

PMB-IoT

The **PMB-IoT** network is for any college members device that cannot do enterprise level security, which is a requirement for PMB-Members and Eduroam Wi-Fi. This can include games consoles, Smart TVs, Alexa's, Firesticks, Google Home and other Internet of things (IoT) devices.

To connect an IoT device to the internet while at college, please read the requirements and then follow the instructions on the next page.

Requirements:

- A different device that can join **PMB-Members**. (Your own Desktop, Mobile or Laptop)
- A login for PMB-Members. (You can set this here: <https://college-account.pmb.ox.ac.uk>)
- The **wireless mac address** of the IoT device you want to connect to the network.
- You must pin protect any devices capable of screen sharing/casting.

Please Understand:

- You are responsible for any device you add to the network.
- For shared devices, whoever adds the device to the network is fully responsible for any misuse or malicious activity.
- All traffic is monitored and devices will be blocked if they are acting suspiciously or deemed to be a threat to the college network.
- IoT devices vary in functionality greatly, although most devices should be able to join the IoT network there may be some circumstances where it will not be possible, or you do not get the functionality you desire. Please contact IT if you are struggling to make any progress and we will respond when possible.

The PMB-IoT network incorporates a technology we refer to as the "User Bubble" this means that you can register devices under your username and generate a passcode for each device to join the network. You can also share your devices with other users and enable features like airplay so that your devices can interconnect across college.

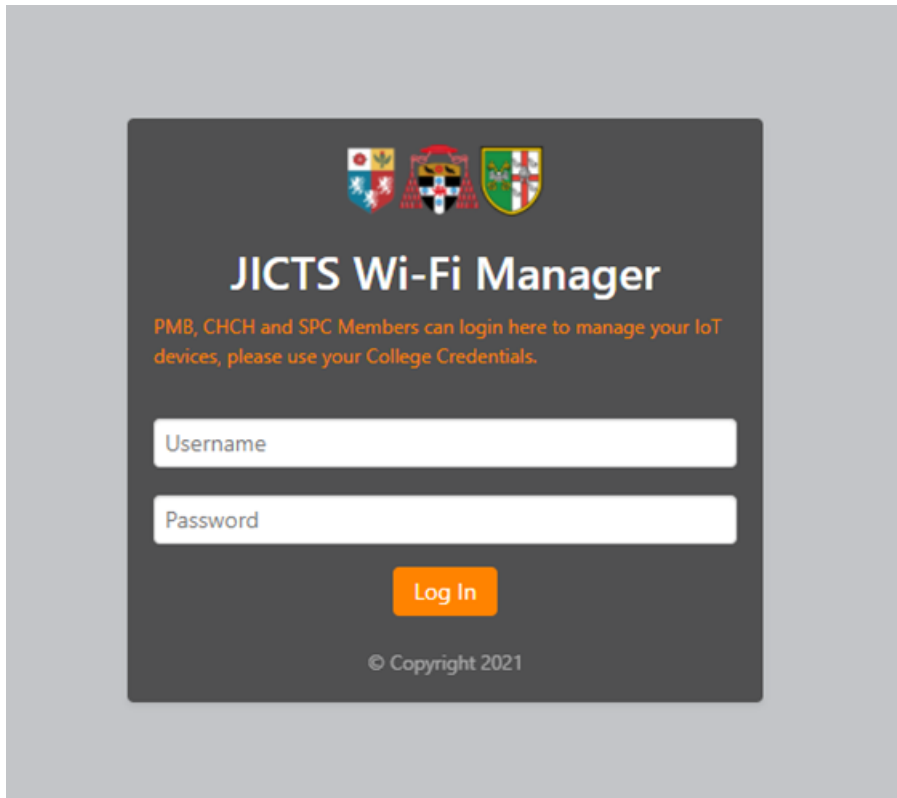
If you at any point suspect that your device is doing something it shouldn't be or has been compromised in any way please disconnect it from the network, turn off the power and contact IT immediately.

Finally, you must adhere to the University's IT regulations which applies to any device that is joined to the University network.


(<https://governance.admin.ox.ac.uk/legislation/it-regulations-1-of-2002>)

Adding a device to PMB-IoT

1. On your main device (Laptop/Desktop/Mobile) connect to PMB-Members and navigate to:
 - <https://guest.pmb.ox.ac.uk/guest>



2. Enter your College credentials into the Username/Password box. These are the same credentials you use for College Wi-Fi and can be set at <https://college-account.pmb.ox.ac.uk>
3. Once logged in you can then add and manage IoT devices.



aruba ClearPass Device and Guest Management

Manage Registered Devices

Use this page to manage your devices.

