

# Best Practices for using Chrome Browser Cloud Management



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# Introduction

Welcome to Chrome Browser Cloud Management. This guide is meant to be a companion to the [Chrome Browser Cloud Management Deployment Guide](#).

This document will take you through the process of:

- Getting your Google Admin Console setup.
- Setting up an organizational unit structure to divide up your machines.
- How to enroll and manage your browsers on various operating systems, including discussing any known limitations.
- How policies will work if you have existing GPOs in place.
- Getting reporting enabled on your devices for extensions and more.



## Step 1

Get access to the admin console ([admin.google.com](https://admin.google.com))

Options are:

- Use existing admin console
- Create a new console via the [sign up page](#)

## Step 2

Setup your organizational units  
(detailed steps [here](#))

## Step 3

Setup your admin accounts  
(detailed steps [here](#))

## Step 4

Enroll devices  
(detailed steps [here](#) and additional methods [via various deployment tools located here](#))

# Access options for Chrome Browser Cloud Management


Following [this guide](#) for the setup of Chrome Browser Cloud Management is the best place to start. It covers all of the initial setup steps. Chrome Browser Cloud Management itself has no additional cost. Note that there are two options to get access to the admin console:

- 1 Use your own domain (no existing Google services associated)
  - Provides 10 admins accounts total
  - Can be associated directly with your enterprise domain (once you verify your domain)
- 2 Use your own domain (Google Services already associated)
  - Admin console is already set up and verified
  - Does not have any additional cost or use any of your Google licenses
  - Number of admins accounts allowed will be dependent on associated Google Service

If it is possible to use your company's existing Google admin console, that is the best option. If the console is already set up, Chrome Browser Cloud Management is already present. You just need to visit that section in the console and accept the terms of service.

## Getting access to an existing Google Admin console

Check internally if your company has an existing Google Admin account before setting up your own. Many companies have accounts set up for various Google services like Chrome OS, Google Workspace or others.

 The Super Admin at your company would need to set up your admin account to the console where Chrome Browser Cloud Management is located.

- They also will be required to add the Chrome Browser Cloud Management license to the admin console which can be enabled through going to the Manage browser section and click the Get started button to add the no-cost license to your Google admin console.



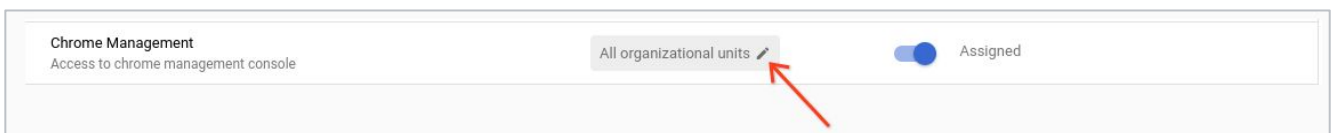
- The console does provide role-based administration so the Super Admin can provide you access just to what you need to manage Chrome Browser.
  - Note that a Super Admin account is required to generate additional admin accounts.
  - Consider asking for a Super Admin account for your team so you can generate your own in the future if needed.
  - If you can't find the original owner internally (like that person has left the company) here is a link for [more information on domain reclamation](#).

If your company does have an existing account but you are not the Super Admin, here is the process of gaining access to Chrome Browser Cloud Management:

- 1 Have a Super Admin first log into admin.google.com and add the Chrome Browser Cloud Management license to the admin console which can be enabled through going to the Manage browser section and click the Get started button to add the no-cost license to your Google admin console
- 2 Have the Super Admin either create an account with super admin rights and assign it to you or if they just want to provide access just to Chrome Browser management, then they can provide the following rights in the admin console:
  - Under **Account>Admin roles**, click the create new role button and give it a name like “**Chrome Browser Management**”.
  - Check the box next to Organizational Units to give the following rights:
    - Read, Create, Update, Delete.
  - Under Chrome Management, check the Settings box to provide all rights to Chrome management.

**Note:** if your super admin wants to limit the rights even more on this admin account, they can create an organizational unit just for Chrome browser management and assign the custom role there. They can do this via the following steps:

- 1 In the admin console, go to **Directory>Users** and select the user account that you want to assign the Chrome browser management role to.
- 2 Scroll down and click on the Admin roles and privileges section.
- 3 Select the Chrome browser management custom role that was created in the previous steps and click on the button to assign it to the user.
- 4 Once it is assigned you can click on the pencil icon on the button that says “**All organizational units**” and select the organizational unit(s) that you want to give the admin access to.



