# LbQ IT and networking principles

LbQ IT Setup revolves around three IT steps that need to be followed in order.  The three steps are listed below:

- WebSocket Test
- School Network Structure
- Tablet Setup and Security

## Websocket Test

LbQ servers need to communicate with the internal school network through a process called Secure WebSockets.  Both the teacher and student will need an uninterrupted WebSocket connection for the software to work correctly.

To check whether the school that you work for can access the LbQ servers through a WebSocket connection please browse to https://www.lbq.org/connection.  Once you have run this test you will either get a tick and a message that says 'Congratulations! This device is able to successfully make a connection' or you will receive a cross and a message highlighting that you cannot make a WebSocket connection.

Please be aware that this test should be run on all the WiFi and cabled devices that will use the LbQ software.  Sometimes you will find that one profile will pass the test whereas another more locked down profile may well fail the test.

If you have any of the school's profiles that fail the WebSocket test then you will need to open up the firewall/filter to allow the WebSocket connection to work.  To do this you will need to log on to the relevant page on the firewall/filter software and open up the following domain names and IP addresses

lbq.org
84.18.216.178

If you are unsure of how to open up the domain names/IP addresses we provide guides for common systems on our website at https://www.lbq.org/TechnicalGuidance/

# School Network Structure

LbQ software relies on the teacher going to www.lbq.org and clicking log in and entering their credentials.  Once they have logged on they can select a subject (maths, English or science) and then search for a question set.  When they have found the relevant question set they can start it and they get given a 3 character code to issue out to the students.  If the school has paid for a licence then they will have full access to the question set and all the features for the year.  If they have registered for the trial version then they will get full access to all features for 60 days then they will get cut down features after that period.  Students can input the 3 character code in to a browser or use the app which can be loaded on to Android, Apple, Windows and Chromebook devices.

If the school is purchasing Android tablets and charging cabinets from LbQ please take note of the amount of tablets you are purchasing.  Once you are aware of the amount of devices that the school is purchasing make sure that you have enough IP addresses spare on the internal subnet range.  For instance if you purchase 3 sets of tablets (32 student tablets and 1 teacher in each set), you would need 99 free IP addresses on the school's internal subnet IP range.

Once you have setup the internal IP ranges so that they can accommodate the new devices it is advised to run a wireless survey through the main areas where the tablets will run the LbQ software.  Please have in mind that although the LbQ software does not need a high amount of bandwidth (it only needs to download images and text) you will have at least 33 new devices per classroom that need a reliable wireless connection.  A reliable connection means that the android device x 33 will need to be connected without dropping the wifi signal during the LbQ session (roughly about 20 minutes long).  When running the wifi survey please cover all areas of the classrooms and make sure that the signal strength is strong.

The LbQ student tablets are Android 7" tablets and the teacher tablet is an Android 10" tablet.  All the LbQ tablets run on a 2.4 Ghz WiFi frequency only.  This means that most of the WiFi access points and controllers will take extra strain on the 2.4ghz range when the tablets are set up for the first time. Most controllers will automatically place devices on to one of three channels on the 2.4ghz range (1,6 and 11).  If you experience problems with connecting multiple devices on to the student WiFi you may have a problem with interference on the stated channels.  To solve this you can place the access points in the LbQ used rooms to a static 2.4ghz range i.e. 5 or 7.

Please be aware that if the school is running Netgear access points and controllers that you may find that you experience a problem where you can only connect up to 24 devices per access point and anything after that will not connect.  The only way you can get around this is to have devices split across two Netgear access points as this is a restriction on some Netgear devices.

Please feel free to contact LbQ via the contact details below if you have any questions regarding LbQ working within the school's network structure.

## Tablet Setup and Security

If you already have tablets in the school and want to use the LbQ app on them then all you need to do is to download the app on each device (preferably by MDM) and then allow the app access to the app store.  Please be aware that the access to the app store is important as it allows the LbQ app to update as and when required.

If you have purchased the LbQ tablets and charging cabinets then you will fall into one of two categories.  Either the school has an MDM in place to manage apps and security or the school does not have an MDM in place.

If the school has no MDM in place and are not looking to procure one we advise the school to create Android profiles to administer the devices i.e. admin and student, with a code on the admin account.  On top of this there are apps available to further lock down the tablets using an app such as Kid's Place, which is available for Android. LbQ does not provide support on these apps however.

https://kiddoware.com/kids-place-parental-control-for-android-devices/

Kids Place will allow the IT department to configure the tablet to operate in a manner similar to kiosk mode, allowing access only to allowed apps which can be chosen by the school.

If the school has an MDM in place already before the LbQ tablets arrive they may have functionality to lock down the LbQ tablets.

We have full documentation that can be sent to you on how to setup profiles, how to configure kids place and also MDM options.

If you need to contact us, you can do so via support@lbq.org.