Quick Help Create

Filter:

Device Name	MAC Address	Created	Sharing
Sharing test	77-33-EE-AA-11-AA	2020-12-11 16:37	Disabled
stefan's iphone test	C8-A6-00-C5-BF-64	2020-11-27 13:43	Personal

Refresh 1

4. Click the “Create” or “Create Device” button to add an IoT device.

5. This should bring up the register device page like below.

The screenshot shows the 'Register Device' page in the Aruba ClearPass interface. The page has a navigation menu on the left with options: Devices, Create Device, Manage Devices, and Logout. The main content area is titled 'Register Device' and includes a sub-header 'IoT Staff Device Registration'. Below the sub-header is a form with the following fields:

- Device Name:** A text input field with a placeholder 'Name of the device.'
- * MAC Address:** A text input field with a placeholder 'MAC address of the device.'
- Device 'Bubble':** A checkbox labeled 'Join the 'Bubble'' is checked. Below it, a note states: 'The 'Bubble' allows you to use services like AirPlay™, AirPrint™, ChromeCast with your personal devices, if they are compatible.'
- Share your device:** Two radio buttons are present: 'Personal' (selected) and 'Shared'. Below 'Shared', a note says: 'You can allow others to use your 'Bubble' device'.
- Shared With:** A text input field with a placeholder 'Enter the usernames of those you wish to share this device with. Use a comma-separated list, e.g. user1,user2,user3, or blank to deny any user access.'
- Notes:** A text area for additional information.

At the bottom right of the form is a button labeled 'Create Device'. A legend at the bottom left indicates that an asterisk (*) denotes a 'required field'. A link 'Manage my devices' is also visible at the bottom left.

6. Fill out the form and click **Create Device**.
 - a. **Device Name:** Please clearly name your IoT device practically so we know what type of device it is.
 - b. **Mac Address:** This will be the wireless mac address of your IoT device, its usually located on the device itself or use google to research how to find it.
 - c. **Join the Bubble:** This option will allow you to airplay/cast/connect from your other devices which are connected to PMB-Members.
 - d. **Share your device:** Please only add devices as personal devices unless you intend to let other users connect to them aswell.
 - e. **Shared With:** Please enter the users SSO who you want to share with, this only works when you are sharing with another student not staff.
 - f. **Notes:** Please use this box to add any additional details about why you are adding the device to the network and what it is for.

7.

IoT Staff Device Registration	
Device Name:	<input type="text" value="Chromecast"/> <small>Name of the device.</small>
* MAC Address:	<input type="text" value="AA:AA:AA:AA:BB:BB"/> <small>MAC address of the device.</small>
Device 'Bubble':	<input checked="" type="checkbox"/> Join the 'Bubble' <small>The 'Bubble' allows you to use services like AirPlay™, AirPrint™, ChromeCast with your personal devices, if they are compatible.</small>
Share your device:	<input checked="" type="radio"/> Personal <input type="radio"/> Shared <small>You can allow others to use your 'Bubble' device</small>
Shared With:	<input type="text"/> <small>Enter the usernames of those you wish to share this device with. Use a comma-separated list, e.g. user1,user2,user3, or blank to deny any user access.</small>
Notes:	<input type="text" value="My Chromecast in the office for testing the IoT network."/>
<input type="button" value="Create Device"/>	

8. If you have correctly entered the details you should now be prompted with a Finished Creating Device page like below which contains the password, you need to enter to add your device.



ClearPass Device and Guest Management

› Devices

› Create Device

› Manage Devices

› Logout

Finished Creating Device

The device was successfully created.

MAC Create New Device Receipt	
Device Name:	Chromecast
MAC Address:	AA-AA-AA-AA-BB-BB
Wi-Fi Password:	wifi.pbMsTw
AirGroup:	Enabled
Ownership:	Personal

9. Now on your IoT device simply connect to PMB-IoT and enter the passcode that was given to you for your device. Enter the whole code, for example for my Chromecast I would join PMB-IoT and enter the password **wifi.pbMsTw**

Notes

- The generated passwords will only work for the mac address you supplied.
- If you have entered the Mac address incorrectly your device will not be able to join.
- You can manage the devices you have added by clicking the **Manage Devices** link when logged into <https://guest.pmb.ox.ac.uk/guest>. This includes editing them and removing them.
- If you are having trouble, please delete the device and then add it again taking care to input the details correctly.
- If you need any further help or things are not working as they are meant to be please email - it-help@PMB.ox.ac.uk