

AFTER

Eduroam and BYU Wi-Fi Master KB

The BYU Office of Information Technology provides wireless internet (Wi-Fi) access to the BYU community across campus. Users with wireless-enabled computers or other devices may access the internet through Eduroam with a BYU login or BYU Wi-Fi for guest access or devices without web browsers.

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About Eduroam and BYU Wi-Fi

Eduroam and BYU Wi-Fi are the two main wireless networks available on BYU campus.

Eduroam

The Office of Information Technology strongly encourages students, faculty, and staff to use the **Eduroam** network whenever it is available. Eduroam provides the highest possible level of wireless network encryption and allows users to connect to Eduroam at other participating schools and universities. Eduroam may be used by any current faculty, staff member, or student.

To search for participating schools, go to [[Eduroam's Supporting Services Map](https://monitor.eduroam.org/map_service_loc.php)](https://monitor.eduroam.org/map_service_loc.php).

Eduroam Features

- High-speed connection to the Internet
- Data encrypted using WPA3 with Transition mode (allows WPA2)
- Username and password required
- Internet access to BYU and non-BYU websites
- Network resources such as printers and network drives

[Eduroam Video: What is Eduroam?]

BYU Wi-Fi

BYU Wi-Fi is provided for guests and devices that are unable to connect to Eduroam. Guest users will only have access to public-facing BYU websites through the internet.

Devices without web browsers—including Apple TVs, Chromecasts, Wi-Fi printers, and Smart Devices—can only use BYU Wi-Fi. These devices can join the network without additional registration or configuration, and the device services will still be accessible to computers connected to Eduroam.

BYU Wi-Fi Features

- 1-Day Guest Access to Wi-Fi with a guest/visitor login
 - Unencrypted access to the internet and BYU internal resources with a BYU Login
 - For increased wireless security, please use the Eduroam network
 - Automatically allows certain devices without web browsers access to the campus internal network
 - For example, Roku, AppleTV, Amazon Echo, and wireless printers
 - BYU Wi-Fi does not support Chromecast devices
 - Services offered by devices without web browsers (such as Airplay on Apple TV or printing) are accessible to authenticated users on the BYU Wi-Fi and Eduroam networks
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Connecting to Eduroam

1. Go to the Wi-Fi settings on your device.
 2. Select Eduroam.
 3. Enter your username and password
 - The username is your **netid@byu.edu**
 - The password is your **BYU password**
 4. Select **Trust** or **Accept** the certificate
 5. Follow the **Device Specific Instructions for Eduroam** if issues occur
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Device Specific Instructions for Eduroam

Connecting an iPhone/iPad Device

The following are detailed instructions for connecting to Eduroam and troubleshooting your connection from an iPhone or iPad.

1. Open the **Settings** app.
2. Under **Wi-Fi**, select **Eduroam**.
3. Enter your username and password.
 - The username is your netid@byu.edu
 - The password is your **BYU password**

[Image of Login screen for iPhone]
4. Your password will be your BYU password, the same one you use for all BYU websites.
5. Select **Trust** when the security certificate prompt appears.
 - Installing this certificate is required for Eduroam to function

[Image of the security certificate screen for iPhone]

Troubleshooting Instructions for iPhone/iPad

If you are still having problems after following the above steps, follow these Troubleshooting Instructions:

1. Open **Settings**.
2. Select **General**.
3. Scroll to the bottom and select **Transfer or Reset iPhone**.
4. Select **Reset**.
5. Select **Reset Network Settings**.
6. Enter your passcode.
 - If asked, enter your Screen Time passcode as well
7. Tap **Reset Network Settings** again to confirm your decision.

Note: For additional assistance with connecting to Eduroam, please contact the [OIT Service Desk](https://support.byu.edu/it?id=tech_support).

Connecting a Windows Device The following are detailed instructions for connecting to Eduroam from a Windows based system:

1. Click on the **wireless icon** in your system tray in the lower right corner of your desktop.
 - For Windows 8.1 and earlier, select **Start > Connect To > Show all connections**
2. Select **Eduroam**.
3. Enter your username and password.
 - The username is your **netid@byu.edu**
 - The password is your **BYU password**

[Image of login screen for Windows 10] & [Image of login screen for Windows 8.1]

4. Click **Connect** to continue connecting.

Connecting an Android or Google Pixel Device

The following are detailed instructions for connecting to Eduroam for an Android based system:

1. Open **Settings**.
2. Open your network settings.
 - Network & internet > Internet (Google Pixel)
 - Network & Internet > Wi-Fi
 - Connections (Samsung Galaxy)
 - Wireless & Networks
3. Switch the Wi-Fi toggle to the on position.
4. Tap on **Wi-Fi**.
5. Select **Eduroam**.
 - If Eduroam does not appear, refer to the manual setup instructions
6. Enter your username and password.
 - The username is your **netid@byu.edu**
 - The password is your **BYU password**
7. Accept/trust the security certificate.

Manual Setup Instructions for Connecting an Android or Google Pixel Device

1. If Eduroam is not on the list of Wi-Fi options, tap **Add Network**.
2. Input the network name **Eduroam**.
3. Select **Advanced**.
4. Input the following information:
 - **EAP Method: Protected EAP or PEAP**
 - **Phase 2 Authentication:** choose MSCHAPv2
 - **Server CA certificate:** Select **Do not validate** or **Do not check** from drop-down menu. If using a Google Pixel or Motorola phone, select **Use system certificates**
 - **Domain Suffix Match:** Leave blank (if you selected **Use System Certificates**, the domain is byu.edu)
 - **Username/Identity:** Your netid@byu.edu
 - **Password:** Your BYU password
 - **Anonymous identity:** Leave blank
 - **All other fields:** Leave blank

If the previous setup does not work, use the following setup:

- **EAP Method: Protected EAP or PEAP**
- **Phase 2 Authentication:** Automatic
- **Server CA certificate:** Default
- **Domain Suffix Match:** byu.edu
- **Username/Identity:** Your netid@byu.edu
- **Password:** Your BYU password
- **Anonymous identity:** Leave blank
- **All other fields:** leave blank

If the previous setup does not work, use the following setup. This setup is a solution to issues related to the anonymous identity field. If the user's anonymous identity can't be left blank, and persists as **anonymous** throughout the setup, this configuration. This has been found to be an issue on newer Google Pixel devices.

- **SSID:** Eduroam
- **EAP Method: Protected EAP or PEAP**
- **Phase 2 Authentication:** MSCHAPv2
- **Server CA certificate:** Trust on first use
- **Username/Identity:** Your netid@byu.edu
- **Anonymous identity:** anonymous@byu.edu
- **All other fields:** Leave blank

Note: For some Google Pixel owners, they will not be able to connect until they set their Server CA Certificates to trust on first connection.

Connecting a Chromebook Device

The following are detailed instructions for connecting to **Eduroam** for a Chromebook:

1. Click on the time at the bottom right of your screen.
2. Click on **no-network**.

3. Select **Eduroam**.
4. Enter your username and password.
 - The username is your **netid@byu.edu**
 - The password is your **BYU password**
5. Accept/trust the certificate.

