

Sun City Computer Club

Cyber Security Seminar Series

**ChromeOS
Chromebooks**

- [Audio Recording of this session](#)
- Use the link above to access MP4 audio recording

- Chrome OS chromeOS ChromeOS
- Linux based Operating System
- Designed by Google
- Open Source ChromiumOS
- Chrome browser as the interface
- Cloud based WEB applications
- 2009 Announcement
- Progressions
 - Google Docs & Browser extensions
 - Android Applications Google Play Store 2016
 - Linux Apps Debian lightweight VM

What?

- Early Netflix viewing platform
- Browser with tabs
- Google Drive
- Chromebooks Chromebox Chromebase
- ChromeOS devices outsold Macs 2020

What?

- Functionality
 - Chrome Enterprise 2017
 - Education
 - Enterprise “Grab-and-Go”
- Hardware
 - Chromebook
 - Chromebase
 - Chromebit
 - Chromebook Tab
- ChromeOS Flex

Why?

- Quick boot
- Small distribution size
- Applications

Thin Client

Chrome Apps

HTML5, CSS, Adobe shockwave, JavaScript

Progressive WEB Applications (PWA)

Integrated media player & File Manager

Android Apps 2016

Linux Apps 2018 without developer mode

Why?

- Security

Firmware

Auto Update

Sandbox

Windows 10 1100 vulnerabilities 5 years

Apple OS X 2200 vulnerabilities 20 years

ChromeOS 55 vulnerabilities 9 years

Developer Mode bash shell

Channels Stable, Beta, Developer

Why?

- Google ChromeOS & Android
- Apple MacOS & iOS
- Microsoft “they can’t make up their mind”

Multiple OS Support

- Plug it into power
- Google Account(s)
- Login & Go Helpful <-> Harmful
 - Guest access
- Ports Plug & Play
- Settings Search
- Display Options
- Top Row Function Keys
- Keyboard Shortcuts CTRL + ALT + /
- Trackpad 1 2 3 finger gestures
- Tablet Mode
- Android & Linux
- Powerwash

Quick Start

- Lower cost
- Long Battery Life
- Shareable
- Secure
- Manageable disable camera, etc. Admin Panel
- Web Apps Android Apps Linux Apps

- CPU Intensive apps
Video editing
- Internet PWA to re-synch
- Google Account Multiple
- Crossover Android App to run Windows Apps

- Trackpad

Right Click two finger

<https://www.laptopmag.com/articles/chrome-os-chromebook-touchpad-gestures>

Touch Screen

Tablet Mode

ChromeOS Trackpad

- 12 ChromeOS updates Features
- Chrome OS 97 4-week update cycle
- Security, Stability, Speed, Simplicity
- Chrome OS 98 February
- ChromeOS Flex February Older hardware
- Chrome OS 99 March
- Chrome OS 100 March
 - New launcher, Folder organization, edit spoken words, Family link, new logo
- ChromeOS 101 network based recover, name change, firmware update menu

ChromeOS 2022

- ChromeOS 102

Google Cursive note-taking, extract zip files w/o mounting first, ...

- ChromeOS 103

Phone HUB sees Android camera roll, Screencast app, Nearby Share, video editor

- ChromeOS 104

New themes, light & dark modes, wallpaper, popup calendar, open PDFs

- ChromeOS 105

Keyboard controls Android games

ChromeOS 2022

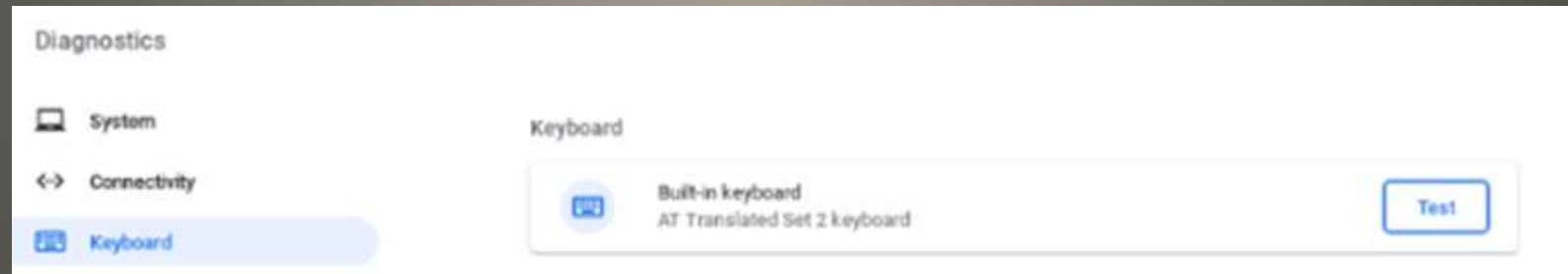
- ChromeOS 106 September
- Techtobor
 - Cloud gaming Chromebooks
 - Steam gaming
 - LumaFusion video editing
- ChromeOS 107
 - Files App resents tab, Close entire desk, merge desks, lock device clamshell mode
- ChromeOS 108
 - Files app gets trashcan, emoji via keyboard

ChromeOS 2022

- ChromeOS 109 January
 - Android app launcher indicator
 - Improved audio device detection
 - About this page
 - Gallery gets color palette
 - Admins can take out trash
 - SFTP options

ChromeOS 2023

- ChromeOS 110 February
Bug fixes
“improved user experience”
Keyboard input routine
Settings > About ChromeOS > Diagnostics



Super resolution audio Bluetooth Microphones

ChromeOS 2023

- Select-to-speak” Highlight text
Choose language
- New badges
- System Tray Channel
- More info *About System*

ChromeOS 110

Test your keyboard

Type any key on your keyboard. You can press up to 4 keys at the same time.

Press **alt** + **esc** to close the dialog.



For more help, go to the [Help Center](#).

Done

Test Your Keyboard

- Old hardware
- Certified old hardware
- Linux?
- Synch ala ChromeOS
- BUT NO Playstore, No Android apps, no Parallels, No Linux
- Device drivers

ChromeOS Flex

- Phone Hub
- PDF editor
- Screen Captures
- Tablets – finger friendly & stylus
- Clipboard manager

ChromeOS & Android

Google Play Store
Google Chrome Web Store

- Enable Verified Access

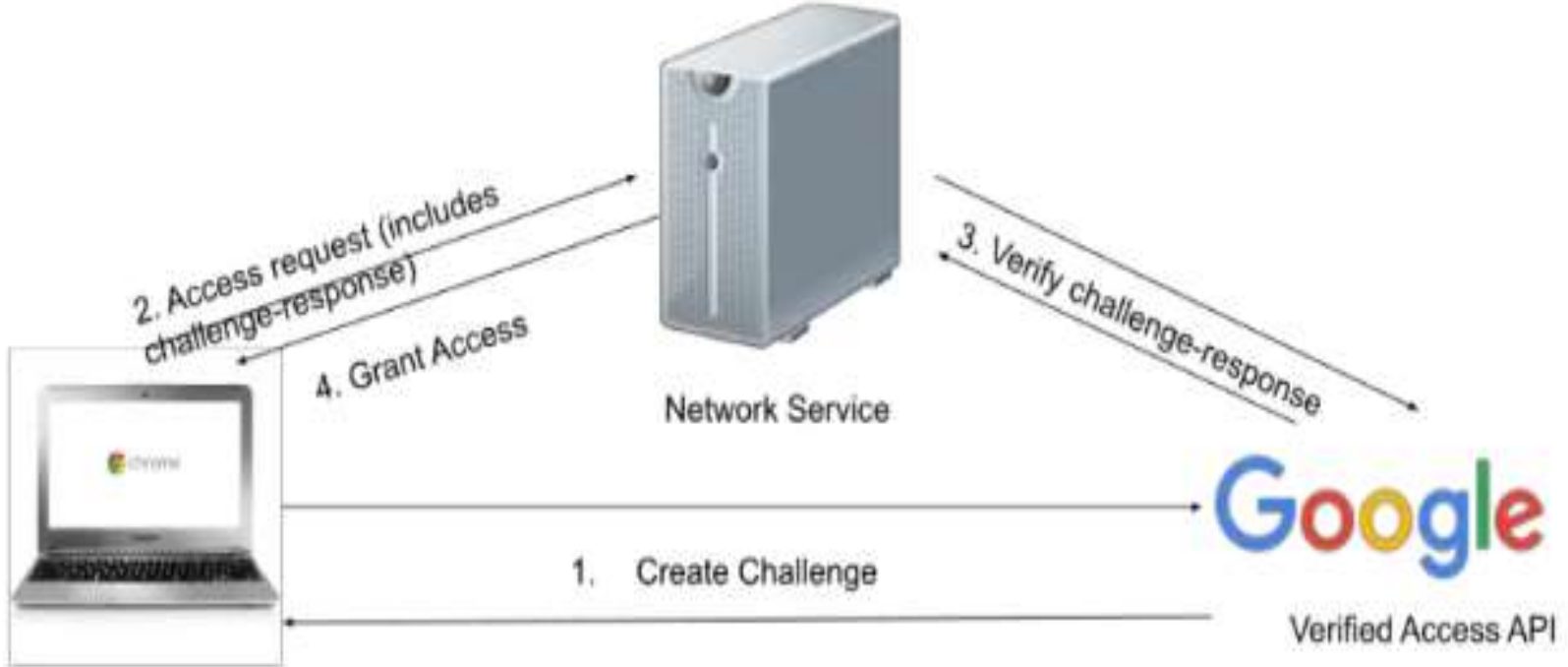
The Chrome extension contacts the Verified Access API to create a challenge.

The Chrome extension calls the `enterprise.platformKeys` API to generate a challenge-response and sends the access request to the network service, including the challenge-response in the request.

The network service contacts the Verified Access API to verify the challenge-response.

In case of successful verification, the network service grants access to the device.

Security Setting



Enable Verified Access

- Corporations Google Admin Console
- Consumer – Ability to run HD and enhanced content
- Information on hardware only

What uses Verified Access?

- Virtual Private Network
 - Encrypted traffic
 - Your device <-> VPN service end nodes
 - False sense of security
 - Home network via Ethernet cable
 - Home network via Wi-Fi 6
 - Home network via Wi-Fi
 - Home network via cellular hot spot
- Public Wi-Fi
- Public W-Fi and VPN
- Multi Factor Authentication
- Try wrong passphrase first

VPN

- Chrome browser extension
- VPN App

- Chrome browser extension store
- Chrome WEB store

VPN connection Options




Settings

- You and Google
- Autofill
- Privacy and security
- Appearance
- Search engine
- On startup
- Languages
- Downloads
- Accessibility
- Reset settings

Search settings

You and Google

 John Jenkinson
[Redacted]

Sync and Google services

Extensions

No access needed
These extensions don't need to see and change information on this site.

- Application Launcher For Drive...
- Chromebook Recovery Utility
- Manage extensions

- Choose Wisely

Chrome WEB Store



Add "NordVPN - VPN Proxy for Privacy and Security"?

It can:

Read and change all your data on all websites

Display notifications

Change your privacy-related settings

Cancel

Add extension



NordVPN

v2.72.0



UNPROTECTED ⓘ



Connect to VPN to browse securely



We'll pick the fastest server for you

Quick Connect



United States



United Kingdom



Germany



Canada

- MOST not All ChromeOS traffic thru browser
- Secure that other traffic via a ChromeOS App
- Google Play Store
- Additional features?

