

# Inspiron 3181 2-in-1

## Service Manual



## Notes, cautions, and warnings

 **NOTE:** A NOTE indicates important information that helps you make better use of your product.

 **CAUTION:** A CAUTION indicates either potential damage to hardware or loss of data and tells you how to avoid the problem.

 **WARNING:** A WARNING indicates a potential for property damage, personal injury, or death.

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<b>1 Working on your computer.....</b>	<b>5</b>
Safety instructions.....	5
Before working inside your computer.....	5
After working inside your computer.....	6
<b>2 Disassembly and reassembly.....</b>	<b>7</b>
Recommended tools.....	7
Screw size list.....	7
microSD card.....	7
Removing microSD card.....	7
Installing microSD card.....	8
Base cover.....	8
Removing base cover.....	8
Installing base cover.....	9
Battery.....	9
Removing battery - optional.....	9
Installing battery.....	10
Keyboard lattice and Keyboard.....	10
Removing keyboard.....	10
Installing keyboard.....	13
Power switch board.....	14
Removing power switch board.....	14
Installing power switch board.....	15
Audio board.....	15
Removing audio board.....	15
Installing audio board.....	16
Power connector port.....	16
Removing power connector port.....	16
Installing power connector port.....	17
Speaker.....	18
Removing speaker.....	18
Installing speakers.....	19
Display assembly.....	19
Removing display assembly.....	19
Installing display assembly.....	22
Display back cover.....	22
Removing display back cover.....	23
Installing display back cover.....	24
System board.....	24
Removing system board.....	24
Installing system board.....	27
Palm rest.....	28
Replacing palm rest.....	28

<b>3 Software.....</b>	<b>30</b>
Operating system.....	30
Chrome OS.....	30
Verified Boot.....	31
Disk Partition Map.....	32
Developer and Recovery mode.....	33
Coreboot and U-boot Custom Firmware.....	33
Chrome vs Chromium OS.....	34
View system information.....	34
Dell activity light.....	37
<b>4 Diagnostic and troubleshooting.....</b>	<b>40</b>
Dell activity light.....	40
Basic troubleshooting.....	40
Power issues.....	41
CROSH.....	45
CROSH commands.....	45
Chrome commands.....	47
Commonly used CROSH command.....	53
Check battery charging status.....	53
Resetting Inspiron Chromebook.....	60
Recovering the Inspiron Chromebook.....	65
Recovering the Inspiron Chromebook.....	65
<b>5 Contacting Dell.....</b>	<b>69</b>



# Working on your computer

## Safety instructions

Use the following safety guidelines to protect your computer from potential damage and to ensure your personal safety. Unless otherwise noted, each procedure included in this document assumes that the following conditions exist:

- You have read the safety information that shipped with your computer.
- A component can be replaced or, if purchased separately, installed by performing the removal procedure in the reverse order.

**⚠ WARNING:** Disconnect all power sources before opening the computer cover or panels. After you finish working inside the computer, replace all covers, panels, and screws before connecting to the power source.

**⚠ WARNING:** Before working inside your computer, read the safety information that shipped with your computer. For additional safety best practices information, see the Regulatory Compliance Homepage at [www.dell.com/regulatory\\_compliance](http://www.dell.com/regulatory_compliance)

**⚠ CAUTION:** Many repairs may only be done by a certified service technician. You should only perform troubleshooting and simple repairs as authorized in your product documentation, or as directed by the online or telephone service and support team. Damage due to servicing that is not authorized by Dell is not covered by your warranty. Read and follow the safety instructions that came with the product.

**⚠ CAUTION:** To avoid electrostatic discharge, ground yourself by using a wrist grounding strap or by periodically touching an unpainted metal surface that is grounded to ground yourself before you touch the computer to perform any disassembly tasks.

**⚠ CAUTION:** Handle components and cards with care. Do not touch the components or contacts on a card. Hold a card by its edges or by its metal mounting bracket. Hold a component such as a processor by its edges, not by its pins.

**⚠ CAUTION:** When you disconnect a cable, pull on its connector or on its pull-tab, not on the cable itself. Some cables have connectors with locking tabs; if you are disconnecting this type of cable, press in on the locking tabs before you disconnect the cable. As you pull connectors apart, keep them evenly aligned to avoid bending any connector pins. Also, before you connect a cable, ensure that both connectors are correctly oriented and aligned.

**ⓘ NOTE:** The color of your computer and certain components may appear differently than shown in this document.

## Before working inside your computer

- 1 Ensure that your work surface is flat and clean to prevent the computer cover from being scratched.
- 2 Turn off your computer.
- 3 Disconnect all network cables from the computer (if available).

**⚠ CAUTION:** If your computer has an RJ45 port, disconnect the network cable by first unplugging the cable from your computer.

- 4 Disconnect your computer and all attached devices from their electrical outlets.
- 5 Open the display.
- 6 Press and hold the power button for few seconds, to ground the system board.

**⚠ CAUTION:** To guard against electrical shock unplug your computer from the electrical outlet before performing Step # 8.

**⚠ CAUTION:** To avoid electrostatic discharge, ground yourself by using a wrist grounding strap or by periodically touching an unpainted metal surface at the same time as touching a connector on the back of the computer.

- 7 Remove any installed ExpressCards or Smart Cards from the appropriate slots.

# After working inside your computer

After you complete any replacement procedure, ensure that you connect any external devices, cards, and cables before turning on your computer.

 **CAUTION:** To avoid damage to the computer, use only the battery designed for this particular Dell computer. Do not use batteries designed for other Dell computers.

- 1 Connect any external devices, such as a port replicator or media base, and replace any cards, such as an ExpressCard.
- 2 Connect any telephone or network cables to your computer.

 **CAUTION:** To connect a network cable, first plug the cable into the network device and then plug it into the computer.

- 3 Connect your computer and all attached devices to their electrical outlets.
- 4 Turn on your computer.

# Disassembly and reassembly

## Recommended tools

The procedures in this document require the following tools:

- Phillips #0 screwdriver
- Phillips #1 screwdriver
- Plastic scribe

**NOTE:** The #0 screw driver is for screws 0-1 and the #1 screw driver is for screws 2-4

## Screw size list

Table 1. Screw list

Component	M2.0x3.0	M2.5x7	M2.5x5.0	M2.0x2.0 Big Head
Base cover		7		
Battery	3			
Heat sink	6			
Solid State Drive	1			
Power button card	1			
Audio card	1			
DC in port	2			
Display hinges (On MB)			6	
Touchpad bracket	1			6
Motherboard	3			
Display bracket	2			
Motherboard bracket	2			
WiFi bracket	1			

## microSD card

### Removing microSD card

- 1 Follow the procedure in [Before working inside your computer.](#)
- 2 Press in on the microSD card to release it from the computer.



- 3 Remove the microSD card from the computer.

## Installing microSD card

- 1 Slide the SD card into its slot until it clicks into place.
- 2 Install the [microSD card](#).
- 3 Follow the procedure in [After working inside your computer](#).

## Base cover

### Removing base cover

- 1 Follow the procedure in [Before working inside your computer](#).
- 2 Remove the [microSD card](#).
- 3 To remove the base cover:
  - a Remove the mylar cap [1].

**NOTE:** The screw cover on the base cover is made up of a mylar sticker. To remove this screw, use a regular philips driver and puncture the mylar cover. Once the mylar caps are removed it cannot be replaced, and the screws will be exposed from that point forward.

- b Loosen the M2.5x7 captive screws that secure the base cover to the computer [2].



- c Pry the base cover from the edge.
- NOTE:** You may need a 3c plastic scribe to pry the base cover from the edge.
- 4 Lift the base cover away from the computer.



## Installing base cover

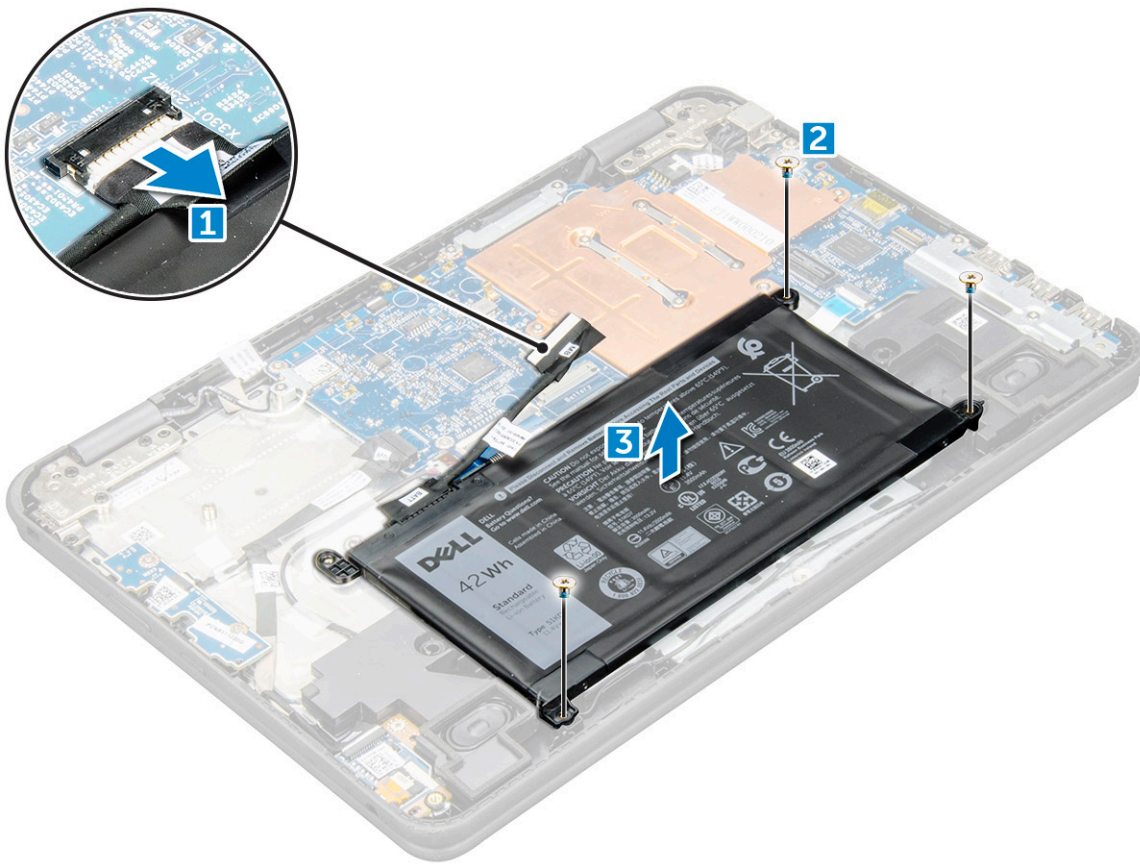
If the system is shipped with M.2 SSD perform the following steps.

- 1 Toe in the base cover front edge into the system.
- 2 Press the edges of the cover until it clicks into place.
- 3 Replace the M2.5x7 screws to secure the base cover to the computer.
- 4 Install the [microSD card](#)
- 5 Follow the procedure in [After working inside your computer](#).

## Battery

### Removing battery - optional

- 1 Follow the procedure in [Before working inside your computer](#).
- 2 Remove the:
  - a [microSD card](#)
  - b [base cover](#)
- 3 To remove the battery:
  - a Disconnect the battery cable from the connector on the system board [1,2].
  - b Remove the M2.0x3.0 screws that secure the battery to the computer [3].
  - c Lift the battery away from the computer [4].



## Installing battery

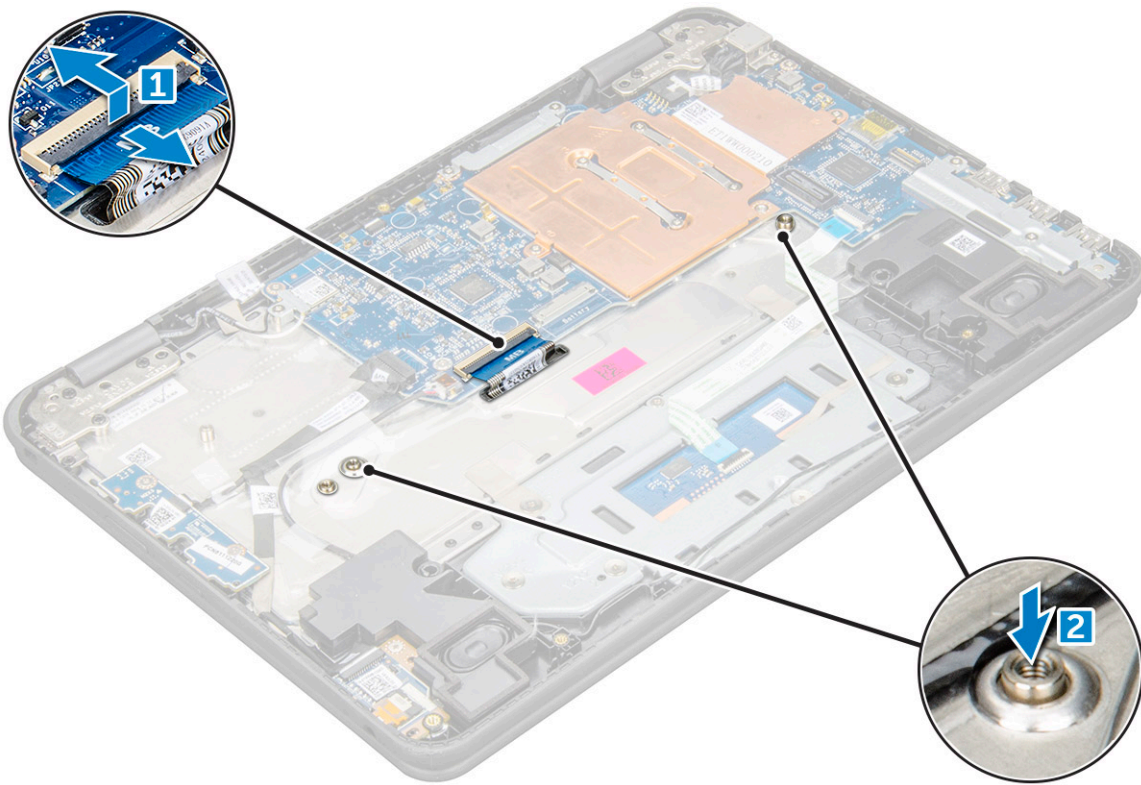
- 1 Insert the battery into the slot on the computer.
- 2 Connect the battery cable to the connector on the battery.
- 3 Replace the M2x3 screws to secure the battery to the computer.
- 4 Install the:
  - a [base cover](#)
  - b [microSD card](#)
- 5 Follow the procedure in [After working inside your computer](#).

## Keyboard lattice and Keyboard

### Removing keyboard

- 1 Follow the procedure in [Before working inside your computer](#).
- 2 Remove the:
  - a [microSD card](#)
  - b [base cover](#)
  - c [battery](#)
- 3 To remove keyboard:
  - a Disconnect the keyboard cable from the system board [1].
  - b Use the plastic scribe to the release the keyboard [2].





① **NOTE:** The two release holes for the keyboard are indicated by the "KB" labeling.

- 4 Slide the keyboard outwards, away from the computer.



 **NOTE:** Carefully pull the keyboard connector through the gap in the palm rest.

- 5 Lift the keyboard away from the computer.





## Installing keyboard

- 1 Align the keyboard trim with the tabs on the computer, and press it until it clicks into place.



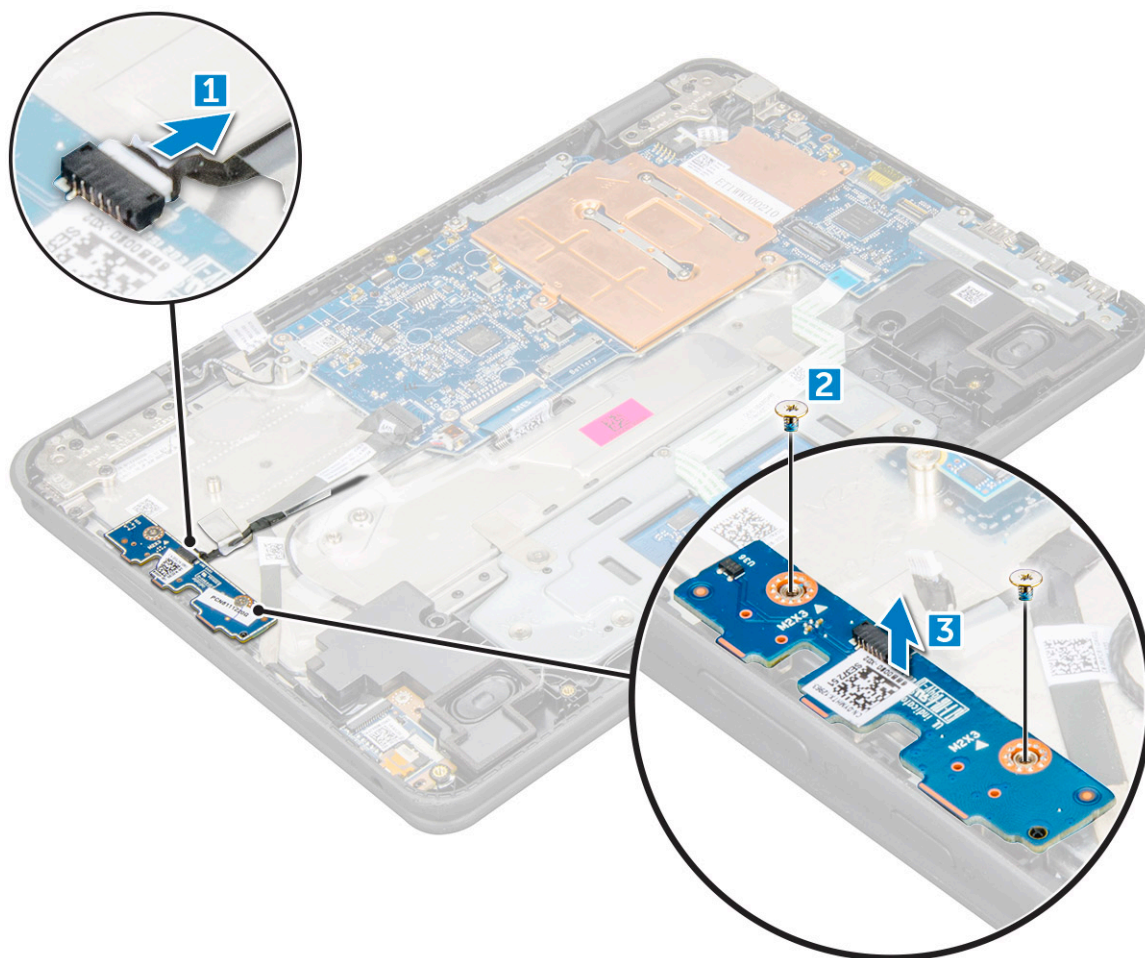
- 2 Connect the keyboard cable on the system board.

- 3 Install the:
  - a [battery](#)
  - b [base cover](#)
  - c [microSD card](#)
- 4 Follow the procedure in [After working inside your computer](#).

## Power switch board

### Removing power switch board

- 1 Follow the procedure in [Before working inside your computer](#).
- 2 Remove the:
  - a [microSD card](#)
  - b [base cover](#)
  - c [battery](#)
- 3 To remove the power switch:
  - a Disconnect the power switch cable from the power switch board [1].
  - b Remove the M.2.0x3.0 screws that secure the power switch board on the computer [2].
  - c Lift the power switch board away from the computer [3].



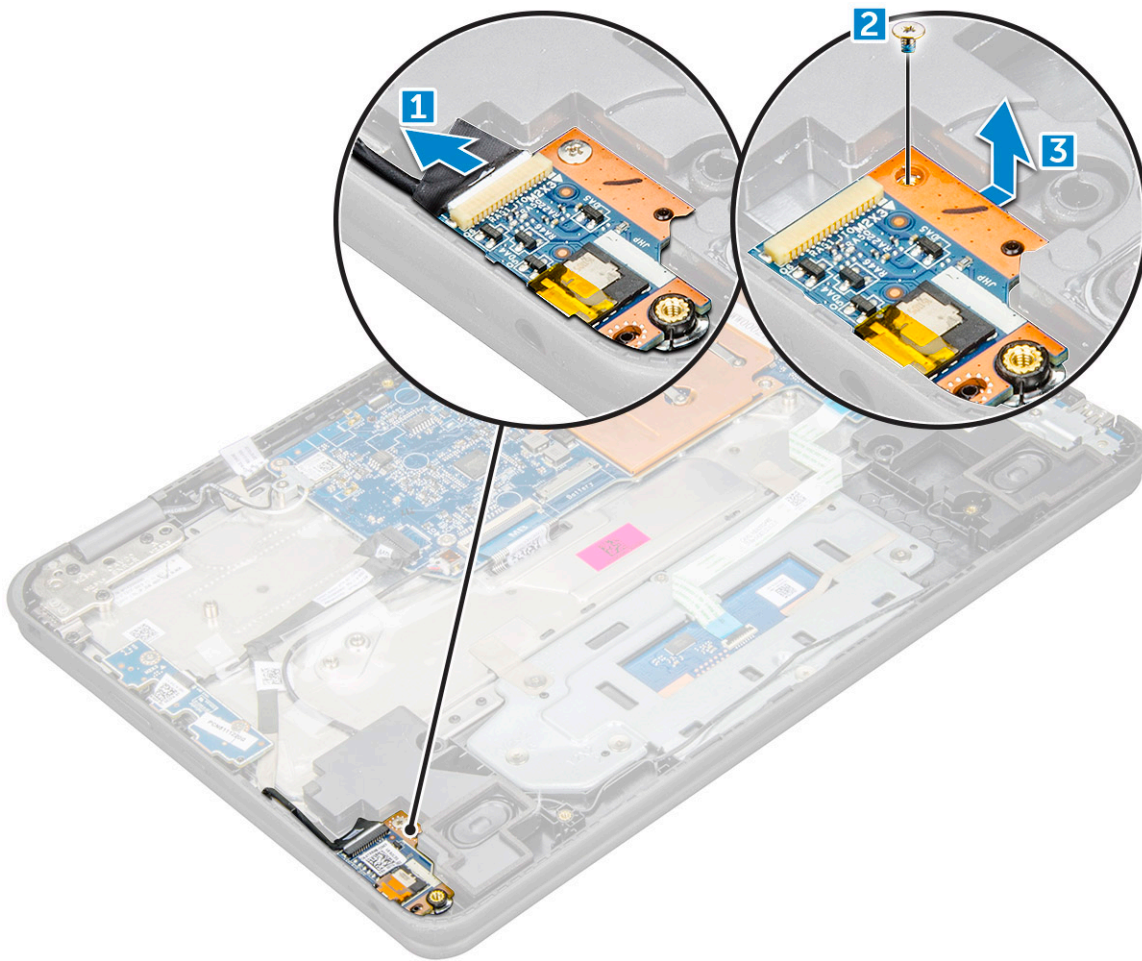
## Installing power switch board

- 1 Align the screw hole on the power switch board with the screw holders on the slot of the computer.
- 2 Replace the two M2x3 screws that secure the power switch board to the computer.
- 3 Connect the power switch cable to the connector on the power switch board.
- 4 Install the:
  - a [battery](#)
  - b [base cover](#)
  - c [microSD card](#)
- 5 Follow the procedure in [After working inside your computer](#).

