

Setup of the WLAN at DHBW-Karlsruhe

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1. General information about DHBW-KA and eduroam

The WLAN with SSID **DHBW-KA** is encrypted with WPA2 Enterprise and is only provided at DHBW Karlsruhe. Users are authenticated in the teaching domain dh-karlsruhe.de. An authentication with the administration account in the domain dhw-karlsruhe.de or dhw-karlsruhe.aa does not work.

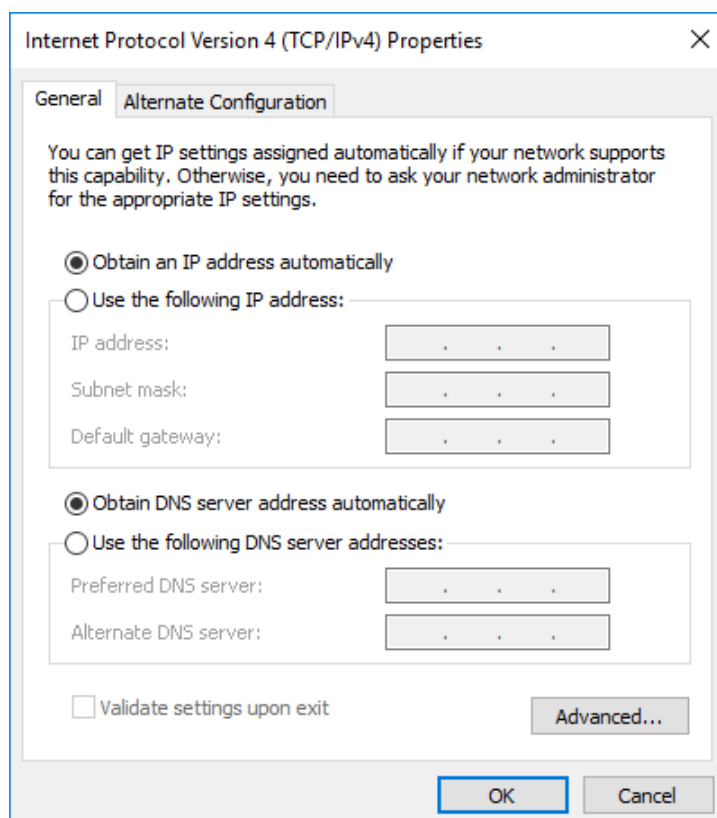
The WLAN with the SSID "DHBW KA" is encrypted and should be used at the Duale Hochschule Baden-Württemberg Karlsruhe whenever possible.

SSID **eduroam** is available at many educational institutions worldwide and also in parts of Karlsruhe. The setup of this WLAN is identical to DHBW-KA. The user name must be specified in the form "user@dh-karlsruhe.de", whereby upper and lower case is important for the user. Of course eduroam is also encrypted with WPA2 Enterprise. A list of participating locations is available at <https://map.eduroam.de>.

At <https://cat.eduroam.org> you can download an installation file, which makes the secure setup of eduroam much easier for you. It is recommended to use this option. To do this, click on the button "Download your eduroam installation program" on the website and search for DHBW Karlsruhe. Usually you will be offered the appropriate installation program for your operating system, otherwise you can select it via the link "All Platforms".

2. Prerequisites

Please make sure that your Wi-Fi connection assigns the IP address automatically via DHCP.



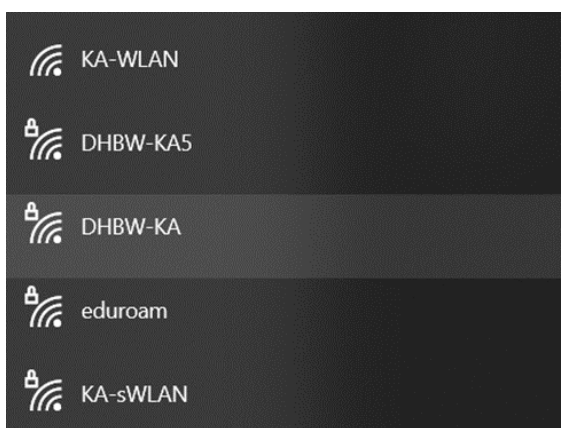
3. Setup on Windows 10

To connect to the network please follow these instructions.

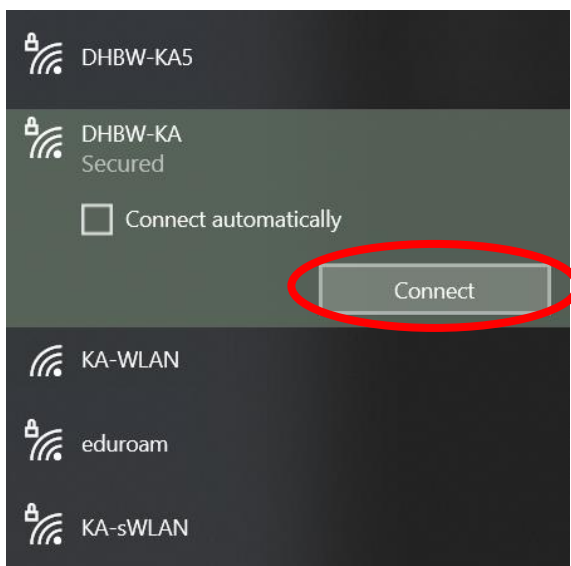
Click on the network icon in the system tray:



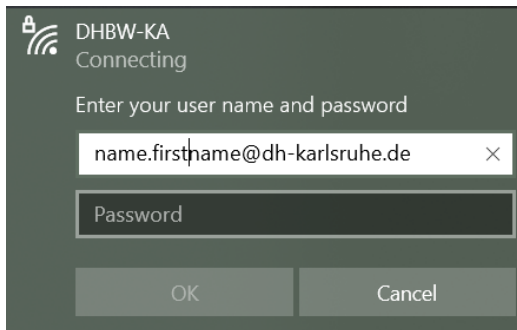
Select the DHBW-KA-network (or eduroam)



and click on „connect“:

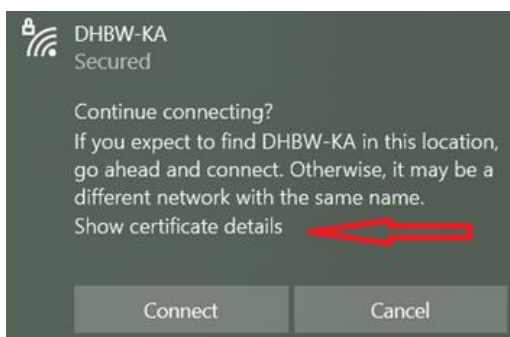


Enter your authentication information (name.firstname@dh-karlsruhe.de) in the following screen and confirm it by clicking "OK".



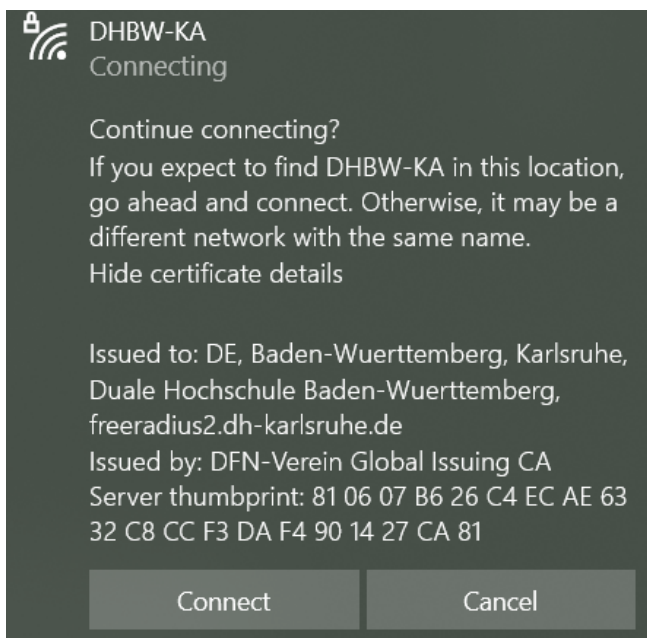
A screenshot of a Windows network connection dialog box titled "DHBW-KA Connecting". It prompts the user to "Enter your user name and password". The username field contains "name.firstname@dh-karlsruhe.de" and the password field is empty. At the bottom are "OK" and "Cancel" buttons.

Now verify the certificate details



A screenshot of a Windows network connection dialog box titled "DHBW-KA Secured". It asks "Continue connecting?" and provides a warning about potential impersonation. A red arrow points to the "Show certificate details" link. At the bottom are "Connect" and "Cancel" buttons.

Please ensure, the certificate thumbprint is one of the following:



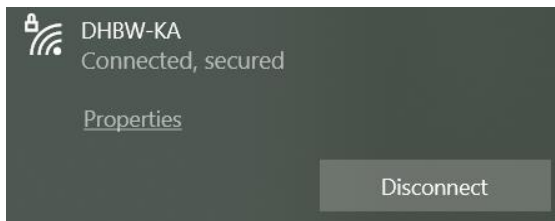
A screenshot of a Windows network connection dialog box titled "DHBW-KA Connecting". It asks "Continue connecting?" and provides a warning about potential impersonation. Below the warning, the "Hide certificate details" link is visible. The certificate details are displayed, showing the issuer as "DFN-Verein Global Issuing CA" and the server thumbprint as "81 06 07 B6 26 C4 EC AE 63 32 C8 CC F3 DA F4 90 14 27 CA 81". At the bottom are "Connect" and "Cancel" buttons.