Split tunneling

Ad blocker

Dark WEB monitoring

Gee Whiz

Cost

Google Play Store



NordVPN – fast VPN for privacy

Nord Security

In-app purchases

Install

4.6 ★

6K reviews ⓘ

50M+

Downloads

E

Everyone ⓘ



Jan 26

11:35





NordVPN – fast VPN for privacy

Nord Security

In-app purchases

Install

4.6 ★
6K reviews ⓘ

50M+
Downloads

E
Everyone ⓘ

NordVPN
Stay safe online

Protection from malware-hosting websites

Encrypt your internet connection

Private connection anywhere you go

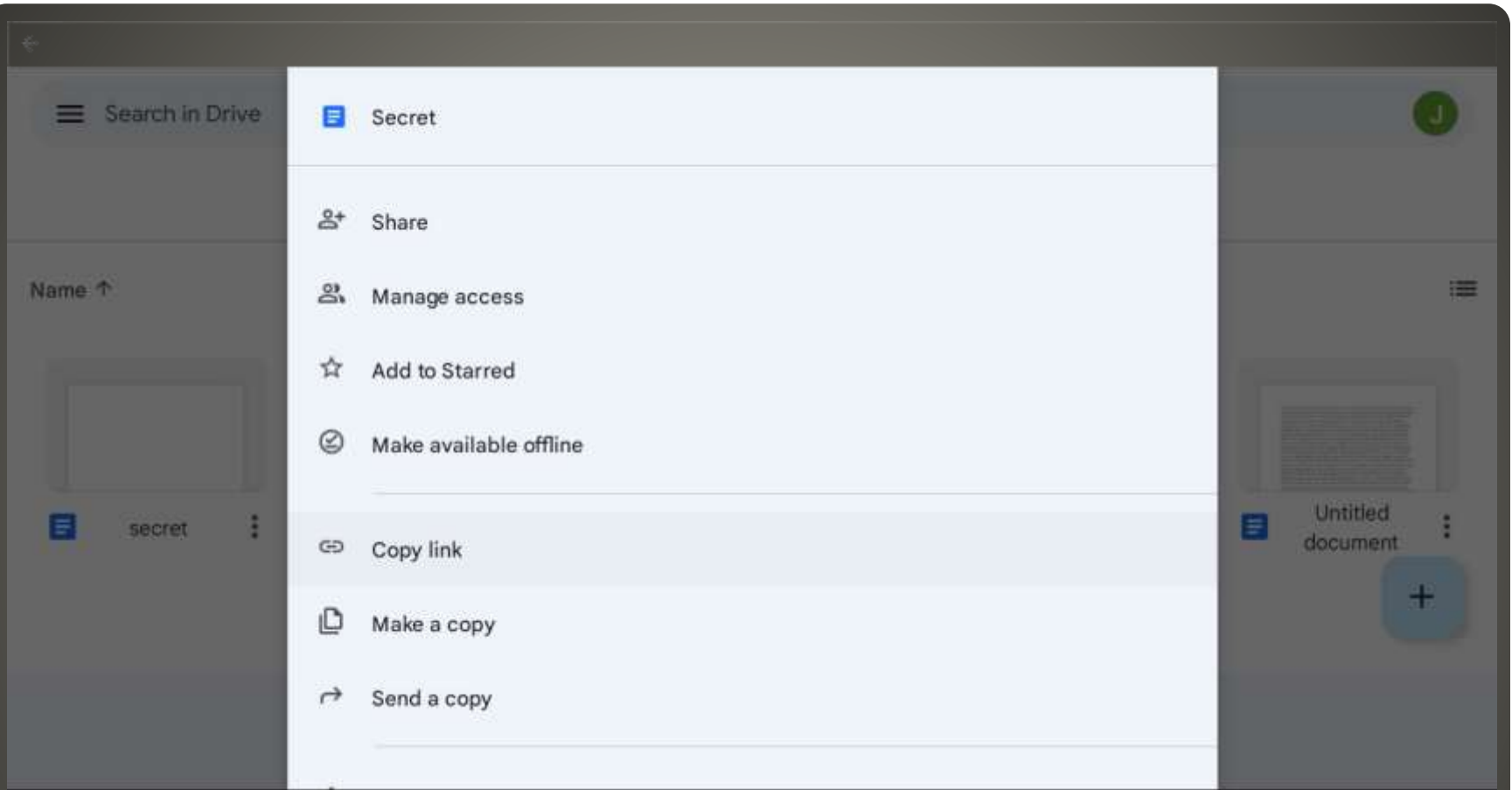
Speed and security combined

5,200+ servers in 60 countries.

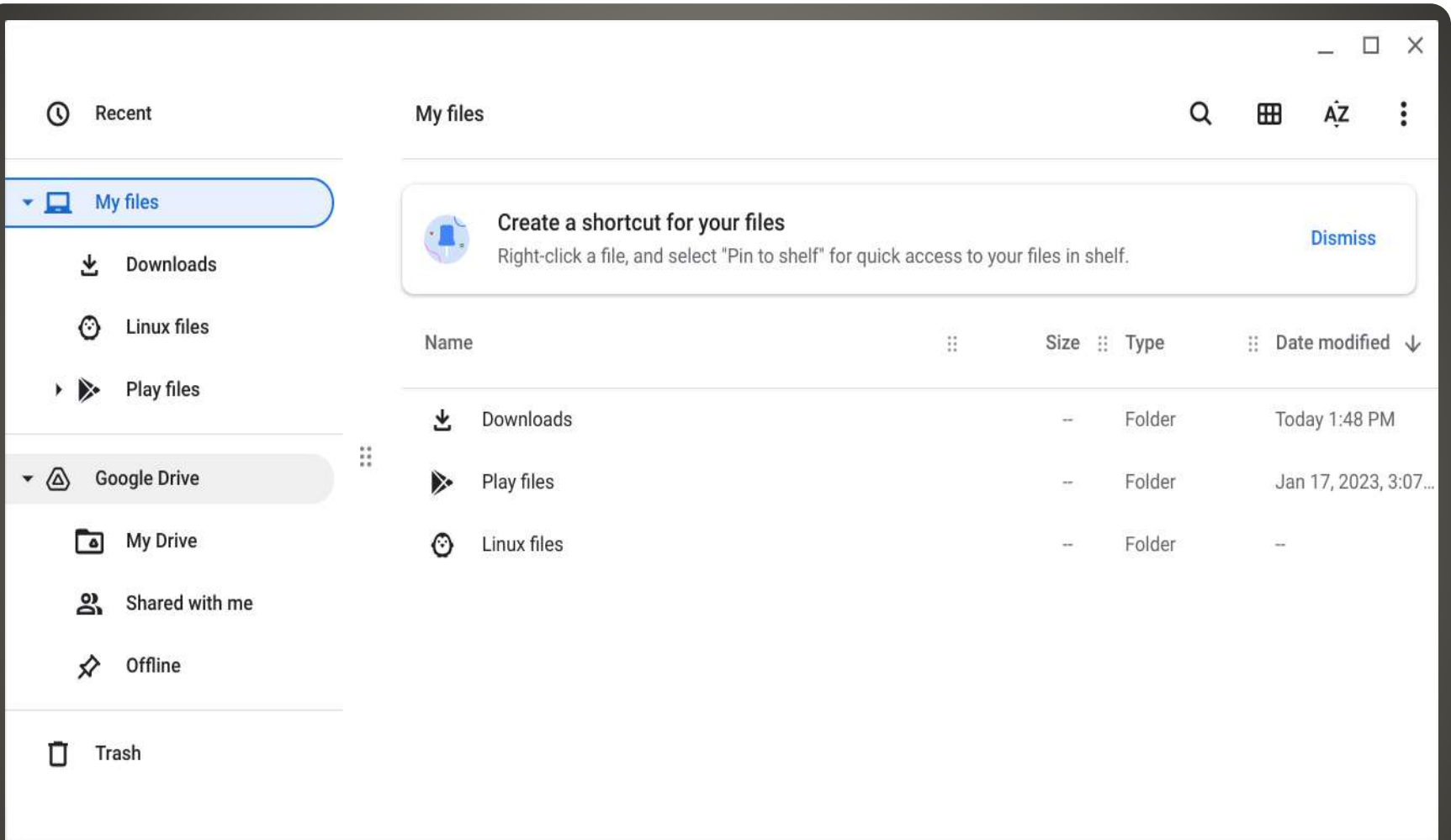
14 million users enjoying NordVPN

- Chromebook advantage Online
- Not always possible
 February storm
- Some apps Proton Mail

Chromebook ChromeOS offline



File by file basis



It is my file, I need it now

- Clean up
- Launcher > Files > Google Drive
Select file(s) **Available offline** off

Offline

- Microsoft Office on the WEB

Crossover app with Microsoft Office license \$\$

- Google Workspace

Documents

Sheets

Slides

PDF

- Libre Office

- Most all can be used interchangeably

Office Suites

- Office mobile apps for Chromebook Retired
- OneDrive app limited function
- Free Microsoft account - option
- Microsoft Office streamed from PC or Mac
- Chrome Remote Desktop extension

Microsoft Office

Remote Access

Remote Support

Set up via SSH

This device



Choose a name

Enter a name for your computer

Dell XPS

Next

Help Us

Send feedback

Toggle theme

Privacy Terms

Remote Access

Remote Support

Set up via SSH

This device



Choose a PIN

Choose a PIN with at least 6 numbers. You'll need the PIN to connect to this computer remotely.

Enter new PIN

Re-enter new PIN

- Help improve Chrome Remote Desktop by allowing Google to collect usage statistics and crash reports.

Start

[Help Us](#)

Send feedback

Toggle theme

Google Chrome Remote Desktop

Remote devices

Remote Access

Remote Support

Set up via SSH

Help

Send feedback

Toggle theme

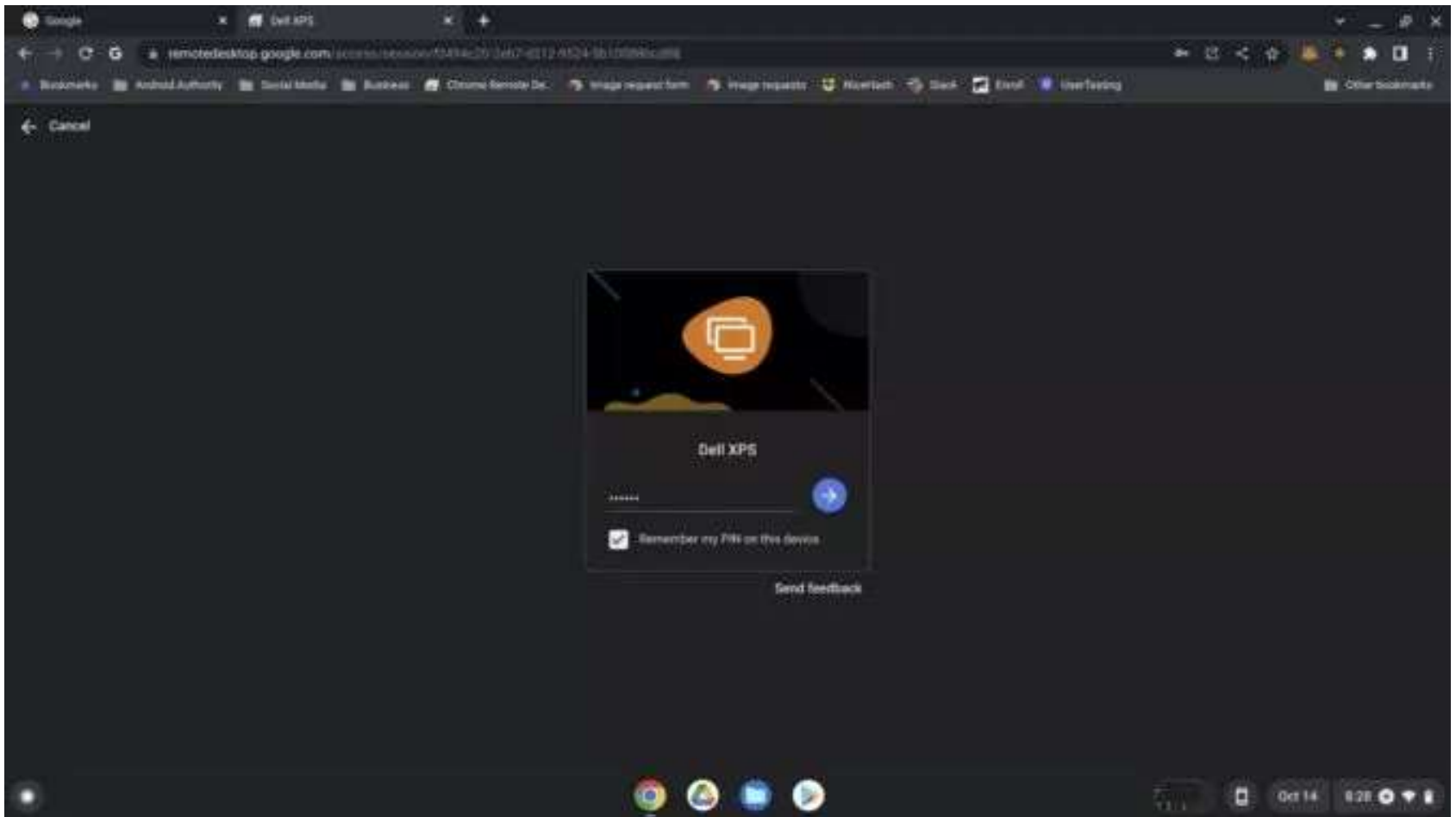
Privacy Terms

Dell XPS
Online

Set up another device for remote access

- 1 Go to the computer that you want to remotely access (Windows 7+ or macOS 10.13+)
- 2 Visit g.co/chrome/remote-desktop from your Chrome or Firefox browser
- 3 Install the Chrome Remote Desktop software and follow the instructions to complete the setup
- 4 After your remote device is set up, you can access it directly from this page