## Audio board

### Removing audio board

- 1 Follow the procedure in [Before working inside your computer](#).
- 2 Remove the:
  - a [microSD card](#)
  - b [base cover](#)
  - c [battery](#)
- 3 To remove the audio board:
  - a Disconnect the audio cable from the connector on the audio board [1].
  - b Remove the M.2.0x3.0 screw that secures the audio board on the computer [2].
  - c Lift the audio board away from the computer [3].



## Installing audio board

- 1 Insert the audio board into the slot on the computer.
- 2 Replace the M2x3 screw that secure the audio board to the computer.
- 3 Connect the audio cable to the connector on the audio board.
- 4 Install the:
  - a [battery](#)
  - b [base cover](#)
  - c [microSD card](#)
- 5 Follow the procedure in [After working inside your computer](#).

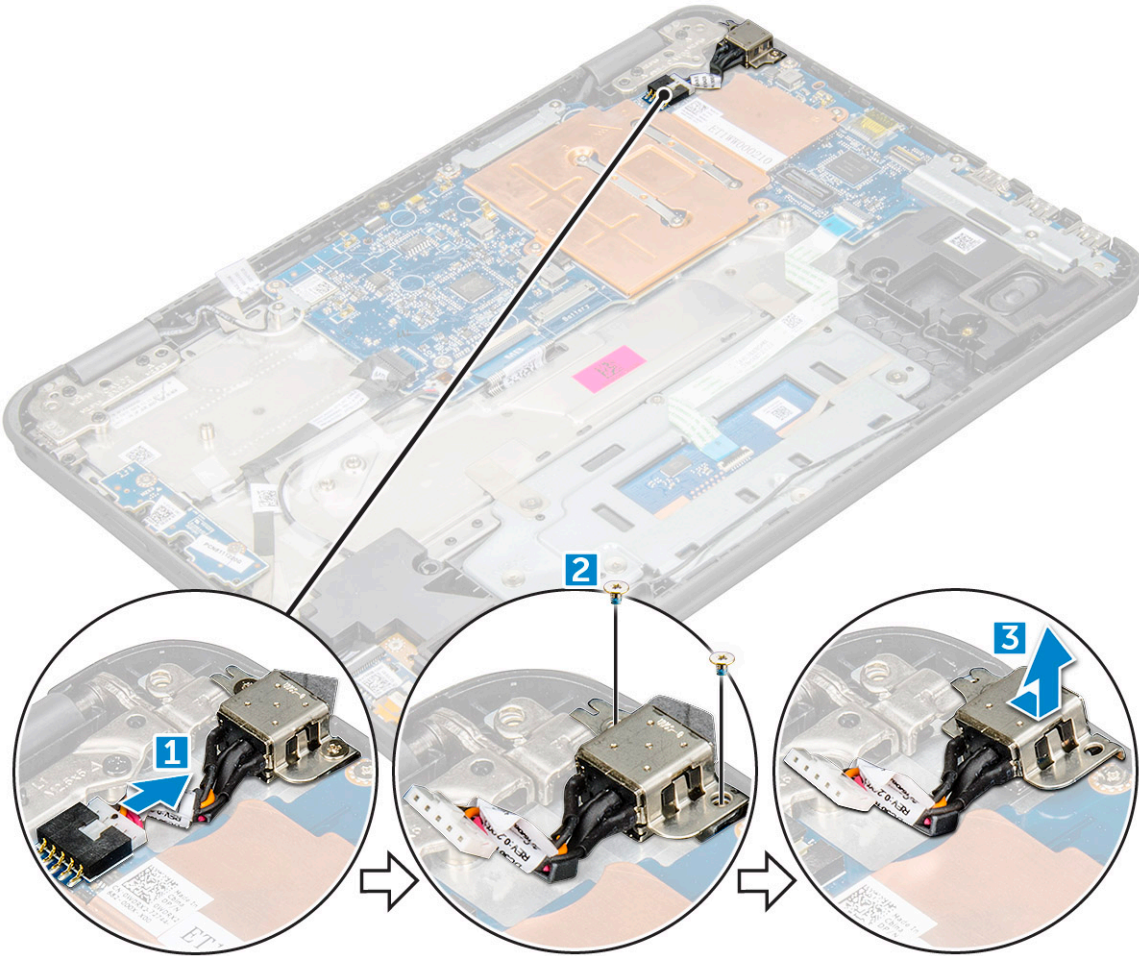
## Power connector port

## Removing power connector port

- 1 Follow the procedure in [Before working inside your computer](#).
- 2 Remove the:
  - a [microSD card](#)
  - b [base cover](#)
  - c [battery](#)



- 3 To remove the power connector port:
  - a Disconnect the power connector cable from the connector on the system board [1].
  - b Remove the M.2.0x3.0 screws that secure the power connector port on the computer [2].
  - c Slide and lift the power connector port away from the computer [3].



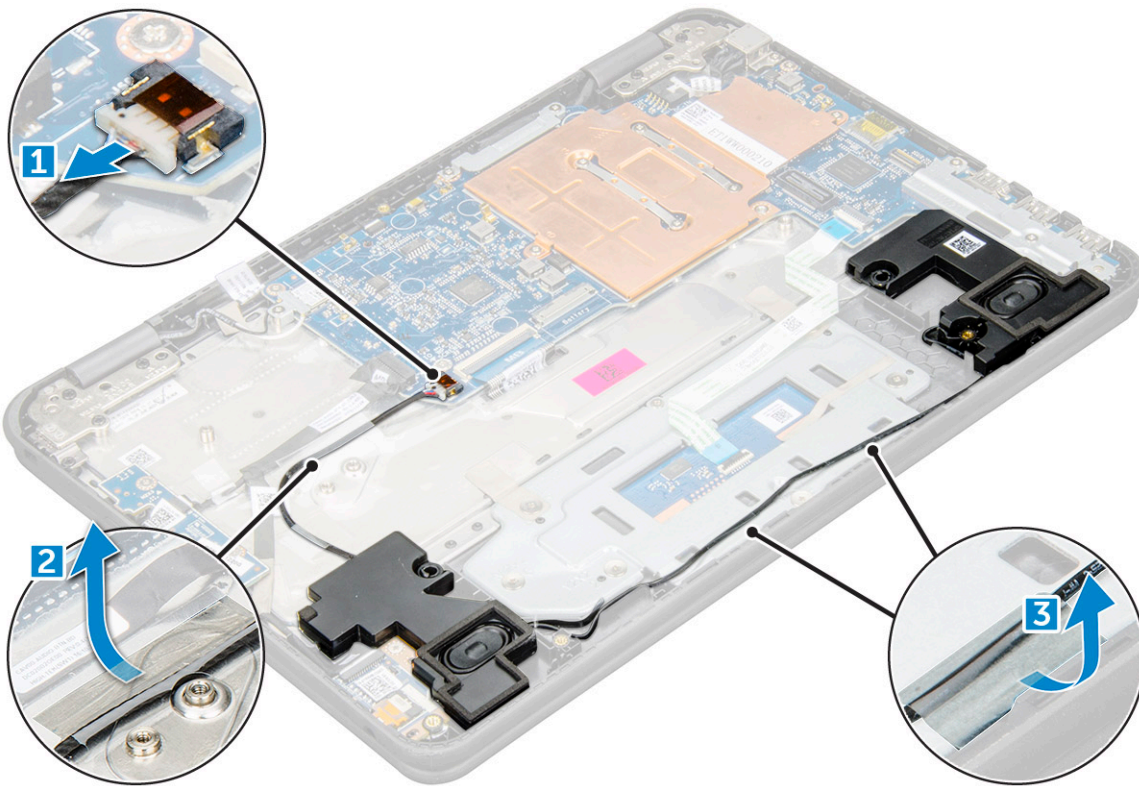
## Installing power connector port

- 1 Insert the power connector port into the slot on the computer.
- 2 Replace the two M2x3 screws that secure the power connector port to the computer.
- 3 Connect the power connector cable to the connector on the system board.
- 4 Install the:
  - a [battery](#)
  - b [base cover](#)
  - c [microSD card](#)
- 5 Follow the procedure in [After working inside your computer](#).

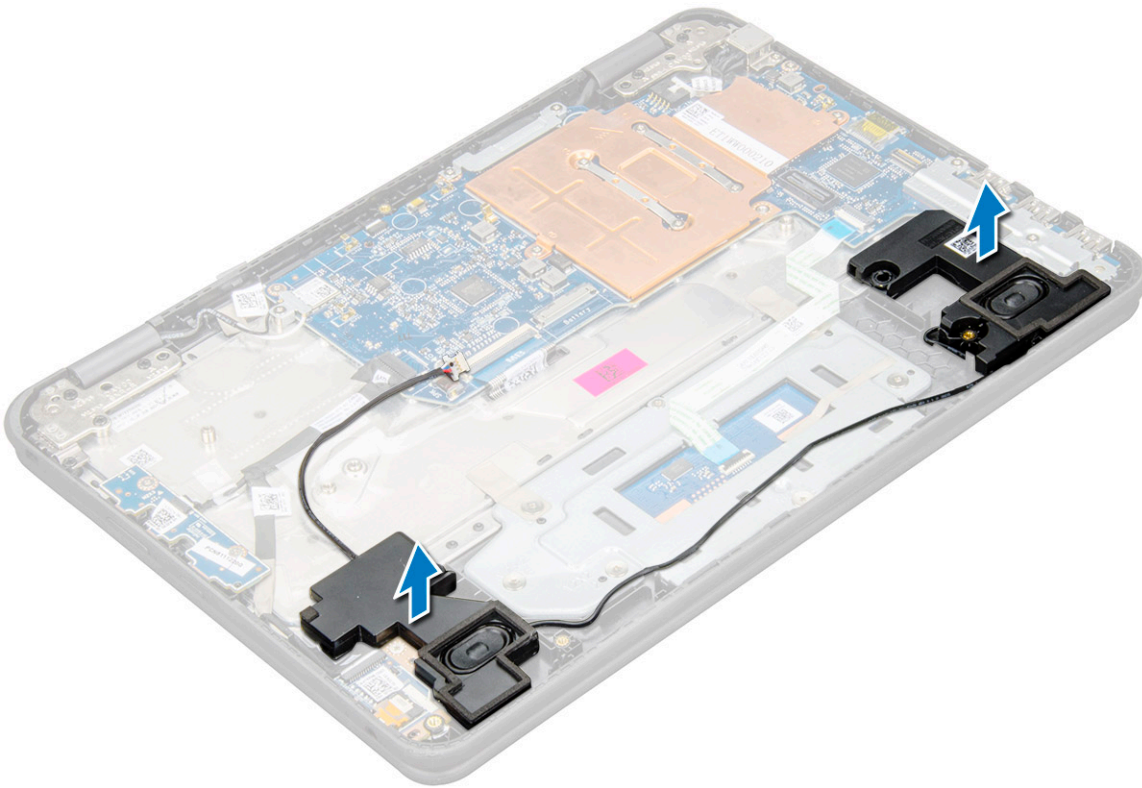
# Speaker

## Removing speaker

- 1 Follow the procedure in [Before working inside your computer](#).
- 2 Remove the:
  - a [microSD card](#)
  - b [base cover](#)
  - c [battery](#)
- 3 To remove the speaker:
  - a Disconnect the speaker cable from the connector on the system board [1].
  - b Remove the adhesive tape that secures the speaker cable on the computer .
  - c Unroute the speaker cable from the routing channel [3].



- 4 Remove the speaker from the computer.



## Installing speakers

- 1 Place the speakers into the slots on the computer.
- 2 Route the speaker cable through the retention clips through routing channel.
- 3 Affix the adhesive tape to secure the speaker cable on the computer.
- 4 Connect the speaker cable to the connector on the system board.
- 5 Install the:
  - a [battery](#)
  - b [base cover](#)
  - c [microSD card](#)
- 6 Follow the procedure in [After working inside your computer](#).

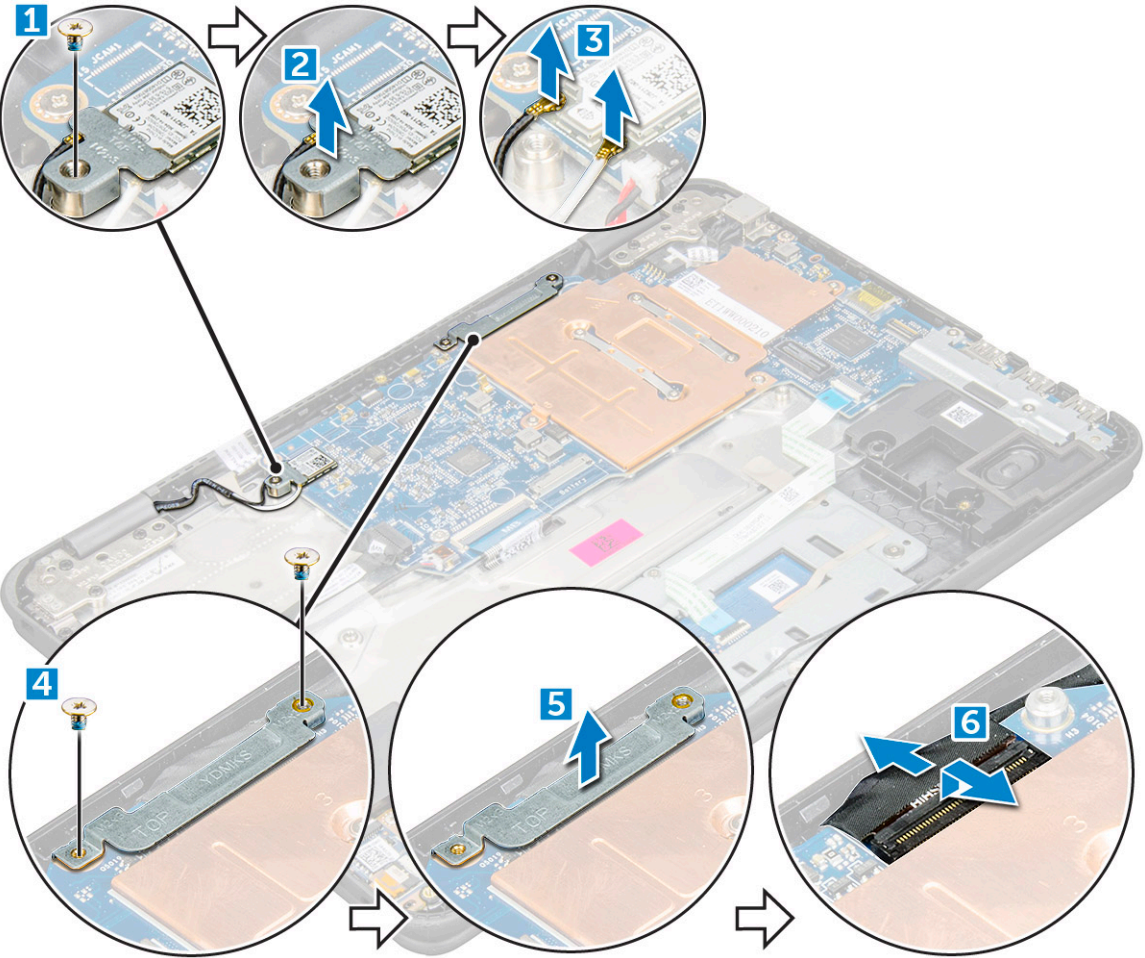
## Display assembly

### Removing display assembly

- 1 Follow the procedure in [Before working inside your computer](#).
- 2 Remove the:
  - a [microSD card](#)
  - b [base cover](#)
  - c [battery](#)
- 3 To remove cables:
  - a Remove the screw M2.0xM3.0 and lift the metal bracket that secures the WLAN card on the system board [1, 2]
  - b Disconnect the WLAN cables [3].
  - c Remove the screws M2.0xM3.0 and lift the metal bracket that secures the display cable on the computer [4, 5]

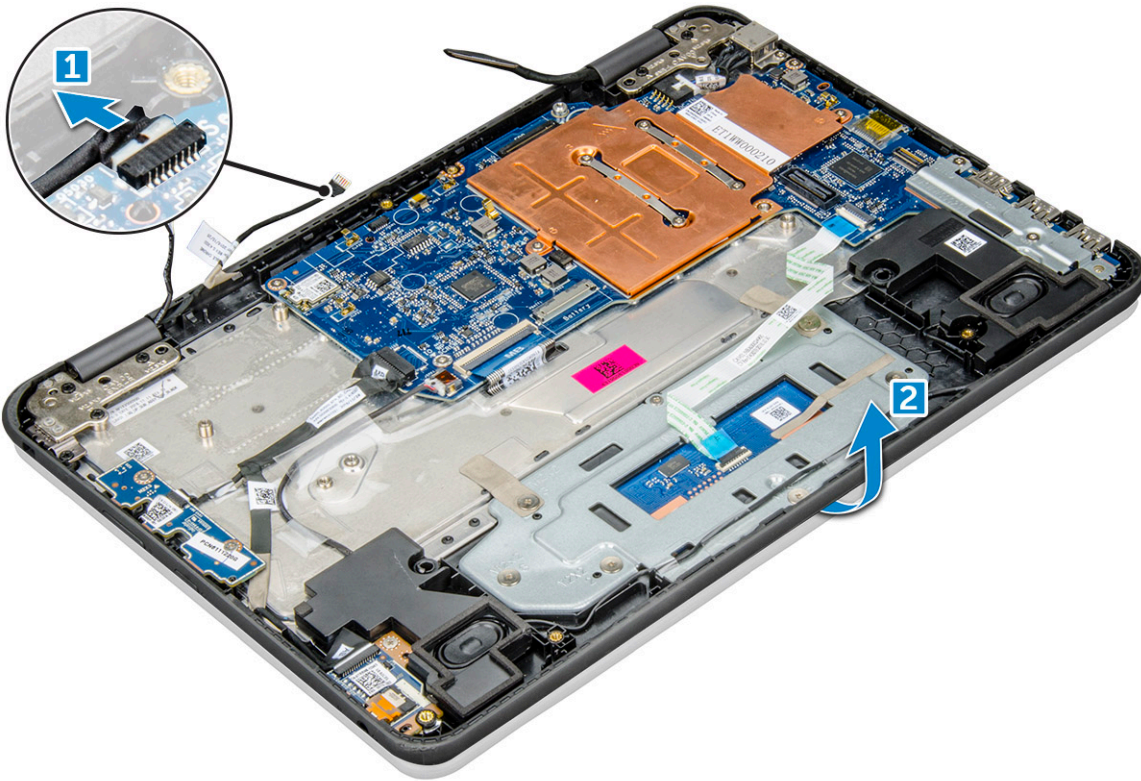


d Lift the latch, and disconnect the cable [6]



4 Disconnect the sensor cable, and turn over the computer [1, 2]





- 5 To remove display assembly:
- a Remove the display hinge screws M2.5xM5.0 that secure the display assembly to the computer [1].
  - b Lift the display assembly away from the computer [2].



## Installing display assembly

- 1 Place the display assembly to align with the screw holders on the computer.
- 2 Replace the screws that secure the display hinges to the palm-rest assembly.
- 3 Flip over the computer and connect the sensor cable on the system board.
- 4 Connect the display cable to the connector on the system board.
- 5 Place the metal bracket over the (display cable) connector, and tighten the M2.0x3.0 screws to secure the display cable to the computer.
- 6 Connect the WLAN cables.
- 7 Place the metal bracket, and tighten the M2.0x3.0 screw to the WLAN cable on the system board.
- 8 Install the:
  - a [battery](#)
  - b [base cover](#)
  - c [microSD card](#)
- 9 Follow the procedure in [After working inside your computer](#).

## Display back cover

## Removing display back cover

- 1 Follow the procedure in [Before working inside your computer](#).
- 2 Using the plastic scribe pry the edges of the display back cover.



- 3 Remove the display back cover away from the computer.