Issued to: DE, Baden-Wuerttemberg, Karlsruhe, Duale Hochschule Baden-Wuerttemberg, Karlsruhe, freeradius.dh-karlsruhe.de
Issued by: DFN-Verein Global Issuing CA
Server thumbprint: 00 23 70 04 4C A0 F9 70 BD 72 C0 8F 03 66 F4 72 7F F6 D4 50

Issued to: DE, Baden-Wuerttemberg, Karlsruhe, Duale Hochschule Baden-Wuerttemberg, Karlsruhe, aragorn.dh-karlsruhe.de
Issued by: DFN-Verein Global Issuing CA
Server thumbprint: F0 D6 64 C6 D5 8C 25 22 C2 29 BA 1E 73 F1 1D FF 6C C9 24 47

Issued to: DE, Baden-Wuerttemberg, Karlsruhe, Duale Hochschule Baden-Wuerttemberg, Karlsruhe, bilbo.dh-karlsruhe.de
Issued by: DFN-Verein Global Issuing CA
Server thumbprint: 03 A4 EE 77 26 75 3C EF 8B FB B4 60 0B E8 A1 EE 7F A2 A9 AF

The certificates are changed regularly, please use the latest version of this instruction. After clicking on "Connect" you should be connected to the WLAN.

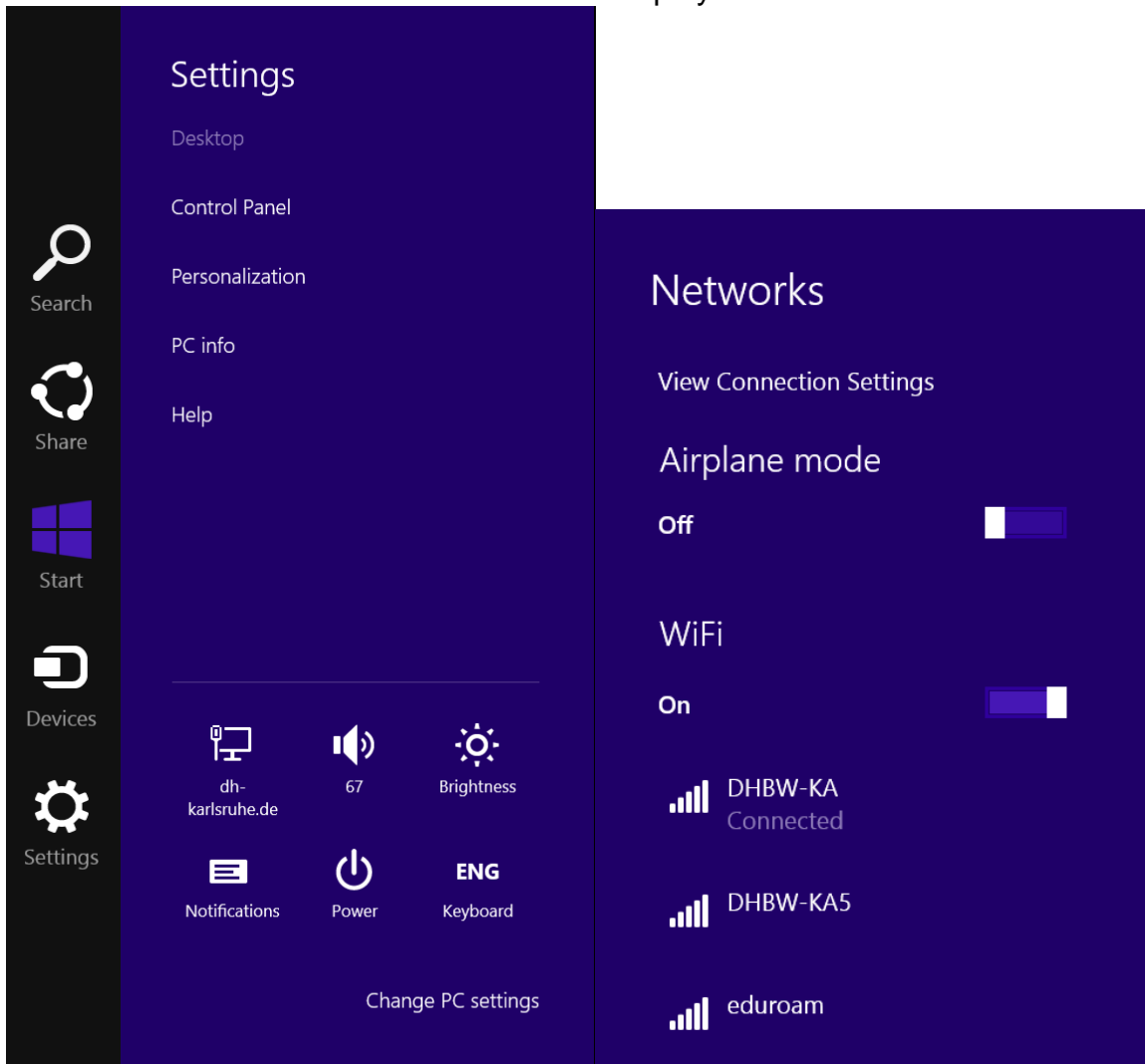


4. Setup on Windows 8.1

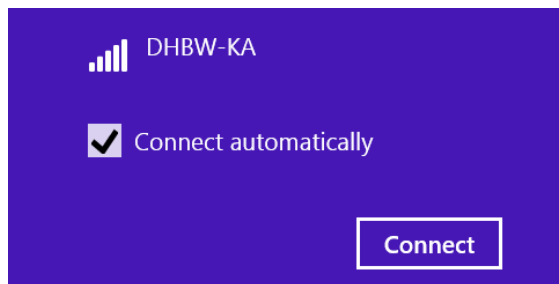
If you are still using Windows 8, please upgrade to Windows 8.1 or later. Windows 8 is out of date.

Connect to the wireless network as follows:

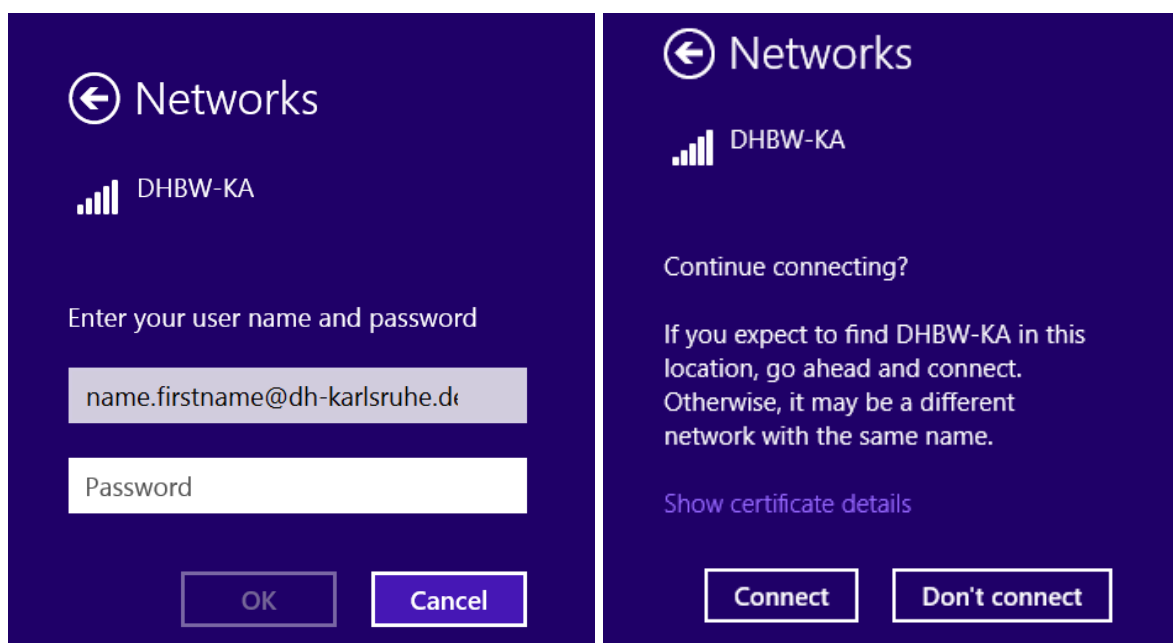
Move your mouse to the bottom right corner of your screen and then move the mouse pointer to Settings. Then click on the left icon in the top row, where stock is available. A list of available wireless networks will be displayed.