Oct 14 8:28



- Mac
 - Microsoft Office for MacOS license
 - Chrome as browser
- Remote Cloud based Windows / Office 365

Office Suites

- Android phone
- Android device with Bluetooth
 - Same Google account
 - Internet connection
 - Android device unlocked
 - Bluetooth turned on
 - Screen lock setup

Settings > Connected devices
Smart Lock on or off

Smartphone Unlock

- File System for Dropbox
Google Play Store app
Security concerns

Dropbox

- DNS

Internet phone book

Settings Time on menu bar

Security and Privacy

Domain Name Service

- Network
- Bluetooth
- Connected devices
- Accounts
- Device
- Personalization
- Search and Assistant
- Security and Privacy**
- Apps
- Advanced
- About ChromeOS

Security and Privacy

Lock screen and sign-in
PIN or password

Manage other people

Help improve ChromeOS features and performance
Automatically sends crash reports as well as diagnostic and usage data to Google

Suggest new content to explore
Includes apps, webpages, and more. Sends statistics to improve suggestions only if you've chosen to share usage data. [Learn more](#)

Enable Verified Access

Use secure DNS
Determines how to connect to the Internet

- With system DNS
 - With secure DNS
 - With secure DNS
- Custom
 - OpenDNS
 - Google (Public DNS)
 - CleanBrowsing (Family Filter)
 - Cloudflare (1.1.1.1)**
 - Custom

secret - Google Docs x Home | Microsoft 365 x Settings x (4,980 unread) - jenkinson x









Chrome | chrome://settings/?search=safety+check

Settings

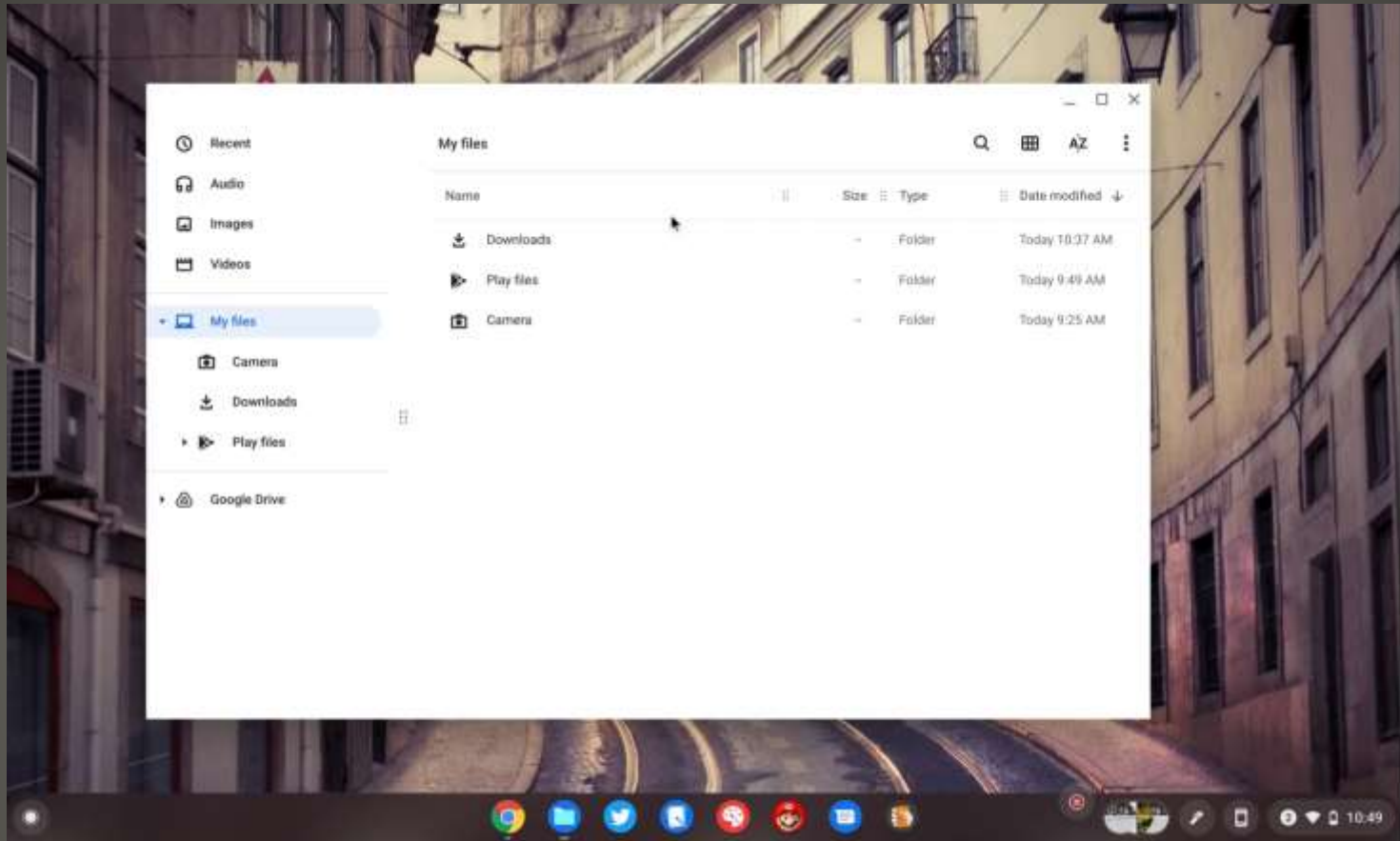
search safety check

- You and Google
- Autofill
- Privacy and security
- Appearance
- Search engine
- On startup
- Languages
- Downloads
- Accessibility
- Reset settings

Safety check

-  Safety check ran 2 minutes ago 
-  Updates
Your Chromebook is up to date
-  Password Manager
No saved passwords. Chrome can check your passwords when you save them.
-  Safe Browsing
Standard protection is on. For even more security, use enhanced protection. 
-  Extensions
You're protected from potentially harmful extensions 

Chrome Safety Check



ChromeOS window resize

Zoom in or magnify your Chromebook screen

You can change your screen resolution, zoom in, or magnify your screen to find items on your Chromebook screen better.

Make a page bigger or smaller

You can make the page you look at bigger or smaller, but keep other parts of your screen the same size.

- **Make the page bigger:** Press **Ctrl** and **+**.
- **Make the page smaller:** Press **Ctrl** and **-**.
- **Reset zoom:** Press **Ctrl** + **0**.

You can also [make all pages bigger or change the font size](#).

Make everything on your screen bigger or smaller

You can make everything on your screen bigger or smaller, which includes your row of apps and tabs, by changing your screen resolution.

- **Make your screen bigger, decrease resolution:** Press **Ctrl** + **Shift** and **+**.
- **Make your screen smaller, increase resolution:** Press **Ctrl** + **Shift** and **-**.
- **Reset resolution:** Press **Ctrl** + **Shift** + **0**.

Tip: On your touchscreen, you can touch and hold an area with 2 fingers, and then pinch open to zoom in, or pinch close to zoom out.

Magnify your screen

You can zoom in on your screen, like when you use a magnifying glass.

Magnify your whole screen

To quickly magnify your entire screen, press **Ctrl** + Search 🔍 + **m** or press **Ctrl** + Launcher ⦿ + **m**.



To manage screen magnification:



1. At the bottom right, select the time.
 - Or press **Alt** + **Shift** + **s**.
2. Select Settings ⚙️ > **Accessibility**.
3. Under "Display," turn on **Full screen magnifier**.
4. Choose how you want to move around the magnified screen.
 - **Move around continuously:** Turn **Move screen continuously as mouse moves** on.
 - **Keep your mouse centered:** Turn **Move screen keeping mouse at center of screen** on.
 - **Move the screen when the mouse touches the edge:** Turn **Move screen when mouse touches edge of screen** on.
5. To choose your zoom level, next to "Fullscreen zoom level," select Down arrow ▼.

Tips:

- To move around, press **Ctrl** + **Alt** + Up ^, Down v, Left <, or Right >. You can also press **Tab** to move from item to item on your screen.
- In full screen zoom mode on your touchscreen, use 2 fingers to move around the screen.



Magnify part of your screen

You can find the magnified section at the top third of your screen. Your default screen shows underneath. To magnify the top section of your screen, press **Ctrl** + Search  + **d** or press **Ctrl** + Launcher  + **d**.

1. At the bottom right, select the time.
 - Or press **Alt** + **Shift** + **s**.
2. Select Settings  > **Accessibility**.
3. Under "Display," turn on **Docked magnifier**.
4. To choose your zoom level, next to "Docked zoom level," select Down arrow .
5. To change the part that's magnified, move your cursor or press **Tab**.

Tip: When you type at the bottom section of your screen, it's zoomed in at the top of your screen.

Change the magnification level

- **Increase magnification:** Press **Ctrl + Alt** + Brightness up .
- You can also press **Ctrl + Alt**, then scroll with 2 fingers up on the touchpad.
- **Decrease magnification:** Press **Ctrl + Alt** + Brightness down .
- You can also press **Ctrl + Alt**, then scroll with 2 fingers down.

- Minimalistic Operating System
- Sandbox for each Chrome Tab, app, extension
- Self-check after restart

Security - Privacy

The image shows a browser window displaying the Google Account dashboard for John Jenkinson. The browser's address bar shows the URL `myaccount.google.com/?hl=en&utm_source=OGB&utm_medium=act&pli=1`. The page features a navigation menu on the left with options: Home, Personal info, Data & privacy, Security, People & sharing, Payments & subscriptions, and About. The main content area is titled "Welcome, John Jenkinson" and includes a sub-header: "Manage your info, privacy, and security to make Google work better for you. [Learn more](#)".

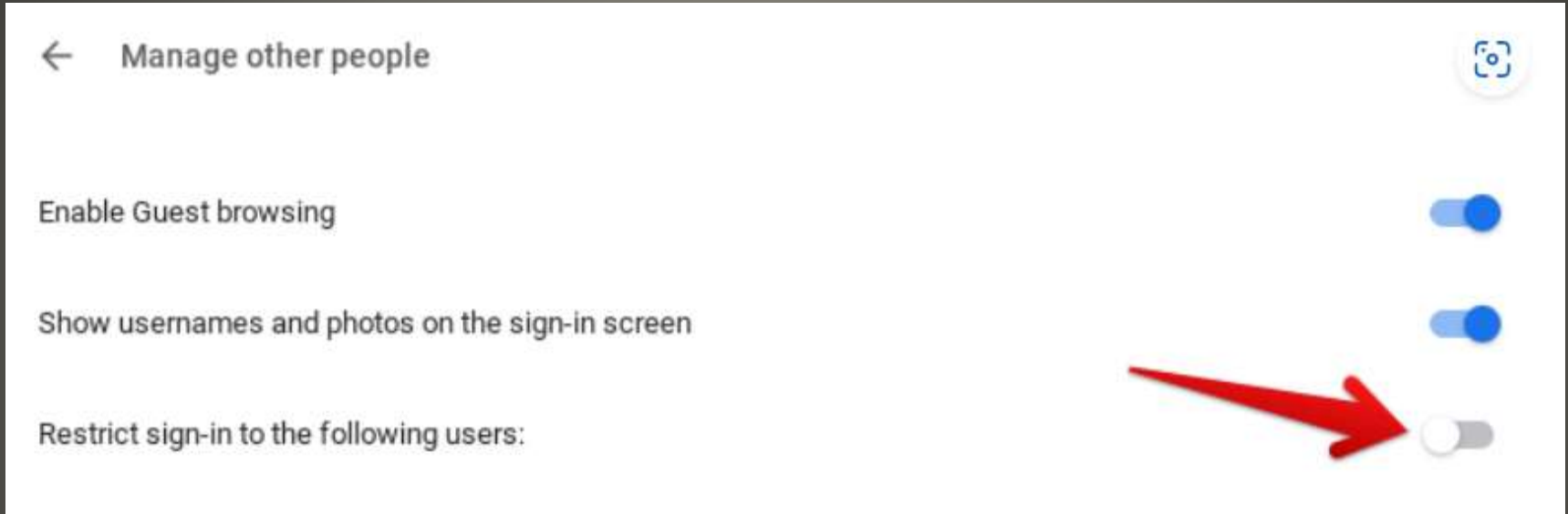
There are three main sections in the dashboard:

- Privacy & personalization:** Includes the text "See the data in your Google Account and choose what activity is saved to personalize your Google experience" and a link to "Manage your data & privacy".
- Your account is protected:** Includes the text "The Security Checkup checked your account and found no recommended actions" and a link to "See details".
- Privacy suggestions available:** Includes the text "Take the Privacy Checkup and choose the settings that are right for you" and a link to "Review suggestion (1)".