Manual Setup Instructions for a Chromebook

1. Click on the time at the bottom right of your screen.
2. Select **Settings**.
3. Under **Network**, select **Add connection > Add Wi-Fi**.
4. Enter the following information:
 - **EAP Method: Protected EAP or PEAP**
 - **Phase 2 Authentication:** choose MSCHAPv2
 - **Server CA certificate:** Select **Do not validate** or **Do not check** from drop-down menu
 - **Domain Suffix Match:** Leave blank (if you selected **Use System Certificates**, the domain is byu.edu)
 - **Username/Identity:** Your netid@byu.edu
 - **Password:** Your own password
 - **Anonymous identity:** Leave blank
 - **All other fields:** Leave blank

If the previous setup does not work, use the following setup:

- **EAP Method: Protected EAP or PEAP**
- **Phase 2 Authentication:** Automatic
- **Server CA certificate:** Default
- **Domain Suffix Match:** byu.edu
- **Username/Identity:** Your netid@byu.edu
- **Password:** Your own password
- **Anonymous identity:** Leave blank
- **All other fields:** leave blank

Advanced Troubleshooting for Chromebooks

If the above configurations do not connect you to the Eduroam network on a Chromebook, download and run the Eduroam installer:

1. Connect to BYU Wi-Fi.
2. Go to cat.Eduroam.org and click **Click here to download your Eduroam® installer**.

[image of eduroam installer for chrome os]

3. Choose Brigham Young University as the organization.
 - If you are on campus, it should be at the top
4. Make sure the installer for Chrome OS is shown.
 - If a different one appears (i.e., for Windows), select **Choose another installer to download** and choose **Chrome OS**

5. Click the blue **Eduroam** button.
 - A text box will appear
6. Click **Continue** to confirm the download.
[Image of Eduroam installer download]
7. With the installer downloaded, open a new tab in Chrome and go to **chrome://net-internals/#chromeos**.
8. Under the **Import ONC File** heading, click **Choose File**.
9. Select the downloaded **.onc** file and click **Open**.
 - The file will likely appear as **eduroam-chromeos-BYU-BYU.onc**.
10. Try using the first configuration method listed under the **Connecting to Eduroam for Android/Chromebook/Google Pixel** heading above.

Note: If the connection doesn't work at first, try it again in a few minutes, as the import may take up to a minute to register on the device.

Note: For additional assistance with connecting to Eduroam, please contact the [OIT Service Desk](https://support.byu.edu/it?id=tech_support).

Connecting to Eduroam for Mac

The following are detailed instructions for connecting to Eduroam from Mac systems.

1. Make sure that you are running IOS 10.9.5 or later on your computer.
2. Click on the wireless icon in the upper right corner of your desktop.
3. Select **Eduroam**.
4. Enter your username and password.
 - The username is your **netid@byu.edu**
 - The password is your **BYU password**

[image of login for eduroam on Chromebook]

5. Click **Join** to join the network.

[image of join network]

6. Click **Continue** when prompted to accept the security certificate.

Note: You will be required to acquire a computer administrator username and password to install the certificate. Contact your IT department for the administrator credentials.

Note: For additional assistance with connecting to Eduroam, please contact the [OIT Service Desk](https://support.byu.edu/it?id=tech_support).

Forgetting Networks

These steps only work for MacOS 13 and beyond. Instructions are similar for older versions, but the names of tabs are a little different.

1. Open **System Settings**.
[image of system settings]
2. On the left side, select **Privacy & Security**.
3. Select **Eduroam** on the right side under **Profiles**.
4. Click the minus button to delete the profile.

[image of privacy and security]

- If there is **no Eduroam** Profile button, there is no old Eduroam profile stored, and you can proceed to the Wi-Fi settings in step seven.
5. Delete the **Eduroam profile**.
 6. Confirm the deletion of the profile by clicking **Remove**. [image of removing the profile]
 7. Click the **Wi-Fi icon** at the top of the title bar and select **Wi-Fi settings**. [image of Wi-Fi settings]
 8. Click on **Advanced** in the window. [image of advanced settings]
 9. In the list of known networks, select **Eduroam**.
 10. Click on the circle with 3 dots and select **Remove From List**. [image of remove from list]

- You should now be good to set up Eduroam again

For MacOS 12 and earlier, these steps might not appear. You can also try the following steps:

1. Open Finder.
2. Hit **Command+Shift+G** to bring up the **Go To Folder** field.
3. Enter the following path:
 - [image of /Library/Preferences/SystemConfiguration/]
4. Delete the **com.apple.network.eapolclient.configuration.plist** file.
5. Enter the local admin credentials.
[image of **com.apple.network.eapolclient.configuration.plist** file]
6. Restart the laptop or iMac and connect to Eduroam.

Clear Cached Network Data

It seems that sometimes the Mac will still keep some information about the Eduroam network within its configuration files. Deleting the config file:

1. Open Finder and click on **Go** at the top of the screen next to window **View** and **Window**.
2. Click on **Go to Folder** near the bottom of the dropdown menu.
3. Input **/Library/Preferences/SystemConfiguration**.
4. Delete **com.apple.network.eapolclient.configuration.plist**.
5. Restart the computer.
6. Connect to Eduroam again.

Note: For additional assistance with connecting to Eduroam, please contact the [OIT Service Desk](https://support.byu.edu/it?id=tech_support).

Connecting to Eduroam for Linux

1. Select the **Eduroam**.
2. Enter your username and password.
 - The username is your **netid@byu.edu**
 - The password is your **BYU password**
3. Accept the security certificate.

Wireless Protocols

The wireless 802.11ac standard is recommended to connect to Eduroam. Eduroam also supports 802.11n and 802.11g. Eduroam does not support 802.11b, which is most commonly found in gaming devices made around 1999.

Manual Setup Instructions

1. Click the **NetworkManager applet** (a pair of superimposed monitors, typically in the upper bar on the right), and then select the network name (Eduroam).
 - The **Wireless Network Secrets Required** window will appear
2. Configure the settings as follows:
 - **Wi-Fi security:** WPA & WPA3 with Transition mode
 - **Authentication:** Protected EAP (PEAP)
 - **Anonymous identity:** (leave blank)
 - **CA certificate:** ca-certificates.crt (found at /etc/ssl/certs/ca-certificates.crt)
 - **PEAP version:** Automatic
 - **Inner authentication:** MSCHAPv2
 - **Username:** Your netid@byu.edu
 - **Password:** Your BYU password
 - **Leave** the checkbox Show Password **unchecked**

For a graphical walkthrough, follow the [[Ubuntu setup instructions](https://uwaterloo.ca/mechanical-mechatronics-engineering-information-technology/how-connect-eduroam)](https://uwaterloo.ca/mechanical-mechatronics-engineering-information-technology/how-connect-eduroam), using the information provided above.

Note: For additional assistance with connecting to Eduroam, please contact the [OIT Service Desk](https://support.byu.edu/it?id=tech_support).

Connecting to BYU Wi-Fi

1. Open your **Wi-Fi Settings**.
2. Turn on Wi-Fi.
3. Select BYU Wi-Fi.
 - Depending on your device, you may be prompted to sign in or you may be connected at this point
 - If you do automatically connect, continue to the login (Step 4)
4. Select your access: **Students, Faculty, and Staff** or **Guest Access**.
 - For students, faculty, and staff, enter your BYU NetID and password
 - For guests, select **Click Here to Connect**
5. Follow the **Device Specific Instructions** for BYU Wi-Fi if issues occur.

Note: To gain access to internal campus resources you must login with your BYU NetID and password. If you are not a current student, faculty, or staff, you can use the 1-day guest access.