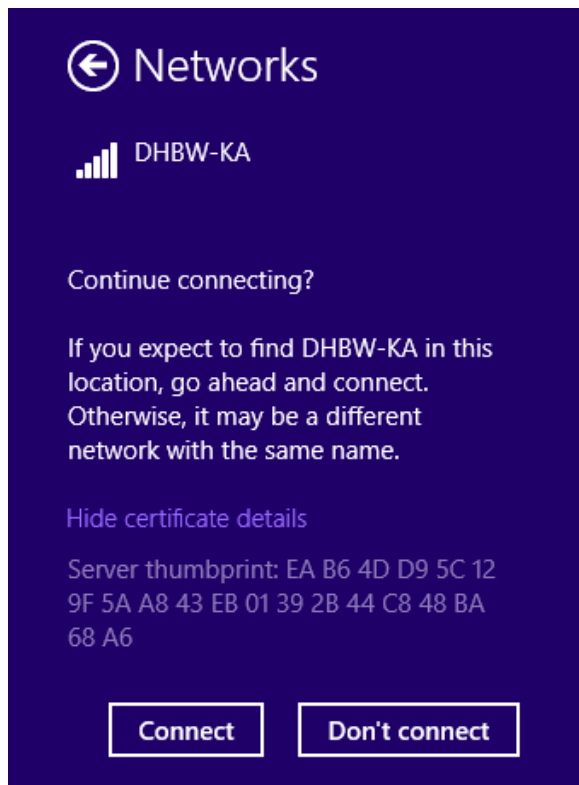
Click DHBW KA (eduroam works the same way), then click Connect.



In the following screen, enter your authentication information.
After clicking “OK” you should be connected to the Wi-Fi.



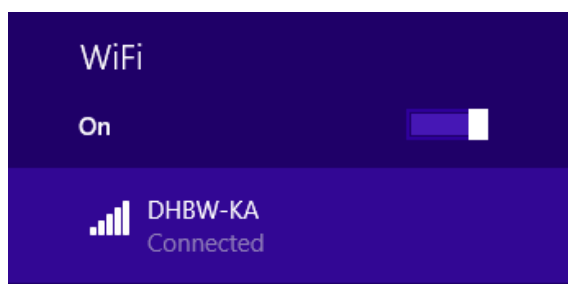
Display the certificate details



Valid Fingerprints are as follows:

```
81 06 07 B6 26 C4 EC AE 63 32 C8 CC F3 DA F4 90 14 27 CA 81
00 23 70 04 4C A0 F9 70 BD 72 C0 8F 03 66 F4 72 7F F6 D4 50
F0 D6 64 C6 D5 8C 25 22 C2 29 BA 1E 73 F1 1D FF 6C C9 24 47
03 A4 EE 77 26 75 3C EF 8B FB B4 60 0B E8 A1 EE 7F A2 A9 AF
```

With this check, you prevent an unauthorized third-party server from intercepting your authentication data and subsequently misusing it. If there is one of these fingerprints, so you can connect to "connect" to the WLAN. During the initial setup, it might be possible that you will be requested to confirm the certificate " T-Telesec Global Root Class 2".



5. Windows 7 and older Versions

Windows 7 and older versions of Microsoft Windows like Windows Vista and Windows XP are obsolete and no longer supported. It is not allowed to connect devices with this old versions of Windows with the Network of the DHBW Karlsruhe.

6. Setup on Linux

Unfortunately, not all Linux variants can be dealt with here. With the following information, you can use the DHBW-KA Wi-Fi.

SSID: DHBW-KA

Encryption: WPA / TKIP or WPA2 / AES

Authentication: PEAP with MSCHAP v2

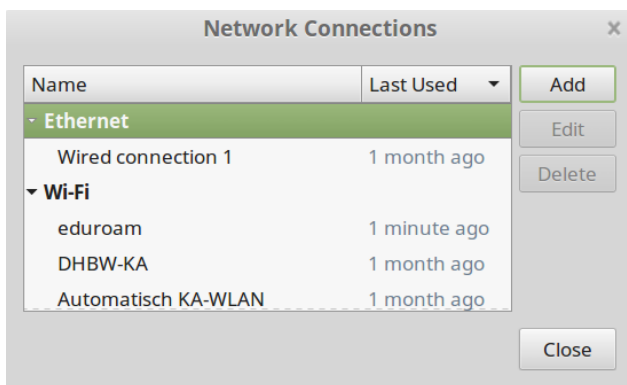
Authentication authority of the certificate: T-Telesec Global Root Class 2

Authentication data: your user from the domain dh-karlsruhe

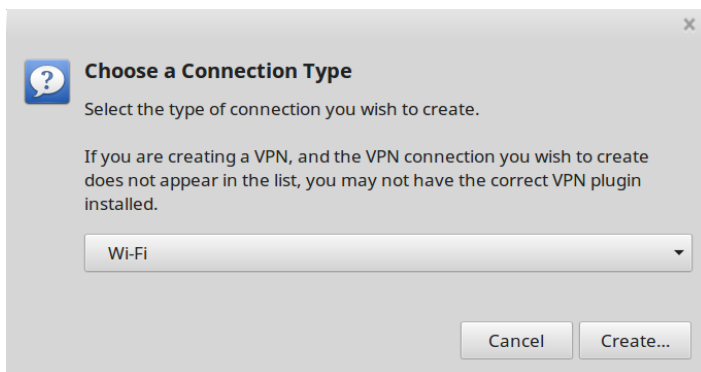
IP configuration automatically via DHCP

The example looks like this:

Open Network Connections and add a new connection:



Choose type Wi-Fi



Name: eduroam, SSID: eduroam, Mode: Client, Device: your Wi-Fi Connector

Editing eduroam

Connection name: eduroam

General | **Wi-Fi** | Wi-Fi Security | IPv4 Settings | IPv6 Settings

SSID: eduroam

Mode: Client

BSSID:

Device: wlp3s0

Cloned MAC address:

MTU: automatic bytes

Cancel Save

In the Wi-Fi Security tab, fill in the fields as shown below:

Editing eduroam

Connection name: eduroam

General | **Wi-Fi** | **Wi-Fi Security** | IPv4 Settings | IPv6 Settings

Security: WPA & WPA2 Enterprise

Authentication: Protected EAP (PEAP)

Anonymous identity:

CA certificate: T-TeleSec_GlobalRoot_Class_2.pem

☐ No CA certificate is required

PEAP version: Automatic

Inner authentication: MSCHAPv2

Username: nachname.vorname@dh-karlsruhe.de

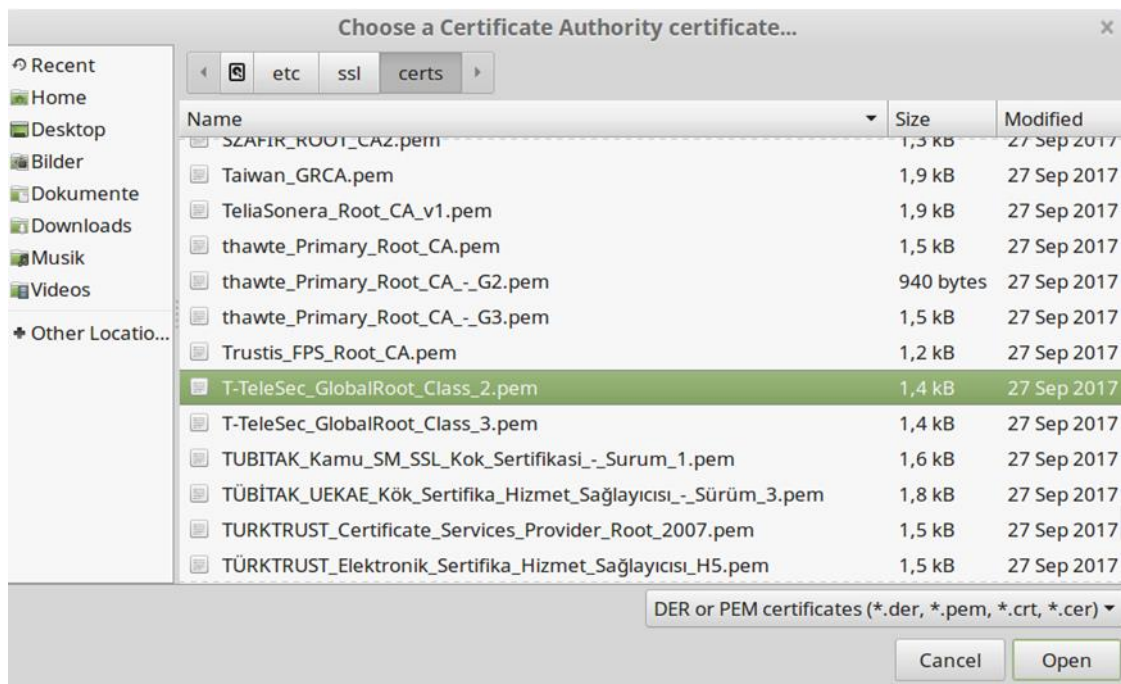
Password: deinpasswort

☒ Show password

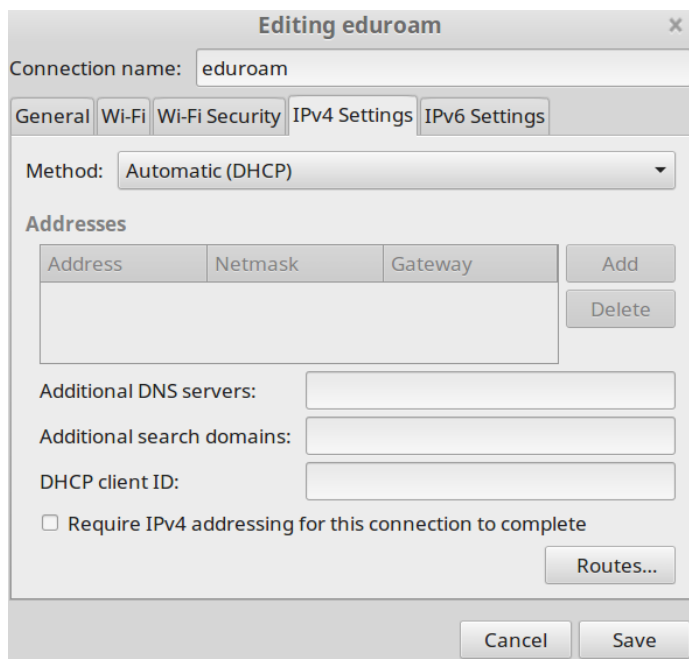
Cancel Save

Instead of “name.firstname@dh-karlsruhe.de” enter your own account data.

