

Optimizing SoftLINK on Wireless Networks

This document relates to SoftLINK version 11 and later, for earlier versions of SoftLINK please see [KB0152](#). Once you have established a reliable wireless connection between the devices in your classroom there are some settings within the Tutor console that you can be changed to optimize performance on your wireless network. A school will have a finite amount of network bandwidth available; viewing the student's screens or broadcasting the teachers' screen simultaneously will consume this limited bandwidth. SoftLINK provides multiple configuration options designed to reduce the amount of data sent across the network which will result in improved performance. These options can be found under their respective configuration sections in the SoftLINK Tutor console

For a wireless environment it is recommended that both of the options within the Performance section of the Tutor settings are selected:

Color reduction – The view window, thumbnails and the teachers screen when broadcast will be restricted to 256 colors.

Low bandwidth mode - The number of video frames transferred will be reduced to around 5 per second.

These options can be found in the Tutor console. To configure them select {School}{Configurations...}{Performance} and ensure that both options are selected.

Additionally, within the Network and Wireless Settings section of the Tutor console it is recommended that the following option is enabled when using SoftLINK on a wireless network:

Enable Broadcast Show – When broadcasting the teachers screen or distributing files to multiple students, enabling this option will result in the screen data or files being sent to all machines simultaneously.

Finally, performance can further be enhanced by reducing the speed that the Tutor console sends data. Matching the Tutor's sending speed to the speed at which the wireless access point can deliver the data can have a positive impact on performance. Sending data onto the network too quickly may result in packets being lost; which will result in the student workstations requesting the data again, adding additional traffic on the network.

For a wireless environment it is recommended that the following options are set:

Wireless Network – Select this option to optimize SoftLINK for best performance in a wireless environment.

Maximum Throughput – This option provides the ability to fine tune the speed that the Tutor console sends data to the connected student devices.

When configuring SoftLINK for use in wireless classroom, consideration should be given to the number of student computers that will be connected to the access point at any one time. Due to the nature of wireless networking, only one device at a time can send and receive data through the access point, so performance will reduce as the number of students increase.

We would recommend for a typical class of 30 students starting with the default Maximum Throughput value of 8 Mbps. However, depending on the type of access point, whether the Tutor PC is using a wired (better) or wireless connection, and actual performance experienced, this value should be decreased for slower networks and increased for faster networks until an optimal setting is found.

IEEE 802.11 Protocol	Data Rate (Maximum)	Suggested Maximum throughput value
802.11a	54Mbps	8Mbps
802.11b	11Mbps	6Mbps
802.11g	54Mbps	8Mbps
802.11n	600Mbps	12Mbps

These options can be found in the Tutor console. To configure them select {School}{Configurations...}{Performance} ensuring that the applicable options are selected.