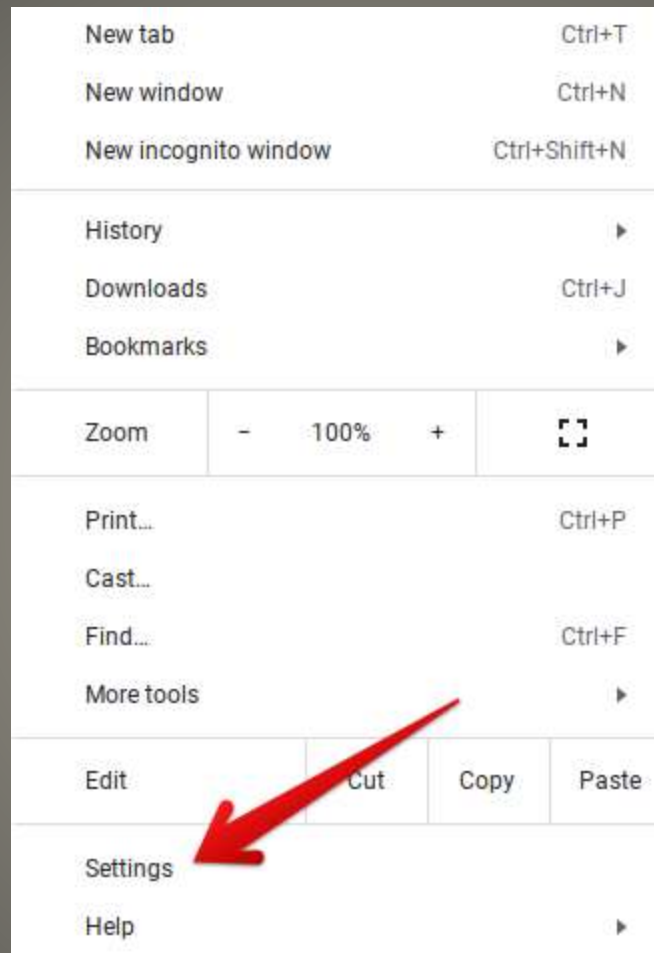
At the bottom, there is a section titled "Looking for something else?" with a search bar and a link to "See help options".

Secure your Google Account

- Security and Privacy



(Dis)allow others to login



Enable Enhanced Safe Browsing

Settings

Search settings

- You and Google
- Autofill
- Safety check
- Privacy and security**
- Appearance
- Search engine
- On startup
- Advanced
- Extensions

Privacy and security

- Clear browsing data
Clear history, cookies, cache, and more
- Cookies and other site data
Third-party cookies are blocked in Incognito mode
- Security**
Safe Browsing (protection from dangerous sites) and other security settings
- Site Settings
Controls what information sites can use and show (location, camera, pop-ups, and more)
- Privacy Sandbox
Trial features are on

Safe Browsing

Enhanced protection

Faster, proactive protection against dangerous websites, downloads, and extensions. Warns you about password breaches. Requires browsing data to be sent to Google.

Standard protection

Standard protection against websites, downloads, and extensions that are known to be dangerous.

Enable Enhanced Safe Browsing

- Chrome Cookies and other site data

Send a "Do Not Track" request with your browsing traffic



Request "Do Not Track"

- Chrome Settings > Privacy & Security

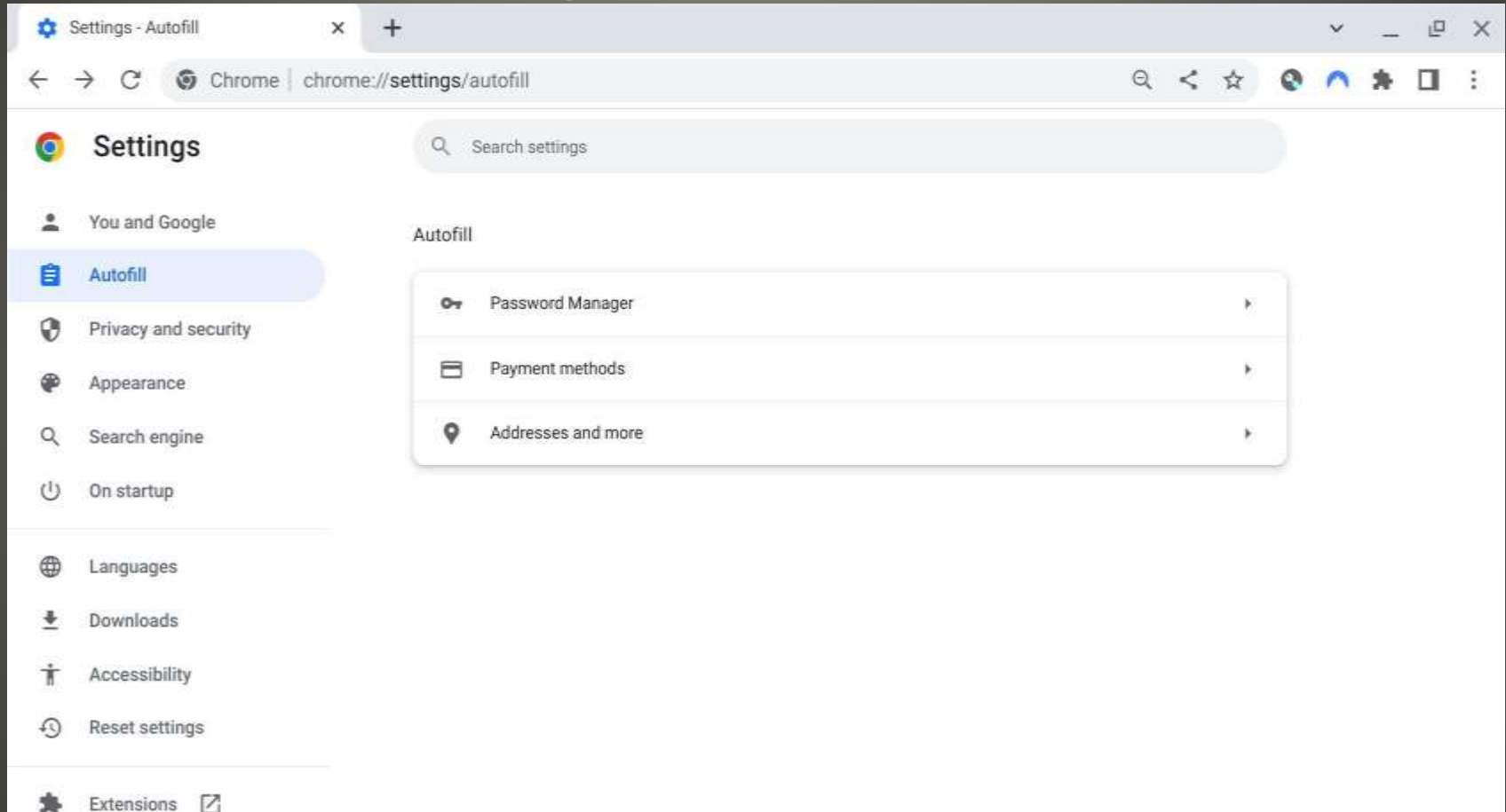
Preload pages for faster browsing and searching

Pre-fetches information from pages, including pages you have not yet visited. Information fetched may include cookies, if you allow cookies.



Disable Prediction Service

• Chrome Settings > Autofill



Disable Autofill

Autofill



Password Manager



Payment methods



Addresses and more



Chrome Autofill

← Password Manager



🔍 Search passwords

Create, save, and manage your passwords so you can easily sign in to sites and apps.

Offer to save passwords



Auto Sign-in

Automatically sign in to sites and apps using saved credentials. If turned off, you'll be asked for confirmation every time before signing in to a site or app.



Check passwords

Keep your passwords safe from data breaches and other security issues



On-device encryption

For added safety, encrypt passwords on your device before they're saved to Google Password Manager



Saved Passwords

Add



Saved passwords will appear here. [Import passwords](#)

Chrome Autofill Password Manager



Create, save, and manage your passwords so **you** can easily sign in to sites and apps.

Offer to save passwords



Auto Sign-in

Automatically sign in to sites and apps using saved credentials. If turned off, you'll be asked for confirmation every time before signing in to a site or app.



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← Password Manager



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Saved passwords will appear here. [Import passwords](#)

Chrome Autofill Password Manager

Check passwords

Keep your passwords safe from data breaches and other security issues

← Check passwords



Checked passwords • Just now
No compromised passwords found

Check again

Chrome will notify you when you sign in with a compromised password

Check Passwords

← Payment methods



Save and fill payment methods

Fills in payment forms with your saved payment methods



Allow sites to check if you have payment methods saved



To add or manage Google Pay payment methods, visit your [Google Account](#)

Payment methods

Saved payment methods will appear here

Payment Methods

← Payment methods



Save and fill payment methods

Fills in payment forms with your saved payment methods



Allow sites to check if you have payment methods saved



To add or manage Google Pay payment methods, visit your [Google Account](#)

Payment methods

Saved payment methods will appear here

Save and fill addresses

Add address

Country / Region

United States

Name

Organization

Street address

Cancel

Save

Save and fill addresses

- Helpful <-> Harmful
- Apps, bookmarks, extensions, history, settings, passwords, addresses, Wi-Fi, etc.
- Chrome > Settings > You and Google Sync and Google services

Google synch

Sync

Manage what you sync



Control how your browsing history is used to personalize Search and more



Review your synced data



Encryption options

For added security, Google Chrome will encrypt your data



Other Google services

Autocomplete searches and URLs

Sends some cookies and searches from the address bar and search box to your default search engine