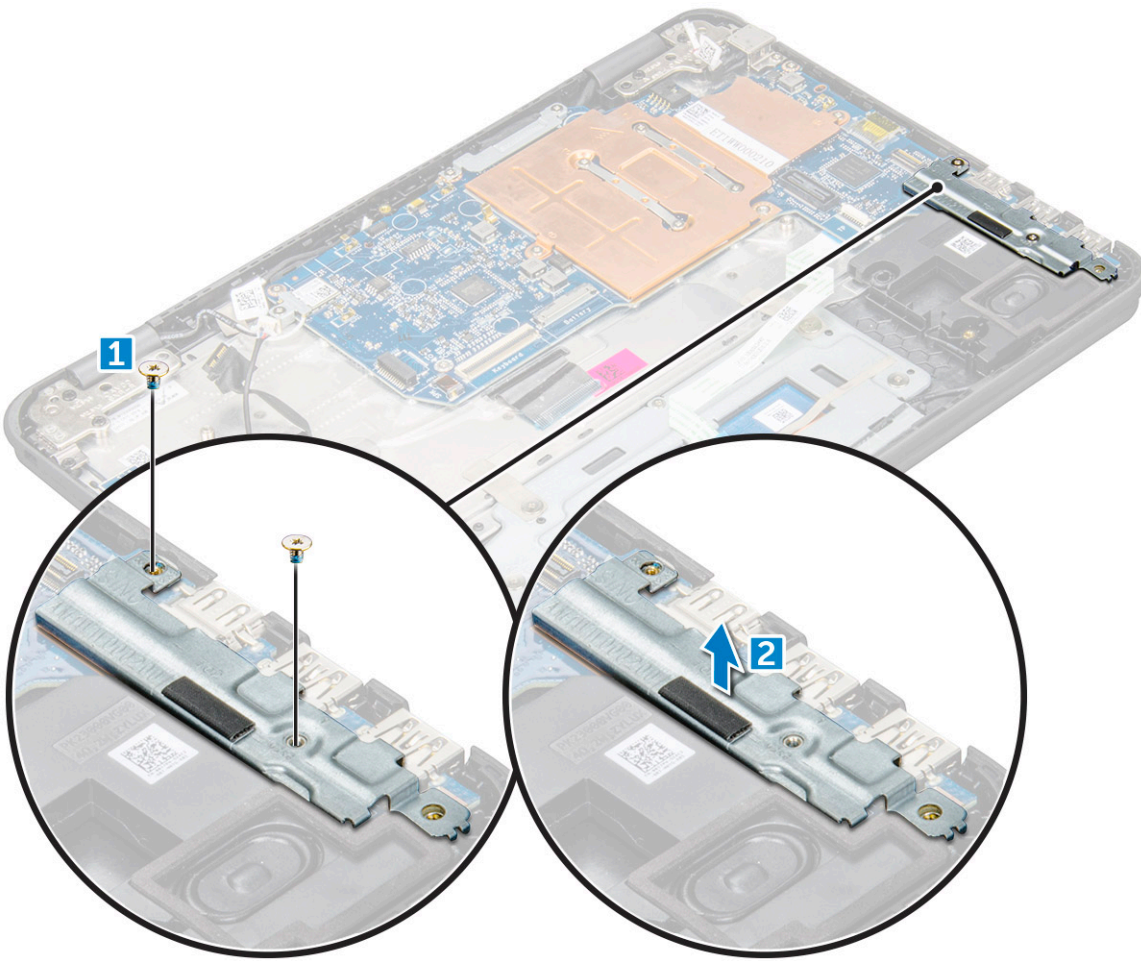
## Installing display back cover

- 1 Align the display back cover with the tabs on the computer, and press it until it clicks into place.
- 2 Follow the procedure in [After working inside your computer](#).

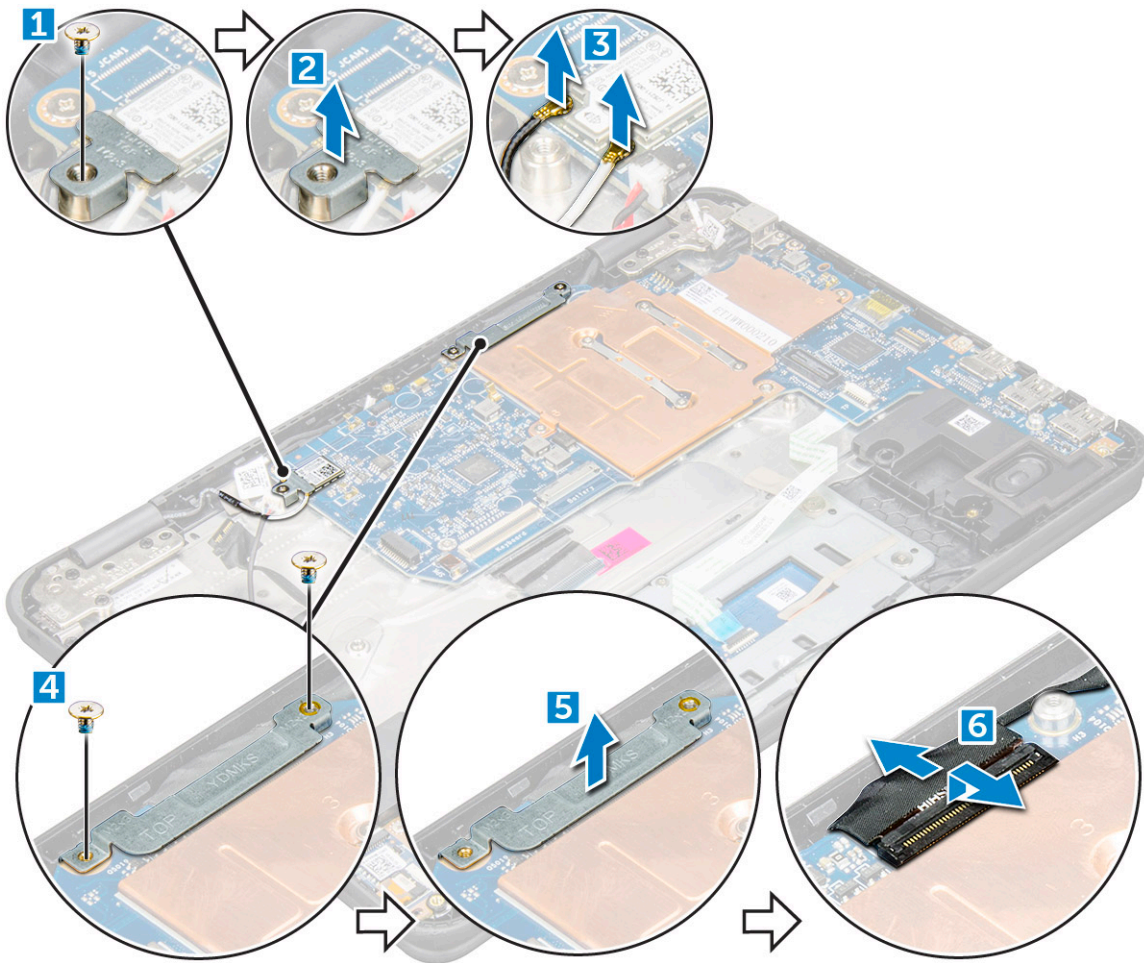
## System board

### Removing system board

- 1 Follow the procedure in [Before working inside your computer](#).
- 2 Remove the:
  - a [microSD card](#)
  - b [base cover](#)
  - c [battery](#)
- 3 Disconnect the following cables:
  - a sensor cable [1]
  - b power board and audio cable [2]
  - c speaker cable [3]
  - d keyboard cable [4]
  - e touch pad cable [5]
  - f power connector cable [6]
- 4 To remove metal bracket on the system board:
  - a Remove the screws on the metal bracket that secures the system board [1].
  - b Lift the metal bracket off the system board [2].

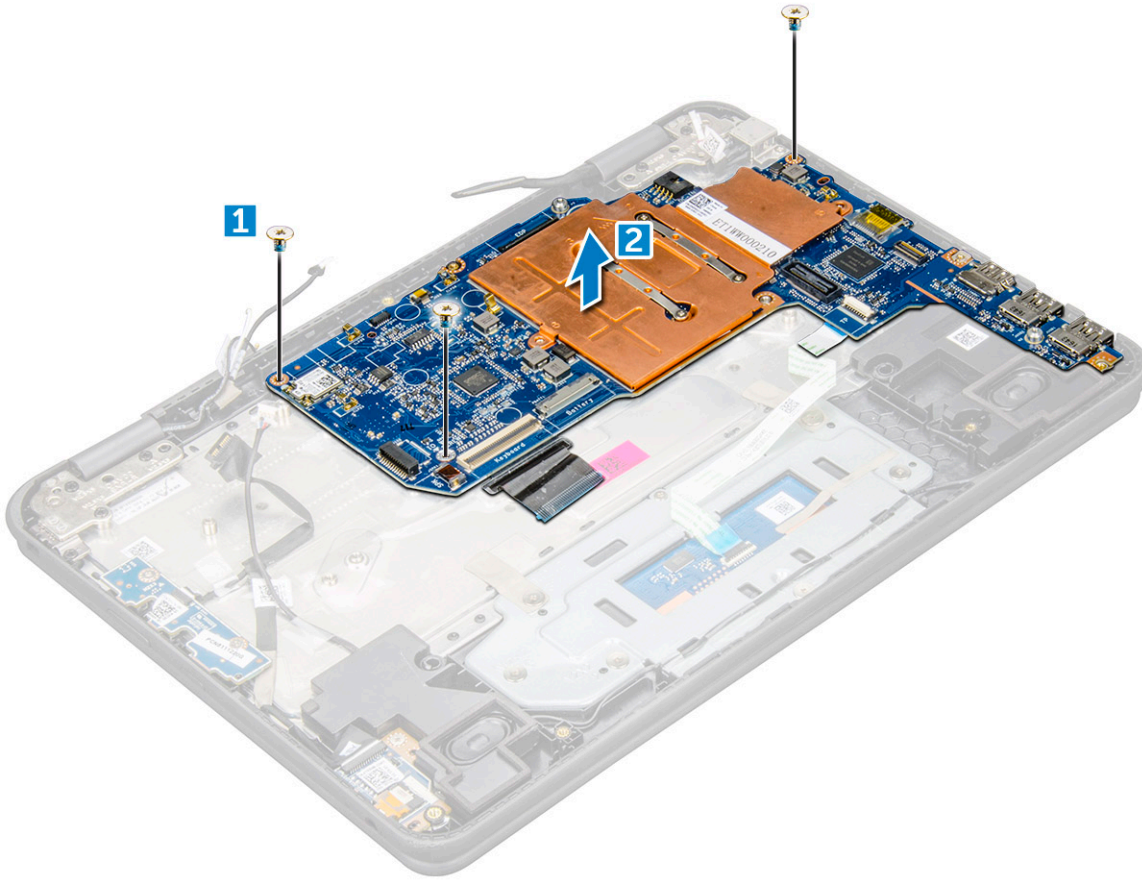


- 5 To remove the metal bracket (WLAN and display cable):
- a Remove the M2.0x3.0 screw and lift the metal bracket that secures the WLAN card on the system board [1, 2]
  - b Disconnect the WLAN cables [3].
  - c Remove the screws M2.0x3.0 and lift the metal bracket that secures the display cable on the computer [4, 5]
  - d Lift the latch, and disconnect the cable [6]



- 6 To remove the system board:
- a Remove the screws that secure the system board on the palm rest assembly [1].
  - b Lift the system board off the palm- rest assembly [2].





## Installing system board

- 1 Align the system board with the screw holders on the computer.
- 2 Tighten the M2.0x3.0 screws to secure the system board to the computer.
- 3 Connect the display cable to the connector.
- 4 Place the metal bracket over the connector and tighten the M2.0x3.0 screws to secure the display cable to the computer.
- 5 Connect the WLAN cables.
- 6 Place the metal bracket, and tighten the M2.0x3.0 screw to the WLAN cable on the system board.
- 7 Place the metal and tighten M2.0x3.0 screws to secure on the system board.
- 8 Connect the following cables:
  - a power connector cable
  - b touchpad cable
  - c keyboard cable
  - d speaker cable
  - e power board and audio cable
  - f sensor cable
- 9 Install the:
  - a [battery](#)
  - b [base cover](#)
  - c [microSD card](#)
- 10 Follow the procedure in [After working inside your computer](#).

# Palm rest

## Replacing palm rest

1 Follow the procedure in [Before working inside your computer](#).

2 Remove the:

- a [microSD card](#)
- b [base cover](#)
- c [battery](#)
- d [keyboard](#)
- e [power switch board](#)
- f [audio](#)
- g [power connector](#)
- h [speaker](#)
- i [display assembly](#)
- j [system board](#)

**NOTE:** Touchpad is not a standalone component and is assembled along with the palm rest.

**NOTE:** The component you are left with is the palm rest.



3 Install the following components on the new palm rest:

- a [system board](#)
- b [display assembly](#)
- c [speaker](#)
- d [power connector](#)
- e [audio](#)
- f [power switch board](#)
- g [keyboard](#)



- h [battery](#)
  - i [base cover](#)
  - j [microSD card](#)
- 4 Follow the procedure in [After working inside your computer](#).

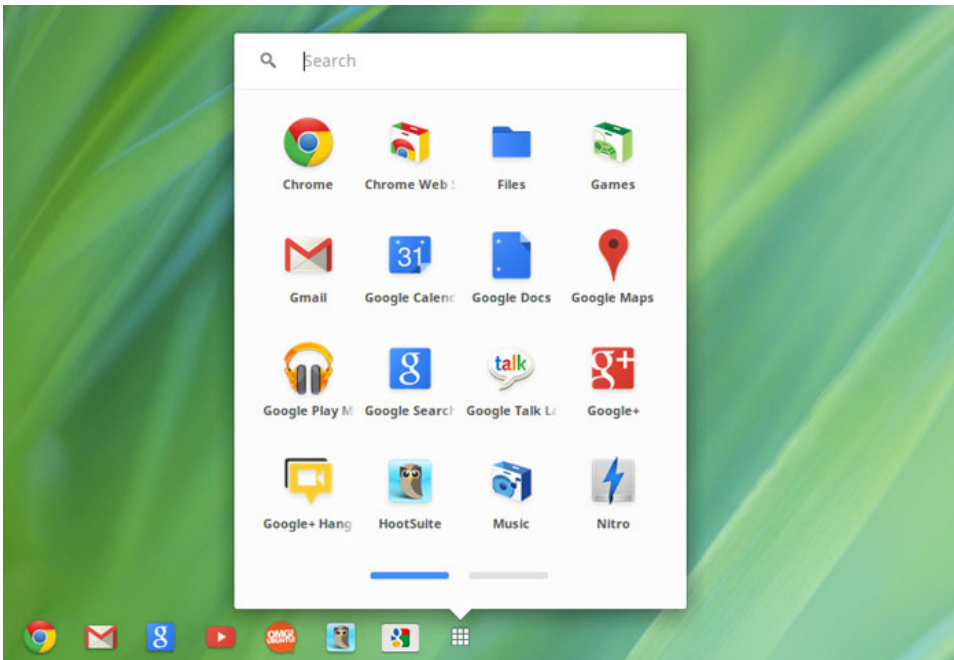
## Software

This section provides information about the operating system, commands, and bundled software for Dell Inspiron Chromebook.

### Operating system

This page contains information about the operating system used by the Dell Chromebook.

### Chrome OS



Chromebooks are powered by the Google Chrome operating system, based on Google's popular Chrome browser. It has been developed to provide a fast, simple, and more secure computing experience for users who spend most of their time online.

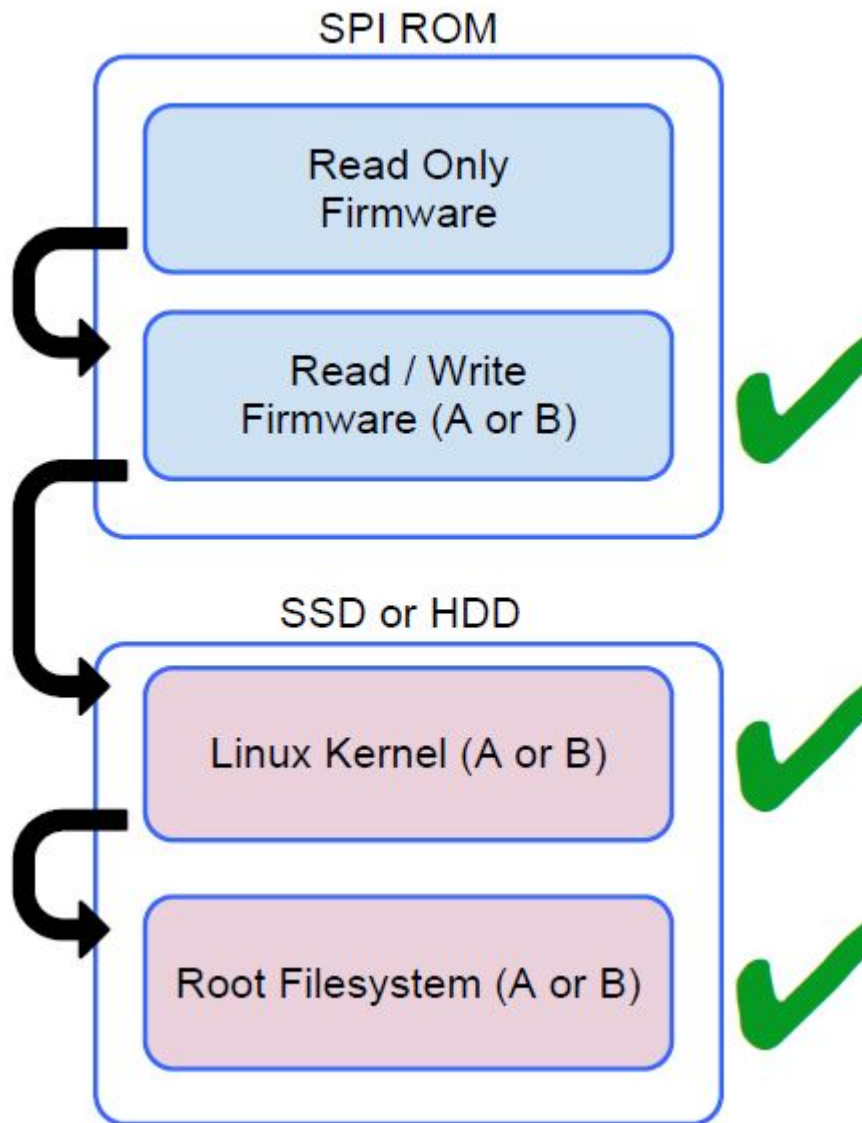
#### Key Benefits

- Speed
- Simplicity
- Security
- Updatability
- Synchronisability
- High power at low cost
- Easy to learn and use
- Documents, calendar, e-mail, contacts, and tasks available online and offline, and all securely backed-up and synchronised in the cloud.
- Access to the Chrome web app store

- Killer web apps
- The latest Intel Core processors
- Fun games
- Built-in support for popular file types and external devices

For more information about the Chrome OS, please visit the [Chrome OS training page](#).

## Verified Boot

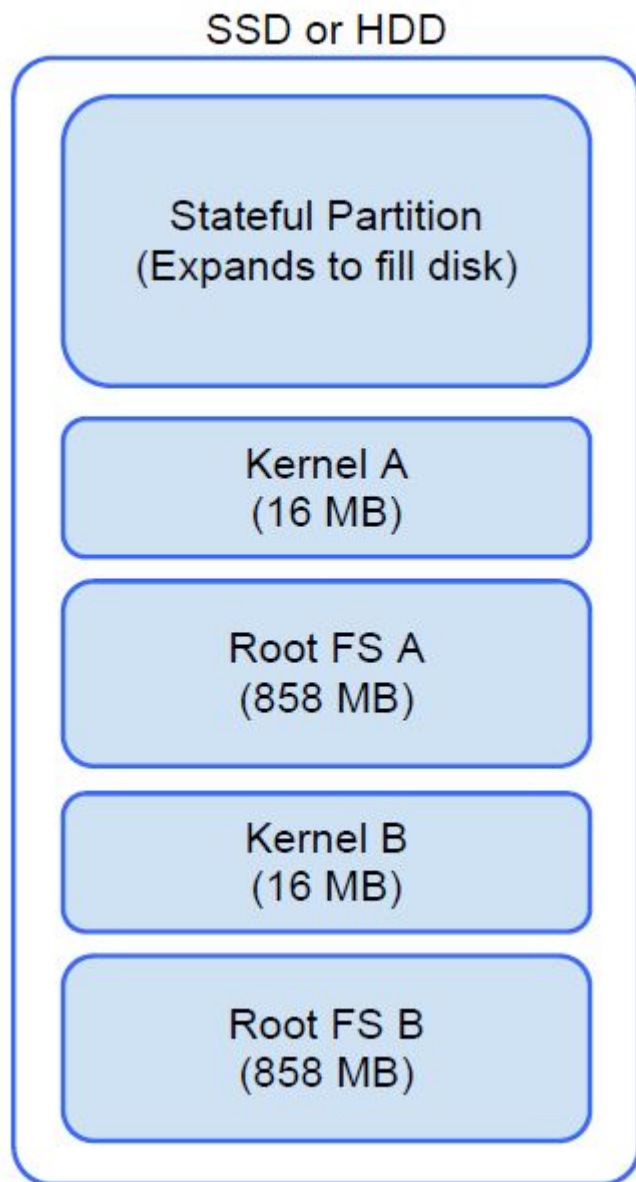


Read Only firmware verifies the integrity of Read/Write (R/W) firmware. R/W firmware verifies the active Linux kernel. During run time, the kernel verifies each block read from disk.

If a verification step fails and there is no backup option, the machine enters recovery mode.

The Developer Mode switch turns off verified boot (at the Kernel stage) to enable users to run Chromium OS (or other OS). The BIOS is always verified.



## Disk Partition Map



There are two copies of Chrome OS on disk: an active copy and a backup copy. Each copy consists of a kernel partition and a root file system. The backup copy is updated automatically in the background. Users only need to reboot. The partition contains encrypted user data and is also used in the factory for storing test software.