The certificates are often located at /etc/ssl/certs



Set the method IPv4 Settings Automatic (DHCP) at the IPv4 Settings.

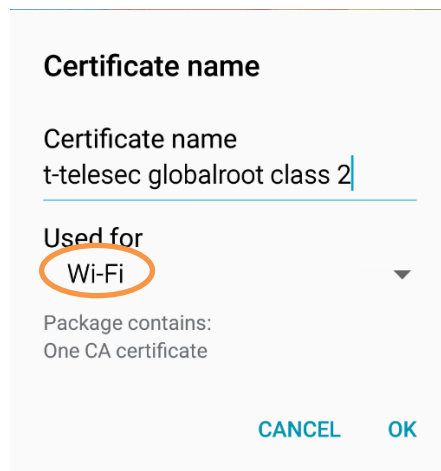


Save now and Connect.

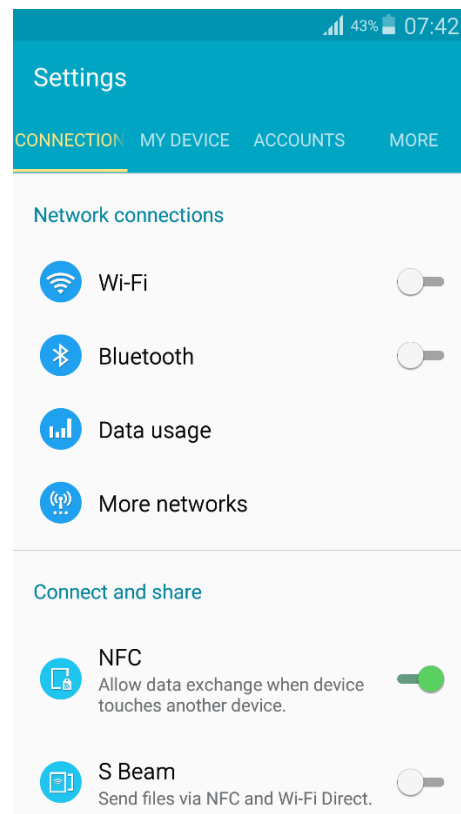
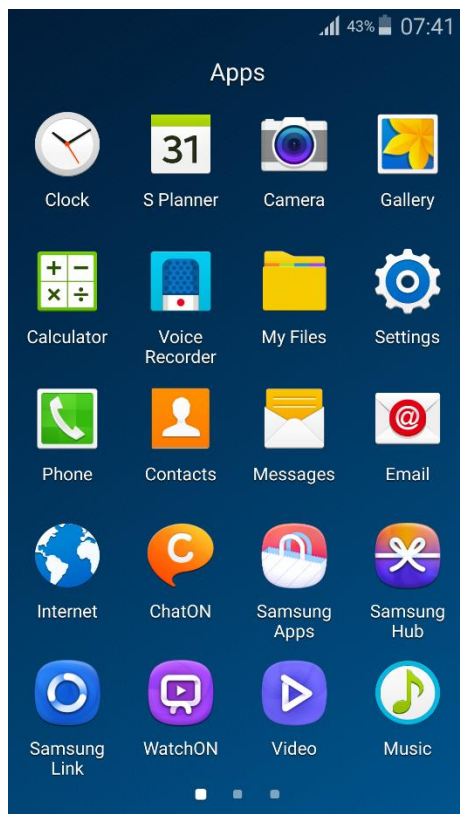
7. Setup on Android

9.1 Android up to version 6

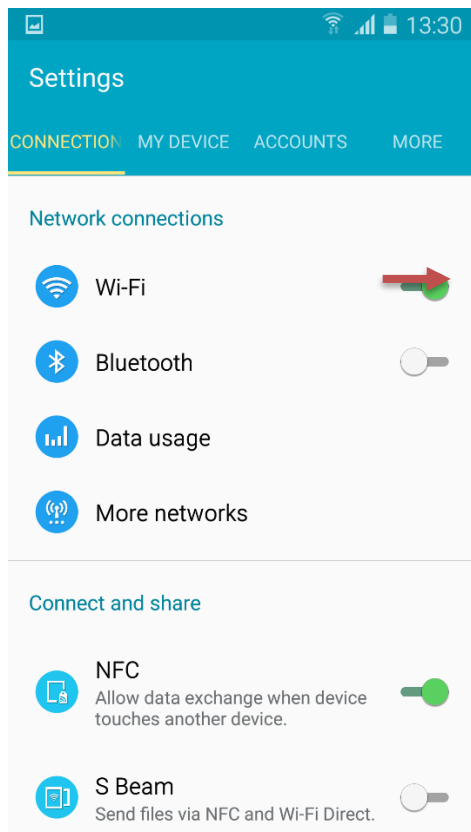
First install the root certificate of T-Telesec GlobalRoot Class 2 under https://www.pki.dfn.de/fileadmin/PKI/zertifikate/T-TeleSec_GlobalRoot_Class_2.crt or scan this QR code: (Attention, with some devices, e.g. from the manufacturer Samsung, some screen unlocking methods, such as patterns or fingerprints, will then no longer work, as the manufacturer of the smartphone classifies them as unsafe.)



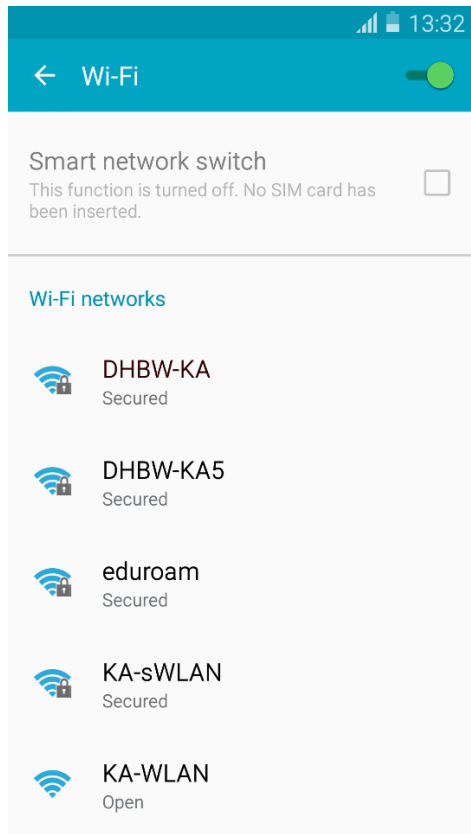
Open the apps, go to settings



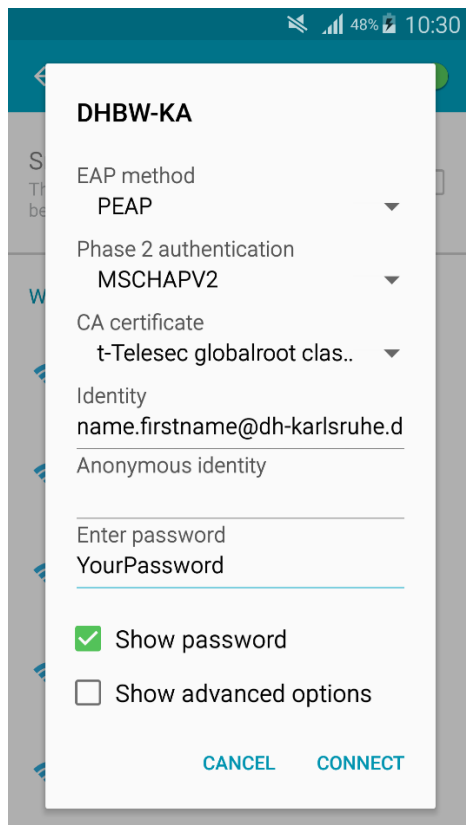
There, tap Wireless & networks



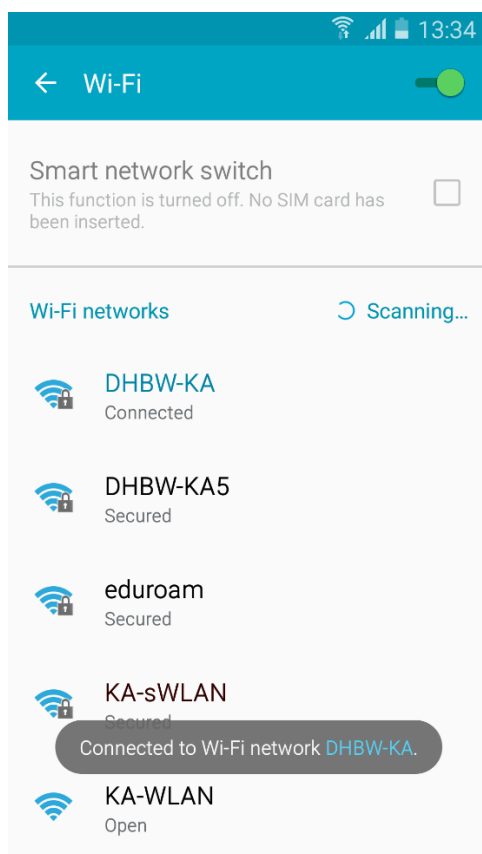
Swipe to activate Wi-Fi and then go to Wi-Fi settings.