Help improve Chrome's features and performance

Automatically sends usage statistics and crash reports to Google



Make searches and browsing better

Sends URLs of pages you visit to Google



Enhanced spell check

To fix spelling errors, Chrome sends the text you type in the browser to Google



Google Drive search suggestions

Chrome will access your Drive to make suggestions in the address bar



Google Sync

Customize sync

Sync data

Bookmarks



Extensions



History



Settings



Theme



Reading list



Open tabs



Passwords



Addresses and more

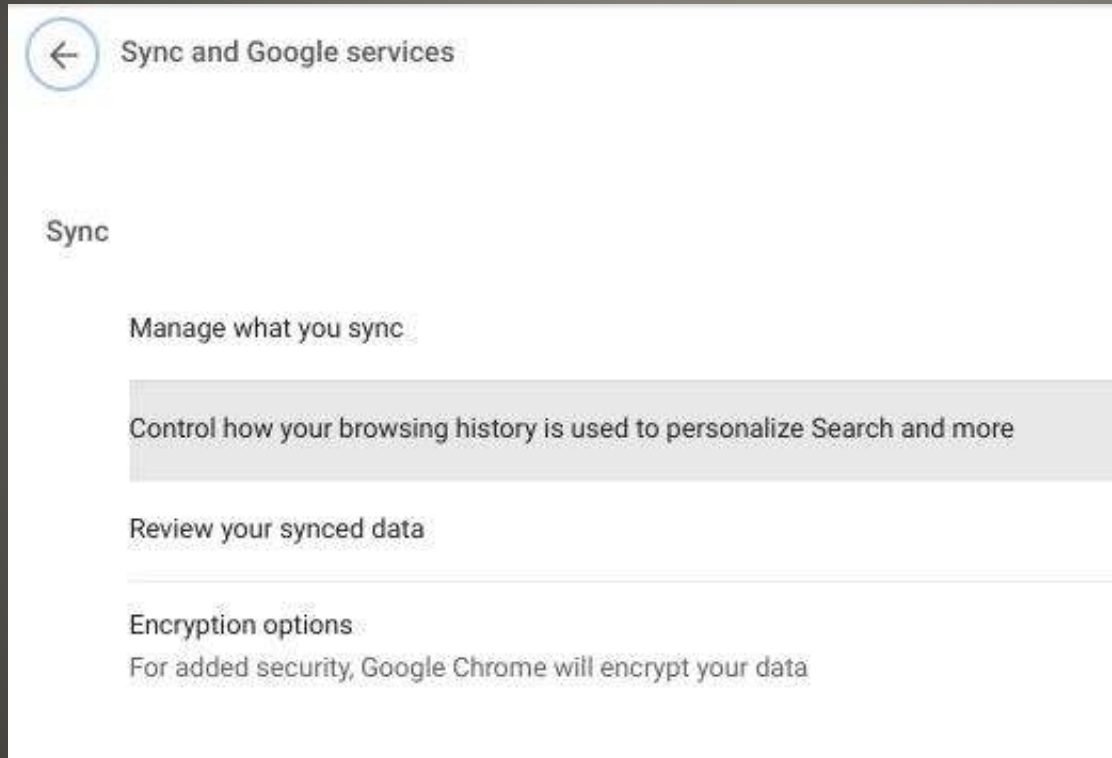


Payment methods, offers, and addresses using Google Pay



Manage what you synch

- Synch advantages
- NOT available to Google



Yeahbut

- Encryption is two-edged sword
- No one without passphrase has any access

CAUTION



Sync and Google services

Sync

Manage what you sync

Control how your browsing history is used to personalize Search and more

Review your synced data

Encryption options

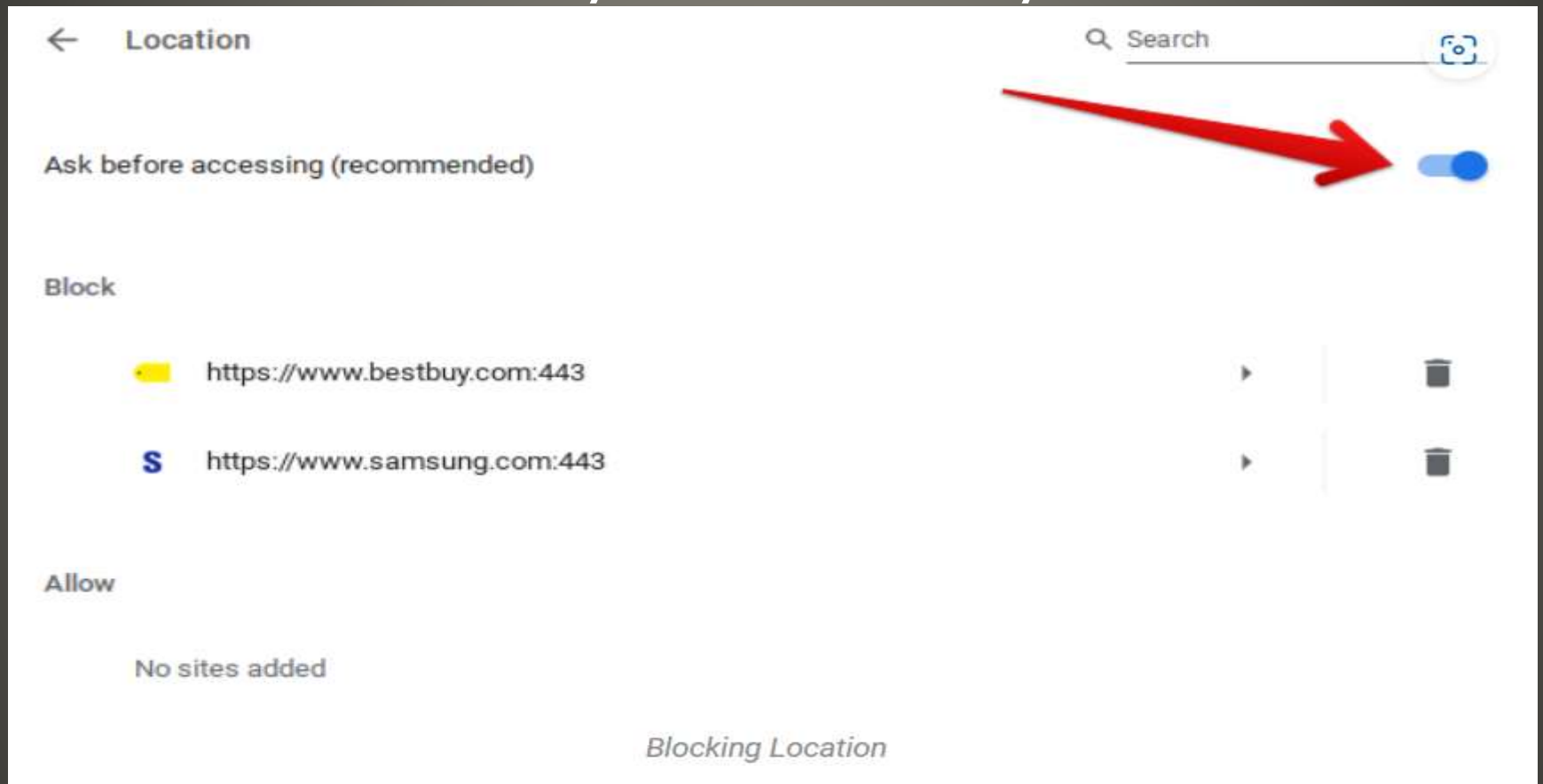
For added security, Google Chrome will encrypt your data

Your Passphrase

- Encryption is two-edged sword
- No one without passphrase has any access

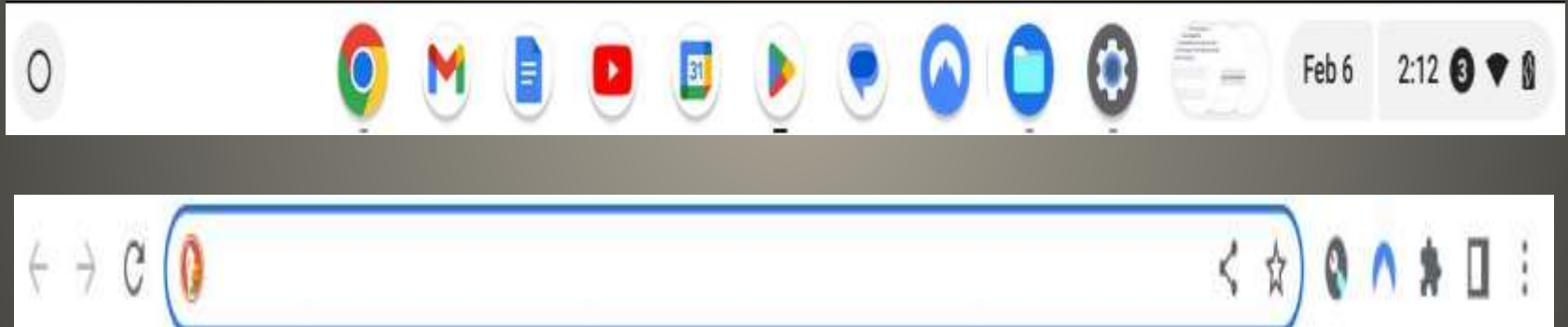
CAUTION

- Chrome Privacy and security > Location



Location services

- LIMITED security and/or privacy
- You control Toggle on & off
- VPN Advantages
- VPN Disadvantages



Virtual Private Network - VPN

- Helpful <-> Harmful
- You control
- Google Ads
- Duckduckgo – privacy

Search Engines



DuckDuckGo Private Browser
DuckDuckGo

Install

4.7★
8K reviews ⓘ

10M+
Downloads

E
Everyone ⓘ

Privacy, simplified.
Search, browse, and email more privately.

Private Search
Search anonymously. We don't track you. Ever.

Website Protection
Block hidden trackers on millions of sites.

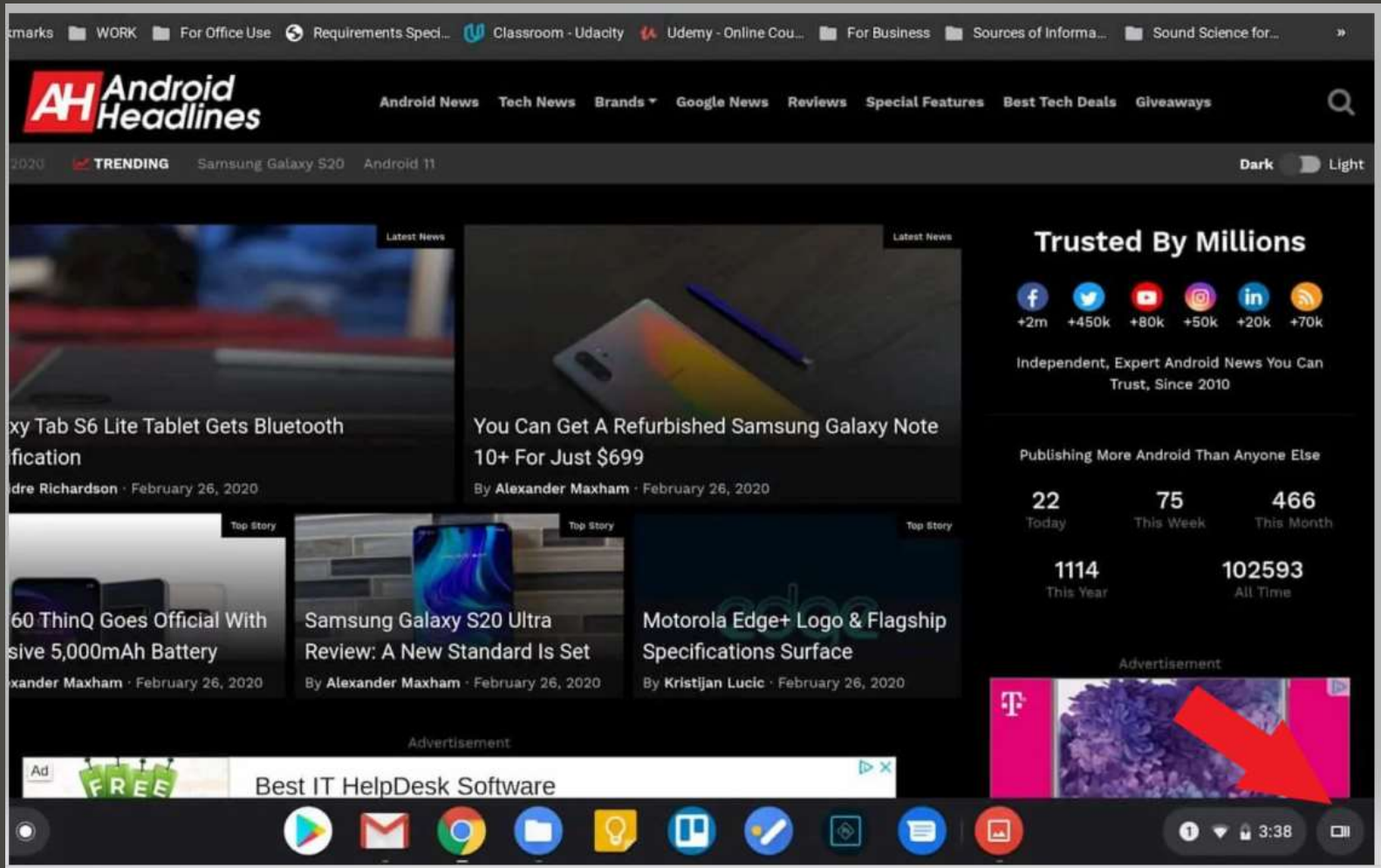
Email Protection BETA
Prevent emails you receive from tracking you.