# Developer and Recovery mode

Table 2. Developer and Recovery mode

Developer Mode	Recovery Mode
<div><h3>Developer Mode BIOS screen</h3></div> <ul style="list-style-type: none"><li>• Used to boot without verification.</li><li>• Can be turned on via key combination during boot.</li><li>• Stateful partition is wiped during transitions.</li><li>• Used in the factory to boot test image.</li></ul>	<div><h3>Recovery Mode BIOS screen</h3></div> <ul style="list-style-type: none"><li>• Allows a user to reinstall the Chrome OS from a USB key or SD card.</li><li>• Recovery mode is entered if verified boot fails.</li><li>• A user can force recovery mode via a key combination during boot.</li></ul>

## Coreboot and U-boot Custom Firmware

### Coreboot (x86 only)

- Memory and chipset initialization
- Open-source, except for MRC binary from Intel.

### U-Boot

- Performs verified boot
- Handles recovery and Developer Mode
- Open source code

Normal boot is very fast, as it takes less than 1 second to start loading kernel. Chromebook does not boot other operating systems such as Windows or OS X.

# Chrome vs Chromium OS

**Table 3. Difference between Chromium and Chrome OS**

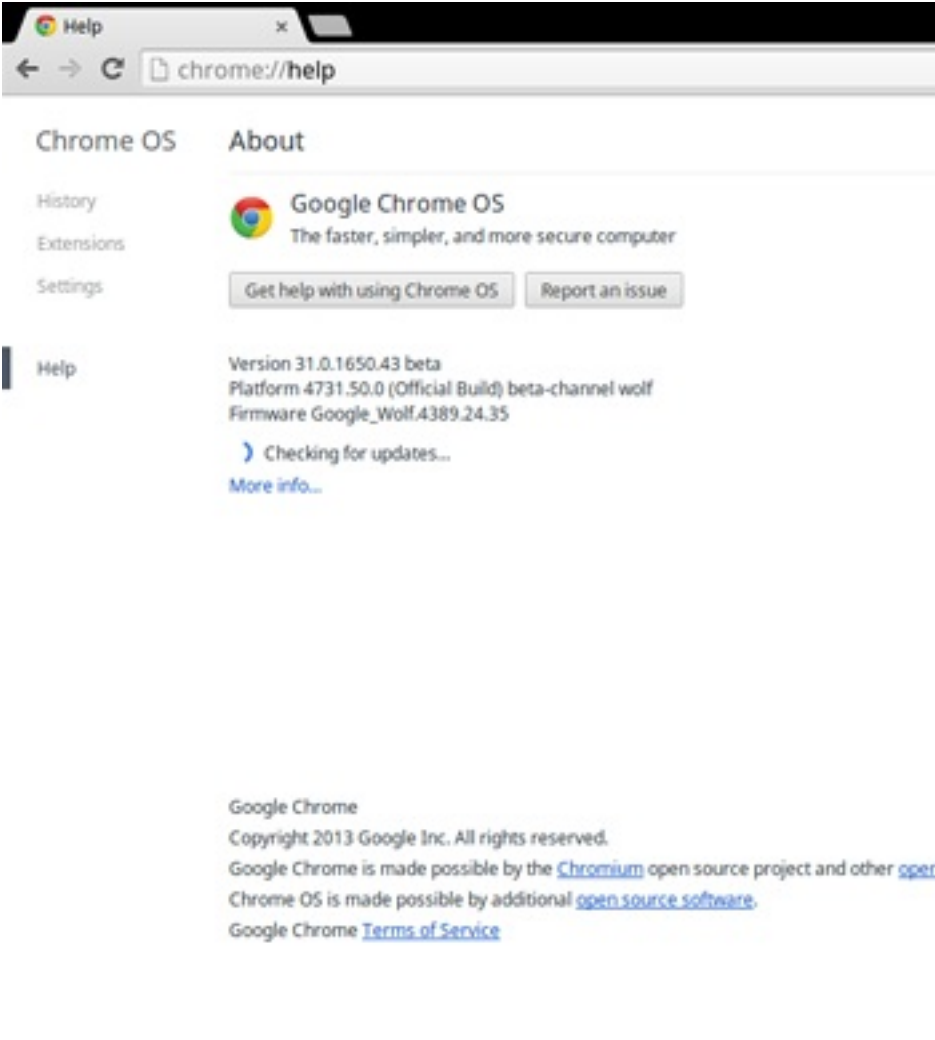
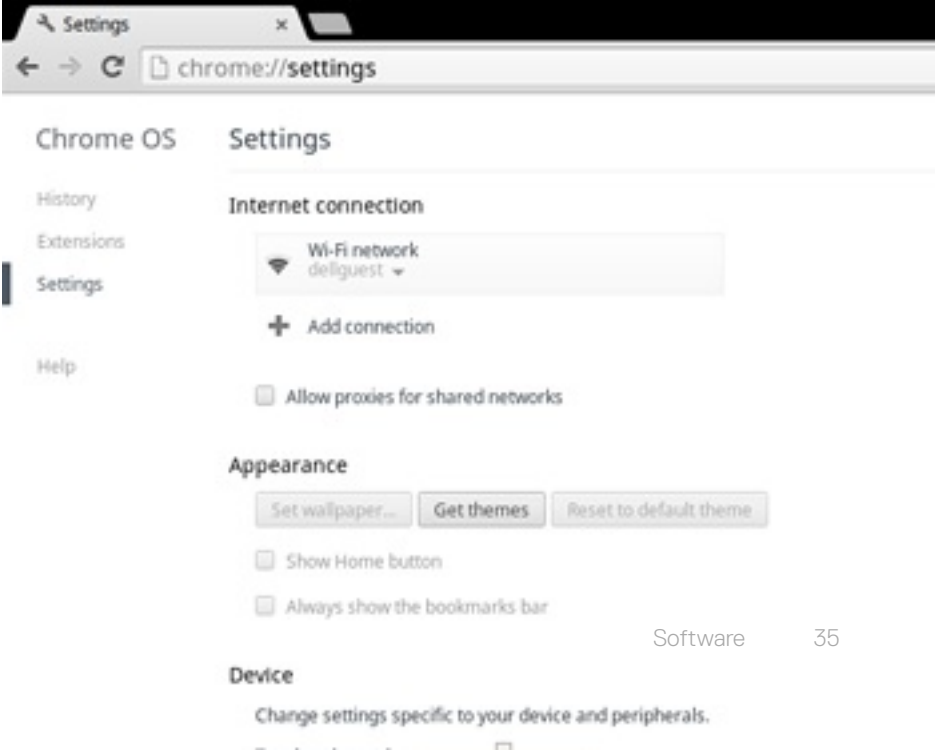
Difference between Chromium and Chrome OS	
Chromium OS	Chrome OS
<ul style="list-style-type: none"><li>• Is an open source project: <a href="http://www.chromium.org/chromium-os">http://www.chromium.org/chromium-os</a></li><li>• Runs on regular PCs and Chrome devices</li></ul>	<ul style="list-style-type: none"><li>• Is based on Chromium OS</li><li>• Only runs on the Chrome devices with required hardware features (TPM, RO firmware, recovery button, developer switch).</li><li>• Includes additional licensed features such as the Netflix plugin, video codecs, and fonts</li></ul>

## View system information

This page contains all the information about viewing system information for the Dell Chromebook.

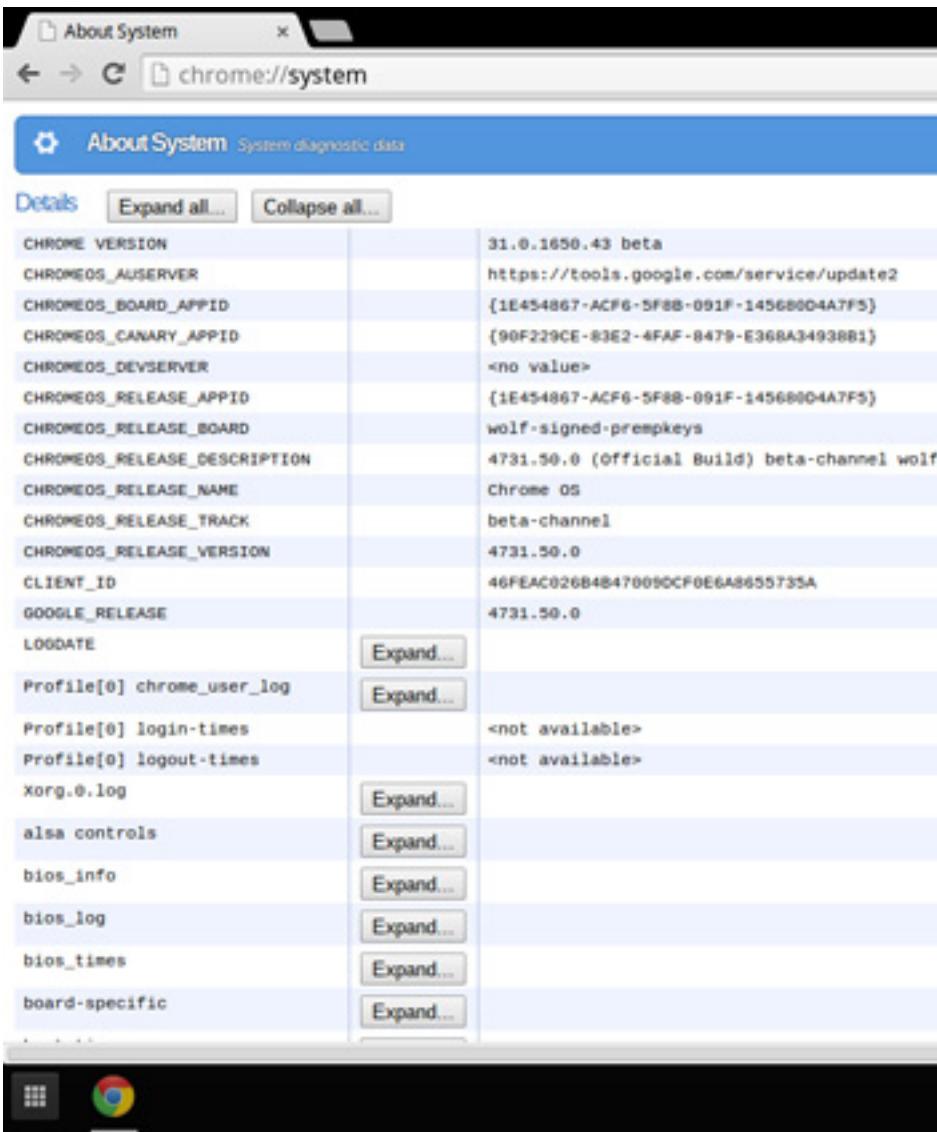
Dell Chromebook does not support Dell BIOS. Hence, there are several ways to check system specifications depending on the information you are searching for. The table below lists some of the most commonly used methods to view system information and specifications.

Table 4. View system information

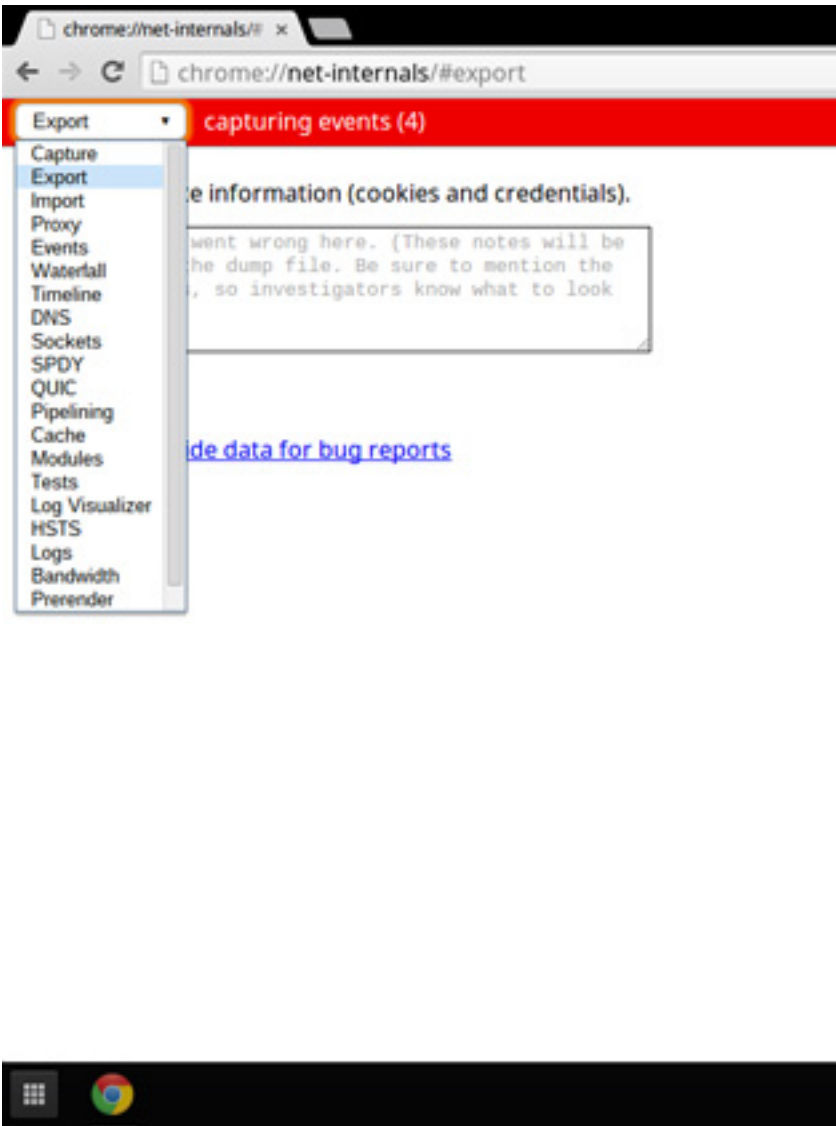
Commands	Action and Purpose	Screenshot
Chrome:help	View basic OS information.	
Chrome:settings	View information such as screen resolution options (Device>Display settings), touchpad, and other basic hardware information.	

Chrome:system

View advanced system information such as the Google Chrome version, BIOS information, CPU information, memory information, network status, power supply information, etc.





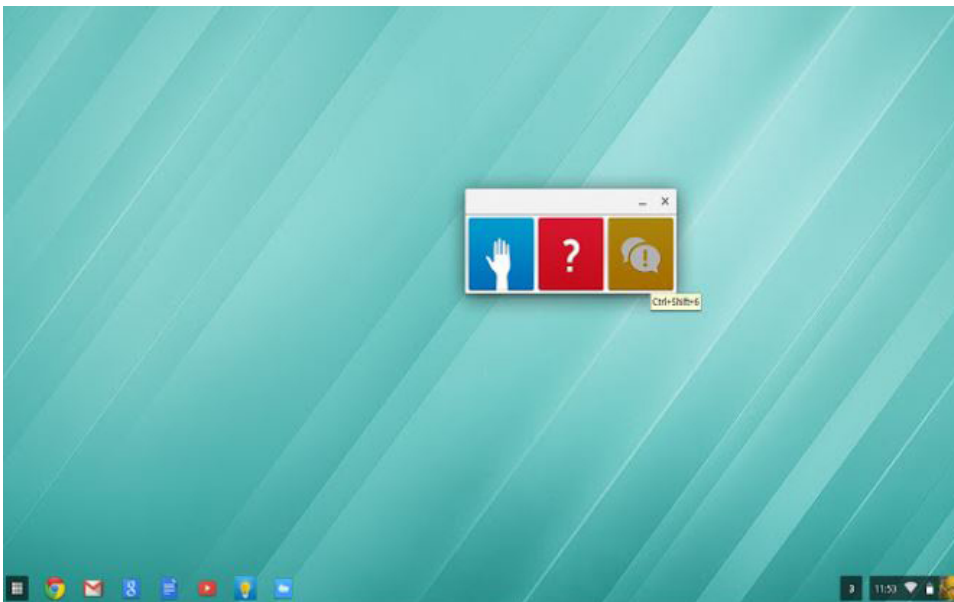
Commands	Action and Purpose	Screenshot
Chrome:net-internals	View advanced networking information.	

## Dell activity light

This page contains all the information about the Dell Bright Light software that is used to control Dell Activity Light.

### Overview

Dell Activity Light can be used as an indicator for the interaction between school teacher and student, and Dell has designed a software over this feature. The application will not be factory installed when product RTS, but it can be downloaded and installed via the web-store through the following link: <https://chrome.google.com/webstore/detail/dell-led/klhphccnhmdljljpdlijjhehlmplnmini>



### **Raise your Hand/Answer Question/Discussion buttons**

Students can either click the on-screen button or press keyboard hot key to on/off the Ask question LED. The on-screen button can be the Chrome application in the menu or the shortcut icon on the task bar.



### **MultiColor Poll**

Students can vote with different LED color by either clicking the on-screen button (suggested) or pressing keyboard hot key.



## Diagnostic and troubleshooting

This section covers the diagnostics tool and troubleshooting information for field service technicians.

### Dell activity light

The Dell Chromebook activity light LED indicator is located on the back of the display cover of Chromebook as shown below:



The activity indicator supports 7 colors for Dell Active Classroom Application, including: white, red, green, blue, yellow, cyan, and magenta. To control to toggle between these colors, use Dell Activity Light from the Chrome Web Store.

### Basic troubleshooting

This page contains all the information for Dell Chromebook basic troubleshooting

- ① **NOTE:** Refer to [Google Help Center](#) for the online troubleshooter.
- ① **NOTE:** [Resetting the Chromebook](#), also known as Powerwash, can be attempted before [Recovering the Chromebook](#). Recovering the Chromebook is the last resort.

# Power issues

Table 5. Power issue

Power issues	
Issue	Possible solutions
Chromebook would not Power On	<p>If the Chromebook will not turn on, follow these steps:</p> <ol style="list-style-type: none"> <li>1 Remove all external devices. <ol style="list-style-type: none"> <li>a If the Chromebook starts, reconnect devices one at a time while restarting the computer to figure out which device is causing the problem. You are done.</li> <li>b If the Chromebook still does not start or exhibits the same problem, do not reconnect anything, and continue troubleshooting.</li> </ol> </li> <li>2 The battery life might be too low. Plug the Chromebook into the AC adapter and let it charge for at least an hour and try turning it on again. <div> <i>NOTE:</i> When a new Chromebook is used for the first time, the battery is still in shipping mode. To resolve this issue, turn off the Chromebook and plug in the AC adapter and turn on the Chromebook again. </div> </li> <li>3 Depending on the Chromebook you have, you may see a power indicator light close to the charging port. If you have let the Chromebook charge and the light is not coming on, perform a hard reset. <div> <i>NOTE:</i> You can perform a hard reset by pressing Refresh + Power. </div> </li> <li>4 Use a different AC adapter with the same power voltage.</li> <li>5 Remove the AC adapter, and turn on with the battery power only.</li> </ol>

# Display issue

Table 6. Display issue

Display issue	
Issue	Possible solutions
Screen is Blank	<p>If the Chromebook's screen is blank, try the following troubleshooting steps to resolve the issue, checking to see if the screen turns on after each step:</p> <ol style="list-style-type: none"> <li>1 Make sure the Chromebook is on. If you are using the battery, plug the Chromebook in and press the power button.</li> <li>2 Restart the Chromebook by holding the power button down until the device turns off, then turn it back on again.</li> <li>3 Reset or Recover the Chromebook.</li> </ol>

## Audio, screen, and camera issues

**Table 7. Audio, screen, and camera issues**

Audio, screen, and camera issues	
Issues	Possible solutions
Audio issues	<p>If you hear static, or the volume from the speakers is low when attempting to listen to audio:</p> <ol style="list-style-type: none"> <li>1 Make sure the device is not muted. Try adjusting the volume.</li> <li>2 Try rebooting the Chromebook.</li> <li>3 Try playing audio from various sources, including YouTube and audio files stored locally on the Chromebook.</li> </ol> <p>If the speakers are not responding when attempting to listen to audio:</p> <ol style="list-style-type: none"> <li>1 Unplug the device from all cables (USB, headphones, and displays).</li> <li>2 Try playing audio from various sources, including YouTube and audio files stored locally on the Chromebook.</li> <li>3 Try rebooting the Chromebook.</li> <li>4 If audio still does not respond, try to Reset or Recover the Chromebook.</li> </ol>
Screen issues	<p>If the screen is not operating properly (images are too dark or no image is appearing):</p> <ol style="list-style-type: none"> <li>1 Try adjusting the brightness with the brightness keys at the top of the keyboard.</li> <li>2 In the status area in the bottom-right of the screen, check the display and make sure there are no issues with a mirrored or extended display.</li> <li>3 Try rebooting the Chromebook</li> <li>4 If the screen issues persist, try to Reset or Recover the Chromebook.</li> </ol>
Camera issues	<p>If the camera is not operating properly (blurry images or poor performance):</p> <ol style="list-style-type: none"> <li>1 Check that the camera is not being blocked or covered by a privacy screen or other obstruction.</li> <li>2 Try using different apps that use the camera. Try a Google+ Hangout or the onboard camera app</li> <li>3 Try rebooting the Chromebook</li> <li>4 If the camera issues persist, try to Reset or Recover the Chromebook.</li> </ol>

## Bluetooth issue

**Table 8. Bluetooth issue**

Bluetooth issue	
Issue	Possible solutions
Bluetooth issues	<p>If you run into issues while attempting to pair or use a Bluetooth device with the Chromebook, try the following steps to resolve the issue:</p> <ol style="list-style-type: none"> <li>1 First, make sure that the Bluetooth device you are trying to pair is supported by the Chromebook.</li> <li>2 Try disabling and re-enabling Bluetooth connectivity from the status area in the lower-right corner.</li> <li>3 Try restarting the Chromebook.</li> <li>4 If you are still encountering issue with bluetooth, try to Reset or Recover the Chromebook.</li> </ol>