Now tap on the network you want (eduroam or DHBW-KA) and then the profile features as shown.



Instead of “name.firstname@dh-karlsruhe.de” you have to use your own user name in the domain “dh-karlsruhe” of course. After that tap Connect and you should be connected to the desired network.

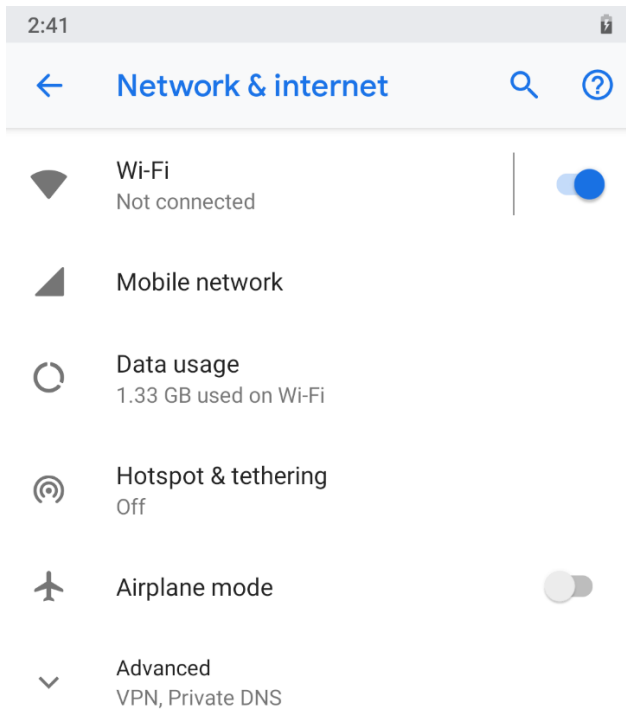


9.2 Android from version 7.0

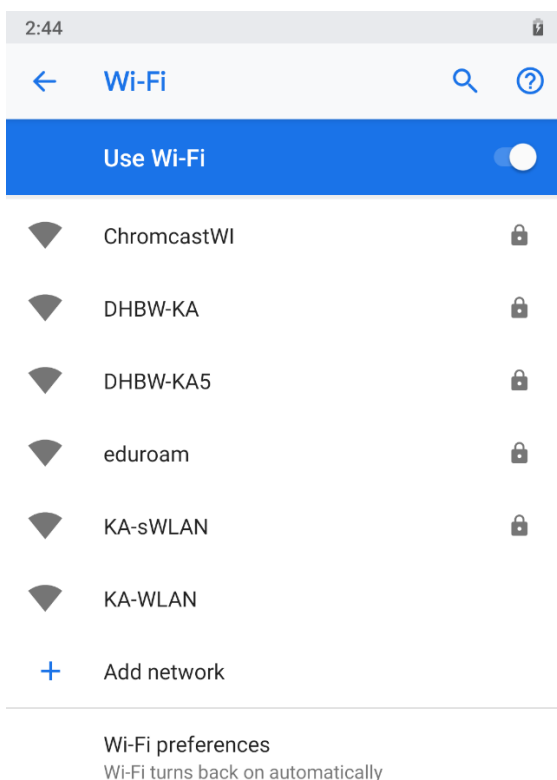
Since Version 7 Android allows the usage of the installed system certificates. You don't need to install the certificate separately.

Proceed as follows:

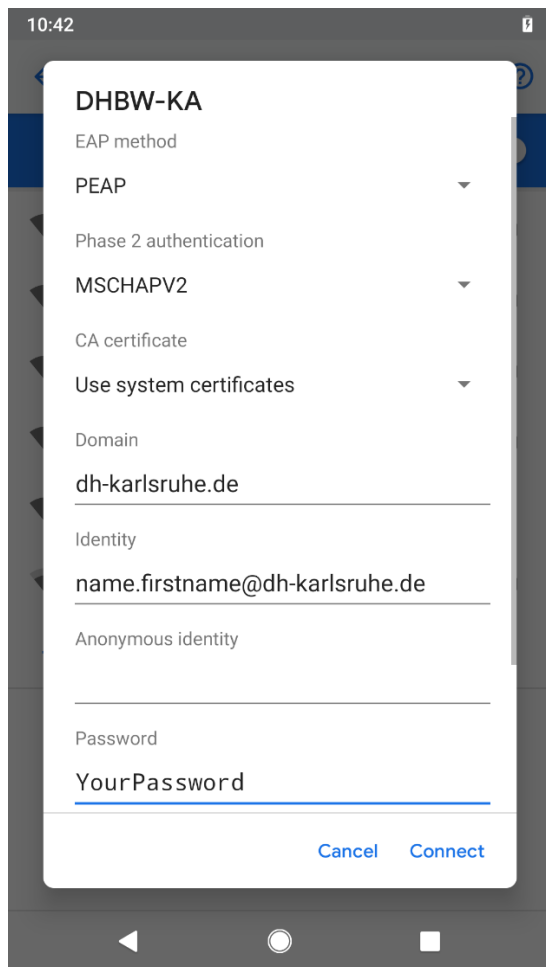
Open the settings for Network & internet



Wi-Fi



Make sure that the WLAN is switched on. Tap DHBW-KA or eduroam and fill in the form as shown in the next picture.



10:42

DHBW-KA

EAP method

PEAP

Phase 2 authentication

MSCHAPV2

CA certificate

Use system certificates

Domain

dh-karlsruhe.de

Identity

name.firstname@dh-karlsruhe.de

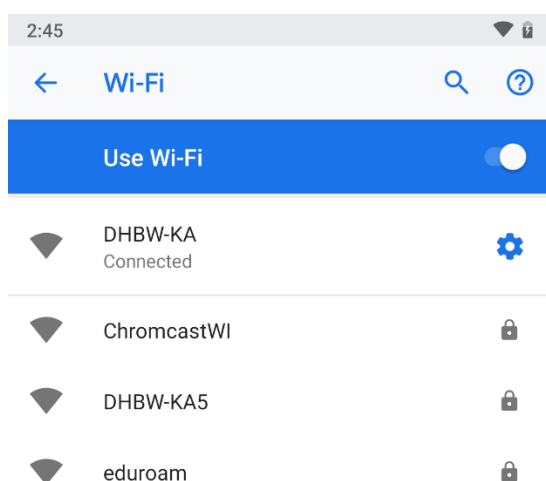
Anonymous identity

Password

YourPassword

Cancel Connect

Instead of **name.surname** you have to enter your own username. Now tap connect.