App Tracking Protection BETA
Block hidden app trackers, day or night.

Smarter Encryption
Automatically use HTTPS whenever possible.

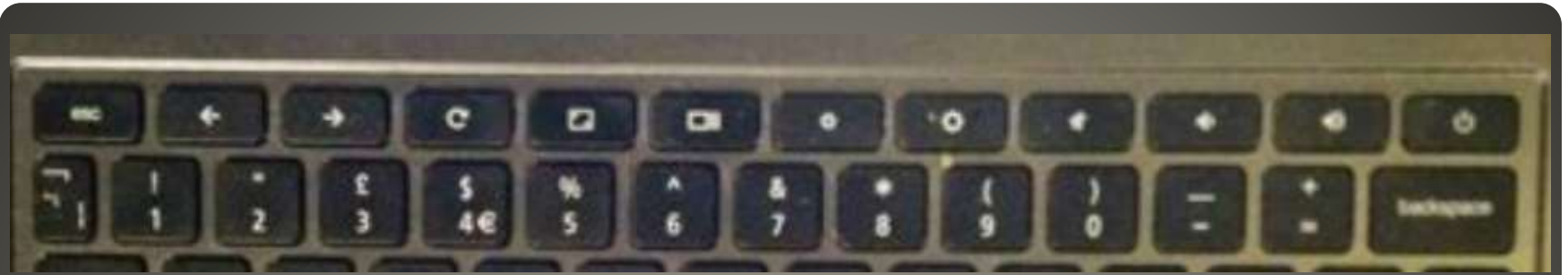
Fire Button
Clear your tabs and browsing data with one tap.

The free super ⚡ privacy app: web browser, search, email & app protection



Quick Switching Overview Desks





ChromeOS Keyboard

Use the Search key or the Launcher key to search, show your apps, and interact with Google Assistant.

- To turn Caps Lock on or off, press Alt + Search . Or press Alt + Launcher .
- Go to the previous page
- Go to the next page
- Refresh your current page
- Make your page take up the full screen
- Show all your open windows
- Take a screenshot
- Decrease screen brightness
- Increase screen brightness
- Turn on electronic privacy screen
- Decrease keyboard backlight brightness
- Increase keyboard backlight brightness
- Rewind to last track
- Play/pause
- Skip to next track
- Turn off the sound
- Lower the volume
- Raise the volume

ChromeOS Keyboard

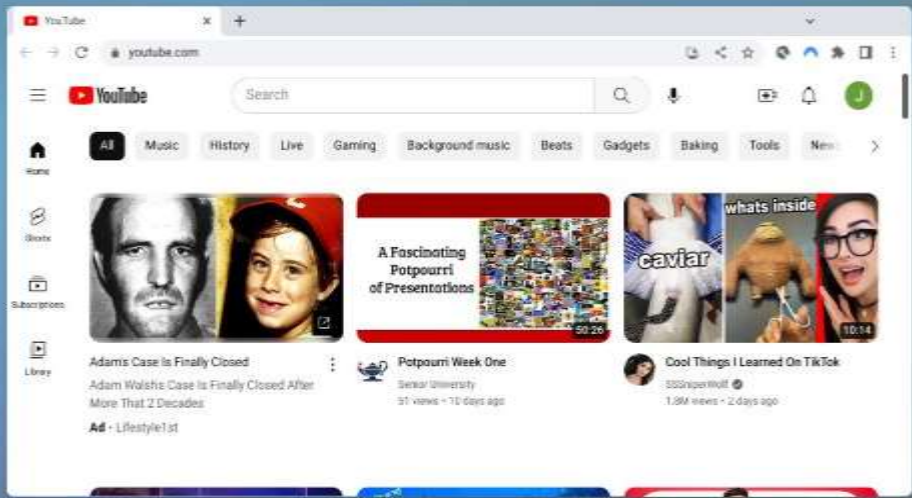


Overview key



Save desk for later

YouTube



Multiple Desks

Browser window showing the 'About System' page in Chrome. The address bar shows 'chrome://system'. The page title is 'About System' with a subtitle 'System diagnostic data'. Below the title are buttons for 'Expand all...' and 'Collapse all...'. The main content is a table of system diagnostic data.

CHROME_VERSION	109.0.5414.125
CHROMEOS_ARC_ANDROID_SDK_VERSION	38
CHROMEOS_ARC_BPC_VERSION	
CHROMEOS_ARC_POLICY	
CHROMEOS_ARC_POLICY_COMPLIANCE_REPORT	
CHROMEOS_ARC_STATUS	enabled
CHROMEOS_ARC_VERSION	8499179
CHROMEOS_AUSERVER	https://tools.google.com/service/update2
CHROMEOS_BLUETOOTH_FLOSS	disabled
CHROMEOS_BOARD_APPID	{9A38E5D2-C3DC-4AE6-9943-E2C113895DC5}
CHROMEOS_CANARY_APPID	{89F229CE-83E2-4FAF-8479-E368A3493881}
CHROMEOS_DEVSERVER	
CHROMEOS_FIRMWARE_VERSION	Google_Bloog.11297.275.0
CHROMEOS_RELEASE_APPID	{9A38E5D2-C3DC-4AE6-9943-E2C113895DC5}
CHROMEOS_RELEASE_BOARD	octopus-signed-mp-v31keys
CHROMEOS_RELEASE_BRANCH_NUMBER	88
CHROMEOS_RELEASE_BUILDER_PATH	octopus-release/R109-15236.88.0
CHROMEOS_RELEASE_BUILD_NUMBER	15236
CHROMEOS_RELEASE_BUILD_TYPE	Official Build
CHROMEOS_RELEASE_CHROME_MILESTONE	109
CHROMEOS_RELEASE_DESCRIPTION	15236.88.0 (Official Build) stable-channel octopus
CHROMEOS_RELEASE_KEYSET	mp-v31
CHROMEOS_RELEASE_NAME	Chrome OS
CHROMEOS_RELEASE_PATCH_NUMBER	0
CHROMEOS_RELEASE_TRACK	stable-channel
CHROMEOS_RELEASE_UNBUILD	1
CHROMEOS_RELEASE_VERSION	15236.88.0
CLIENT_ID	error: consent not given

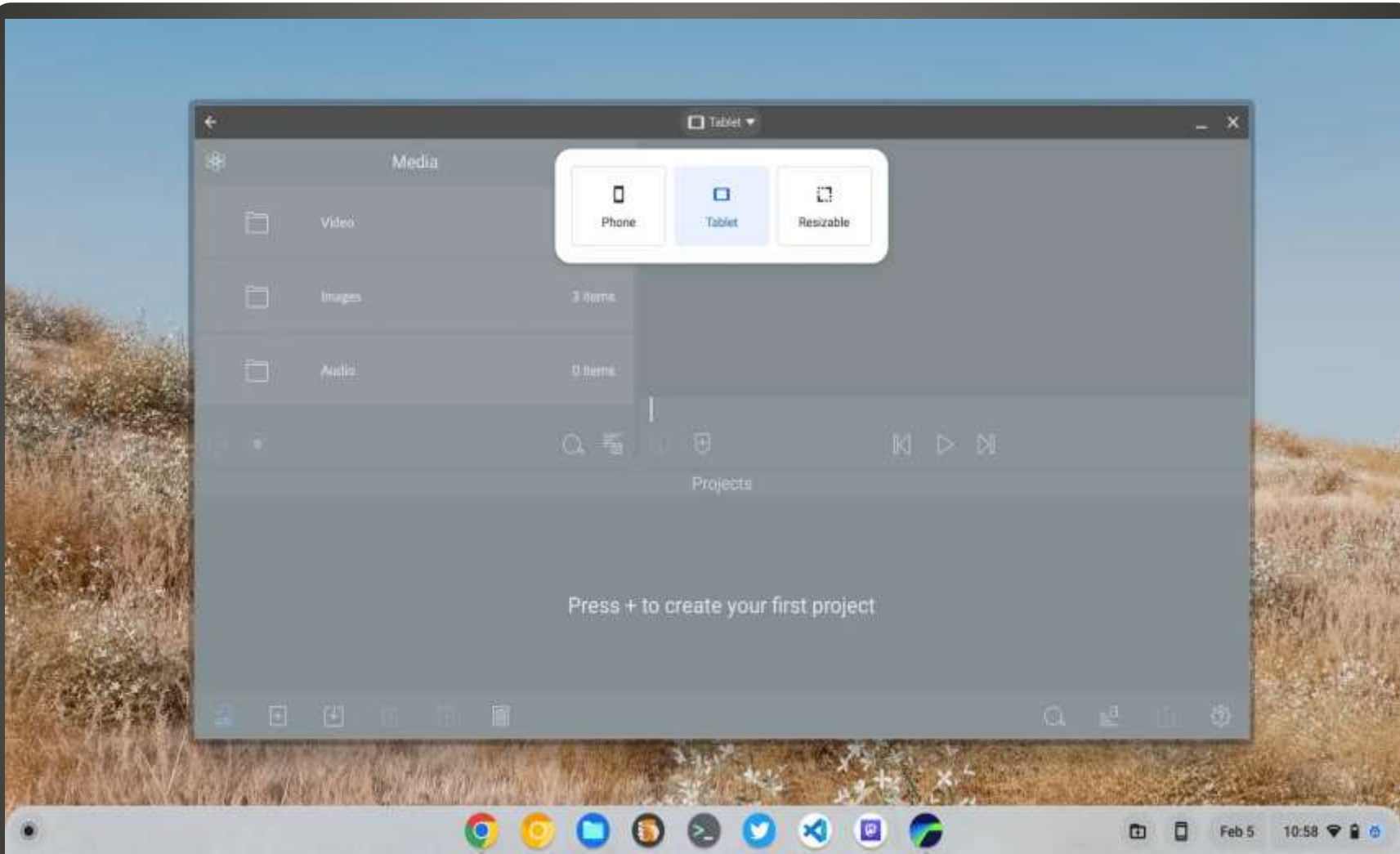
What?

Chrome browser window showing the 'About System' page. The page lists various system details such as Chrome version, Android SDK version, and release information. A context menu is open over the 'Shelf position' option, showing three choices: Left, Bottom (selected), and Right. The dock at the bottom contains icons for various apps and the system tray shows the date (Feb 6) and time (3:33).