- Once the admin logs in, they will not see any other organizational units aside from the ones that you have given them access to
- but will have full rights to do Chrome management and create new Organizational units under the assigned OU.
- You can also view changes made in the console for auditing purposes. See [Admin audit log](#).



## Using your own domain

If you want to use your company's own domain but do not currently own any Google services, then you can sign up [via this link](#) and Google will provide you an admin console at no additional cost.

- When the admin console is first launched, the initial admin will be the Super Admin with full rights to the console.
- You will have the ability to invite other users to be admins (who also will be Super Admins) as well but you will not be able to create accounts for them, until you verify your domain. Here is a link for more information on [verifying your domain](#).
- It is highly recommended to verify your domain to create custom roles to limit access to least rights and have the ability to create user accounts.
- For more information, check out this link about [email-verified vs domain-verified accounts](#).



# Guides

Chrome Browser cloud management has a great section under [Devices>Chrome>Guides](#) that covers many of the sections in this guide, directly in the admin console with direct links to the relevant sections in the console. It is highly recommended that you use this guide in the console as it will take you through all of the steps you need to get started.

Refer to the section below for Chrome Browser Cloud Management.

## Guides

Get started with managing Chrome browsers and ChromeOS devices

### Set up ChromeOS devices

Follow these steps to configure your organization, set up your ChromeOS devices, and manage the user experience through device and user settings (also known as policies).

- 1 Set up your organizational structure
- 2 Add users
- 3 Add Wi-Fi networks
- 4 Enroll ChromeOS devices
- 5 Configure device settings
- 6 Configure user settings
- 7 Configure apps and extensions

### Set up Chrome browsers

Follow these steps to configure your organization and deploy managed Chrome browsers across Windows, Mac, Linux, iOS and Android devices.

- 1 Verify your domain
- 2 Set up your organizational structure
- 3 Enroll browsers
- 4 Enable Chrome browser reporting
- 5 View Reports
- 6 Configure browser settings
- 7 Configure apps and extensions

# Setting up your Organizational Units

Once you have access to the Google admin console, then the next step would be to set up the Organizational Units that your devices will be managed in.

- These are the “buckets” that you will separate your different enrolled devices into so you set granular policy to just those machines.
- They are set up in a parent-child structure so anything that is set at the top level will be applied to the lower OUs.
  - Just note that you can override any top level policy at the sub OU level. To prevent extra work, it is recommended to only turn on the cloud reporting policy at the root OU level.

Before you create a complex OU structure, consider how you are applying Chrome browser policy today. Do most of your machines receive the same browser policy?

- If so, then it is recommended as a best practice, to just have one OU for production and one for testing. If you need more for a collection of machines that need a different policy than the norm, you can always create a new OU at that point.
- For more information about managing organizational units, [check out this link](#).

If you are an existing Workspace or Chrome OS customer, it is recommended that you create a separate Organizational Unit structure so there is not any conflict in policies that are applied.

- This is to prevent policies originally intended as user policies inadvertently being applied to newly enrolled browsers placed into those organizational units.





# Setting up Role Based Access Control

Once you have your organizational units setup, then you can start setting up accounts for your administrators.

- This way you can delegate access to the various admins that need access.
- You can create admin accounts with just access to Chrome Browser Cloud Management, or to specific Organizational Units or just provide read- only access.
  - For more information about setting up different admin accounts, please refer to [this link for more information](#).

The Chrome Browser Cloud Management role is a custom role and to create this you would need to do the following:

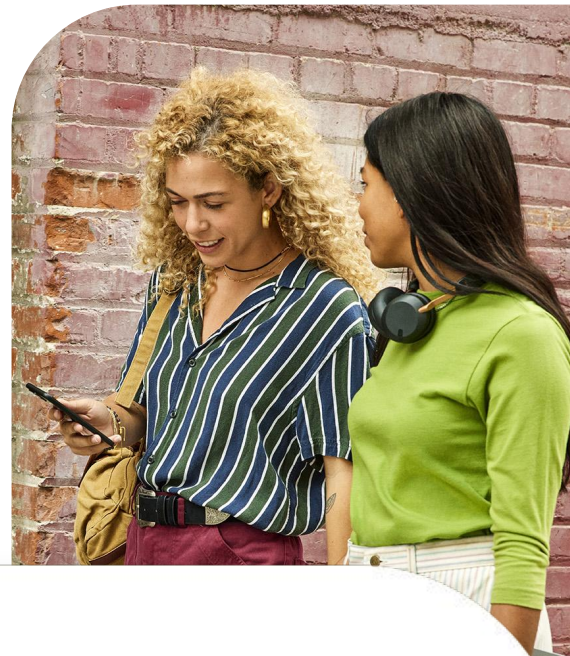
- 1 Go to **Account>Admin roles** and click on the create new role link.
- 2 Give the custom role a name like “Chrome Browser Cloud Management”.
- 3 Check the box by Organizational units to give full rights (read/create/update/delete).
  - You can only provide read rights, but that will limit the management capabilities of your browser admin(s).
- 4 Under Chrome Management, check the box next to “Settings” to give full rights of all of the Chrome Browser Cloud Management features.