## Touchpad and Hotkeys issues

**Table 9. Touchpad and hotkeys issues**

Touchpad / Hotkeys issues	
Issue	Possible solutions
Touchpad not responding	<p>If the touch pad has stopped responding, try the following steps to resolve the issue: Try moving the cursor after each step:</p> <ol style="list-style-type: none"> <li>1 Tap the Esc key several times.</li> <li>2 Drumroll the fingers across the touch pad for a few seconds.</li> <li>3 Restart the Chrome OS by holding down the power button until the device turns off, and then turn it back on again.</li> <li>4 If the cursor still does not move when using the touch pad, try logging in from the Guest account using the tab key to navigate.</li> <li>5 If users experience touch pad issues with the account that is not the owner (primary) account, delete the user account and re-create it. Again, use the tab key to navigate.</li> <li>6 If none of the above steps work, try to Reset or Recover the Chromebook.</li> </ol>
Top row of keys (Hotkeys) not responding	<p>If a hotkey (like the volume or brightness keys) are not responding, try the following troubleshooting steps, making sure to test the keys after each one:</p> <ol style="list-style-type: none"> <li>1 If the affected key is volume or brightness, check to make sure you are not at the upper or lower limit for that setting.</li> <li>2 If the backward or forward buttons do not work, check that the same icons in a web browser are not grayed out. For example, if the back button on a web page is grayed, this is because the browser is not aware of a page to move backward to.</li> <li>3 Restart the Chrome OS by holding down the power button until the device turns off, and then turn it back on again.</li> <li>4 Try using the keys in the Guest account.</li> </ol>

Touchpad / Hotkeys issues	
	<p>5 If users experience hotkey issues with the account that is not the owner (primary) account, delete the user account and re-create it.</p> <p>6 If none of the above steps work, try to Reset or Recover the Chromebook.</p>

## Chrome OS issue

Table 10. Chrome OS issue

Chrome OS issues	
He's Dead, Jim! error message	<p>If the Chromebook becomes slow or unresponsive, and the <b>He's Dead, Jim!</b> error message appears, the system could be running low on memory.</p> <p><b>NOTE:</b> If you terminated the process using Google Chrome's Task Manager, the system's task manager, or with a command line tool, this message will appear as well.</p> <ol style="list-style-type: none"> <li>1 If the page was not ended intentionally, reload the page to continue. If the message continues to appear, try closing inactive tabs or other programs to free up more memory.</li> <li>2 If issue persists, please see He's Dead, Jim! from Google knowledge base.</li> </ol>
Chrome OS is missing or damaged	<p>If the Chromebook does not start and displays the message, <b>Chrome OS is missing or damaged. Please insert a recovery USB stick into the USB ports on the device:</b></p> <p>Perform a system recovery. See performing Recover Chromebook for more information.</p>
Chrome OS stops responding and nothing moves on the computer display	<p>If the Chrome OS stops responding and nothing moves on the computer display:</p> <ol style="list-style-type: none"> <li>1 Turn off the computer.</li> <li>2 Disconnect all peripheral devices, and remove all USB devices and media cards.</li> <li>3 Disconnect the AC adapter.</li> <li>4 Press and hold the power button for 10 seconds.</li> <li>5 Reconnect the AC adapter, and turn on the system.</li> <li>6 If issue persists, please perform a Reset or Recover the Chromebook.</li> </ol>
Lost / Forget Sign in password (Chrome OS)	<p>If you lost/forget the sign-in password to the Chromebook:</p> <ol style="list-style-type: none"> <li>1 Check if this is a managed device (Enterprise enrolled device). <ol style="list-style-type: none"> <li>a If this is a managed device, please contact the administrator to have them reset the password via Google Admin Console.</li> <li>b If this is not a managed device, please proceed with the following steps:</li> </ol> </li> <li>2 Sign in as guest or use a different PC.</li> <li>3 Open an internet browser, and navigate to <a href="https://www.google.com/accounts/recovery/">https://www.google.com/accounts/recovery/</a></li> <li>4 Select I do not know my password, and then enter the email address that you use to sign in to Google.</li> </ol>



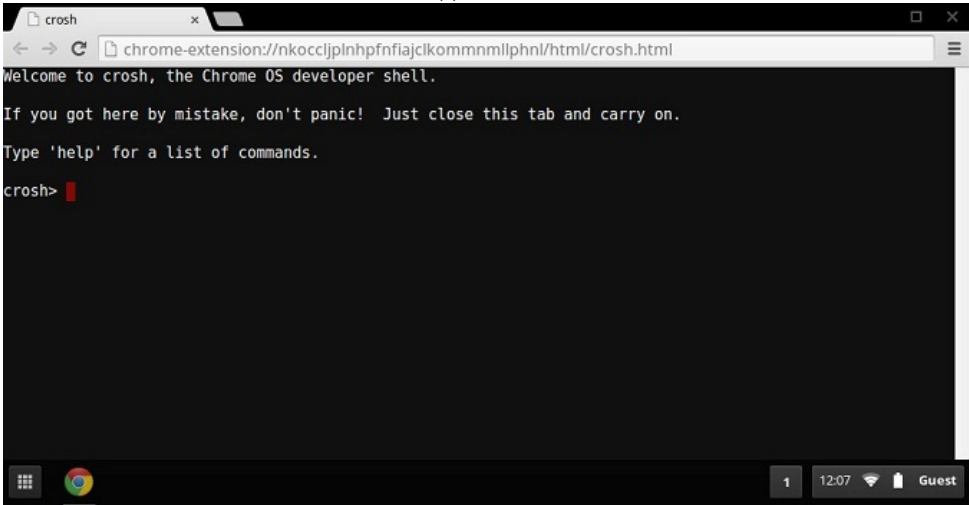
Chrome OS issues	
	5 Click Continue and follow the on-screen instructions to reset the password.
Other Chromebook lock up or freeze symptoms that are not listed here	If none of the above symptoms match the Chromebook's issue, refer to Google Help Center for the online troubleshooter and more help.

# CROSH

This topic covers the information you need to know for the Chrome Shell (CROSH). CROSH and the Google Chrome URL commands provide some troubleshooting tools, information, and advanced settings.

The Chrome OS does not support ePSA, Dell BIOS, the F12 boot menu, or DellConnect. There are no preboot diagnostics. All troubleshooting must be done inside the OS. Chrome Shell (CROSH) and the Chrome URL commands provide some troubleshooting tools, information, and advanced settings. CROSH is a command line interface similar to the Linux BASH or Windows command (cmd.exe) terminals. Chrome OS is based on Linux, but CROSH does not recognize most Linux commands. The most useful commands for troubleshooting are memory\_test, storage\_test\_1, storage\_test\_2, ping, and tracepath. Ping works differently than it does in Windows. By default, it repeats until you press **<Ctrl> + <C>**, and it does not show any statistics. The tracepath command is similar to the Windows traceroute command. A detailed explanation of the commands can be viewed below, by typing help, or help\_advanced in CROSH.

- 1 Open the Chrome browser.
- 2 Press **<Ctrl> + <Alt> + <T>** The interface appears as shown in the screenshot below:



- 3 Type in the CROSH command for diagnostics. Type **'help'** for a list of available commands. Type **help\_advanced** to display a complete list of commands for debugging purposes

Alternately, refer to CROSH Commands for the list of the CROSH commands available for diagnostics.

# CROSH commands

The table below lists the available commands in Chrome Shell (CROSH).

Table 11. Help commands

Command	Purpose
exit	Exits the CROSH Shell.
help	Displays this help.

Command	Purpose
help_advanced	Displays the help for more advanced commands, used for debugging.
ping	[-c count] [-i interval] [-n] [-s packetsize] [-W waittime] — Sends ICMP ECHO_REQUEST packets to a network host. If is "gw", then the next hop gateway for the default route is used. It works just like the ping command on other operating systems. Press <b>&lt;Ctrl&gt; + &lt;C&gt;</b> to stop the ping process or halt any other command in CROSH.
ssh	[optional args...] — Starts the ssh subsystem if invoked without any arguments. "ssh <user> <host>", "ssh <user> <host> <port>", "ssh <user>@<host>". or "ssh <user>@<host> <port>" connect without entering the subsystem
ssh_forget_host	Removes a host from the list of known ssh hosts. This command displays a menu of known hosts and prompts for the host to forget.
top	Sets the chaps debug logging level. No arguments start verbose logging

**Table 12. Advanced help command**

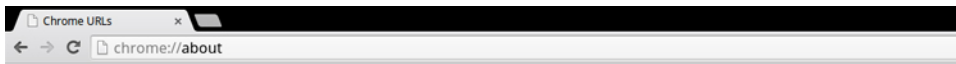
Command	Purpose
battery_test[<test length>]	Tests the battery discharge rate for a given number of seconds. No argument defaults to a 300 s test.
bt_console [<agent capability>]	Enters a Bluetooth debugging console. The <b>Optional</b> argument specifies the capability of a pairing agent the console provides; see the <b>Bluetooth Core</b> specification for valid options.
chaps_debug [start stop <log_level>]	Sets the chaps debug logging level. No arguments will start verbose logging.
connectivity	Shows connectivity status.
experimental_storage<status enable disable>	Enables or disables experimental storage features.
ff_debug [<tag_expr>] [--help] [--list_valid_tags] [--reset]	Adds and removes flimflam debugging tags.
memory_test	Performs extensive memory testing on the available free memory.
modem <command> [args...]	Interacts with the 3G modem. Run <b>modem help</b> for detailed help.
modem_set_carrier carrier-name	Configures the modem for the specified carrier.
network_diag[--date] [--link] [--show-macs] [--wifi] [--help] [--wifi-mon] <host>	Performs a suite of network diagnostics and saves a copy of the output to your download directory
network_logging <wifi cellular ethernet>	Enables a predefined set of tags useful for debugging the specified device.
p2p_update [enable   disable]	Enables or disables the peer-to-peer (P2P) sharing of updates over the local network. This will both attempt to get updates from other peers in the network and shares the downloaded updates with them. Run this command without arguments to see the current state.
rlz < status   enable   disable>	Enables or disables RLZ.
rollback	Attempts to roll back to the previous update cached on your system. Only available on non-stable channels and non-enterprise enrolled devices. Please note that this will power wash your device.
route [-n] [-6]	Displays the routing tables.
set_apn [-n <network-id>] [-u <username>] [-p <password>] <apn>	Sets the APN to use when connecting to the network specified by <network-id>. If <network-id> is not specified, use the network-id of the currently registered network.

Command	Purpose
<b>set_apn - c</b>	Clears the APN to be used, so that the default APN is used instead.
<b>set_arpgw</b> <true   false>	Turns on the extra network state checking to make sure the default gateway is reachable.
<b>set_cellular_ppp</b> [-u <username>] [-p <password>]	Sets the PPP username and/or password for an existing cellular connection. If neither -u nor -p is provided, this shows the existing PPP username for the cellular connection.
<b>set_cellular_ppp -c</b>	Clears any existing PPP username and PPP password for an existing cellular connection.
<b>sound</b> <command> <argument>	Low level sound configuration. Can be used to play/record audio samples and enable beam forming on Pixel. <b>sound beamforming &lt;on off&gt;</b> will enable/disable the feature. <b>sound record [duration]</b> will start recording. <b>sound play &lt;filename&gt;</b> plays the recorded audio samples
<b>storage_status</b>	Reads storage device SMART health status, vendor attributes, and error logs.
<b>storage_test_1</b>	Performs a short offline SMART test.
<b>storage_test_2</b>	Performs an extensive readability test.
<b>syslog</b> <message>	Logs a message to system log.
<b>tpcontrol</b> {status   taptoclick [on off] sensitivity [1-5]   set <property>< value>} tpcontrol {syntp [on off]}	Allows the user to manually adjust advanced touchpad settings.
<b>tracpath</b> [-n] <destination>[/port]	Traces the path/route to a network host.
<b>update_over_cellular</b> [enable disable]	Enables or disables the auto updates over cellular networks. Run without arguments to see the current state.
<b>upload crashes</b>	Uploads available crash reports to the crash server.
<b>wpa_debug</b> [<debug_level>] [--help] [--list_valid_level] [--reset]	Sets the wpa_supplicant debugging level.
<b>xset m</b> [acc_mult[/acc_div] [thr]] xset m default	Tweaks the mouse acceleration rate.
<b>xset r rate</b> [delay [rate]]	Tweaks the autorepeat rates. The delay is the number of milliseconds before autorepeat starts. The rate is the number of repeats per second.
<b>xset r</b> [keycode] < on off >	Turns autorepeat on/off. If a keycode is specified, it affects only that key. If not specified, it affects global behavior.

## Chrome commands

Chrome:// pages contain experimental features, diagnostic tools, and detailed statistics. They are hidden in Chrome's user interface.

**Chrome://about** page lists all Chrome's internal pages. To view all the commands, type **chrome://about** in the Chrome browser URL as shown below:



## List of Chrome URLs

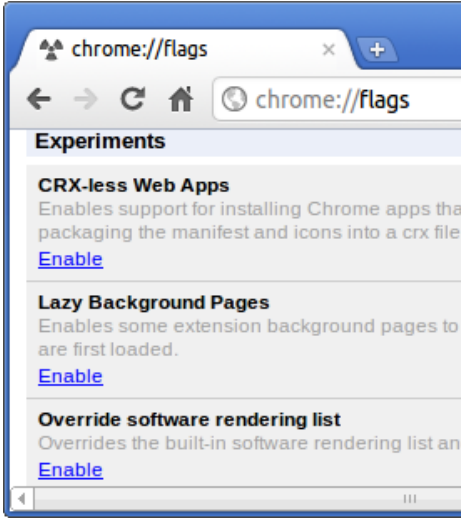
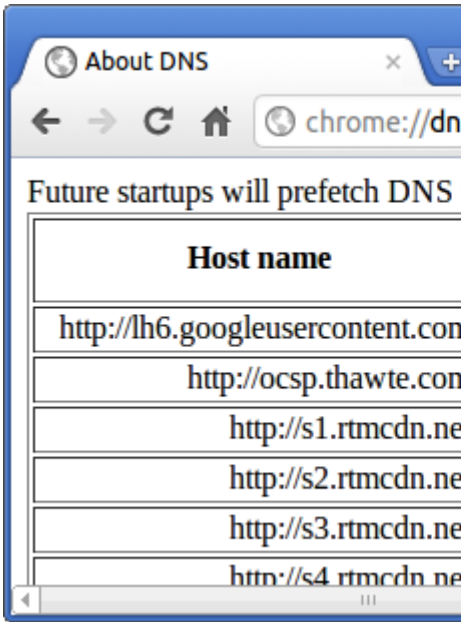
- [chrome://accessibility](#)
- [chrome://appcache-internals](#)
- [chrome://blob-internals](#)
- [chrome://bookmarks](#)
- [chrome://cache](#)
- [chrome://choose-mobile-network](#)
- [chrome://chrome-urls](#)
- [chrome://components](#)
- [chrome://crashes](#)
- [chrome://credits](#)
- [chrome://cryptohome](#)
- [chrome://diagnostics](#)
- [chrome://discards](#)
- [chrome://dns](#)
- [chrome://downloads](#)
- [chrome://drive-internals](#)
- [chrome://extensions](#)
- [chrome://first-run](#)
- [chrome://flags](#)
- [chrome://flash](#)
- [chrome://gpu](#)
- [chrome://histograms](#)
- [chrome://history](#)

**Table 13. Chrome browser shortcuts**

Purpose	Browser Shortcut	Explanation
System Information	<code>chrome://system/</code>	"Who am I".. BIOS version, and so on
Basic Connectivity Diags	<code>chrome://diagnostics/</code>	Test for NIC and Internet connection
Chrome Information	<code>chrome://version</code>	More "Who am I" type of stuff
Create Recovery USB Stick	<code>chrome://imageburner/</code>	Google's version of DBAR/DBRM
Chrome Flags	<code>chrome://flags</code>	Experimental features beyond the scope of what Dell supports
Memory Troubleshooting	<code>chrome://memory</code>	View running processes and memory utilization
Module Load	<code>chrome://conflicts</code>	Shows conflicts of all modules loaded by Chrome
Chrome Sync Status	<code>chrome://syncchrome://sync-internals</code>	Allows troubleshooting of connected accounts
Connectivity Troubleshooting	<code>chrome://net-internals</code>	Comprehensive network/connectivity diagnostics, including DNS analysis, Waterfall and Bandwidth diagnostics, and so on
Histogram	<code>chrome://histograms</code>	Actual work and I/O audit
Credits	<code>chrome://credits</code>	References to all module/libs contributions and their respective wiki/license URLs
Crash Reporting	<code>chrome://crashes</code>	Shows detailed crash report, if the feature was enabled
Apps RAM Utilization	<code>chrome://appcache-internals</code>	Detailed memory usage for apps/extensions, especially handy for 2 GB Chromebooks

Following are the 12 most helpful `chrome://` commands that you should know:

Table 14. Helpful chrome commands

Chrome Commands	Purpose	Screenshot
chrome://flags	From here you can enable some of the experimental features that are hidden in the Google Chrome browser. Please note that as mentioned on this page, since these are experimental, these might not work as expected and might cause issues. Enable these features, and use it at your own risk.	
chrome://dns	This displays the list of hostnames for which the browser will prefetch the DNS records.	



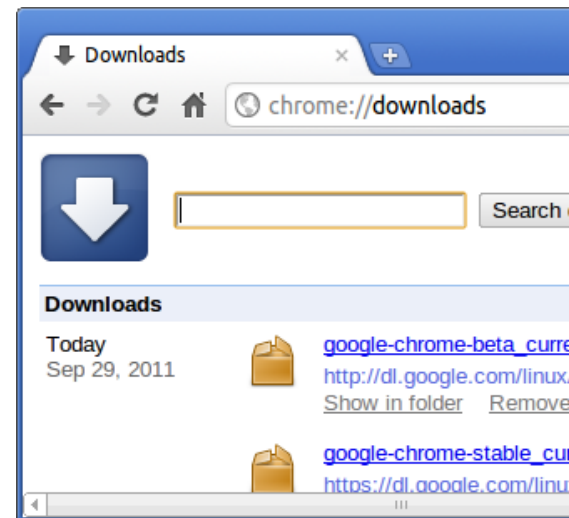
## Chrome Commands

## Purpose

## Screenshot

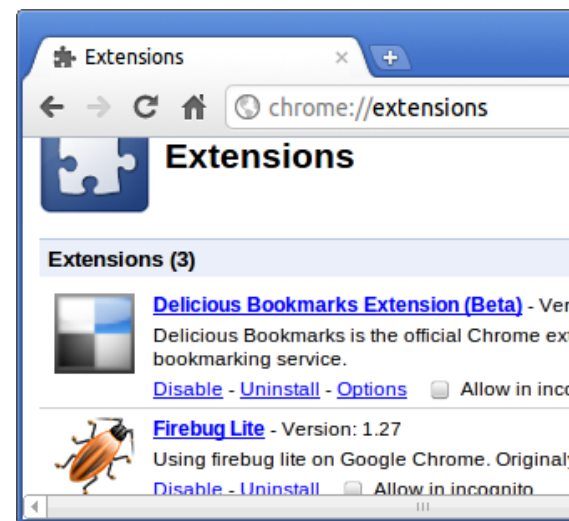
chrome://downloads

This is also available from the Menu > Downloads. Shortcut key is Ctrl+J.



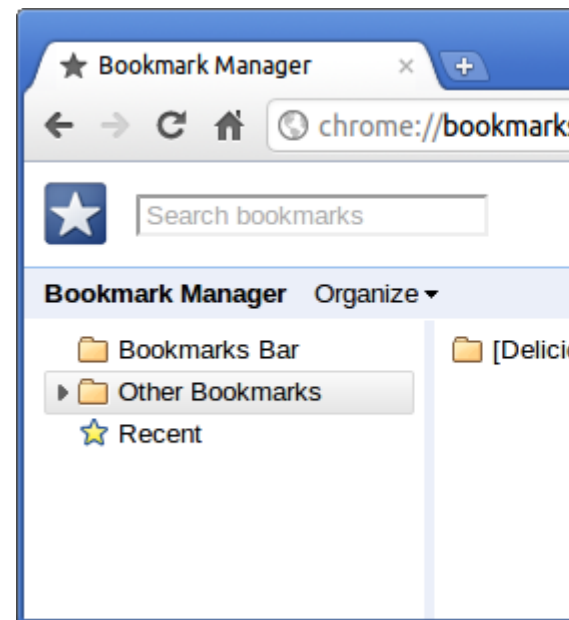
chrome://extensions

This is also available from the Menu > Tools > Extensions.



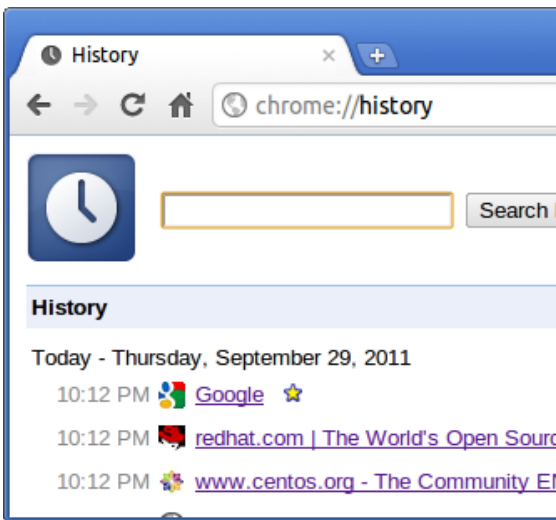
chrome://bookmarks

This is also available from the Menu > Bookmarks > Bookmark Manager. Short cut key is Ctrl+Shift+O.