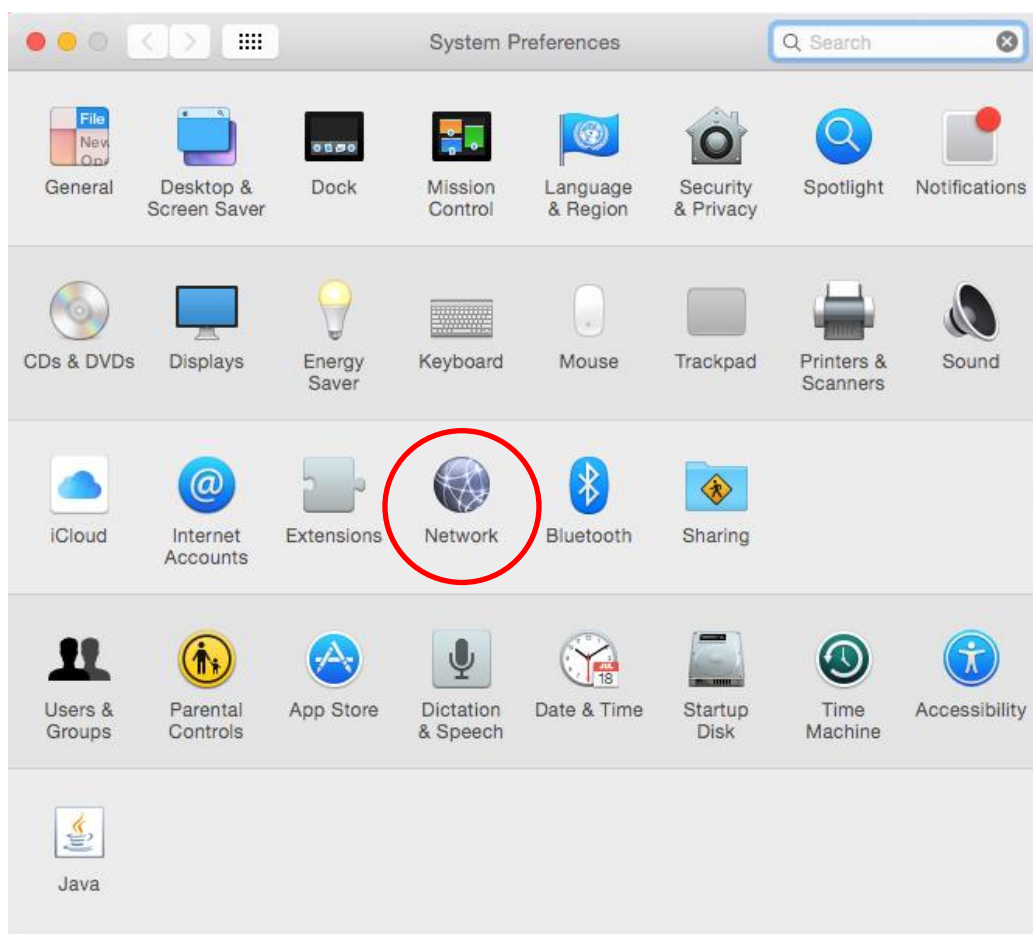
If you do not have the setting option "Use system certificates" on your device, please proceed as described under "Android up to version 6". For eduroam you can use the app eduroamCAT from the Google Play Store.

8. Mac OS

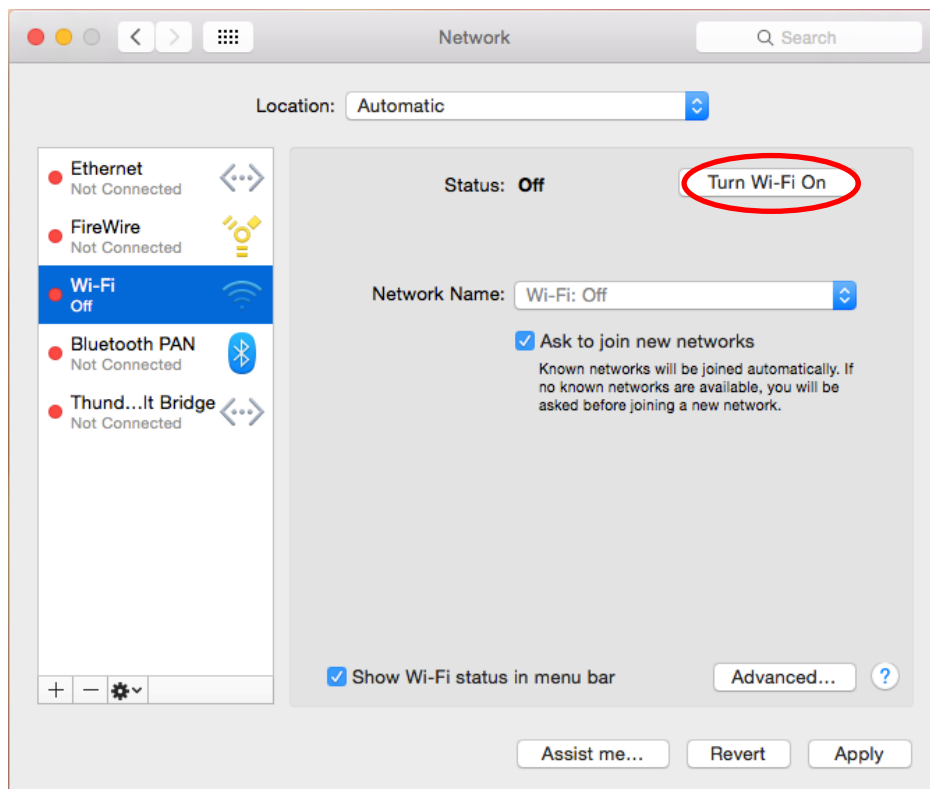
To install Wi-Fi on a MacBook click on System preferences



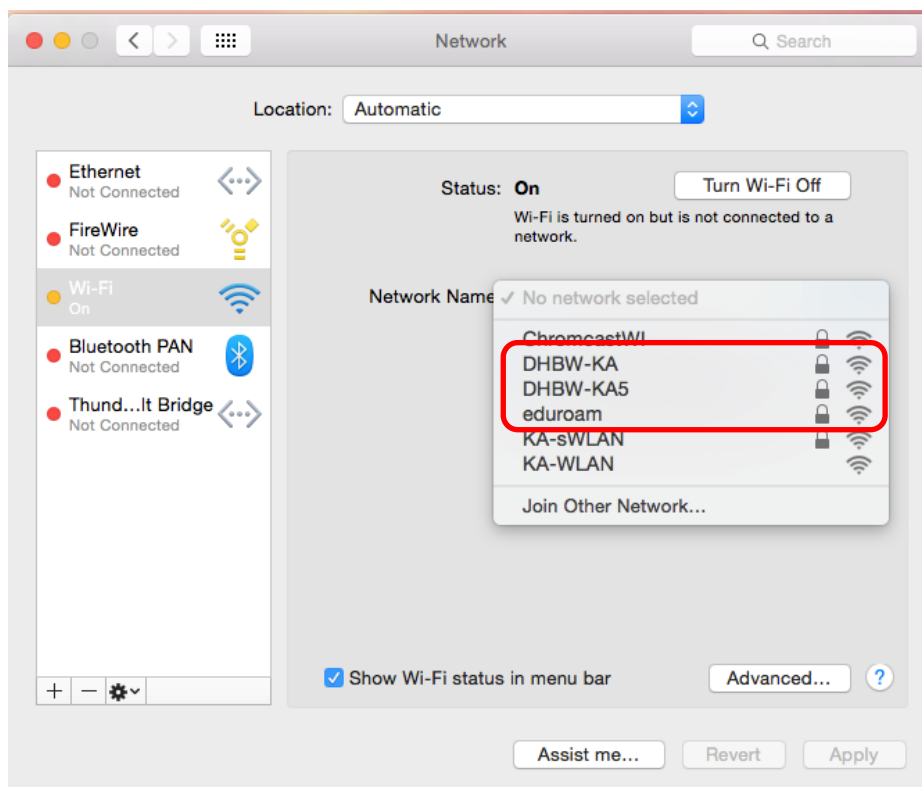
then on the Network-icon:



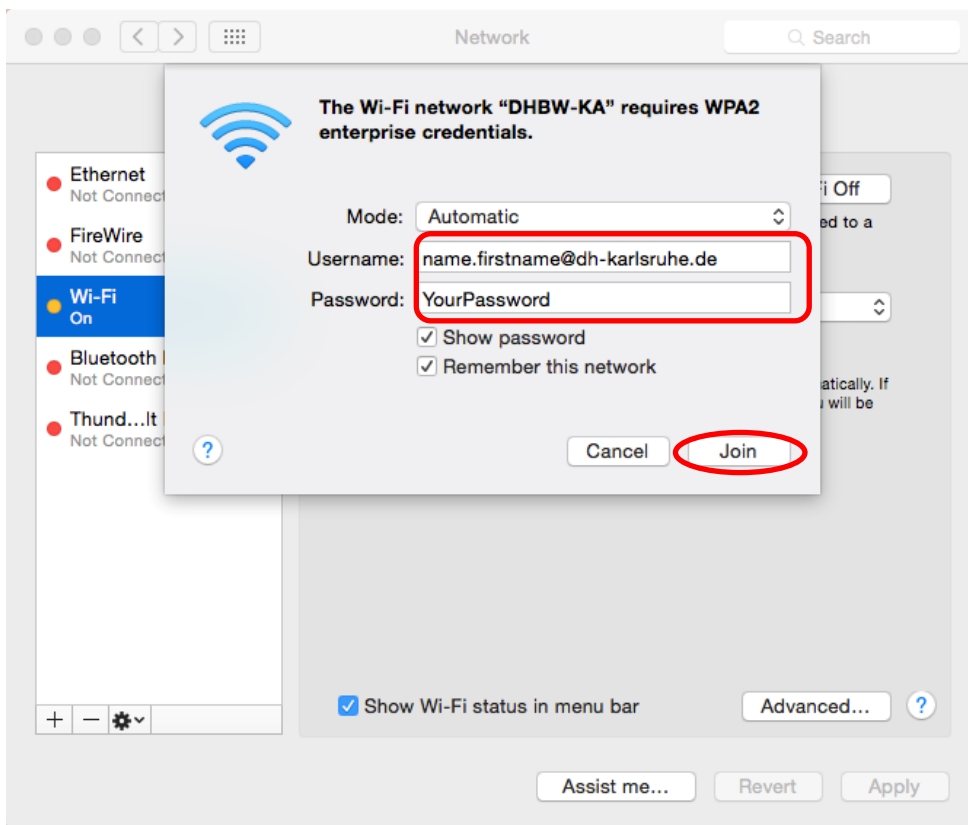
Turn on the Wi-Fi.