- This section does have a view reports option, and when coupled with providing only the read- only rights of Organizational Units in step 3, it can provide a read-only admin role.
  - This is useful for admins that only need to view reports, not set policies.

- 5 Hit the continue button and then the create role button to finish.
- 6 Assign the role to your desired user account in the admin console via **Directory>Users>Select** the user and scroll down to Admin roles and privileges.
- 7 Assign the role that you created in the previous steps.
  - If you want to limit the scope of this role, select the pencil icon next to the scope of the role column and limit access to a specific Organizational unit.
    - This way your admin will only have the rights assigned above on the Organizational units that you give them access to.
    - This is great for shared environments to provide least rights to other OUs that might have other Google services associated with them.

# Setting up integration with 3rd party SAML SSO

You can set up a single sign-on for your Google Admin console. For more information, please [take a look at this link](#). Note that super admin users are the only accounts that are not supported for SAML.



# Rolling out Chrome Browser Cloud Management to production

For more information about enrolling browsers [please refer to this link](#) that covers all of the steps to getting your devices enrolled in the console. It includes steps for Windows, Mac and Linux, and the various methods and tools that you can use to deploy the token.

- Refer to this link for [deploying the enrollment token via various other tools](#) like Jamf, Intune and many more.



## Setting up the console in reporting-only mode

Many customers roll out the enrollment in the console in a phased approach starting with reporting- only mode. Chrome Browser Cloud management has great reporting on Chrome versions and can also provide in-depth insights on extensions, including where they are installed, and what access they have to the websites that your users are visiting, and/or the devices that they are browsing from.

The value of this method is that you can take advantage of the rich reporting in the console without having to change your current management method. It allows your machines to report into the console and you only need to set a few policies.

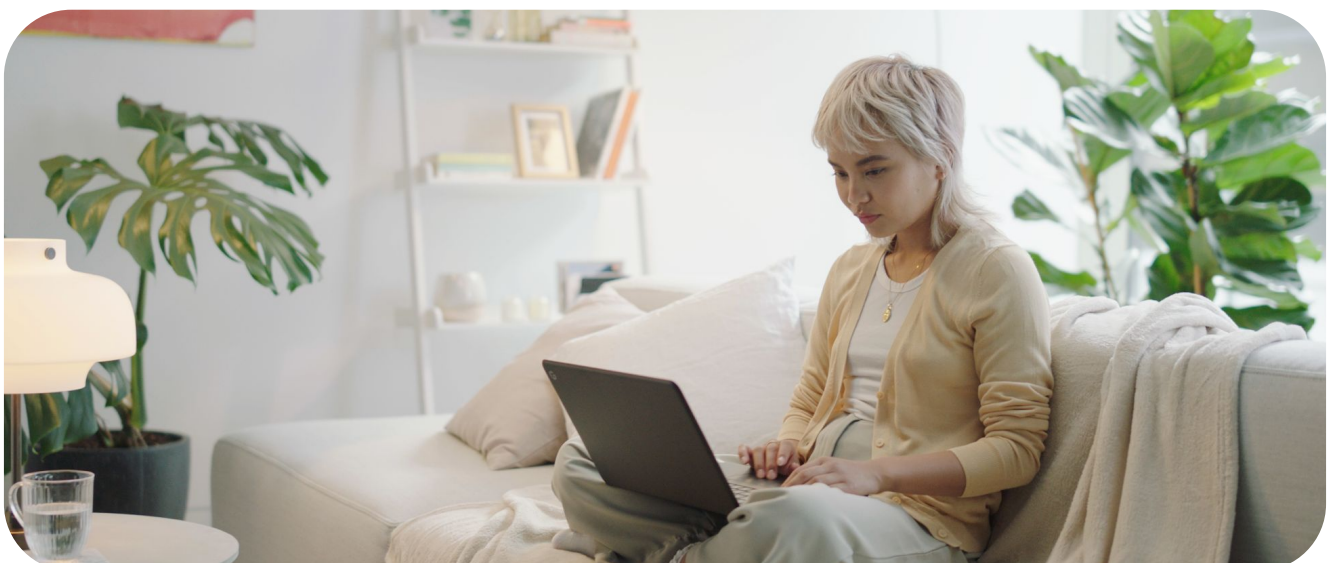
Your existing policy for Chrome will not be affected. In this way, you can take advantage of the reporting while you decide if you want to manage all of your policies in the cloud, use the console as a reporting tool, or a hybrid of both.