Device Specific Instructions for BYU Wi-Fi

Connecting to BYU Wi-Fi For Windows

1. Click the wireless icon in your system tray in the lower right corner of your desktop.
 - For Windows 8.1 and earlier, choose **Start>Connect To>Show all Connections**
2. Select **BYU Wi-Fi**.
3. Open a browser such as Google Chrome.
4. Navigate to google.com or another search engine.
 - You may see a security error if you attempt to access a secure site. This is a normal function, and you may proceed. Avoid this error by going to a non-secure website (such as a search engine) or a website you have not visited before
5. Select your access: **Students, Faculty, and Staff** or **Guest Access**.
 - For students, faculty, and staff, enter your **BYU NetID** and **password**
 - For guests, select **Click Here to Connect**

Connecting to BYU Wi-Fi For Mac

1. Click on the wireless icon in the upper right corner of your desktop.
2. Select **BYU Wi-Fi**.
 - For 1 day guest access, select **Guest Access** in your Wi-Fi settings
3. Open a browser such as Google Chrome.
4. Navigate to google.com or another search engine.
5. Select your access: **Students, Faculty, and Staff** or **Guest Access**.
 - For students, faculty, and staff, enter your **BYU NetID** and **password**
 - For guests, select **Click Here to Connect**

Connecting to BYU Wi-Fi For Mobile Devices (Android and iOS)

1. Go to Settings.
2. Select Wi-Fi.
3. Select the BYU Wi-Fi network.
 - Optionally, you can gain 1 day guest access by clicking the link at the bottom of the login box
4. Open an internet browser.
5. Navigate to google.com or another search engine.
6. Select your access: **Students, Faculty, and Staff** or **Guest Access**.
 - For students, faculty, and staff, enter your **BYU NetID** and **password**
 - For guests, select **Click Here to Connect**

Note: Some Samsung devices will pop up a message that says **Allow Captive Portal Login to access photos, media, and files on your device?** You can select **Deny** for this message. This message is from the **Samsung device**, not the BYU Sign-on system.

Authenticated Access

Users with an active role with the university who log in with a BYU NetID and password will have access to the internal campus network and internet access. This access will allow a user to perform activities such as printing to network printers and accessing internal network drives.

- This access does not include data center access

Guest Access

Users may click a link below the login box for instant guest access. Guests will have access to the internet but not internal campus resources. Campus websites that are accessible through any public internet connection will still be accessible.

Note: For additional assistance with connecting to BYU Wi-Fi, please contact the [OIT Service Desk](https://support.byu.edu/it?id=tech_support).

Common Issues

IOS Device Software Version: IOS devices using IOS 14.0 or 14.1 have had issues connecting to Eduroam. Ensure your device is updated to IOS 14.2 or higher. If the issue persists, please contact the [OIT Service Desk](https://support.byu.edu/it?id=tech_support) for assistance.

Access to Internal Resources with BYU login: To gain access to internal campus resources you must login with your BYU NetID and password. If you are not a current student, faculty, or staff, you can use the 1-day guest access.

Connecting Devices without Web Browsers: Devices without web browsers (wireless printers, Chromecasts, smart TVs, AppleTVs, Amazon Echos, or other similar products) will only use the **BYU Wi-Fi** network. Services offered by devices connected to **BYU Wi-Fi** (for example, Airplay on Apple TV) are accessible to users on the **Eduroam** network. Smart devices are generally unable to connect to the Eduroam network. Devices such as wireless printers, Chromecasts, smart TVs, AppleTVs, Amazon Echos or other similar products only connect to the BYU Wi-Fi network.

Wireless Protocols/Standards: The wireless 802.11ac standard is recommended to connect to Eduroam. Eduroam also supports 802.11ax, 802.11n, and 802.11g. Eduroam does not support 802.11b, which is most commonly found in gaming devices made around 1999.

Eduroam and BYU Wi-Fi not Available: If **Eduroam** or **BYU Wi-Fi** do not appear in the list of available networks in a building, the Wi-Fi adapter will need to be updated. Please contact the [OIT Service Desk](https://support.byu.edu/it?id=tech_support) or your college's IT Department. Many buildings have been upgraded to Wi-Fi-6, which requires newer drivers to see the Wi-Fi-6 SSIDs.

Google Pixel Certificate: For some Google Pixel owners, they will not be able to connect until they set their Server CA Certificates to trust on first connection.

Contact Us: For additional assistance with connecting to Eduroam or BYU Wi-Fi, please contact the [OIT Service Desk](https://support.byu.edu/it?id=tech_support).

Elevated Troubleshooting

Gather Information

1. Find out what the customer has done so far:

- If the customer has **not done any** troubleshooting, begin with manual setup instructions
 - If the customer has done **some** troubleshooting, begin where they stopped
 - If the customer has done **all** the troubleshooting, continue with the elevated troubleshooting instructions
 - If the customer is a member of a YSA bishopric, stake presidency, high counsel, or stake Relief Society, follow the instructions in [KB0025782](https://support.byu.edu/kb_view.do?sysparm_article=KB0025782) to grant them rights to connect to Eduroam
2. Find out which network the customer is attempting to use.
 - Customers will often refer to issues as **BYU Wi-Fi** but really mean **Eduroam**
 3. Ask the user if they are in a coverage area.
 - Bathrooms, stairwells, mechanical spaces, and outside of BYU buildings are not covered
 4. Enter the following information in the incident ticket: Room, Building, Time(s) the issue occurred, IP address, and MAC address of their Wi-Fi adapter.
 - Useful questions to ask the user include the following: Does this occur in other buildings? Are others experiencing the same issue?

Check the Clearpass Error Logs

- Clearpass is the login system for both BYU Wi-Fi and Eduroam
1. Log in to Clearpass (see [KB0029648](https://support.byu.edu/kb_view.do?sysparm_article=KB0029648)).
 2. Check for alerts for the user's login attempts
 - An LDAP error from the BYU Wi-Fi login page (user-facing) indicates either no active user role or a bad password
 3. Check to see if there is a space character " " after their netid@byu.edu.
 - If there is a space, have the customer eliminate it and try again

Check IP Address

1. Check to make sure that the customer is getting a valid IP address.
 - You may need to help the customer find this information
2. Use [KB0023419](https://support.byu.edu/kb_view.do?sysparm_article=KB0023419) to verify if the IP address is valid.

Check that their Active Directory Account is not Locked

1. Verify that the customer's account is not being locked because of their Active Directory Account.
 - A locked account will prevent the customer from using new device leases
 - A device with an old password saved may lock their Active Directory Account
 - A locked account will cause all new devices to fail authentication
 - Some existing devices that are already connected may still be working properly

2. Unlock the locked Active Directory Account using [KB0026069](https://support.byu.edu/kb_view.do?sysparm_article=KB0026069).

See if the Customer gets a Security Error in the Web Browser when using BYU Wi-Fi

1. Have the customer go to a website they have never been.
 - For example, bbc.com, espn.com, or cnn.com
2. Have the customer sign in on the BYU Wi-Fi sign-in page.
 - If the customer is getting security errors for BYU Wi-Fi, have them navigate to <https://onboard.byu.edu/guest/public>

See if the Customer is able to load Webpages and Connect to Wi-Fi

1. Follow the trouble shooting steps in [KB0030084](https://support.byu.edu/kb_view.do?sysparm_article=KB0030084) to resolve the issue.

