe*",
        "ec2:GetConsoleOutput",
        "autoscaling:Describe*",
        "cloudformation:DescribeStacks",
        "cloudformation:GetStackPolicy",
        "cloudformation:GetTemplate",
        "cloudformation:ListStackResources",
        "cloudfront:List*",
        "cloudfront:GetDistributionConfig",
        "cloudfront:GetStreamingDistributionConfig",
        "cloudhsm:Describe*",
        "cloudhsm:List*",
        "cloudsearch:Describe*",
        "cloudtrail:DescribeTrails",
        "cloudtrail:GetTrailStatus",
        "cloudwatch:DescribeAlarms",
        "cloudwatch:GetMetricStatistics",
        "cloudwatch:ListMetrics",
        "cognito-identity:ListIdentities",
        "cognito-identity:ListIdentityPools",
        "cognito-idp:ListGroups",
        "cognito-idp:ListIdentityProviders",
        "cognito-idp:ListUserPools",
        "cognito-idp:ListUsers",
        "cognito-idp:ListUsersInGroup",
        "config:DescribeConfigRules",
        "config:GetComplianceDetailsByConfigRule",
        "config:Describe*"
      ]
    }
  ]
}
```

Inventory (code block 2 of 3)

```
"datapipeline:ListPipelines",
"datapipeline:GetPipelineDefinition",
"datapipeline:DescribePipelines",
"directconnect:DescribeLocations",
"directconnect:DescribeConnections",
"directconnect:DescribeVirtualInterfaces",
"dynamodb:ListTables",
"dynamodb:DescribeTable",
"dynamodb:ListTagsOfResource",
"ecs:ListClusters",
"ecs:DescribeClusters",
"ecs:ListContainerInstances",
"ecs:DescribeContainerInstances",
"ecs:ListServices",
"ecs:DescribeServices",
"ecs:ListTaskDefinitions",
"ecs:DescribeTaskDefinition",
"ecs:ListTasks",
"ecs:DescribeTasks",
"ssm:ListResourceDataSync",
"ssm:ListAssociations",
"ssm:ListDocumentVersions",
"ssm:ListDocuments",
"ssm:ListInstanceAssociations",
"ssm:ListInventoryEntries",
"elasticache:Describe*",
"elasticache:List*",
"elasticbeanstalk:Describe*",
"elasticfilesystem:DescribeFileSystem",
"elasticfilesystem:DescribeTags",
"elasticloadbalancing:Describe*",
"elasticmapreduce:Describe*",
"elasticmapreduce:List*",
"es:ListDomainNames",
"es:DescribeElasticsearchDomains",
"glacier:ListTagsForVault",
"glacier:DescribeVault",
"glacier:GetVaultNotifications",
"glacier:DescribeJob",
"glacier:GetJobOutput",
"glacier:ListJobs",
"glacier:ListVaults",
"iam:Get*",
"iam:List*",
"iam:GenerateCredentialReport",
"iot:DescribeThing",
"iot:ListThings",
"kms:DescribeKey",
"kms:GetKeyPolicy",
"kms:GetKeyRotationStatus",
"kms:ListAliases",
"kms:ListGrants",
"kms:ListKeys",
"kms:ListKeyPolicies",
"kms:ListResourceTags",
"kinesis:ListStreams",
"kinesis:DescribeStream",
"kinesis:GetShardIterator",
"kinesis:GetRecords",
```

Inventory (code block 3 of 3)

```
        "lambda:ListFunctions",
        "lambda:ListTags",
        "Organizations:List*",
        "Organizations:Describe*",
        "rds:Describe*",
        "rds:List*",
        "redshift:Describe*",
        "route53:ListHealthChecks",
        "route53:ListHostedZones",
        "route53:ListResourceRecordSets",
        "s3:GetBucketACL",
        "s3:GetBucketLocation",
        "s3:GetBucketLogging",
        "s3:GetBucketPolicy",
        "s3:GetBucketTagging",
        "s3:GetBucketWebsite",
        "s3:GetBucketNotification",
        "s3:GetLifecycleConfiguration",
        "s3:GetNotificationConfiguration",
        "s3:List*",
        "sdb:ListDomains",
        "sdb:DomainMetadata",
        "ses:ListIdentities",
        "ses:GetSendStatistics",
        "ses:GetIdentityDkimAttributes",
        "ses:GetIdentityVerificationAttributes",
        "ses:GetSendQuota",
        "sns:GetSnsTopic",
        "sns:GetTopicAttributes",
        "sns:GetSubscriptionAttributes",
        "sns:ListTopics",
        "sns:ListSubscriptionsByTopic",
        "sqs:ListQueues",
        "sqs:GetQueueAttributes",
        "storagegateway:Describe*",
        "storagegateway:List*",
        "support:*",
        "swf:ListClosedWorkflowExecutions",
        "swf:ListDomains",
        "swf:ListActivityTypes",
        "swf:ListWorkflowTypes",
        "workspaces:DescribeWorkspaceDirectories",
        "workspaces:DescribeWorkspaceBundles",
        "workspaces:DescribeWorkspaces"
    ],
    "Resource": "*"
  }
}
```

CloudTrail

```
{
  "Version": "2012-10-17",
  "Statement": [
    {
      "Sid": "CloudTrailPermissions",
      "Effect": "Allow",
      "Action": [
        "s3:GetBucketACL",
        "s3:GetBucketLocation",
        "s3:GetBucketLogging",
        "s3:GetBucketPolicy",
        "s3:GetBucketTagging",
        "s3:GetBucketWebsite",
        "s3:GetBucketNotification",
        "s3:GetLifecycleConfiguration",
        "s3:GetNotificationConfiguration",
        "s3:GetObject",
        "s3:List*"
      ],
      "Resource": [
        "arn:aws-us-gov:s3:::[YOUR CLOUDTRAIL BUCKET]",
        "arn:aws-us-gov:s3:::[YOUR CLOUDTRAIL BUCKET]/*"
      ]
    }
  ]
}
```

CloudWatch Flow Logs

```
{
  "Version": "2012-10-17",
  "Statement": [
    {
      "Sid": "CloudWatchLogsSpecific",
      "Effect": "Allow",
      "Action": [
        "logs:GetLogEvents",
        "logs:DescribeLogGroups",
        "logs:DescribeLogStreams"
      ],
      "Resource": [
        "arn:aws-us-gov:logs:*:*:*"
      ]
    }
  ]
}
```




Learn more about the
CloudCheckr Cloud Management
Platform at
www.cloudcheckr.com.