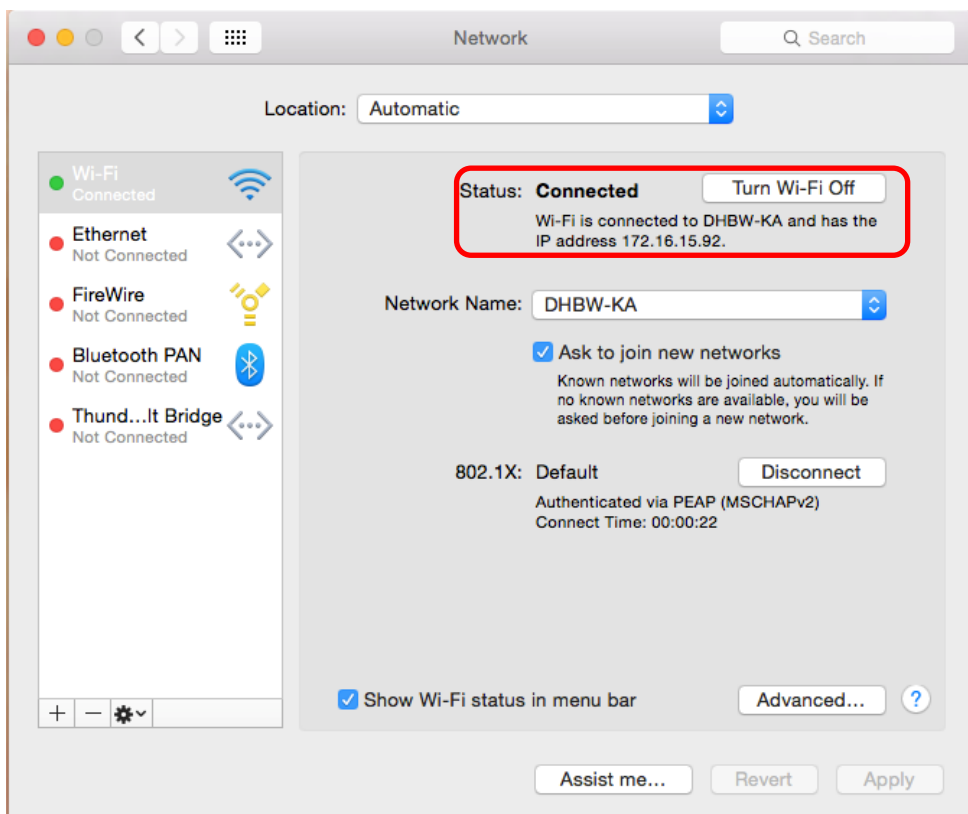
Now you have to select your network (DHBW-KA or eduroam):



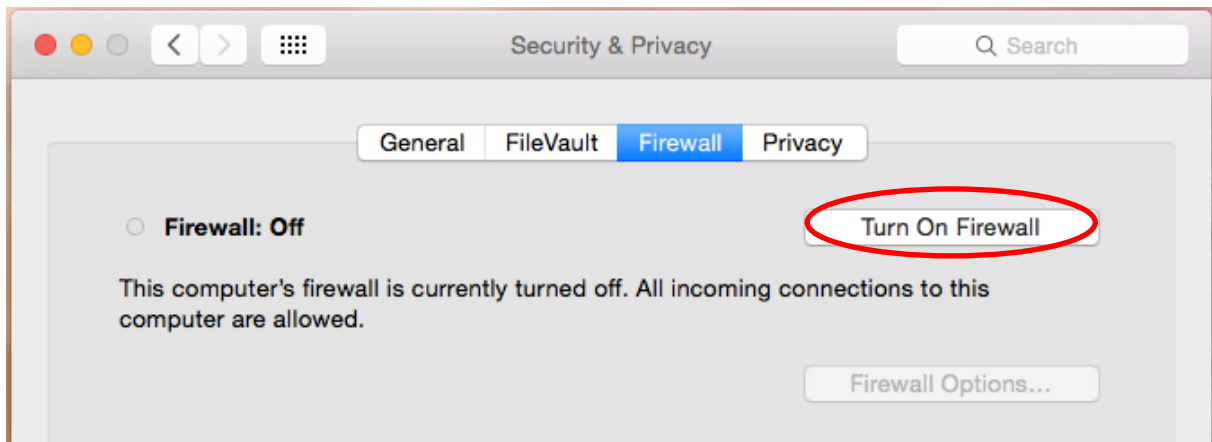
Enter your Authentication Information as follow:



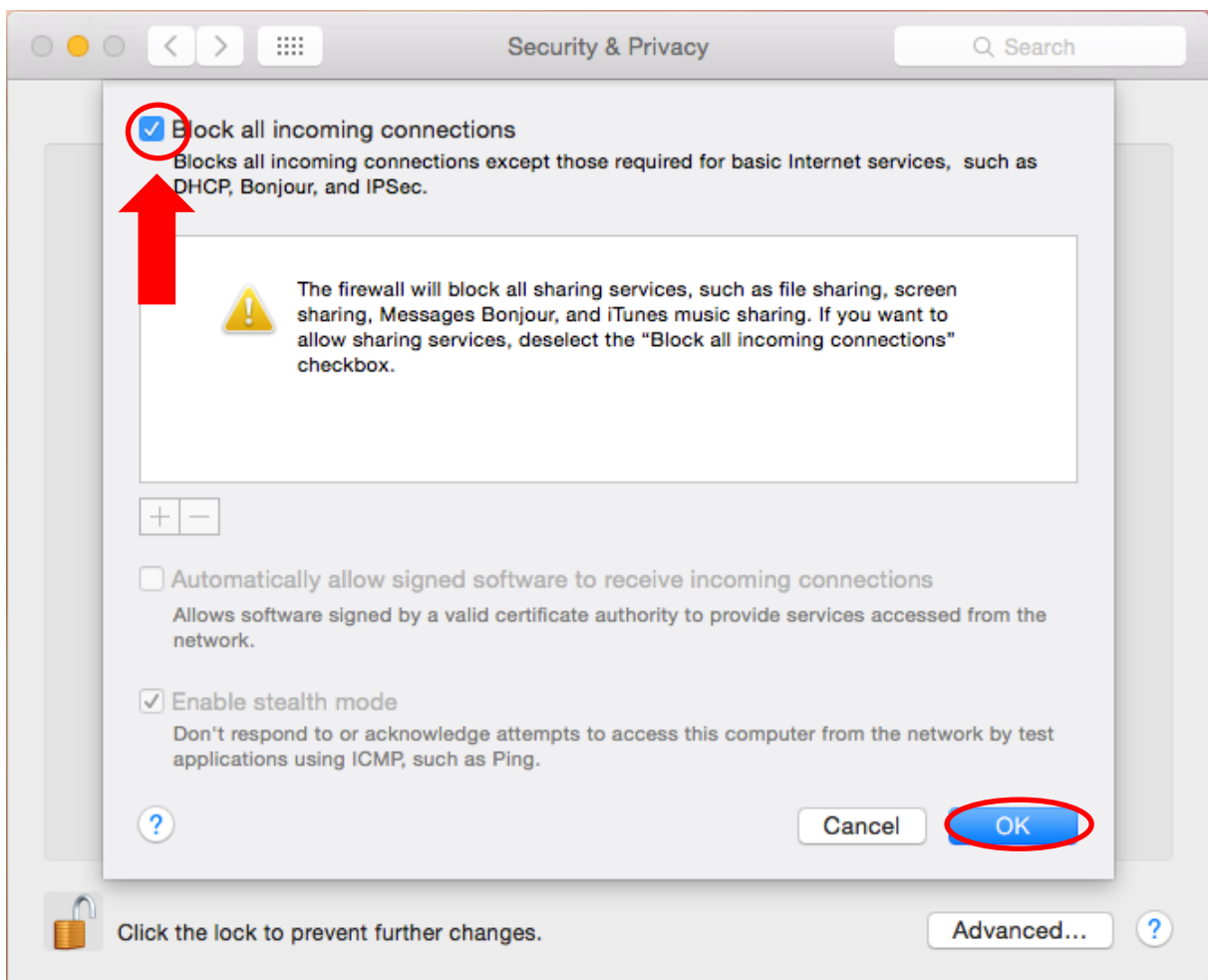
Proceed with clicking the button "Join" for connecting with the Wi-Fi.



It's recommended to turn on your firewall and block incoming connections if you don't want to share data with other Wi-Fi users.