Assign the incident to the CNC-Network Service Center with all the following information:

1. What type of device (for example, an iPhone or Dell laptop) does the customer have?
2. What Operating System does the customer have?
3. What is the MAC address of the wireless NIC?
4. Does the customer connect to an access point (IP address or other)?
5. What access point, if any, does the customer connect to?
 - Check Clearpass [KB0029648](https://support.byu.edu/kb_view.do?sysparm_article=KB0029648)
6. Can the customer get a valid connection to a network outside of BYU Wi-Fi or Eduroam (for example, their home Wi-Fi)?
7. Which, if any, IP address does the customer get?
8. Is the customer's Active Directory account locked or automatically locking?
9. Can the customer ping google.com?
10. Can the customer ping the IP address 8.8.8.8 (a Google server)?
11. Can the customer access campus websites?
12. Which websites is the customer trying to and unable to access? What happens when they try?
13. In what rooms and buildings is the customer having trouble connecting to Wi-Fi?
14. What specific time(s) of day is the issue occurring?
15. Are other people around the customer experiencing the same issue?

Using Clearpass

Find the Clearpass error codes at

[KB0029648](https://support.byu.edu/kb_view.do?sysparm_article=KB0029648).

To access Clearpass, go to [onboard.byu.edu](<https://onboard.byu.edu/tips/welcome.action>) and select the box in the top left that says **Clearpass Policy Manager**.

- The credentials for the service desk are saved in Lastpass

[image of clearpass]

Check for a Valid IP Address

This section covers how to check for a valid IP address and release and renew the IP address while troubleshooting wired/wireless network access problems.

Check for a Valid IP Address on Windows 7, 8, and 10

1. Click the **Start** button.
2. Select the search bar at the bottom that says **Start Search**.
3. Type **command** or **cmd** in the search bar and press **enter**.
4. Type **ipconfig** in the **Dos Prompt** window.
5. Check for a valid IP address (listed as IPv4 Address).
6. Type **ipconfig /release** and press **enter**.
 - Click **Start**
 - Click **All Programs**
 - Click **Accessories**
 - Right Click, **Command Prompt**
 - Click **Run as Administrator**
 - A box will come up asking for permissions, click **Yes**
 - Type **ipconfig /release** again at the prompt and press **Enter**

Note: An error may appear saying **The requested operation requires elevation**. This message means that only the administrator can release the IP address.

7. Type **ipconfig/renew** and press **Enter**.
8. Check for a valid IP address.
 - If the user gets the error **The operation failed as no adapter is in the state permissible for this operation**, it means they have a static IP address. Check their TCP/IP settings.

If the previous method for finding an IP address does not work, use the following method:

1. Go to **Control Panel > Network and Internet > Network and Sharing Center**.
2. On the left side menu select **Change Adapter Settings**.
3. Right Click on **Local Area Connection or Wireless Area Connection** and select **Status**.
4. Click on the **Details** button.

Check for a Valid IP Address on Mac OS X

1. Click the **Apple** button.
2. Click on **System Preferences**.
3. Select **Internet and Network** subtitle.
4. Click the **Network** icon.
5. Select **Options > Ethernet**
 - For wireless problems, select **Options > Airport or Wi-Fi**
6. Click the **Advanced** button.
 - For Mac OS 10.4 and earlier, click the **TCP/IP** tab (on)
7. Select **Using DHCP** in the Configure IPv4 field.
8. Check for a valid IP Address.
9. Click **Renew DHCP Lease** to get a new address.

- If the boxes are grayed out and will not allow changes, check in the bottom left of the window to see if they have been locked
- To allow changes, click on the lock and have the user re-enter their computer username/password

If problems continue, remove the **offending network** (Airport, Ethernet, etc.).

1. Go to **System Preferences > Network preferences**.
2. Press the **minus (-)** button in the left pane.
3. Press **apply**.
4. Add the network again.
5. Check for a valid IP Address.

Escalation Rules

Note: Devices without internet browsers or screens (such as Chromecasts, Apple TVs, printers, and Amazon Echoes) are unable to connect to Eduroam. These devices should connect to BYU Wi-Fi without needing to enter a password or registration. If there are problems with these devices connecting with BYU Wi-Fi, get the MAC address and assign the INC to CNC-Network Service Center.

If an issue related to the wireless network cannot be resolved by the TSC, it might need to be escalated to the **Campus Network Center (CNC)**.

- TSC agents submitting tickets to the CNC must use the provided incident ticket template in ServiceNow
- Before a ticket is assigned to the CNC, the agent needs to **verify the user's contact information**, and **update the information** in ServiceNow, as needed
- After a ticket is assigned to the CNC, the agent will direct the user to **save the ticket number** and **contact the CNC directly at 801-422-7576** to follow-up if their ticket is not resolved within **24-48 hours** or the amount of time agreed by the TSC agent and customer

BEFORE

Eduroam and BYU WiFi - Connecting to Networks

The BYU Office of Information Technology provides wireless internet (WiFi) access to the BYU community across campus. Users with wireless-enabled computers or other devices may access the internet using this wireless service.

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 - Advanced Troubleshooting for Chromebooks - Only to be used by CNC 801-422-7576. This is guaranteed to break 99.9% of devices!
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- How to Check IP Address
 - Windows 7, 8 and 10
 - Mac OS X
- Escalation Rules

Available Networks

There are currently two main wireless networks available across campus depending on your location:

Eduroam

The Office of Information Technology encourages students, faculty and staff to use the **Eduroam** network wherever it's available. Eduroam provides the highest possible level of wireless network encryption and gives users the ability to use the eduroam networks at other participating universities. Eduroam may be used by any current faculty, staff member, or student. To search for participating schools, go to <https://cat.eduroam.org/>.

Users can connect/reconnect by:

- Going into wifi settings on your device, select Eduroam. Using your "netid@byu.edu" as the username and your BYU password for the password.

BYU-WiFi

BYU-WiFi is intended for guests and devices that are unable to connect to eduroam. Guest users will only have access to public-facing BYU websites through the internet. Devices that do not have web browsers should use BYU-WiFi. These include (but are not limited to) Apple TVs, Chromecasts, and WiFi printers, which can join the network with no additional registration or configuration needed. Even though they are connected to BYU-WiFi, these devices are accessible to computers connected to Eduroam.

Connecting to Eduroam

See instructions below for your device.

Eduroam Features

- High-speed connection to the Internet

- Data is encrypted using WPA3 with Transition mode (allows WPA2)
- Username and password required
- Provides Internet access to BYU and non-BYU websites
- Access to other network resources such as printers, network drives, etc

Manual Setup Instructions

1. Select the "eduroam" network on your device
2. It will prompt you for a username, which MUST be formatted as <netID>@byu.edu. ex: oitbyu@byu.edu
3. Enter your password, which should be your regular BYU password that you use to sign into all BYU websites
4. Accept the security certificate.

Note: for device specific instructions, see sections below.

Wireless Protocols

The wireless 802.11ac standard is recommended, 802.11ax, 802.11n and 802.11g are supported. 802.11b (found on very old devices such as older gaming consoles and portable devices) is not supported.

Most computers, cell phones and tablets should work with eduroam without issue.

Please note that smart devices are generally unable to connect to the Eduroam network. Devices such as wireless printers, Chromecasts, smart TVs, AppleTVs, Amazon Echos or other similar products should connect to the BYU-WiFi network. Services offered by devices connected to BYU-WiFi (such as Airplay on Apple TV) are still accessible to users on the eduroam network.