**To do this:**

- 1 Turn on cloud reporting [via this method](#).
- 2 Create and set up your organizational units.
  - No need to over complicate the structure if your browser policy is flat (where most devices receive the same browser policy).
  - One or two OUs is usually sufficient for most environments: o. One for testing and one for production.
- 3 Generate an enrollment token from the OU that you want the browsers to be enrolled into.
- 4 Deploy the token out to all machines in production and use the console as a reporting tool for Chrome versions and installed extensions until you decide if you want to move away from your current management method into setting everything Chrome- related in the cloud.

**A few things of note for the enrollment process:**

- 1 Chrome will need to be restarted or launched for policies to be applied from the console.
  - It can take up to 24hrs for an enrolled browser to show up in the console.
- 2 Changing the enrollment token in the registry directly is not a method for moving the browser from one OU to another. The browser needs to be moved directly in the console for the change to take effect, or via the API.
  - You can invalidate or delete device tokens when you delete browsers from the Admin console via the Device Token Management policy located in the Other settings section in the admin console.
  - It is recommended to change this from the default of invalidate token to delete token as it will allow the enrollment token to remain behind and if the device was deleted by mistake, it will re-enroll on next launch of Chrome.



# Supporting Virtual and Physical Machines

## Non-persistent VMs

The admin console does not support non-persistent VMs today. You are able to enroll them, however, since the machine is frequently rebuilt, it will cause multiple entries in the console, which will make your reporting inaccurate. This is because the machines are marked as unique through the machine GUID, which will change as the machines are recreated.

## Persistent VMs

The console does support persistent VMs if each machine has a unique SID (machine GUID). This is normally generated by running [sysprep](#) on the machine during the imaging process. If you are using a system (like Citrix) that has the same machine GUID on every machine, then you would need to run a script (like [a run once script](#)) to change the machine GUID. Doing this will have the machine show up as a unique machine.



### Here is a workflow of what that might look like (Windows):

- 1 Close Chrome.
- 2 Delete Device Token located in:
  - HKLM\Software\Google\Chrome\Enrollment  
String value name: dmtoken
  - Enrollment token can be left behind unless you want to move the device to a new OU location.
- 3 Delete Machine-GUID and the new unique machine guid will be generated as the key adds itself back in.
  - This key is usually located in:  
HKLM\Software\Microsoft\Cryptography\MachineGuid
- 4 Restart Chrome.
- 5 Chrome will read the existing enrollment token (or new one if you pushed one out) and will push down a new DMtoke

## Supporting Physical Machines

The console fully supports physical machines, however, just note that since the uniqueness of the device is tied to a unique SID (machine GUID), if the machine is reimaged or if that GUID changes, it will register as a new machine within the console.

It is recommended if a machine is reimaged, that it is deleted from the console and then re-enrolled under the new image to prevent duplicate counts. Another tool to prevent inactive machines from remaining in your console is to use the filter feature in the

managed devices view by the last activity column or click on the “search or add a filter button” and select Last activity.

Decide a timeframe of how long you want machines to remain in the console after being inactive (like 90 days , a year etc.) and consider deleting them out. You can also use the API to remove these machines after a period. Refer to the [API support section](#) for more information.