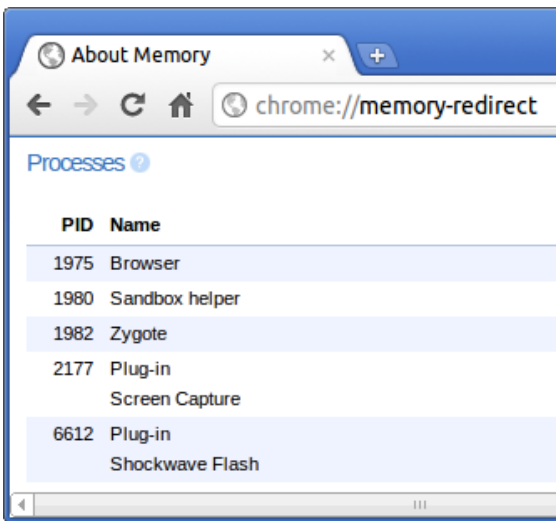
chrome://history

This is also available from the Menu > History. Short cut key is Ctrl+H.



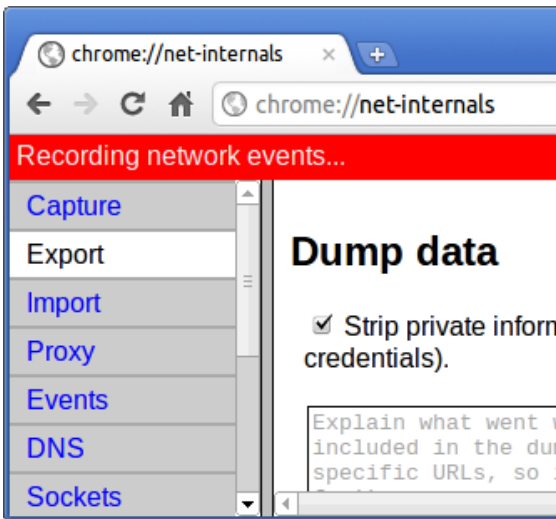
chrome://memory

This will redirect to “chrome://memory-redirect/”. This will display the memory used by the Google Chrome browser. This also displays all the process related to browser with their PID, process name, and the memory it takes.



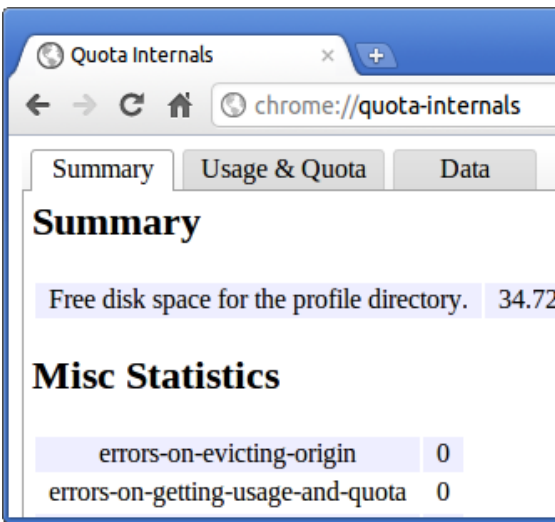
chrome://net-internals

This displays all networking related information. Use this to capture network events generated by the browser. You can also export this data. You can view DNS host resolver cache. One of the important features in this feature is “Test”. If a URL failed to load, you can go to “chrome://net-internals” > click on “Tests” tab > type that URL which failed, and click on “Start Test”, which does some test and report you why that URL failed. chrome://plugins/.



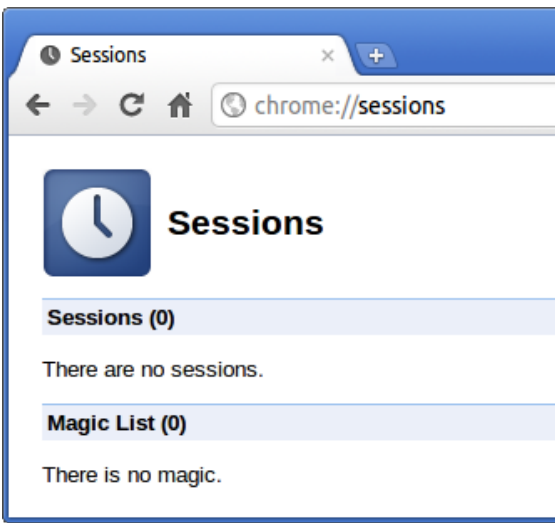
chrome://quota-internals

This gives information about the disk space quote used by the browser, including the breakdown of how much space the individual websites took under temporary files.



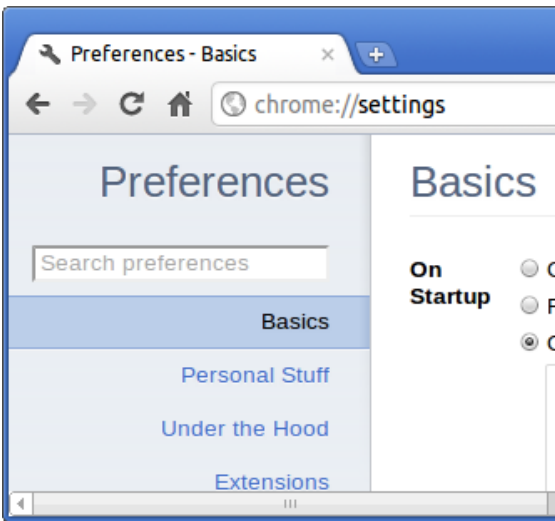
chrome://sessions

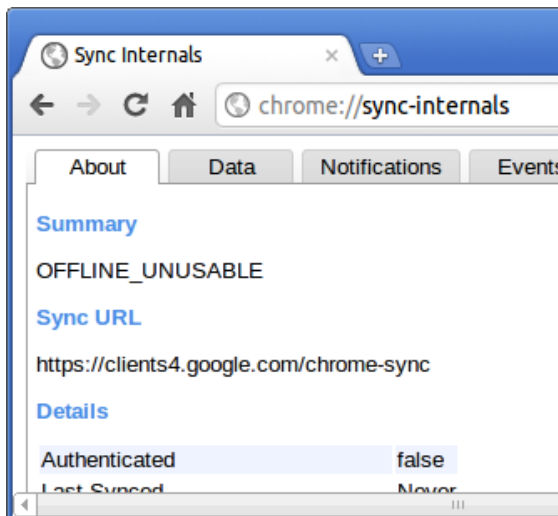
This displays the number of sessions and magic list that are currently running.



chrome://settings

This is also available from the Menu > Options (on Windows), and Menu > Preferences (on Linux). From here you can control various browser related settings.



Chrome Commands	Purpose	Screenshot
chrome://sync-internals	This gives information about the Chrome sync feature, including the Sync URL used by Google, and sync statistics.	

## Commonly used CROSH command

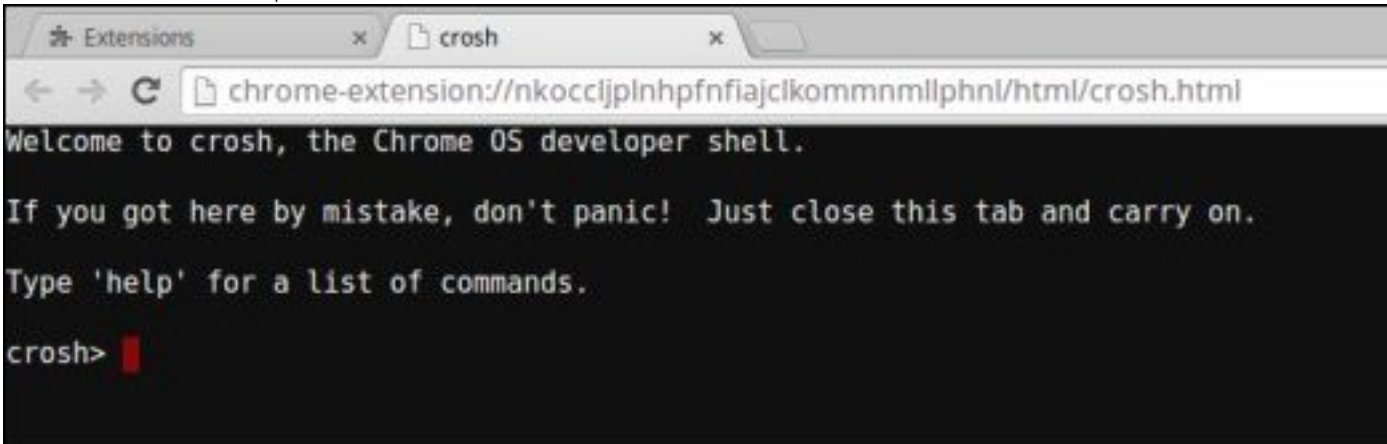
This page contains information about the most commonly used CROSH commands to diagnose the Dell Chromebook. Below are some of the most commonly used CROSH commands to troubleshoot a hardware issue.

**NOTE:** CROSH `storage_test_1` and `storage_test_2` are not supported on the eMMC storage device.

## Check battery charging status

The Chrome Shell (CROSH) includes a simple battery health diagnostic test. This is to confirm that the battery is charging and to check on the battery health and discharge rate. Follow the instruction provided to check on the battery charging status:

- 1 Connect the AC adapter to the Chromebook and a power outlet.
- 2 Turn on, and sign in to the Chromebook.
- 3 Open the Chrome browser.
- 4 Press **CTRL + ALT + T** to open CROSH.



```

chrome-extension://nkoccljplnhpfnfajclkommmnmlphnl/html/crosh.html
Welcome to crosh, the Chrome OS developer shell.

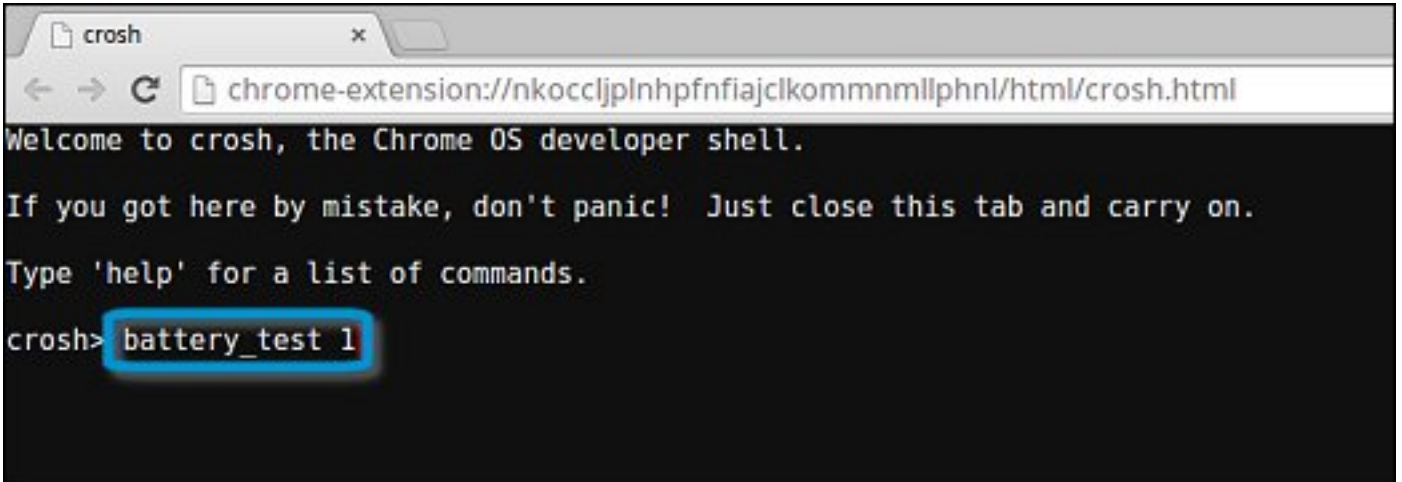
If you got here by mistake, don't panic! Just close this tab and carry on.

Type 'help' for a list of commands.

crosh>

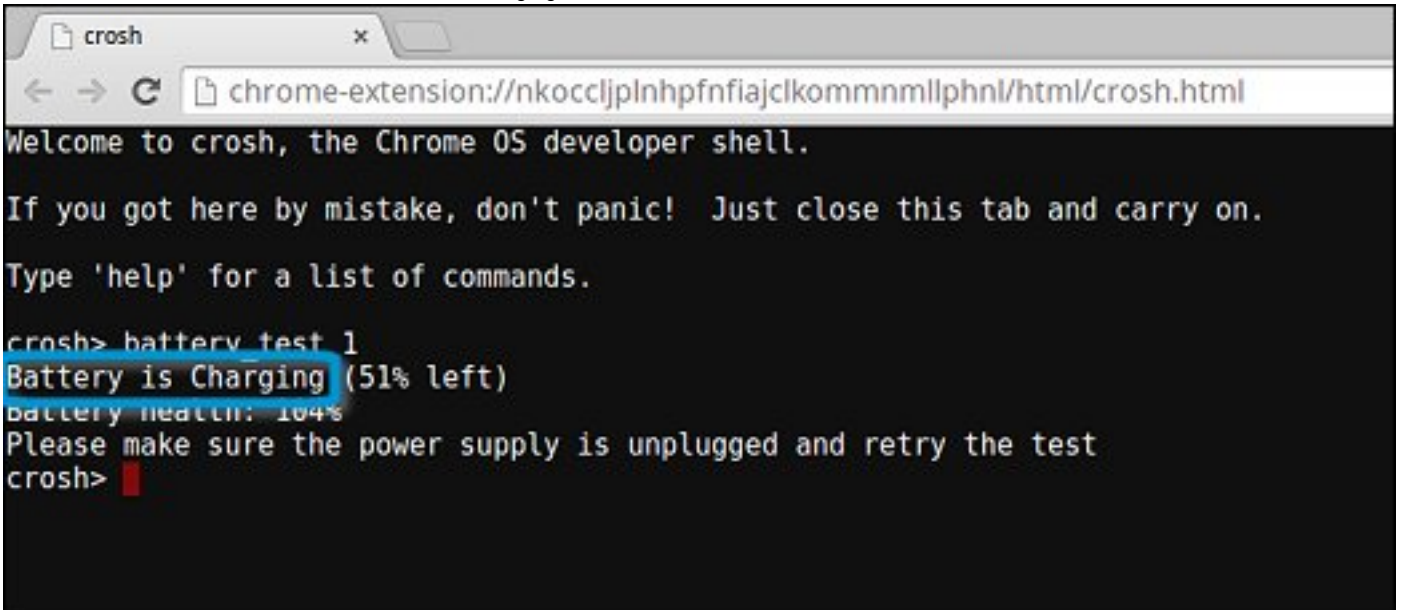
```

- 5 Type **battery\_test 1** into CROSH, and then press **Enter**.



The screenshot shows a web browser window with a single tab titled 'crosh'. The address bar displays 'chrome-extension://nkoccljplnhpfnfajclkommmnmlphnl/html/crosh.html'. The main content area is a black terminal window with white text. It displays the following text: 'Welcome to crosh, the Chrome OS developer shell.', 'If you got here by mistake, don't panic! Just close this tab and carry on.', 'Type 'help' for a list of commands.', and 'crosh> battery\_test 1'. The command 'battery\_test 1' is highlighted with a blue rectangular selection box.

- 6 Check the result to confirm that the battery is charging.



The screenshot shows the same web browser window as before. The terminal window now displays the output of the 'battery\_test 1' command. The text shown is: 'Welcome to crosh, the Chrome OS developer shell.', 'If you got here by mistake, don't panic! Just close this tab and carry on.', 'Type 'help' for a list of commands.', 'crosh> battery\_test 1', 'Battery is Charging (51% left)', 'battery health: 104%', 'Please make sure the power supply is unplugged and retry the test', and 'crosh>'. The output 'Battery is Charging (51% left)' is highlighted with a blue rectangular selection box.

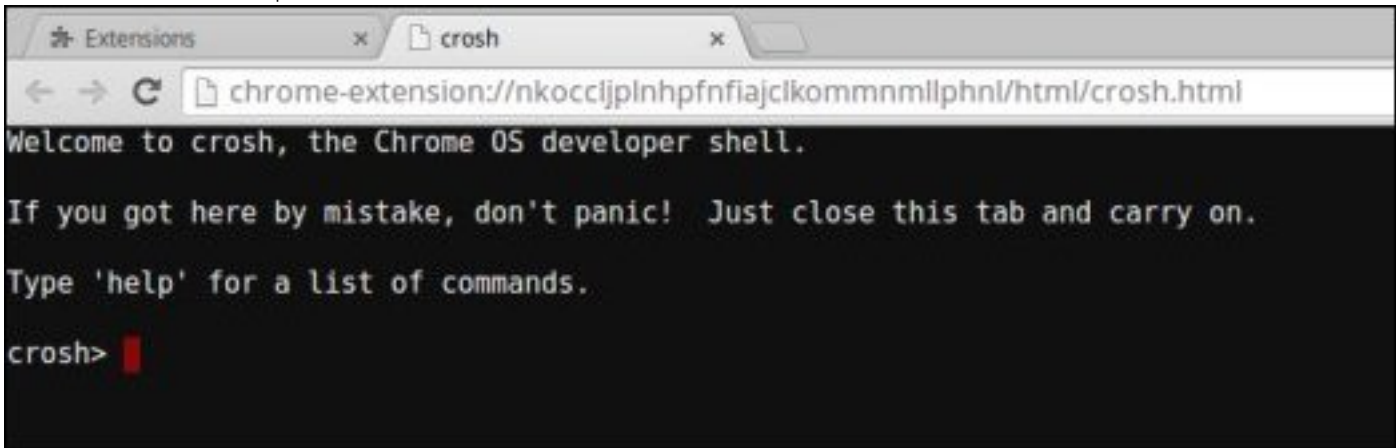
## Check battery health

Follow the steps to evaluate the health of the Chromebook battery, and check the discharge rate:

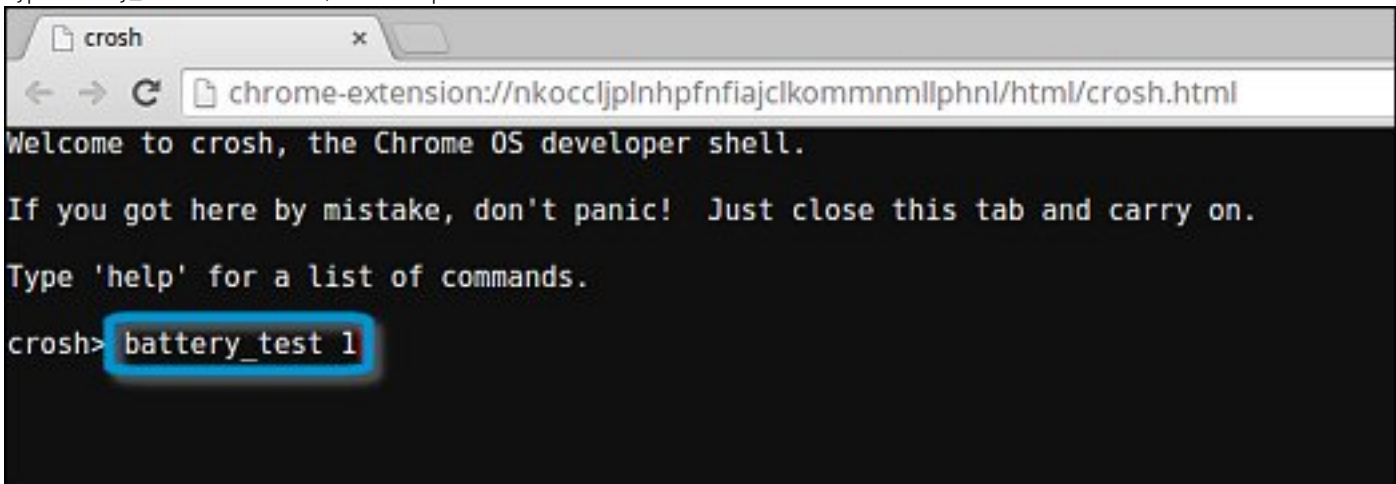
- 1 Disconnect the AC adapter from the Chromebook.
- 2 Turn on and sign in to Chromebook.
- 3 Open the Chrome browser.



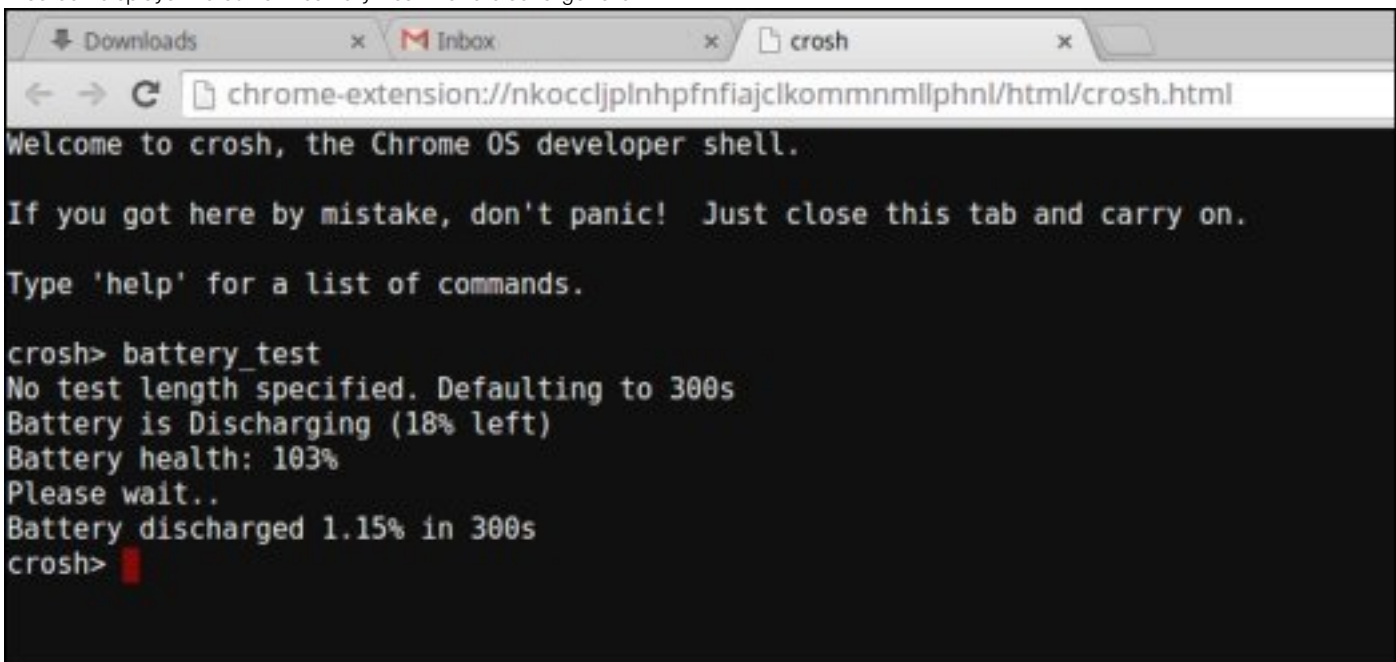
- 4 Press **CTRL + ALT + T** to open CROSH.