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Connecting to Eduroam for iPhone/iPad

The following are detailed instructions for manually connecting to and troubleshooting connecting to Eduroam from an iPhone or iPad. For general information, see [Connecting to the Eduroam network](#).

Manually Connecting

1. Open the "Settings" app.
2. Under "Wi-Fi" select the network called "eduroam".
3. Your device will prompt you for your username and password.
4. The username needs to be formatted as [<netid>@byu.edu](#).

[image]
5. Your password will be your BYU password, the same one you use for all BYU websites.
6. When you get prompted about a security certificate tap the text that says "Trust" at the top of the screen. Installation of this certificate is required for Eduroam to function.

[image]
7. At this point you should be connected to Eduroam and should be able to use the internet.
8. If you are still having problems after following the above steps, see the Troubleshooting section at the bottom of this page.

Note: There has been an issue recently that only applies to iPhones not being able to connect to Eduroam or BYU WiFi. This issue is caused by a bug in the code of IOS 14.0 and/or 14.1. The device needs to be updated to IOS 14.2 to correct the issue. Once updated, the iPhone will connect to Eduroam. If the issue persists after updating the IOS, please contact the TSC at [801-422-4000](tel:801-422-4000) for assistance.

Note: Some users have been unable to connect to Eduroam while their iPhone's language is not English. Switching the language to English, connecting to Eduroam, and then switching back to the user's preferred language may resolve the problem.

Troubleshooting Option

1. Open Settings
2. Select General
3. Scroll to the bottom and select Transfer or Reset iPhone
4. Select Reset
5. Select Reset Network Settings
6. Enter your passcode if you have one
7. If asked, enter your Screen Time passcode as well
8. Tap Reset Network Settings again to confirm your decision

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Connecting to Eduroam for Windows

NOTE: If neither "eduroam" nor BYU-WiFi show up in their list of available networks in some buildings, they will need to update their wifi adapter before proceeding. Many buildings on campus have been upgraded to wifi-6. This newer protocol requires newer drivers to be able to even see the wif-fi-6 SSIDs.

The following is detailed instructions for manually connecting to Eduroam from a Windows based system.

1. Click on the wireless icon in your system tray in the lower right corner of your desktop
 - a. Users of older versions of Windows can choose Start > Connect To: > Show all connections
2. Select the desired network, eduroam. Your computer will prompt you for a username and password.
3. Username needs to be formatted as [<netid>@byu.edu](#)."

[image]
(Windows 10)

[image]
(Windows 8.1)

4. Your password will be your BYU password, the same one you use for all BYU websites.

5. Click "Connect" on the dialogue box that asks if you want to continue connecting.

[image] [image]

6. At this point, you should be connected to Eduroam and should be able to use it without issue.
7. If you are still having problems after following the above steps, see the Troubleshooting section at the bottom of this page.

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Connecting to Eduroam for Android/Chromebook/Google Pixel

The following is detailed instructions for manually connecting to Eduroam for Android based system or Chromebooks.

Android users should use the following setup.

1. **EAP Method: Protected EAP or PEAP**
2. **Phase 2 Authentication:** choose MSCHAPv2
3. **Server CA certificate:** Select "**Do not validate**" or "**Do not check**" from drop-down menu. If using a Google Pixel or Motorola phone, select "**Use system certificates**"
4. **Domain Suffix Match:** Leave blank (if you selected "Use System Certificates", the domain is byu.edu)
5. **Username/Identity:** <[netid](#)>[@byu.edu](#)
6. **Password:** <Your own password>
7. **Anonymous identity:** Leave blank
8. **All other fields:** Leave blank

It has been found that the above setup may not always work for all Chromebooks or Androids. If this is the case, try this setup, as well.

1. EAP Method: Protected EAP or PEAP

2. Phase 2 Authentication: Automatic

3. Server CA certificate: Default

4. Domain Suffix Match: byu.edu

5. Username/Identity: [<netid>@byu.edu](#)

6. Password: <Your own password>

7. Anonymous identity: Leave blank

8. All other fields: leave blank

For some Google Pixel owners, they will not be able to connect until they set their Server CA Certificates to trust on first connection.

If the previous configurations are failing, try this one. This is a solution to issues related to the anonymous identity field. If the user's anonymous identity can't be left blank, and persists as "anonymous" throughout the setup, try this configuration. This has been found to be an issue on newer Google Pixel devices.

1. EAP Method: Protected EAP or PEAP

2. Phase 2 Authentication: MSCHAPv2

3. Server CA certificate: Trust on first use

4. Username/Identity: [<netid>@byu.edu](#)

5. Anonymous identity: [anonymous@byu.edu](#)

6. All other fields: Leave blank

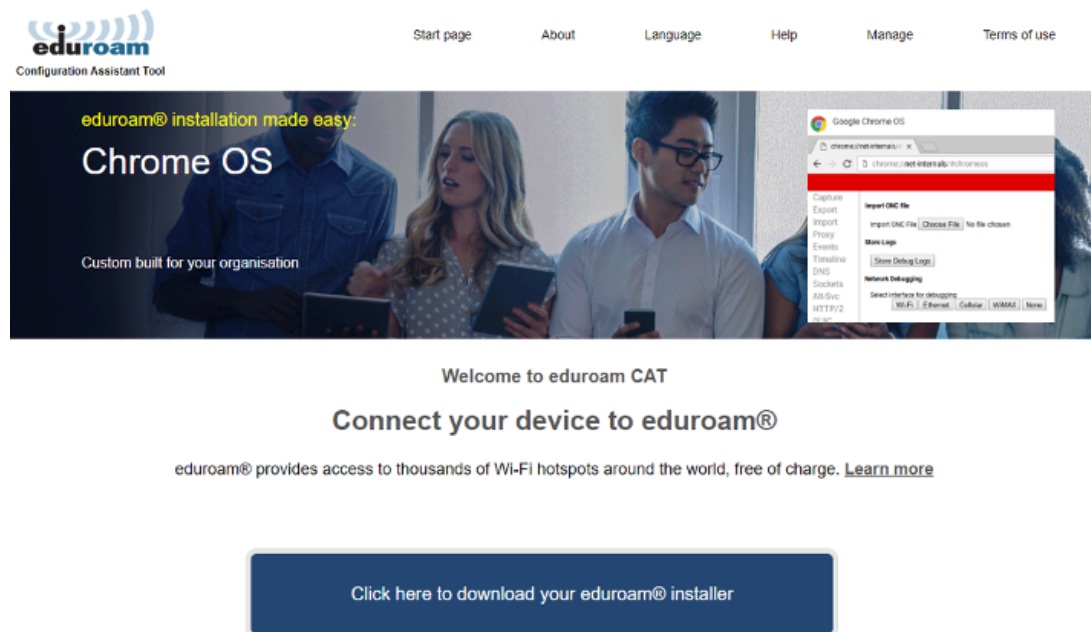
Please Note that the SSID is "eduroam".

Advanced Troubleshooting for Chromebooks - Only to be used by CNC 801-422-7576. This is guaranteed to break 99.9% of devices!

When neither of the above configurations for connecting to Eduroam work on a Chromebook, forward ticket to CNC. The CNC may decide to have the user download and run the Eduroam installer.