The screenshot shows the Google Admin console interface for 'Managed browsers'. A search bar at the top contains 'Search for users, groups or settings'. Below it, the breadcrumb path is 'Devices > Chrome > Managed browsers'. A sidebar on the left shows organizational units: Global Organization, APAC, Dev, EMEA, North America, and UX. The main content area shows '308 managed browsers' and a table with columns: organizational unit, Last activity, Browser version, Number of extensions, and Number of... A filter dropdown is open over the 'Last activity' column, showing 'From date' and 'To date' fields with calendar icons, and an 'APPLY' button. The table contains several rows of browser data.

organizational unit	Last activity ↓	Browser version	Number of extensions	Number of f	
...	Jul 13, 2020, 8:21 AM	83.0.4103.97	11	29	
...	Jul 13, 2020, 6:59 AM	83.0.4103.116 85.0.4174.0 (Canary)	13	28	
...	Jun 10, 2020, 8:51 PM	83.0.4103.97	0	21	
...	May 1, 2020, 1:34 PM	81.0.4044.122	44	18	
CHROME1-W10	Shinjuku	Jun 6, 2019, 12:24 PM	74.0.3729.169	12	10
FENSTER-10	Berlin	Mar 26, 2019, 3:53 PM	73.0.3683.86	8	7

# Viewing reports in Chrome Browser Cloud Management

Once the devices are enrolled and present within the console, you can start viewing the data that is coming in.

It is recommended that before you start applying policies (especially around extensions) that you first take a look at what is already present.

- You must [turn on the cloud reporting feature](#) in order for data to populate into the console.

- It is also recommended to set the Managed browser reporting upload frequency to the minimum of 3 hours to have reports come up more frequently than the default 24 hours.

Under the managed browsers section, you can select one of your enrolled devices and browse the Applied Browser Policies section to see what policies are already in effect.

Applied browser policies

Machine policies			
Name ↑	Source	Status	Value
BrowserSignin	Cloud Machine Policy	✓ Applied	1
BrowserSwitcherChromePath	Cloud Machine Policy	✓ Applied	
BrowserSwitcherDelay	Cloud Machine Policy	✓ Applied	3000
BrowserSwitcherEnabled	Cloud Machine Policy	✓ Applied	true
BrowserSwitcherExternalSitelistUrl	Cloud Machine Policy	✓ Applied	
BrowserSwitcherUrlList	Cloud Machine Policy	✓ Applied	Show value
BrowserSwitcherUseSitelist	Cloud Machine Policy	✓ Applied	false
CloudExtensionRequestEnabled	Cloud Machine Policy	✓ Applied	true
CloudManagementEnrollmentToken	Local Machine Policy	✓ Applied	5a3f21ed-3f4b-4c7e-ba38-de5cebfe8efc
CloudReportingEnabled	Cloud Machine Policy	✓ Applied	true

Rows per page: 10 ▾ |< Page 1 of 3 < >

To get a viewpoint on the extensions that are already installed on that machine, you can view the Apps and Extensions section.

Name	Status	Version	Install type	Browser version and channel	Manifest version	Profile
Google Docs Offline	Enabled	1.50.1	Normal	108.0.5359.100 (Stable)	2	Person 1
Loom - Screen Recorder & Screen Capture	Enabled	5.3.93	Admin	108.0.5359.100 (Stable)	2	Person 1
Kiosk	Enabled	9.3.0	Admin	108.0.5359.100 (Stable)	2	Person 1
Meow, The Cat Pet	Enabled	1.11.9 [1.12.2]	Admin	108.0.5359.100 (Stable)	3	Person 1
Telepathy	Enabled	1	Admin	108.0.5359.100 (Stable)	2	Person 1
Chrome Remote Desktop	Enabled	1.5 [2.1]	Admin	108.0.5359.100 (Stable)	2	Person 1
Roblox+	Enabled	2.4.34	Admin	108.0.5359.100 (Stable)	2	Person 1
Kiosk	Enabled	9.3.0	Admin	98.0.4729.0 (Beta)	Not reported	Person 1
Telepathy	Enabled	1	Admin	98.0.4729.0 (Beta)	Not reported	Person 1
Chrome Remote Desktop	Enabled	1.5 [2.1]	Admin	98.0.4729.0 (Beta)	Not reported	Person 1

To get a viewpoint of all your installed extensions, click on the Apps and extensions usage Report link on the right.

App name	App type	Install type	Installs	Permissions	Manifest versions
Google Docs Offline	Chrome Extension	Sideload	13	5	2
Slides	Chrome App	Normal	6	0	Not reported
Sheets	Chrome App	Normal	6	0	Not reported
Docs	Chrome App	Normal	6	0	Not reported
Tabby Cat	Chrome Extension	Multiple	4	2	2
Endpoint Verification	Chrome Extension	Multiple	4	10	2
Google Translate	Chrome Extension	Multiple	4	3	2
Meow, The Cat Pet	Chrome Extension	Multiple	3	4	3
Kiosk	Chrome App	Admin	3	15	2
Chrome extension source view	Chrome Extension	Admin	3	8	2

This view provides all of the extensions that are present within your enrolled browsers.