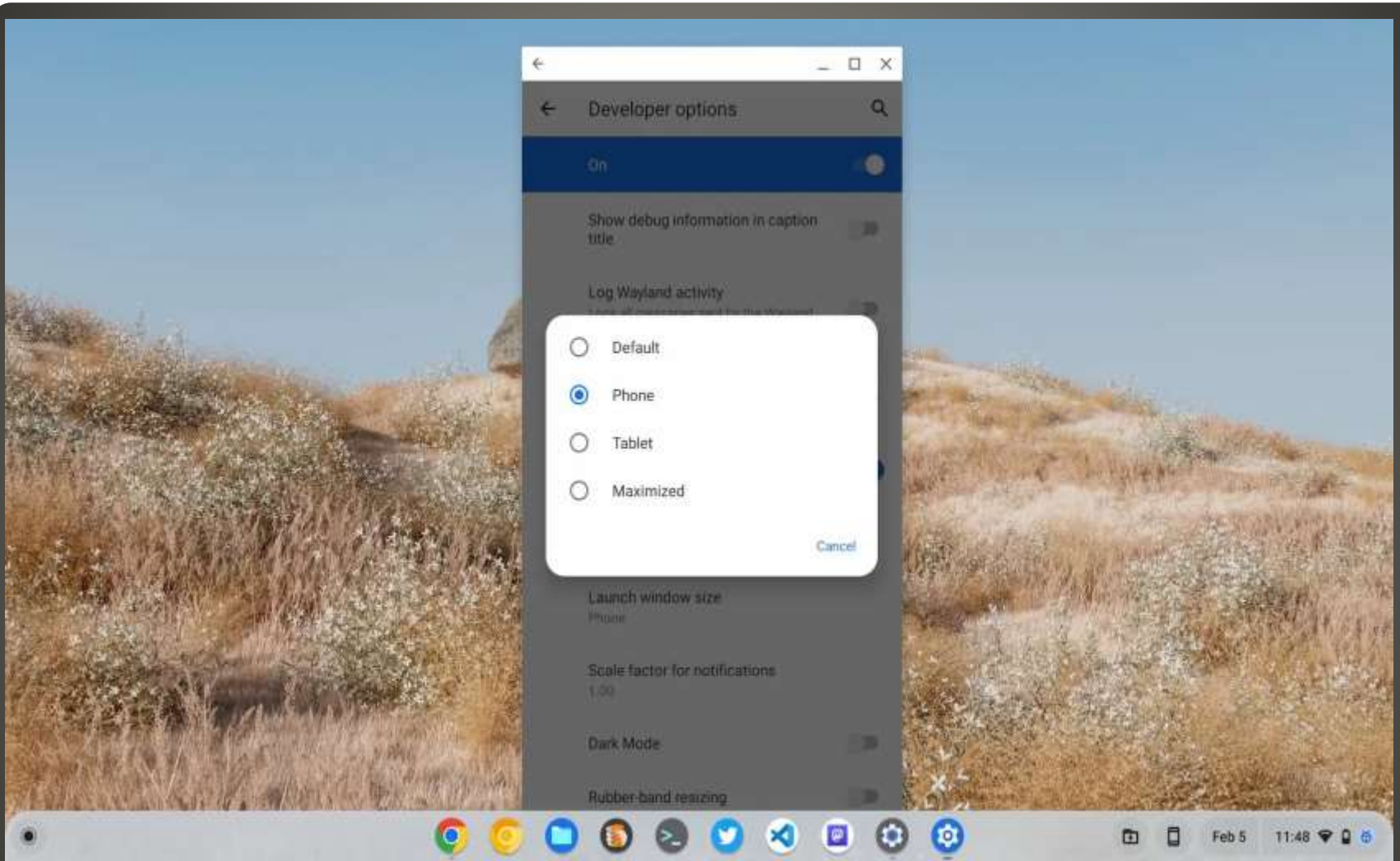
Property	Value
CHROME_VERSION	109.0.5414.125
CHROMEOS_ARC_ANDROID_SDK_VERSION	30
CHROMEOS_ARC_SFC_VERSION	
CHROMEOS_ARC_POLICY	
CHROMEOS_ARC_POLICY_COMPLIANCE_REPORT	
CHROMEOS_ARC_STATUS	enabled
CHROMEOS_ARC_VERSION	9498179
CHROMEOS_AUSSERVER	https://tools.google.com/service/update2
CHROMEOS_BLUETOOTH_FLOSS	disabled
CHROMEOS_BOARD_APPID	{9A3B8507-C3DC-4A6A-9943-E2C113B99DC5}
CHROMEOS_CANARY_APPID	{98F23DCE-83E2-4FAP-8479-E388A3493883}
CHROMEOS_DEVSERVICES	
CHROMEOS_FIRMWARE_VERSION	Google_Bioog.11297.179.0
CHROMEOS_RELEASE_APPID	{9A3B8507-C3DC-4A6A-9943-E2C113B99DC5}
CHROMEOS_RELEASE_BOARD	octopus-signed-tp-v11keys
CHROMEOS_RELEASE_BRANCH_NUMBER	80
CHROMEOS_RELEASE_BUILDER_PATH	octopus-release/R108-85236.88.0
CHROMEOS_RELEASE_BUILD_NUMBER	15236
CHROMEOS_RELEASE_BUILD_TYPE	Official Build
CHROMEOS_RELEASE_DIR	
CHROMEOS_RELEASE_DES	
CHROMEOS_RELEASE_KEY	
CHROMEOS_RELEASE_NAME	
CHROMEOS_RELEASE_PATH	
CHROMEOS_RELEASE_TRA	
CHROMEOS_RELEASE_URI	
CHROMEOS_RELEASE_VERSION	
CLIENT_ID	

Shelf

- Clear All Notifications
- New Chromebook Charge first
- Some Playstore apps
- Touchpad
- Keyboard shortcuts
- Google Suite
 - Sheets, Docs, Calendar, Hangouts



Resize Android Apps - maby



Rsize Android Apps - maby

- AndroidManifest.xml

```
android:resizeableActivity="false"
```

- Pixel phone feature



Game Dashboard

🔍 Search

🏠 Home

📅 Perks

🕒 What's new

▶️ ? Help

Welcome to your Chromebook

Unlock all the amazing capabilities of your Chromebook.



[? Contact support](#)

Send feedback

[Privacy](#) • [Terms](#) • [Licenses](#)

Explore

PERKS

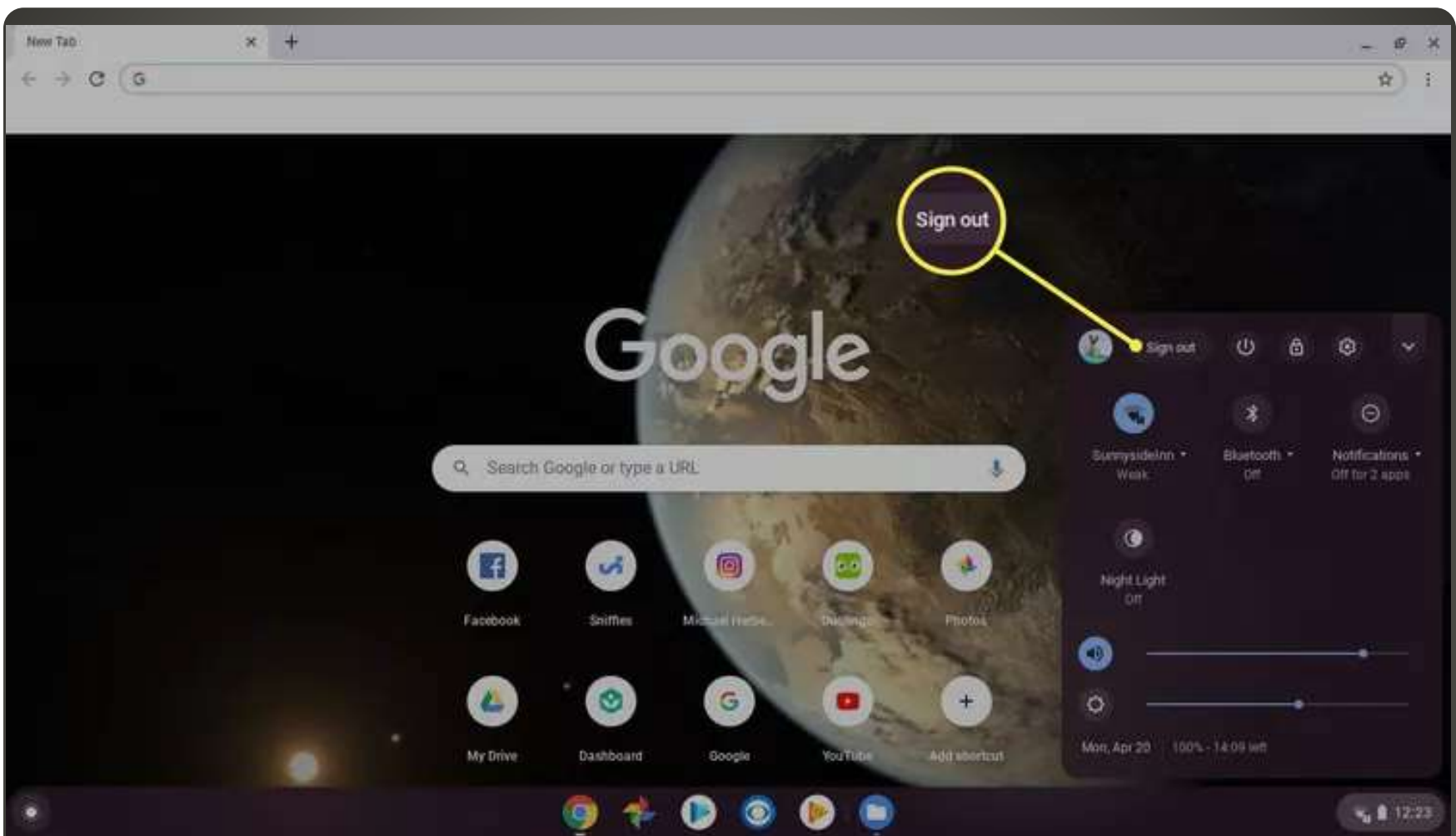
Boosteroid

[Get perk](#)