To do so:

1. Connect to BYU-WiFi
2. Go to cat.eduroam.org and click “Click here to download your eduroam® installer”



3. Choose Brigham Young University as the organization (if they are on campus, it should be at the top)
 4. Make sure the installer for Chrome OS is shown. If a different one appears (i.e., for Windows), click Choose another installer to download and choose Chrome OS
 5. Click the blue Eduroam button
 6. A text box will appear. Click Continue to confirm the download:
[image]
 7. With the installer downloaded, have the user open a new tab in Chrome and go to `chrome://net-internals/#chromeos`
 8. Under the Import ONC File heading, click Choose File
 9. Once a pop-up window opens, select the downloaded .onc file (probably eduroam-chromeos-BYU-BYU.onc) and click Open
 10. Try using the first configuration method listed under the Connecting to Eduroam for Android/Chromebook/Google Pixel heading above.
- **Note:** If it doesn't work at first, try it again in a few minutes, as the import may take up to a minute to register on the device.

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Connecting to Eduroam for Mac

The following is detailed instructions for manually connecting to Eduroam from Mac systems.

For manual connection

1. Make sure that you are running 10.9.5 or later on your computer
2. Click on the wireless icon in the upper right corner of your desktop.
3. Select the desired network eduroam. Your computer will prompt you for a username and password.

4. Username needs to be formatted as (netid@byu.edu).
5. Your password will be your BYU password, the same one you use for all BYU websites.
6. Click "Join" to join the network.

7. Click "Continue" when prompted to accept the security certificate.
8. A computer administrator name and password will be required to install the certificate - this is a username and password on the computer, not one that is provided by or associated with BYU. It will be the same username and password that you normally use to install software on the device.
9. If you are still having problems after following the above steps, see the Troubleshooting section at the bottom of this page.

Forgetting Networks

These steps only work for MacOS 13 and beyond. Instructions are similar for older versions, but the names of tabs are a little different.

1. Open the "System settings..."

[image]

2. On the left side, select "Privacy & Security" and select "eduroam" on the right side under "Profiles". You can now delete the profile by clicking the minus button.

[image]

Note: If there is **no** Profile button, there is no old Eduroam profile stored, you can proceed to step 4.

3. Step 3: Delete eduroam profile. Please confirm the deletion of the profile by clicking "Remove".

[image]

4. Click the "Wi-Fi icon" at the top of the title bar and select "Wi-Fi settings".

[image]

5. Click on "Advanced" in the window.

[image]

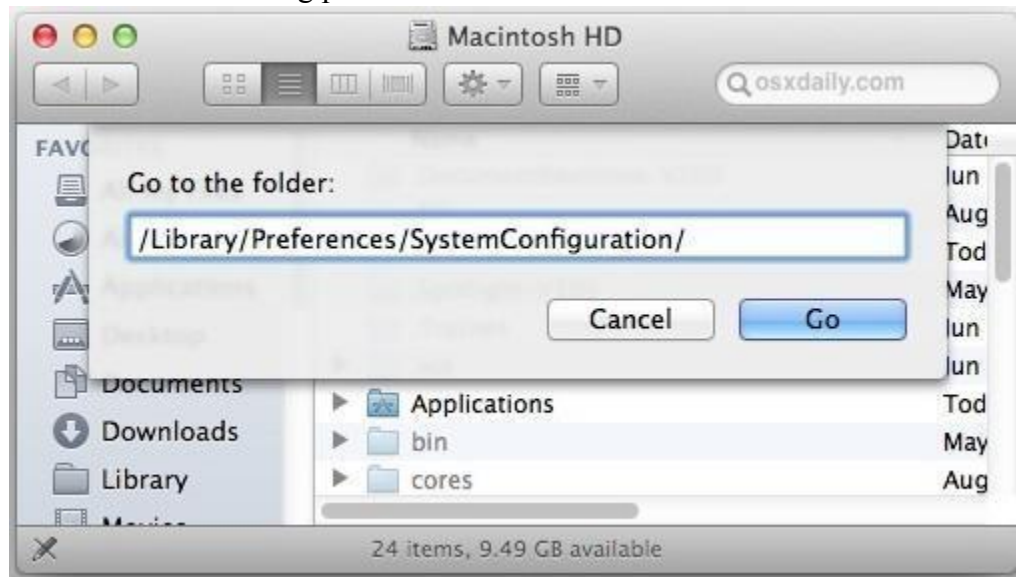
6. In the list of known networks, select "eduroam" if available, click on the circle with 3 dots and select "Remove From List".

[image]

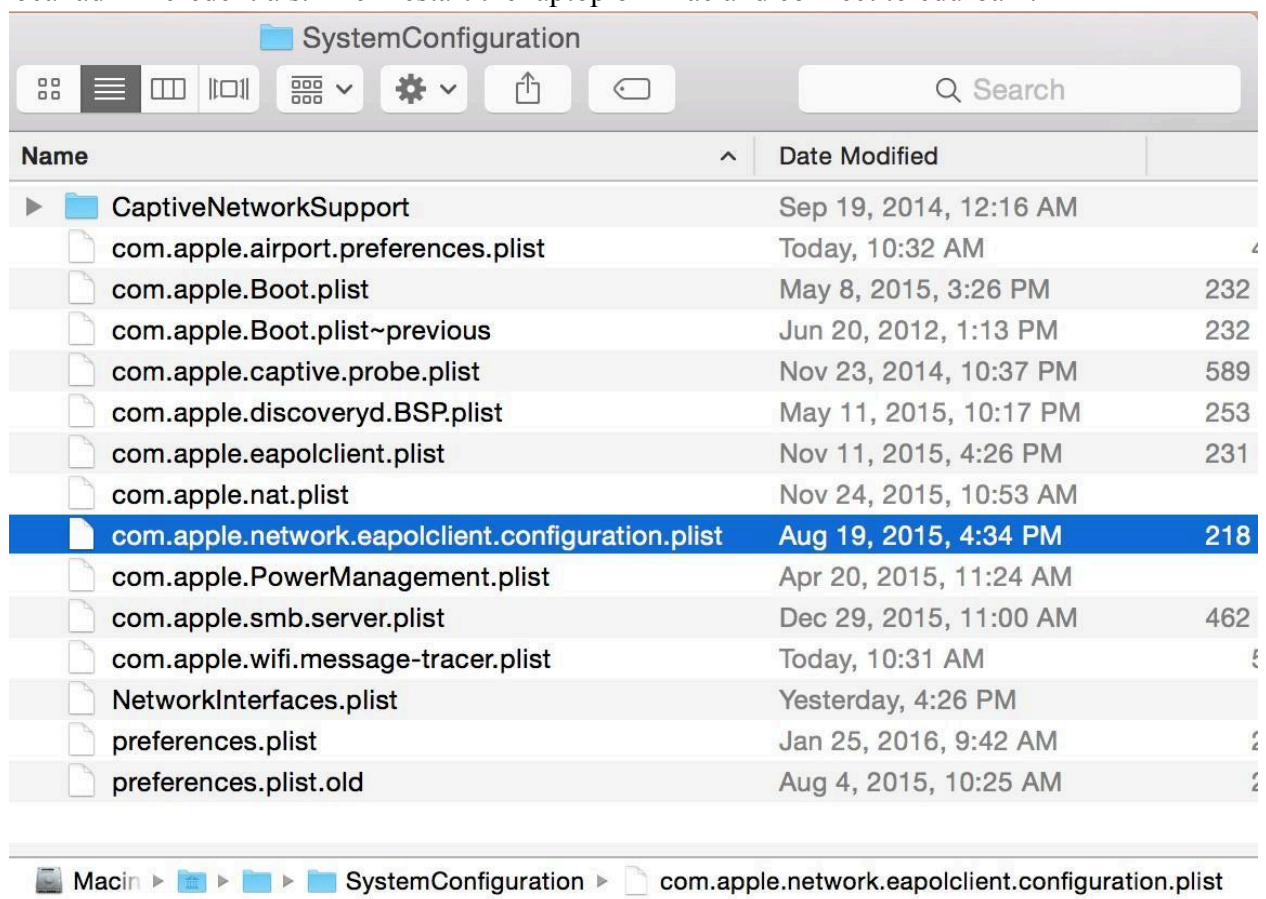
7. You should now be good to set up eduroam again.