- 5 Type `battery_test 1` into CROSH, and then press Enter.



- 6 A screen displays the current battery health and discharge rate.



- If the Battery health percentage is greater than 50%, the battery is within the expected wear limits.
- If the Battery health percentage is equal to or less than 50% and the battery is less than a year old, the battery is outside expected wear limits and might need to be replaced.

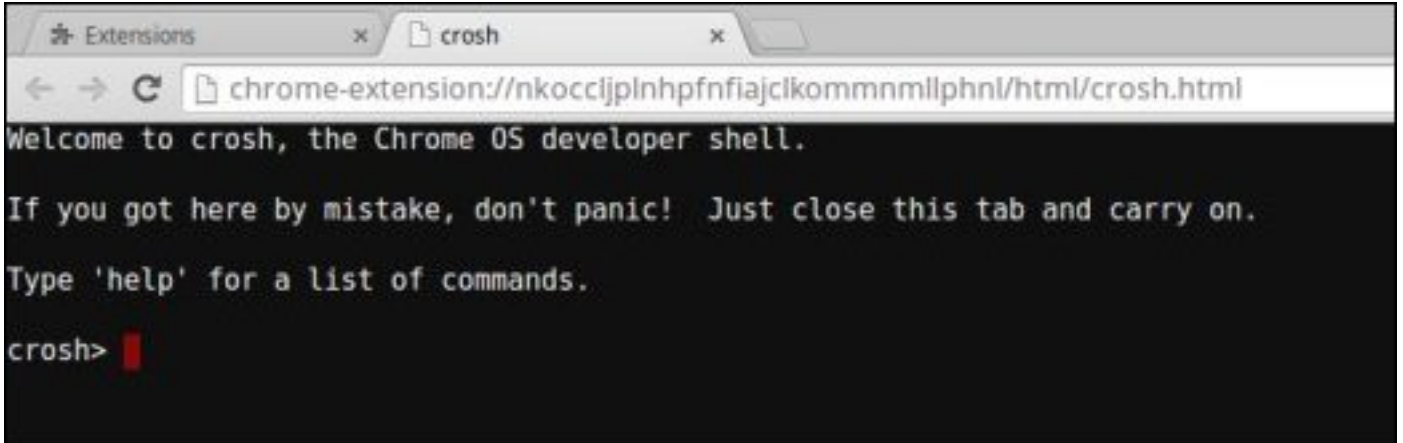
- If the test results show that Battery is Unknown, the battery might need to be replaced.

## Checking memory

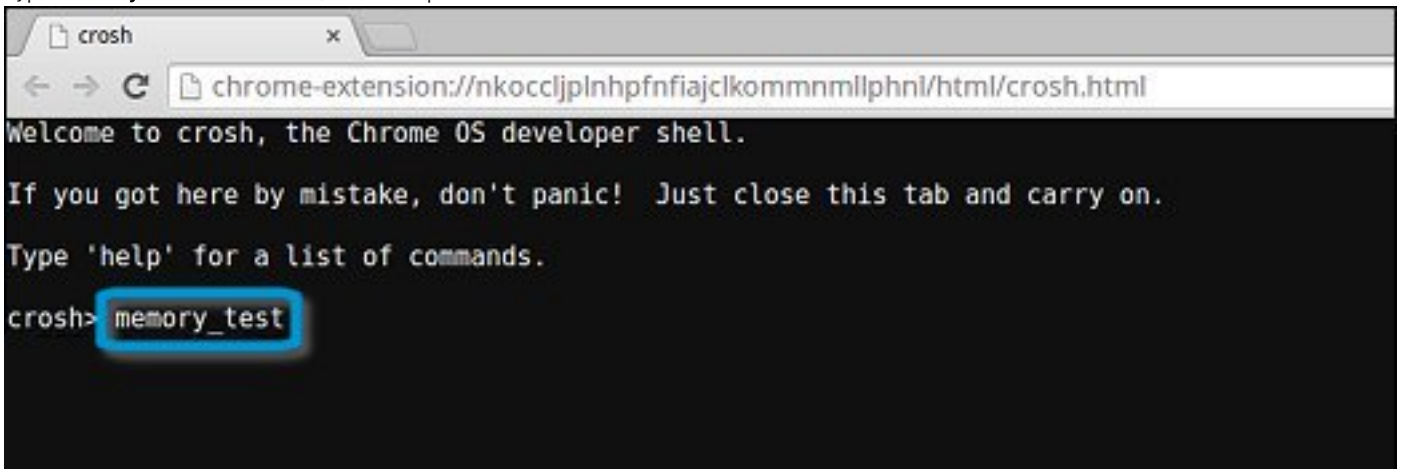
Follow the steps below to perform a memory check for Chromebook:

**NOTE:** This will approximately take 20 minutes to complete the test, and it also depends on the capacity of the memory.

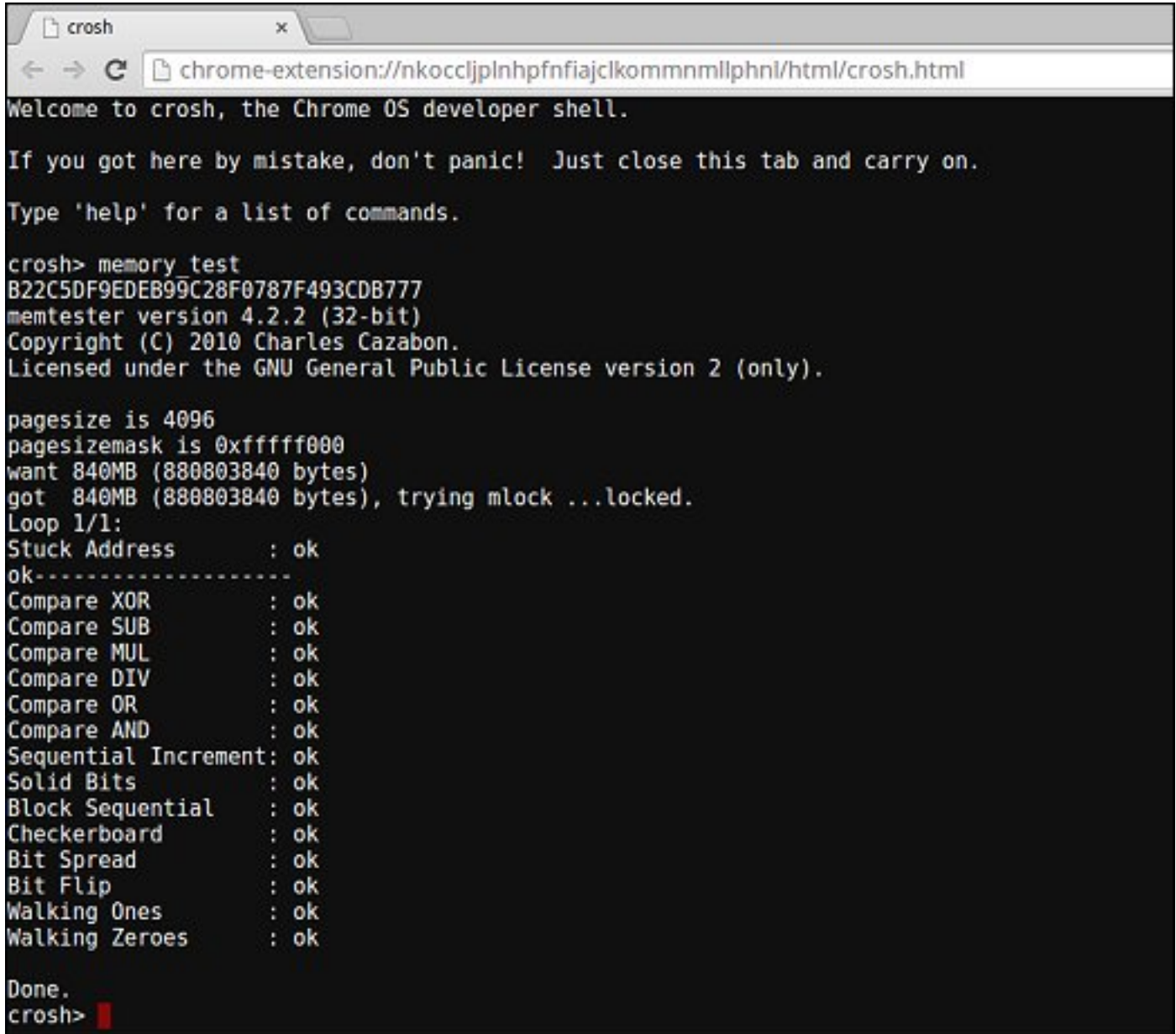
- 1 Turn on and sign in to Chromebook.
- 2 Open the Chrome browser.
- 3 Press **CTRL + ALT + T** to open CROSH.



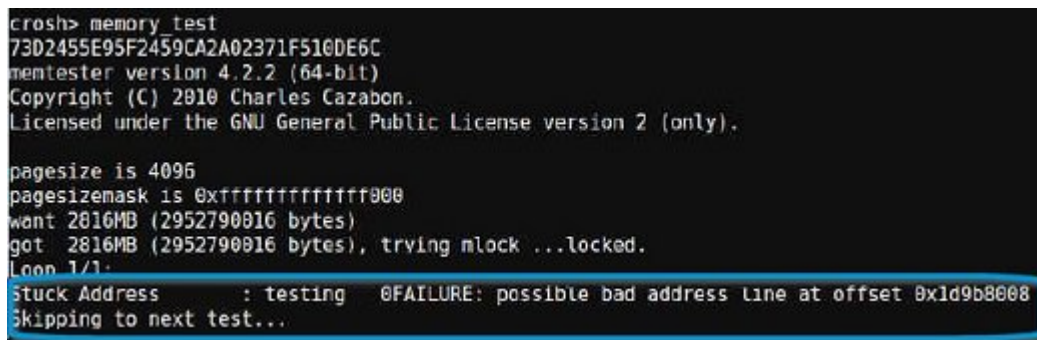
- 4 Type **memory\_test** into CROSH, and then press **Enter**.



- 5 A diagnostic screen displays the result of the memory test passed without any errors.



Example of a memory test failure.

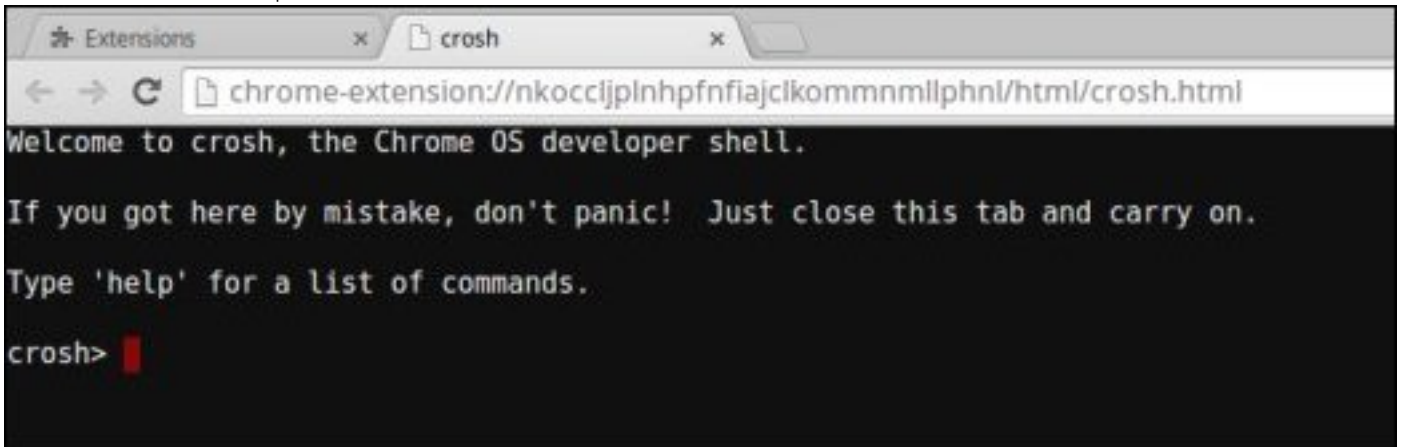


## Checking network status

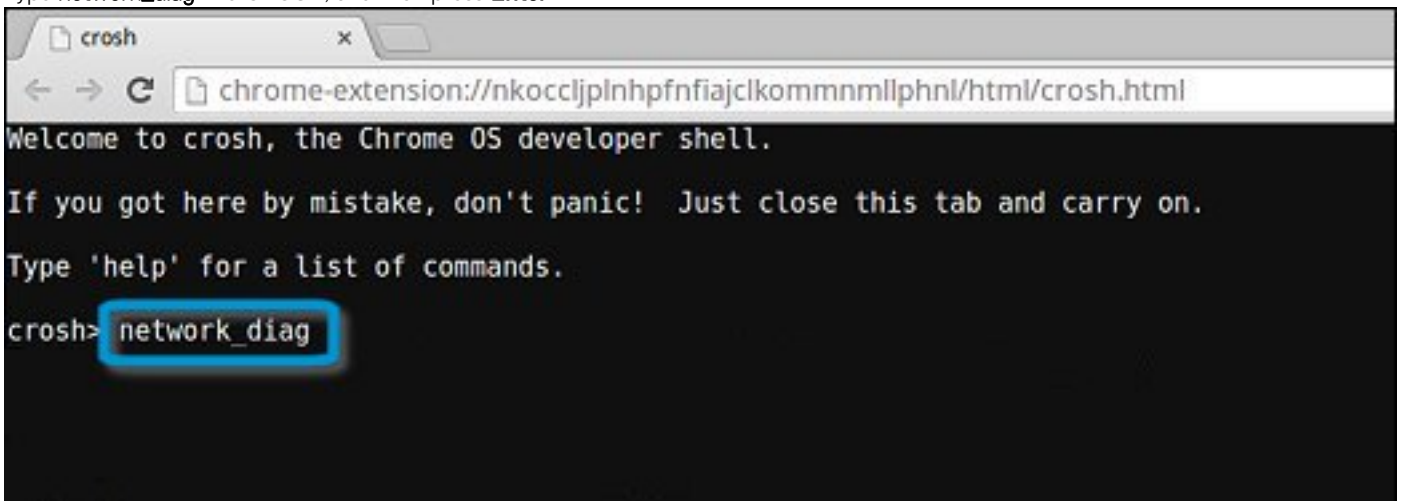
If you are having trouble connecting to the Internet, use the steps in one or more of the following sections to test the network adapter:

Follow the instruction to gather the information about the network and diagnose the network errors.

- 1 Turn on and sign in to Chromebook.
- 2 Open the Chrome browser.
- 3 Press **CTRL + ALT + T** to open CROSH.

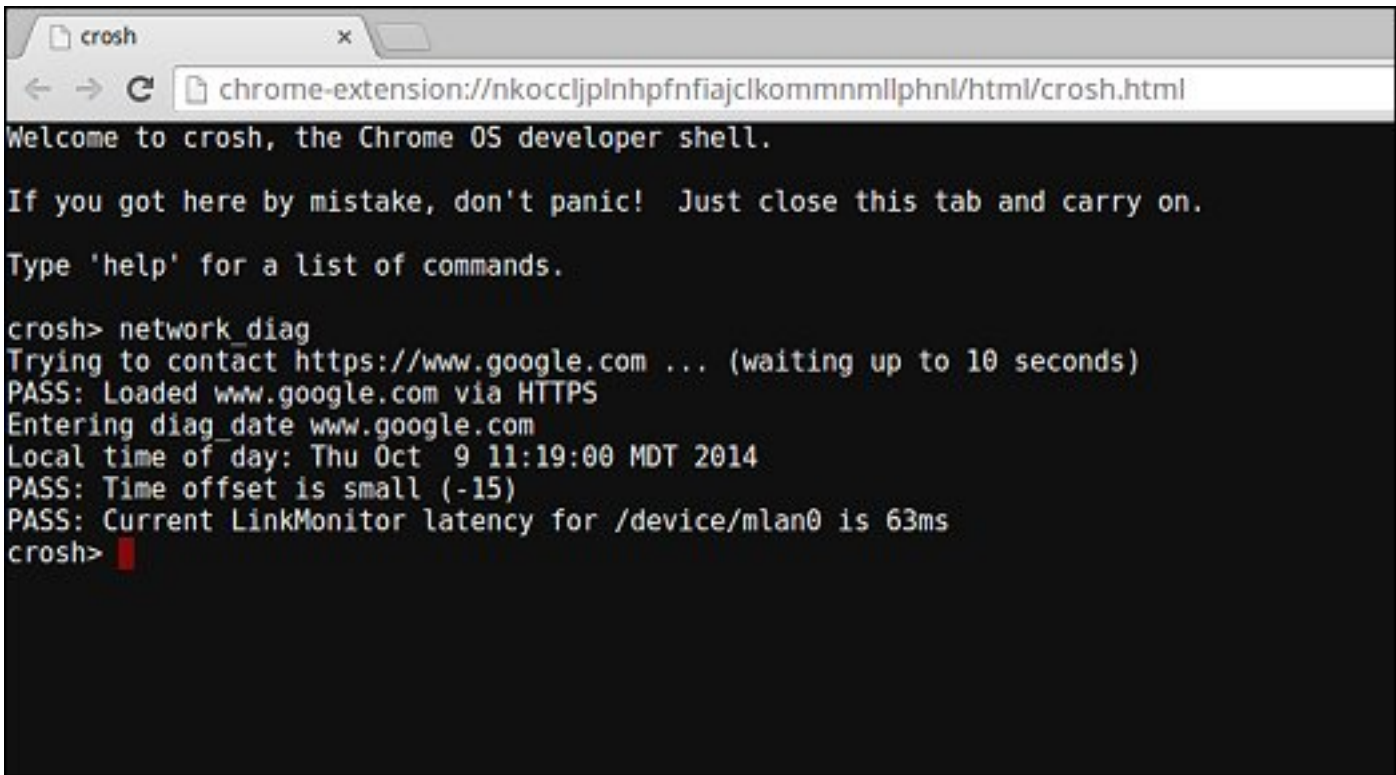


- 4 Type **network\_diag** into CROSH, and then press **Enter**.





- 5 Wait while CROSH performs a set of network diagnostic tests. A diagnostic screen displays the results of the network adapter health test.