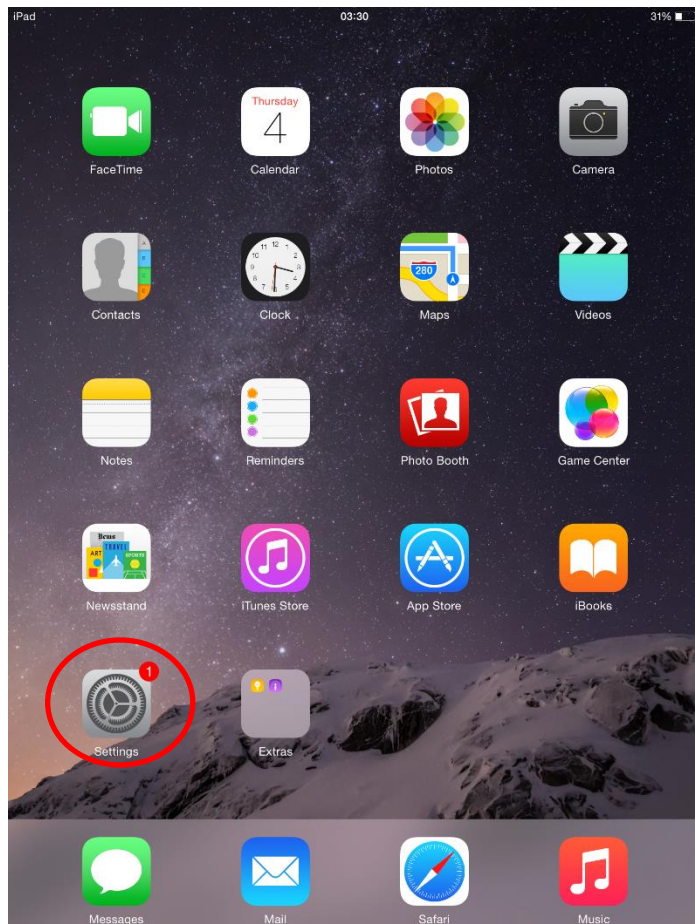


In the Firewall Options check the Box "Block all incoming connections" and confirm this by clicking the "OK" button.



9. iOS

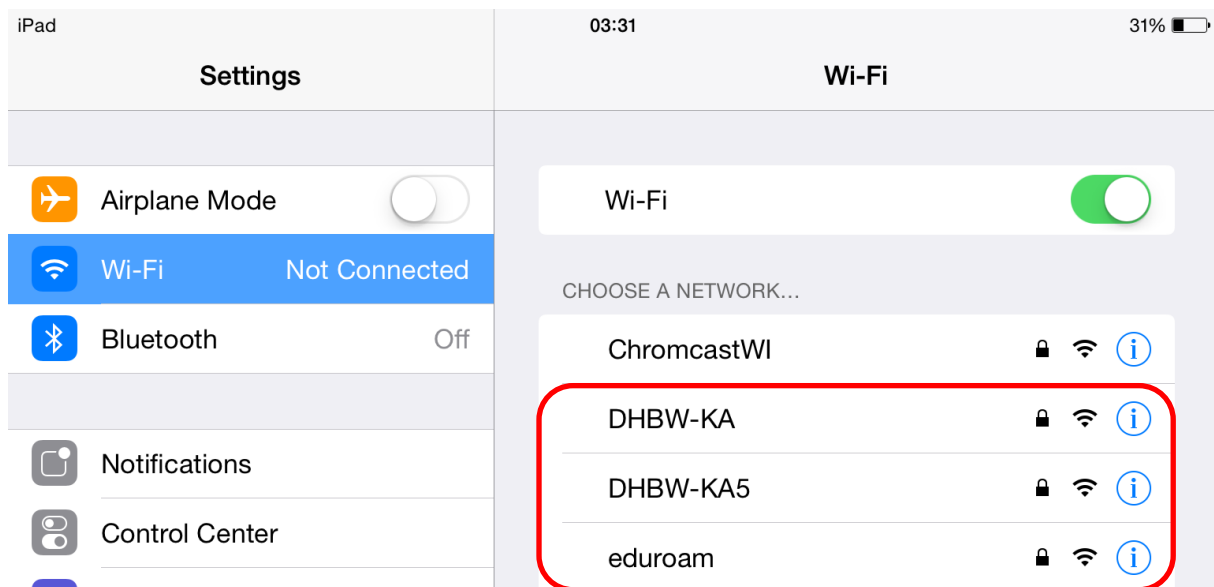
To connect your iPad or iPhone to the Wi-Fi go to the system preferences.



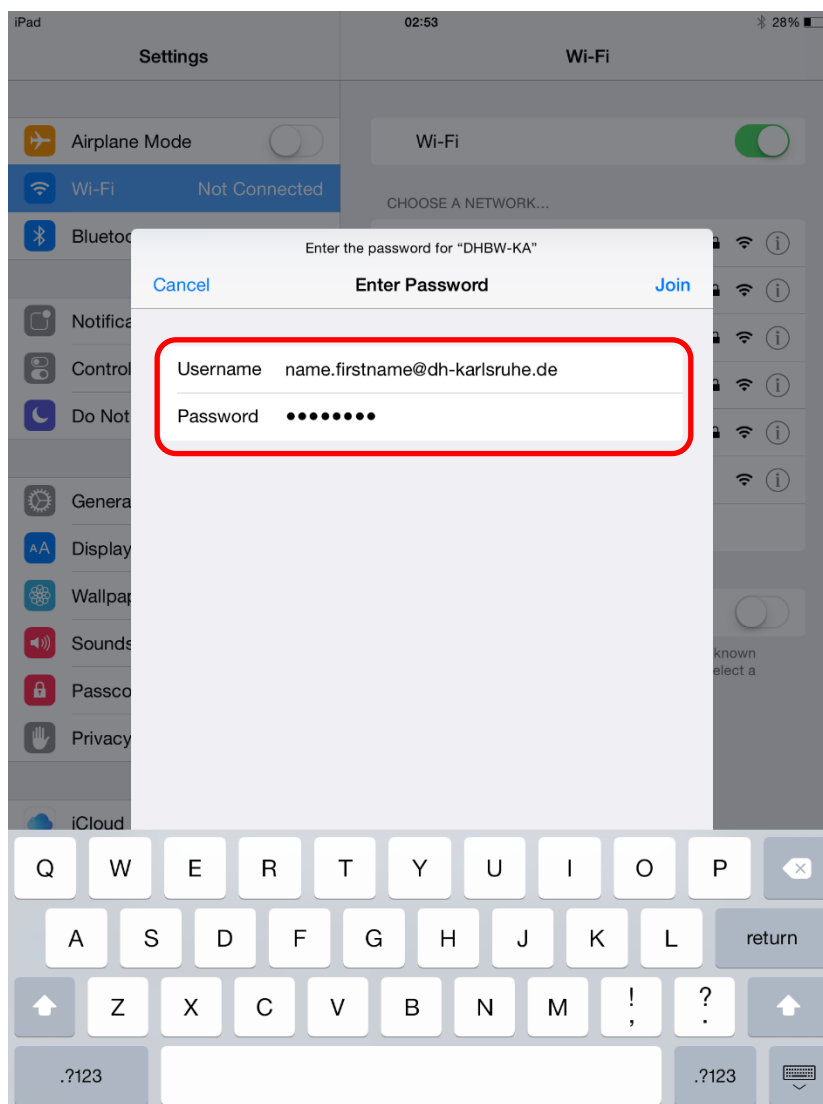
and turn on the Wi-Fi.



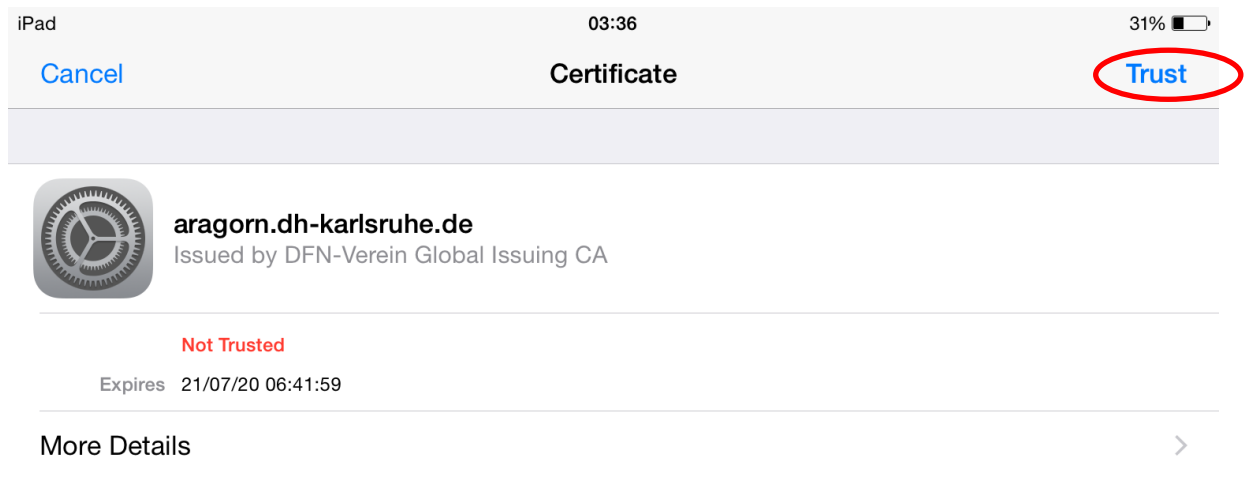
Now select the network (DHBW-KA or eduroam)



and enter your authentication Information as follows:



After clicking on “Join” you have to confirm the certification:



After that you are connected to the Wi-Fi.