For some older versions of Mac OSX (MacOS 12 and earlier), these steps might not appear. You can also try these steps:

1. From any Finder window, hit Command+Shift+G to bring up the "Go To Folder" field. Then enter the following path:



2. Delete the com.apple.network.eapolclient.configuration.plist file which will prompt for local admin credentials. Then restart the laptop or iMac and connect to eduroam.



Clear Cached Network Data

It seems that sometimes the Mac will still keep some information about the Eduroam network within its configuration files. Deleting the config file by:

1. Open Finder and click on "Go" at the top of the screen next to window "View" and "Window".
2. Click on "Go to Folder" near the bottom of the dropdown menu.
3. Type/paste in: /Library/Preferences/SystemConfiguration
4. Delete com.apple.network.eapolclient.configuration.plist
5. Restart the computer.
6. Try connecting to Eduroam again.

Connecting to eduroam for Linux

1. Click the NetworkManager applet (a pair of superimposed monitors, typically in the upper bar on the right), and then select the network name (eduroam). The "Wireless Network Secrets Required" window will appear.
2. Configure the settings as follows:
 - a. Next to "Wireless Security:", select WPA & WPA2 Enterprise.
 - b. Next to "Authentication:", select Protected EAP (PEAP).
 - c. Leave the "Anonymous Identity:" field blank.
 - d. Click the button next to "CA Certificate:", and then browse to the certificate bundle file (</etc/pki/tls/certs/ca-bundle.crt>).
 - i. For Ubuntu/Debian Linux systems connecting to Eduroam, the certificate might also be found at /etc/ssl/certs/ca-certificates.crt
 - e. Next to "PEAP Version:", choose Version 0.
 - f. Make sure "Inner Authentication:" is set to MSCHAPv2.
 - g. Next to "User Name:" enter your NetID@byu.edu. Next to "Password:", enter the password you use to access my.byu.edu.
 - h. Do **NOT** check Show password, as it will display your passphrase in clear text.

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Most computers, cell phones and tablets should work with eduroam without issue. Devices without web browsers should use the BYU-WiFi network. Services offered by devices connected to BYU-WiFi (such as Airplay on Apple TV) are accessible to users on the eduroam network.

Wireless Protocols

The wireless 802.11ac standard is recommended, 802.11n and 802.11g are supported. 802.11b (typically only found on very old devices such as older gaming consoles and portable devices) is not supported.

Manual Setup Instructions

- Select the "eduroam" network on your device.
- When prompted enter netid@byu.edu for the username.
- Accept the security certificate.
- **Please note that smart devices are generally unable to connect to the Eduroam network. Devices such as wireless printers, Chromecasts, smart TVs, AppleTVs, Amazon Echos or other similar products should connect to the BYU-WiFi network**

Detailed Instructions

Wi-Fi security: **WPA & WPA3 with Transition mode**

Authentication: **Protected EAP (PEAP)**

Anonymous identity: **(leave blank)**

CA certificate: **ca-certificates.crt** (found at /etc/ssl/certs/ca-certificates.crt)

PEAP version: **Automatic**

Inner authentication: **MSCHAPv2**

Username: netid@byu.edu

Password: *********

For a graphical walkthrough, follow the Ubuntu setup instructions here, using the information provided above.

Connecting to BYU-WiFi

BYU-WiFi Features

- Open generic internet access to the Internet.
- BYU WiFi is not encrypted, for increased wireless security use the Eduroam network.
- BYU-WiFi features a guest/visitor login which grants internet only access.
- BYU-WiFi also allows users to sign-in and authenticated users gain access to internal resources in addition to the generic internet access.
- Automatically allows certain "headless" devices (no web browser) access to the campus internal network. Examples include Roku, AppleTV, Amazon Echo, and wireless printers. It does not allow Chromecast devices.
- Services offered by headless devices (such as Airplay on Apple TV or printing) are accessible to authenticated users on the BYU-WiFi and eduroam networks.

Connecting to BYU WIFI

To manually access the list of available networks if not automatically connected:

Note: Many modern devices will automatically pop up a web page for sign in once connected to the network. These instructions are included in case this doesn't happen.

Connecting to BYU WIFI For Windows

1. Click on the wireless icon in your system tray in the lower right corner of your desktop if available.
 - a. Users of older versions of Windows can choose **Start > Connect To > Show all connections**
2. Select the BYU-WiFi network.
3. Open a browser such as Google Chrome and navigate to google.com or another website, where you will be prompted to log in using your BYU NetID and password.
 - a. You may see a security error if attempting to go to a secure site. This is normal behavior and you may proceed. One way to avoid this error is to attempt to access a non-secure website or a website you've never been to.
4. To gain access to internal campus resources you must login with your netid and password. If you are not a current student, faculty, or staff you can click the link at the bottom of that screen for 1 day of guest access.

Connecting to BYU WIFI For Mac

1. Click on the wireless icon in the upper right corner of your desktop and click on the BYU-WiFi network.
2. Open a browser such as Google Chrome and navigate to Google or another website. You will be prompted to log in using your BYU NetID and password.
3. If you don't want to login you can sign on as a campus guest for 1 day of internet access.

Connecting to BYU WIFI For Mobile Devices (Android and iOS)

1. Go to settings and then click on the Wi-Fi settings, then select the BYU-WiFi network.
2. Open up an internet browser (usually Safari on iOS devices and Chrome on Android devices) and navigate to Google or another website. You will be prompted to log in using your BYU NetID and password.
3. If you don't want to login you can click the link at the bottom of the login box (below the login button) for 1 day of guest access.

Note: Some Samsung devices will pop up a message that says "Allow CaptivePortalLogin to access photos, media, and files on your device?" You can select "Deny" for this message. This is particular to Samsung devices and is not something that our sign-on system is asking for.

Authenticated Access

Users who log in with a NetID and password and have an active role with the university will have access to the internal campus network as well as internet access. This does NOT include data center access. This would allow a user to be able to perform activities such as printing to network printers and accessing internal network drives.

Guest Access

Users may click a link below the login box allowing for instant guest access. This provides access to the internet but no access to internal campus resources. Campus websites that are accessible via any public internet connection will still be accessible.

Note: There has been an issue recently that only applies to iPhones not being able to connect to Eduroam or BYU WiFi. This issue is caused by a bug in the code of IOS 14.0 and/or 14.1. The device needs to be updated to IOS 14.2 to correct the issue. Once updated, the iPhone will connect to WiFi. If the issue persists after updating the IOS, please contact the TSC at [801-422-4000](tel:801-422-4000) for assistance.