Hitting the export button provides the ability to export this list to a CSV file.

For a complete list of all extensions and further details, it is recommended to use the **Extension Takeout API**.

Here is a link to [instructions on how to set this up](#) and a link to [an instructional video](#).

## Applying policies

Once you have your devices reporting into the console, any policies that you currently have applied within Group Policies will work with any policies that are pushed from the cloud. Local policy will take precedence over cloud policy by default if there is a conflict.

- If you want to override this functionality, in the admin console there is a policy named Policy precedence where you can change what occurs in case of a conflict.
- If you want to combine policies from multiple sources (admin console and local machine policy), you can use the policy mergelist policy to combine them together: **Entering in a \* into this policy will automatically merge all supported policies together.**
- Refer to [this link for more information](#) about policy precedence and policy merging.
- If you set a policy in the console, it will apply to the machine in near real time.
  - Note that reports come up to the console by default every 24 hours:  
You can change it to every 3 hours via the Managed browser reporting upload frequency policy.

## API support for Chrome Browser Cloud Management

Nearly every setting in the console has API support. For scaled management (like moving machines and making bulk changes), it is recommended as a best practice to set up the API to make life easier for admins in the console.

- For more information on how to setup the API in Chrome Browser Cloud Management, refer to [this guide](#).
- The Chrome Enterprise also has [a Github repository](#) that provides tons of different scripts as well as a C# framework called [CBCM-CSharp](#) that you can use to learn, create, and solve complex use cases through automation and integration.
- It has example augments that can move browsers, delete out inactive browsers, pull information, and more.
- It also has some helpful Powershell scripts to [wake the browser and force updates](#) and other useful [Chrome Browser Cloud Management enrollment related scripts](#).



# Troubleshooting issues in Chrome Browser Cloud Management

My machine is present in the admin console, but no information is being populated (like extension, version etc).

- **Possible solution:** Make sure that [Cloud reporting](#) is turned on in the Organizational Unit that the device is enrolled in.

I pushed out the token to my machines but many of them are not present in the console.

- **Possible solution 1:** Chrome needs to be restarted or launched in order for it to enroll into the console. Usually this happens over time but if you want to speed things along, you can use [this script](#) that will add the enrollment token, launch the browser in a system context (users will not see the window being displayed), wait 15 seconds for the enrollment to complete, and then close Chrome.
- **Possible solution 2:** Google update is required to be present on the machine for the enrollment to take place. It does not require for Autoupdate to be on. Make sure that Google update is present on the machine and that the URLs that are needed for its function are not blocked. For a list of the URLs, [check out this link](#), but most importantly the URL that is most used is: <https://m.google.com/device-management/data/api>

- **Possible solution 3:** The console marks machines as unique on Windows through the machine GUID and via serial number on Macs. If you do not use sys-prep on your Windows images and the machine GUID is the same, then if a machine enrolls with the same Machine GUID, it will replace the one that is already present in the console.

Refer to the section on [supporting Persistent VMs](#) in this guide on how to change the Machine GUID on your machines to prevent this issue.

I set a policy in the console and it has applied on the machine but it isn't showing up in the devices view in the managed browser section of managed browser.

- **Possible solution:** By default, policies that you set in the console apply to the machine in a few moments, but reporting back into the console by default is every 24 hours (you can reduce this to every 3 hours via policy).



I am seeing multiple instances of the same machine name in the managed browser section of the console.

- **Possible solution:** The console does not support non-persistent VMs. If you enroll them into the console, they will show up under the managed browser section, but once they are rebuilt they will receive a new Machine GUID which will have them show up as a duplicate entry, even if the machine name is the same.

I have a lot of machines that are inactive due to them being replaced or reimaged.

- **Possible solution:** Use the filter feature in the managed devices view by the last activity column or click on the “search or add a filter button” and select Last activity and delete them out.
  - Or you can set up the API and refer to the CBCM-Csharp section on [inactive browser deletion](#) to automate this.

# Resources



[Setting up Chrome Browser Cloud Management](#)



[Chrome Browser Cloud Management Deployment Guide](#)



[Chrome Browser Policy List](#)



[Chrome update management strategies](#)



[Managing Extensions in your Enterprise Guide](#)



[Moving from Shadow IT to Managed Chrome Browser](#)