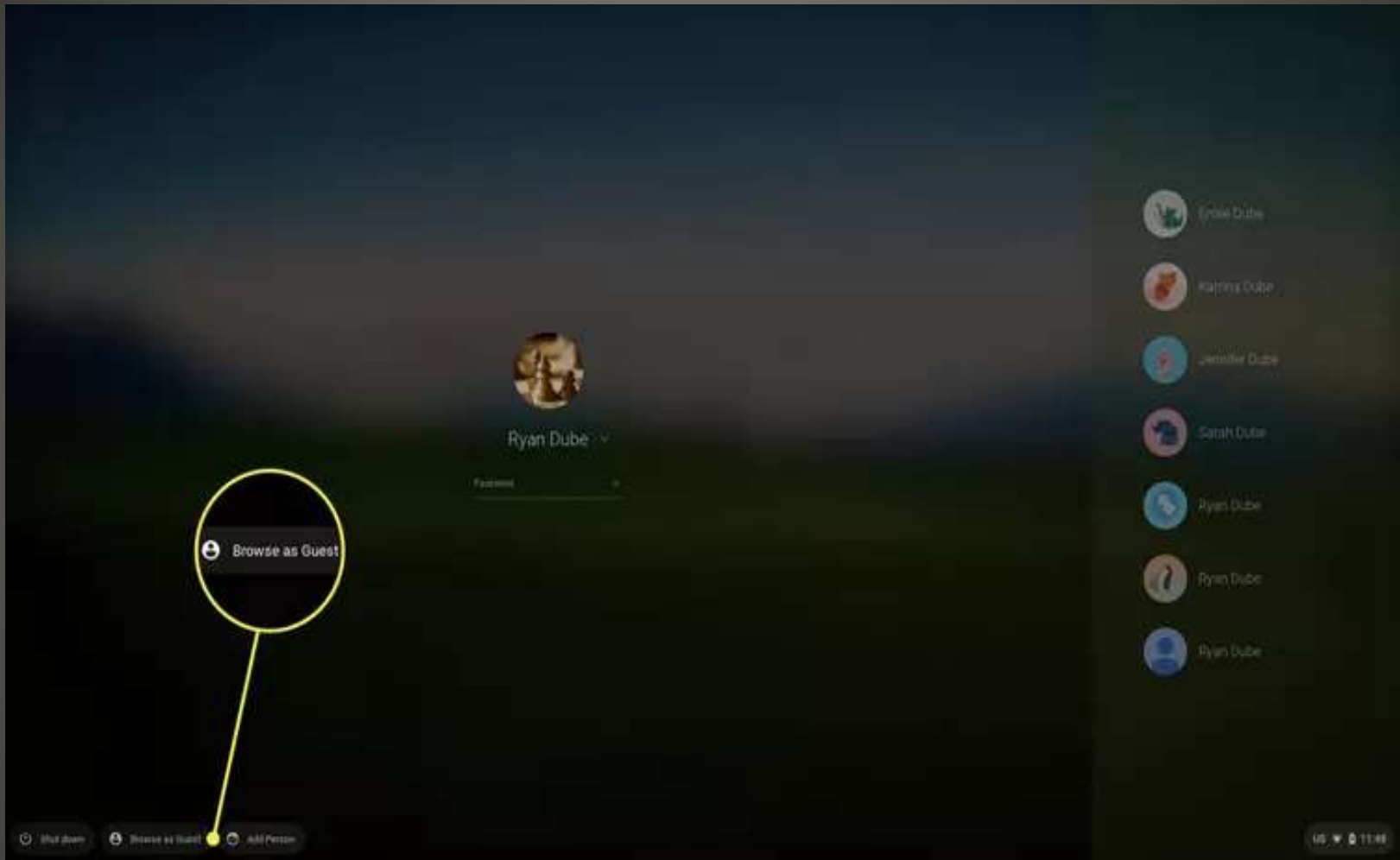
WHAT'S NEW

Discover the latest features on your Chromebook

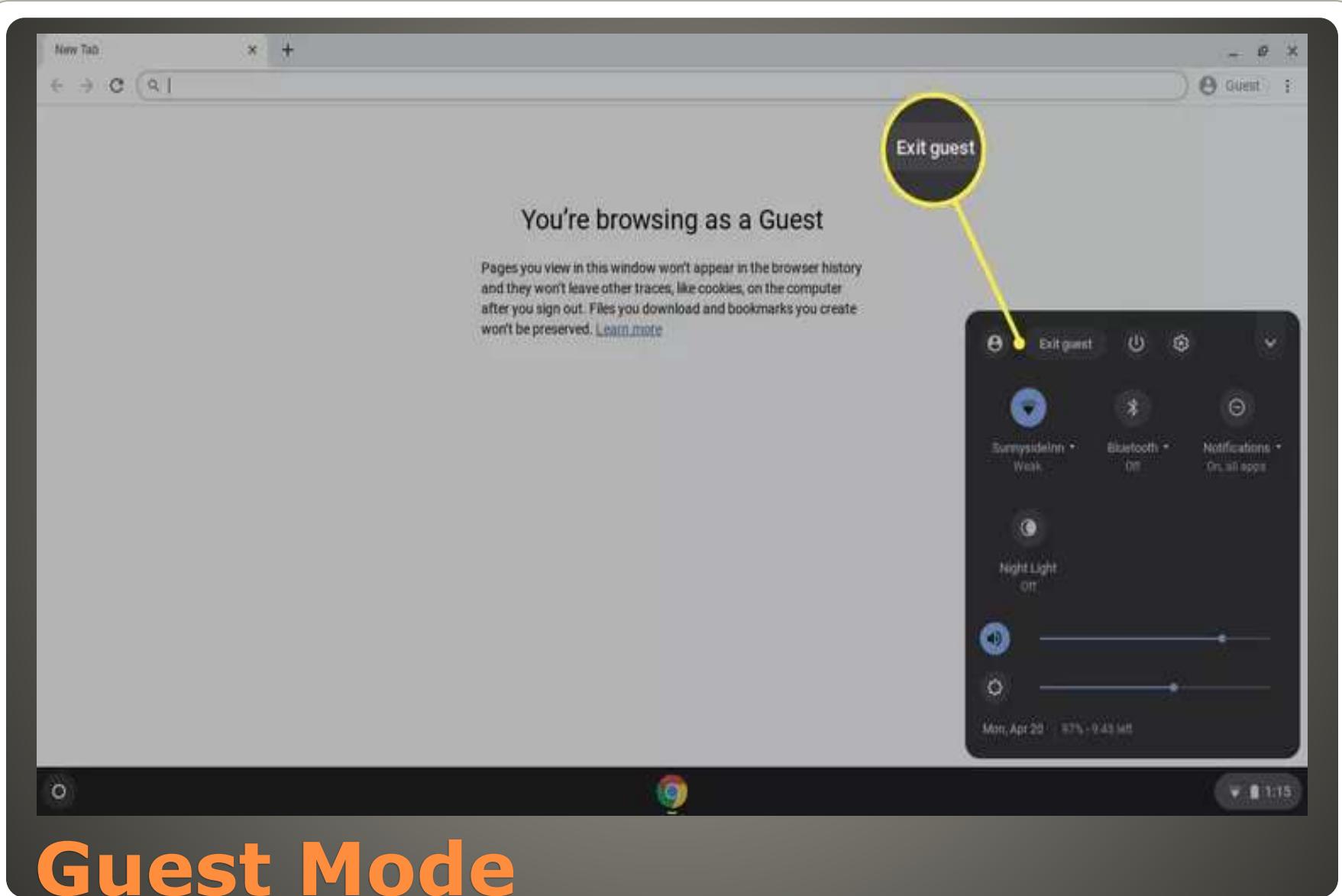
Explore



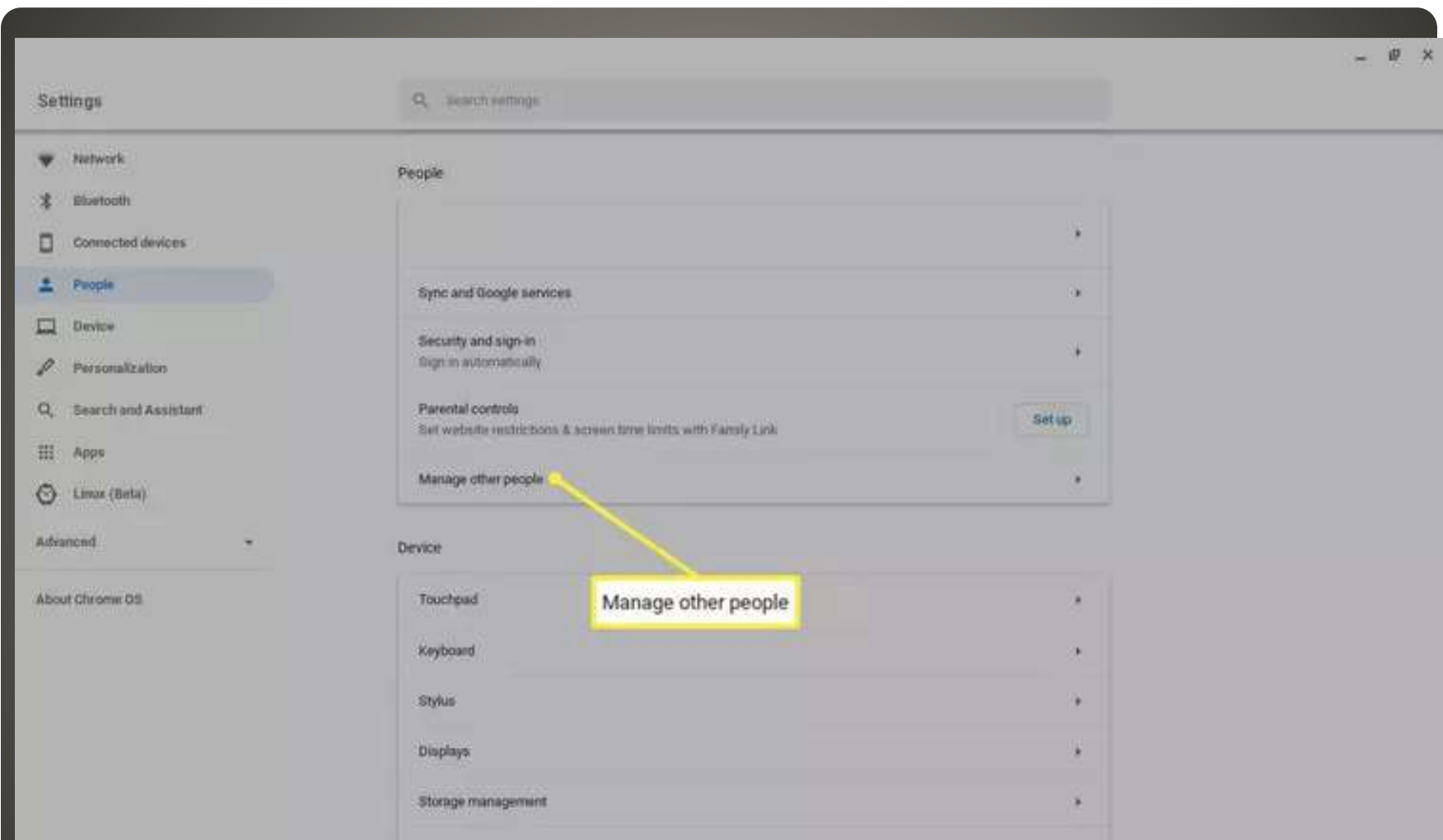
Guest Mode



Guest Mode



Guest Mode

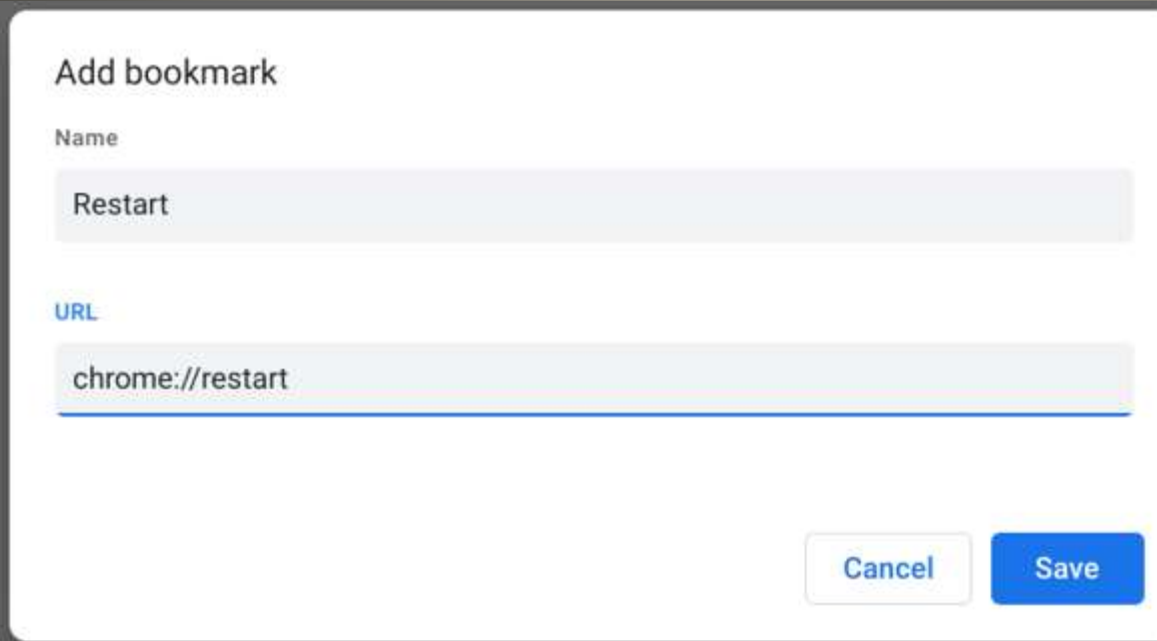


Don't see Guest mode?

- Alt + 1 First app on Dock Taskbar Shelf
- or-
- Click

Quick App launch using keys

- Ctrl + Shift + O
- Click on three vertical dots upper right corner



Add bookmark

Name

Restart

URL

chrome://restart

Cancel Save

Quick Restart

- Ctrl + Alt + /
- Print that list

Keyboard Shortcuts

- Limit battery charge/discharge
Refresh + Power => battery disconnect
Pull the charging plug AFTER power down
Power down is not Power off

Care and feeding

Settings

- Network
- Bluetooth
- Connected devices
- Accounts
- Device
- Personalization
- Search engine
- Security and Privacy
- Apps

Network



Wi-Fi
ppoli

Add connecti

Bluetooth



Bluetooth
Off

Connected devices



Android phone
No eligible devices. [Learn more](#)

Search: upd

- Check for **update**
- About ChromeOS
- Firmware **updates**
- Look **up**
- Set **up** connected devices

Updates

Firmware updates for external devices

All firmware is up to date

Update firmware

About ChromeOS



Google ChromeOS

Version 109.0.5414.125 (Official Build) (64-bit)

[Check for updates](#)

[See what's new](#)



[Get help with ChromeOS](#)



[Report an issue](#)



[Diagnostics](#)



[Firmware updates](#)



[Additional details](#)



Update ChromeOS

- Usually every 4 weeks

About ChromeOS



Google ChromeOS



Your Chromebook is up to date

Version 109.0.5414.125 (Official Build) (64-bit)

Update ChromeOS

- Google Drive
- USB cable
- Wi-fi
- Bluetooth
- Email

Printers

- Three dots > More tools > Task manager
- Chrome

Task Manager(s)

- Our thanks for viewing a presentation
In Cyber Security SIG Seminar Series
- Topic suggestions are most welcome

sccccyber@gmail.com