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Eduroam and BYU WiFi Elevated Troubleshooting

Headless or "smart" devices (Chromecasts, AppleTVs, printers, Amazon Echos, etc.) are typically unable to connect to Eduroam.

These devices should be able to connect to BYU-WiFi without needing to enter a password or do any sort of registration. If there are problems with these devices connecting with BYU-WiFi, get the MAC address and assign the INC to CNC-Network Service Center.

1. Gather Information

- Find out what the customer has done so far:
 - If the customer has NOT done any troubleshooting, begin with the steps above.
 - If the customer has done SOME troubleshooting, pick up where they off.
 - If the customer has done ALL of the troubleshooting, continue troubleshooting with the information below.
 - If the customer is a member of a YSA bishopric, stake presidency, high counsel, or a YSA Stake Relief Society, follow the instructions in [KB0025782](#) to grant rights to connect to Eduroam.
- Find out **FOR SURE** which network the customer is attempting to use. Customers will often refer to issues using "BYU WiFi" but are actually talking about eduroam.
- Ask the user if they are in a coverage area (bathrooms, stairwells, mechanical spaces are the only areas not covered)
- Be sure to enter the following information in the ticket: Room, Building, Time(s) the issue occurs, IP address, **MAC address** of their wifi adapter, etc.
- Useful questions to ask the user: Does this occur in other buildings? Are others experiencing the same issue?

2. Check Clearpass error logs - Clearpass is the login system for both BYU-WiFi and Eduroam

- Login to Clearpass (see [KB0029648](#)) and see what alerts (if any) show up for the users's login attempts
- **An LDAP error from the BYU-WiFi login page (user-facing) indicates either no active user role or a bad password**

- Check to see if there is a 'space' character after their NetID@byu.edu. If there is, have them eliminate that and try again.

3. Check IP Address

- Check to make sure that the customer is getting a valid IP address. They should have this information, but if not, you may need to help them find it.
- Use [KB0023419](#) to find the IP address and see if it is valid.

4. Check to make sure that their Active Directory Account is not locked out / is not being continually locked out by a device with an old or recently changed password

- Having their Active Directory account locked out can prevent new device leases from being created, especially with the eduroam network.
- A device with an old password saved for the eduroam network can also lock their active directory account until that network is forgotten, causing all new devices to fail authentication, but some devices that are already connected may still be working properly.
- Instructions for unlocking an Active Directory Account can be found in [KB0026069](#).

5. Does the customer get a Security Error in the web browser when using BYU-WiFi?

- Have the customer try going to a website they have never been to, such as possibly bbc.com, espn.com, cnn.com, etc. This is to try and get the BYU-WiFi sign in page to come up. The user can also manually navigate to <https://onboard.byu.edu/guest/public> - ONLY if they are trying to get on BYU-WiFi and are getting security errors.

6. Does the customer connect to WiFi, but is unable to load webpages?

- Follow the DNS troubleshooting KB ([KB0030084](#)) and see if that resolves the issue.

7. Please put the following information in one work log comment and assign to **CNC-Network Service Center** (if the KB has not been followed the incident will be sent back to TSC):

- What type of device do they have (ie iPhone, Dell laptop)?
- What Operating System do they have?
- What is the MAC address of the wireless NIC?
- Do they connect to an access point (even if they don't receive an IP address)? If so, which one (check Clearpass [KB0029648](#))?
- Do they get a valid network connection on non-BYU Wifi such as their home WiFi?
- What IP address do they get (if any)?
- Verify their Active Directory Account is not locked out or being locked out automatically

- Can they ping google.com?
 - Can they ping IP address of 8.8.8.8? (this is one of Google's servers).
- Can they access campus websites?
 - Get examples and specifics if they cannot get to them.
- Get location information such as rooms and buildings where they are experiencing trouble.
- What specific times of day does the issue occur? (Engineers need specific times the person has experienced the issue when looking at logs)
- Do others around the person experience the same issue?

Note: Flushing the DNS has worked in past incidents and may help if other elevated troubleshooting measures do not.

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How to Use Clearpass

All error codes found at: [KB0029648](#).

To access Clearpass, go to onboard.byu.edu and select the box in the top left that says "Clearpass Policy Manager.". For the service desk, the credentials are saved in Lastpass.

[image]

How to Check IP Address

This section covers how to check for a valid IP address and release and renew the IP address while troubleshooting wired/wireless network access problems.

Windows 7, 8 and 10

1. Click the **Start** button.
2. There will be a search bar at the bottom that says **Start Search**.
3. Type **command** or **cmd** in the search bar and press **enter**.
4. The **Dos Prompt** window should open.
5. Type **ipconfig** at the prompt.

6. Check for a valid IP address (listed as IPv4 Address).
7. Type **ipconfig /release** and press **enter**.
 - a. An error may come up that says "The requested operation requires elevation." This means that only the administrator can release the IP address.
 - b. Have the user click **Start**.
 - c. Click **All Programs**.
 - d. Click **Accessories**.
 - e. Right Click, **Command Prompt**.
 - f. Click **Run as Administrator**.
 - g. A box will come up asking for permissions, click **Yes**.
 - h. Type **ipconfig /release** again at the prompt and press **Enter**.
8. Type **ipconfig /renew** and press **Enter**.
9. Check for a valid IP address.
 - a. If the user gets the error "The operation failed as no adapter is in the state permissible for this operation", it means they have a static IP address. Check their TCP/IP settings.

Note: If this method for finding an IP address does not work, use this optional method:

1. Go to **Control Panel**, then **Network and Internet**, and then **Network and Sharing Center**.

2. On the left side menu select **Change Adapter Settings**.
3. Right Click on **Local Area Connection** or **Wireless Area Connection** and select **Status**.
4. Click on the **Details** button.

Mac OS X

1. Click the **Apple** button.
2. Click on **System Preferences**.
3. Click the **Network** icon (Under the Internet and Network subtitle).
4. Select **Ethernet** from the options in the menu on the left side of the window, or for wireless problems, select **Airport** or **Wi-Fi** from the same list on the left.
5. Click on the **TCP/IP** tab (on Mac OS 10.4 and older) or **Advanced** button (on Mac OS 10.5 and newer).
6. Select **Using DHCP** in the Configure IPv4 field.
7. Check for a valid IP Address.
8. Click **Renew DHCP Lease** to get a new address.
9. If the boxes are grayed out and will not allow changes, check in the bottom left of the window to see if they have been locked. To unlock this, click on the lock and it may have the user re-enter their computer user name/password.

Note: If problems continue:

- While looking at the **Network preferences** (under System Preferences), remove the **offending network** (Airport, Ethernet, etc.) by pressing the **minus (-)** button in the left pane and press **apply**, then re-add the network and check for a valid IP Address.

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Escalation Rules

If an issue related to the wireless network cannot be resolved by the TSC, it might need to be escalated to the CES Network Center (CNC). If a TSC agent is submitting a ticket to them, they must use the provided template in ServiceNow.

Before a ticket is assigned to the CNC, the agent needs to make sure the ticket has a valid form of contacting the user just in case their current phone number in ServiceNow is outdated.

After a ticket is assigned to the CNC, the agent needs to direct the user to contact the CNC directly (at [801-422-7576](tel:801-422-7576)) for follow-ups about their ticket. The agent should have the user write down the ticket number to make follow-ups easier.