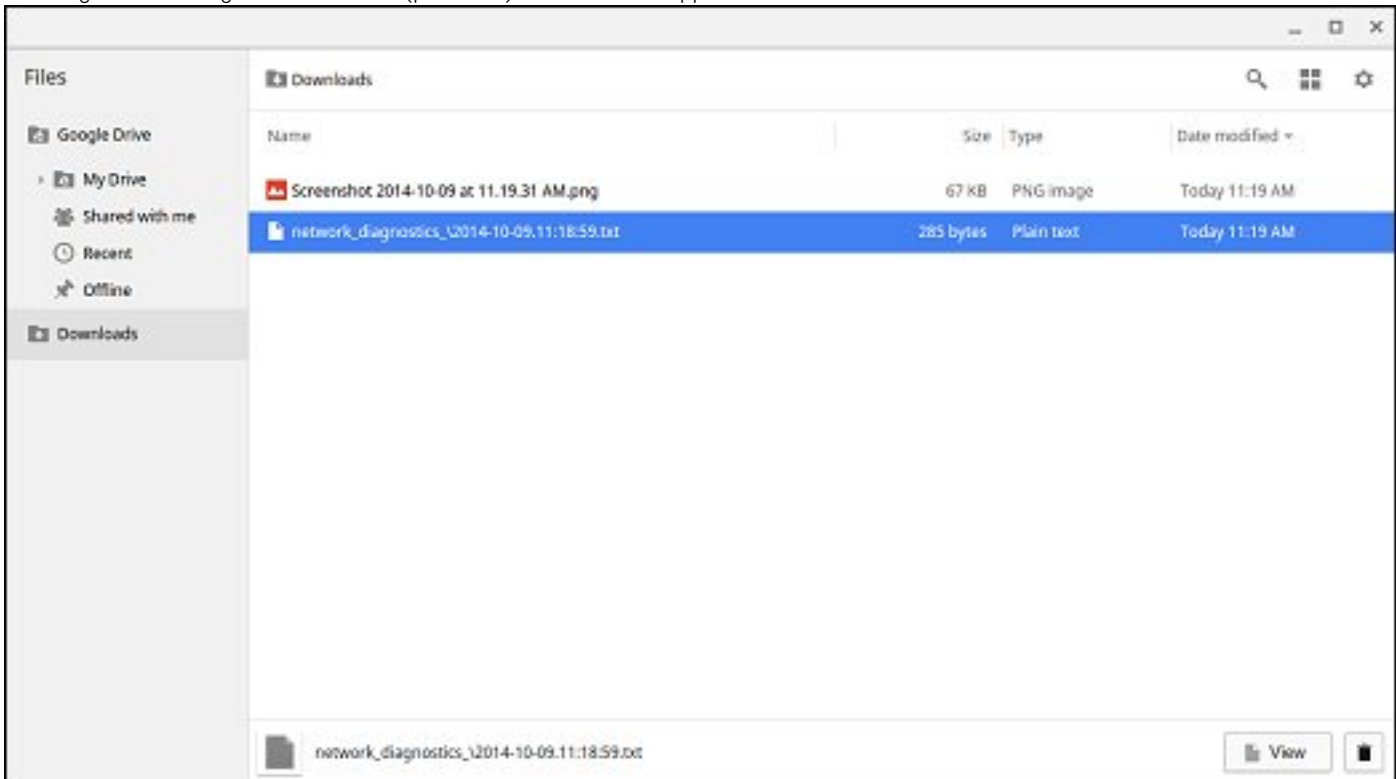


The screenshot shows a web browser window with a single tab titled 'crosh'. The address bar displays 'chrome-extension://nkoccljplnhpfnfiajclkommmmlphnl/html/crosh.html'. The main content area is a black terminal window with white text. It starts with a welcome message: 'Welcome to crosh, the Chrome OS developer shell. If you got here by mistake, don't panic! Just close this tab and carry on. Type 'help' for a list of commands.' The user has entered the command 'crosh> network\_diag'. The terminal output shows: 'Trying to contact https://www.google.com ... (waiting up to 10 seconds)', 'PASS: Loaded www.google.com via HTTPS', 'Entering diag\_date www.google.com', 'Local time of day: Thu Oct 9 11:19:00 MDT 2014', 'PASS: Time offset is small (-15)', and 'PASS: Current LinkMonitor latency for /device/mlan0 is 63ms'. The prompt 'crosh>' is visible at the bottom.

```
Welcome to crosh, the Chrome OS developer shell.
If you got here by mistake, don't panic! Just close this tab and carry on.
Type 'help' for a list of commands.

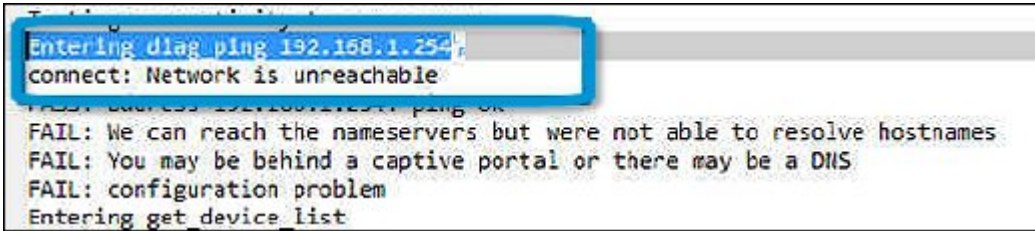
crosh> network_diag
Trying to contact https://www.google.com ... (waiting up to 10 seconds)
PASS: Loaded www.google.com via HTTPS
Entering diag_date www.google.com
Local time of day: Thu Oct 9 11:19:00 MDT 2014
PASS: Time offset is small (-15)
PASS: Current LinkMonitor latency for /device/mlan0 is 63ms
crosh>
```

- 6 The diagnostic test log is saved as a **.txt** (plain text) file in the Files app.





- 7 If the diagnostic test returns a failure message, make sure the Wi-Fi adapter is enabled and connect to a network.



```
Entering diag ping 192.168.1.254
connect: Network is unreachable
FAIL: We can reach the nameservers but were not able to resolve hostnames
FAIL: You may be behind a captive portal or there may be a DNS
FAIL: configuration problem
Entering get device list
```

## Resetting Inspiron Chromebook

This page contains all information about resetting Dell Chromebook.

All local user data stored on the Chromebook can be cleared by resetting it to its original factory state (also known as Powerwash).

This step might be helpful if you want to reset owner permissions or if you are experiencing issues with your user profile.

- NOTE:** All data stored on your Chromebook such as downloaded files, photos, owner permissions, and saved networks, will be deleted for all accounts when performing a factory reset. After clearing this data, you will be guided through the initial setup again. Resetting your device will not affect your accounts themselves, or any data synced to these accounts.
- NOTE:** Do not follow the instructions below if you're using a managed Chrome device, as you will not be able to re-enroll your device after powerwashing it.

Follow these steps to reset your Chromebook to its original factory state:

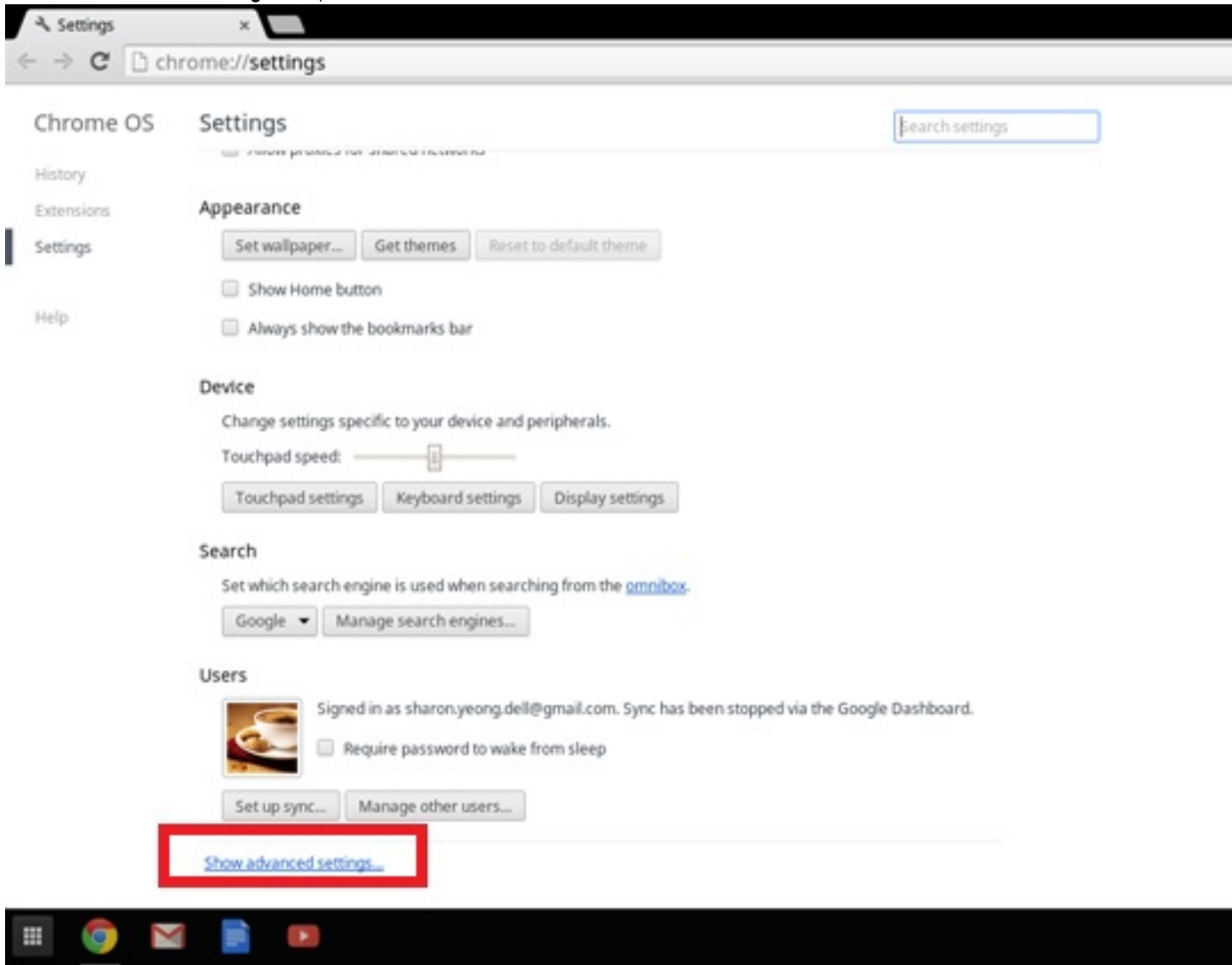
- 1 Click the status area in the lower-right corner, where your account picture appears.



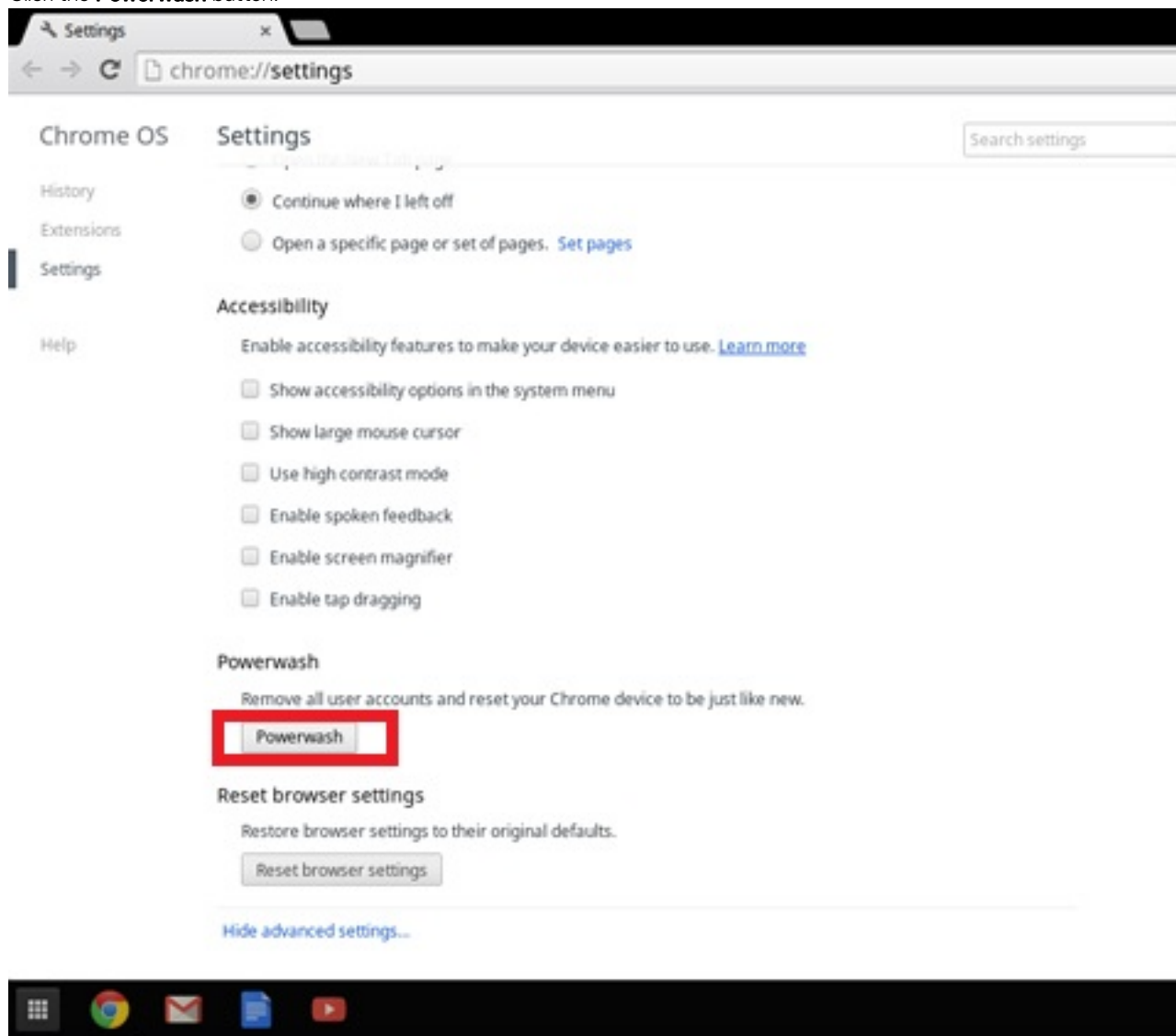
- 2 Click **Settings** as highlighted from the screenshot below.



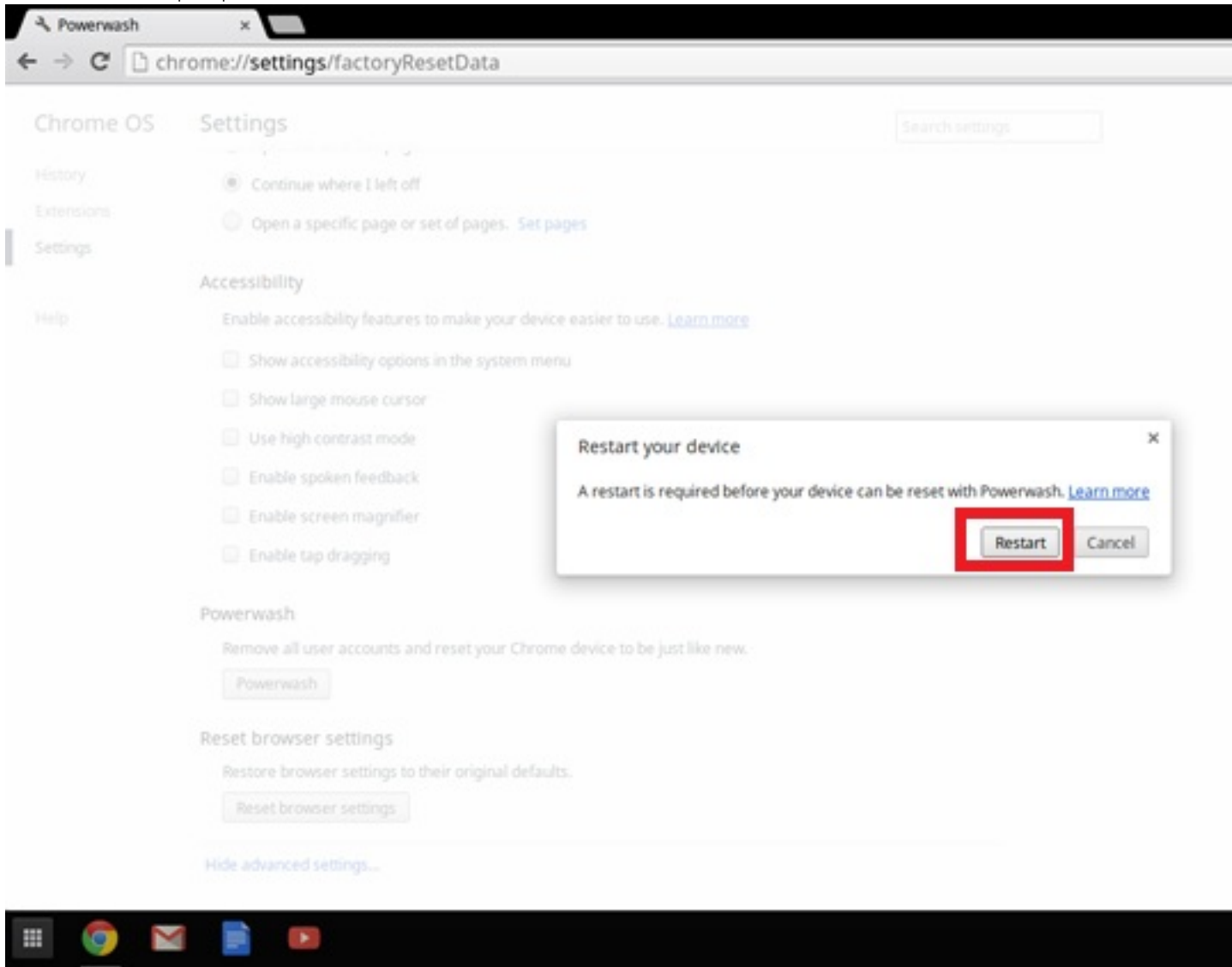
- 3 Click **Show advanced settings** to expand the menu.



- 4 Click the **Powerwash** button.



- 5 Click **Restart** when prompted.



You can also reset your Chromebook from the sign-in screen by holding down the keys **Ctrl+Alt+Shift+R** and clicking **Restart**. (If you are signed in to your Chromebook, sign out first before you press on **Ctrl+Alt+Shift+R**, then click **Restart**. Once the Chromebook is restarted, click **Reset**.)

After you restart the Chromebook, you should now see the setup screen. Follow the instructions on the screen to set up your Chromebook again. Make sure you sign in with your primary Google Account, because this account is set as the owner account.

## Recovering the Inspiron Chromebook

This page contains information about recovering Dell Chromebook.

## Recovering the Inspiron Chromebook

Install a new version of the Chrome operating system on your Chromebook by going through the recovery process. You may want to go through this process if you are having problems updating your Chromebook or if it stops working.



**NOTE:** All account information and data stored on your Chromebook, such as photos, downloaded files, and saved networks, will be deleted. Owner privileges for your primary account will also be reset. However, the actual Google Accounts and any data synced to these accounts are not affected by the recovery process. After the recovery process is complete, you will be guided through the initial setup again.

**Prerequisites:**

Before starting this process, you need the following:

- A Chrome device, Windows, Mac, or the Linux computer with administrative rights.
- A 4 GB or larger USB flash drive or SD card that you do not mind clearing.

## Step 1- Check for the Chrome OS is missing or damaged message

If you see this message, you can first try to perform a hard reset on your Chromebook by pressing Refresh + Power. If you still see this message after performing a hard reset, please proceed to Step 2.

If you see the **Chrome OS verification is turned off** message, refer to **Chrome OS verification is turned off** section below.

## Step 2- Create the recovery USB flash drive or SD card

Insert a USB flash drive or SD card into your computer and follow the instructions below

**Table 15. USB flash drive or SD card**

Operating System	Instructions
Chrome Device Instructions	Create a recovery flash drive by using the Image Burner. The tool may not be available in all languages.
	<ol style="list-style-type: none"><li>1 Type chrome://imageburner into the omnibox (browser's address bar) .</li><li>2 Run the tool and follow the instructions that appear on your screen.</li></ol>
Windows Instructions	<div><div><div><div></div><div></div></div><div><b>NOTE:</b> When recovering your Chromebook, make sure to create the recovery flash drive on the same model.</div></div></div>
	<ol style="list-style-type: none"><li>1 Click this <a href="#">link</a> to download the Recovery Tool. If you are a network administrator for your school, business, or organization, click this link to download the Recovery Tool: 2. 3.</li><li>2 Run the tool and follow the instructions that appear on your screen.</li><li>3 After you recover your Chromebook, you must format your USB flash drive or SD card using the Recovery Tool. If you do not format your USB flash drive or SD card, you will not be able to use all the storage space on your external device. Additionally, your USB flash drive or SD card may not be recognizable by Windows.</li></ol>
Mac Instructions	Create a recovery flash drive by using the Recovery Tool. The tool may not be available in all languages.
	<ol style="list-style-type: none"><li>1 Click this link to download the Recovery Tool.</li><li>2 Run the tool and follow the instructions that appear on your screen.</li></ol>
	After the process is complete, you might see an alert saying your USB drive or SD card is unreadable. If this fails, try removing and

## Linux Instructions

reinserting your USB drive or SD card. Your USB drive or SD card should now be ready to use for recovery.

Create a recovery flash drive by using the Recovery Tool. The tool may not be available in all languages.

1. Click this link to download the Recovery Tool.
2. Modify the script permissions to allow execution with the following command: `$ & sudo chmod 755 linux_recovery.sh`
3. Run the script with root privileges with the following command: `$ sudo bash linux_recovery.sh`
4. Follow the prompts from the tool to complete building the operating system image.

## Reinstall the Chrome Operating System

1. Start your Chromebook.
2. When the **Chrome OS is missing or damaged** screen appears, insert the USB flash drive or SD card you created into the USB port or SD card slot on your Chrome device.
3. Wait for the Chromebook to boot up from the flash drive.
4. Follow the instructions that appear on the screen.
5. On successful installation of the Chrome operating system, you will be prompted to remove the USB flash drive or SD card.
6. Remove the USB flash drive or SD card when prompted, and your Chromebook will automatically restart.

You should now be able to start your Chromebook as normal. Because the data stored on your Chromebook has been cleared, you will need to go through the initial setup again. Make sure you sign in with your primary Google Account, because this account will be set as the owner account.

## Chrome OS verification is turned off Message

By default, Chromebooks are set to the normal user mode. If you've set the user mode to developer mode instead, you'll see a screen with the message "Chrome OS verification is turned off" when you start up. Use the developer mode if you want to test your own version of the Chrome operating system.

Press **Ctrl+D** to enter developer mode. If you press the space bar instead, you'll see a screen asking to recover your device.

## Troubleshooting Tips

**Table 16. Troubleshooting tips**

Question	Solution
I am unable to recover my Chromebook	To help ensure that you are running the latest version of Chrome OS once you recover your Chromebook, we recommend creating the recovery media with the latest version of Chrome OS and avoid using recovery media that may contain an older version of the operating system.
An error message <b>An unexpected error has occurred.</b>	Try the following steps: <ol style="list-style-type: none"> <li>1. Confirm that you successfully completed all instructions exactly as specified in Step 2: Create the recovery USB flash drive or SD card above.</li> <li>2. Try using a different USB stick or SD card.</li> </ol>

## Question

An error message **You are using an out-of-date Chrome OS recovery image.**

You successfully recovered your Chromebook but now you can not use your USB or SD card with Windows

You successfully recovered your Chromebook but now Windows does not recognize the whole size of the USB or SD card used for recover.

## Solution


3 If the problem persists, contact Google Chrome support team.

You should download an up-to date recovery image. Simply follow all the instructions exactly as specified in Step 2 above.

After you have completed recovery, you need to format your USB or SD card using the recovery tool.

After you have completed recovery, you need to format your USB or SD card using the recovery tool.

## Contacting Dell

 **NOTE:** If you do not have an active Internet connection, you can find contact information on your purchase invoice, packing slip, bill, or Dell product catalog.

Dell provides several online and telephone-based support and service options. Availability varies by country and product, and some services may not be available in your area. To contact Dell for sales, technical support, or customer service issues:

- 1 Go to **Dell.com/support**.
- 2 Select your support category.
- 3 Verify your country or region in the **Choose a Country/Region** drop-down list at the bottom of the page.
- 4 Select the appropriate service or support link based on your need.