

2Control NXT FAQ

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Errors

Q: I try install the LEGO NXT Driver on XP SP3 and get a message that SP2 is required

A: Go to http://support.2simpleweb.com/public/tools/3rd_party/LEGO/ and download the driver. Install this locally on each pc.

Q: "Add operation failed" when trying to deploy the LEGO Driver MSI as a GPO

A: This is a very common question by schools. We have discussed this with LEGO and requested this feature, but unfortunately GPO deployment is not currently supported for the LEGO Driver. You therefore need to install the driver manually on each machine, or use some other network deployment technique besides GPO; for example, on RM CC3 and CC4 networks the driver can be successfully deployed across a network since these networks do not base their deployment on GPO. If you are aware of any other non-GPO methods that can be used for network deployment for this MSI, please let us know and we will add it to this FAQ.

Q: "The application failed to initialize properly (0xc0000135). Click on OK to terminate the application." when trying to run the program

A: You need to install Microsoft .NET Framework (v2 or above) which is available on the CD or can be downloaded from the Microsoft website (go to www.microsoft.com and search for ".NET Framework")

Q: I try to run 2Control from the 2Simple Collection Launcher but nothing happens

A: You need to install Microsoft .NET Framework (see previous question for details.)

Q: “Unhandled exception has occurred... unable to load DLL ‘Fantom.dll’...” when trying to run the Sequence part of 2Control

A: Please install the LEGO Mindstorms NXT Driver on that computer (available on the CD).

Q: “Not Connected!” error when starting up 2Control

A: Make sure that:

- 1) The LEGO Mindstorms NXT Driver is installed on that computer (the driver install is available on the CD or online – see above.)
- 2) The LEGO brick is plugged into the computer via a USB port.
- 3) The LEGO brick is turned on (hold down the orange button to do so.) If you do not use the brick for a while, it automatically switches itself off.
- 4) The LEGO brick is turned on and plugged in before you start 2Control. If you do turn it on or plug it in after starting 2Control, you can reset the connection by clicking on “Restart” when 2Control brings up the “Not Connected” window (see pg 12 of the user guide.)
- 5) The LEGO brick needs to be light grey in colour (NXT), not yellow (RCX)
- 6) Try a different USB port on your computer.
- 7) You may need to update the firmware on the LEGO brick (see below for details)
- 8) Check if you are able to use the LEGO brick with the LEGO Mindstorms software, if you have purchased it.

Q: “2ControlNXT has encountered an error and needs to close” when trying to run the program

A: This error can occur if you are trying to run 2Control from a shared drive on your network. It is possible to run 2Control this way, but you need to amend your .NET Framework security settings to allow this. Below are 2 possible ways you could do this (Warning – this will change the security settings on your computer – please consult your technician before doing this. Remember also that if you’re running 2Control from a shared network drive, you still need to have the following 2 installed on *each* local machine: Microsoft .NET Framework (v2 or above), and the LEGO Mindstorms NXT Driver .)

Method 1:

1. Go to http://support.2simpleweb.com/public/fixes/2control/mapped_drive/
2. Download “2Control_NXT-Mapped Drive.msi”
3. Right-click it and choose “install” (simply double-clicking it will not work)
4. It will briefly flash up a window which will then disappear, but this should be all you need to do. Try 2Control now – it should work.

Method 2:

1. Go to http://support.2simpleweb.com/public/tools/3rd_party/Microsoft/.NET_FW_Config/
2. Download configwizard.msi and install it
3. Go to Start > Control Panel > Administrative Tools > Microsoft .NET Framework 2.0 Configuration
4. Click “Configure Code Access Security Policy” and then “Adjust Zone Security”
5. Select “Make changes to this computer” and click Next
6. Select “Local Intranet” and move the slider up to “Full Trust”, click Next and Finish

2Control and LEGO Mindstorms

Q: Why do I get no software included when I purchase my NXT kit?

A: As shown on www.2simple.com/mindstorms, there are 3 main options when purchasing LEGO:

1. **The NXT hardware** – 1 LEGO NXT brick with a processing chip inside it as well as 3 motors, various sensors and other building parts. No software is included with this purchase – it needs to be purchased separately.
2. **LEGO Mindstorms NXT** – Software developed by LEGO to work with the NXT brick.
3. **2Control NXT**– Software developed by 2Simple in partnership with LEGO to work with the NXT brick. 2Control and the LEGO Mindstorms software are separate pieces of software and are available for purchase separately.

Q: What is the difference between the LEGO Mindstorms software and 2Control?

A: LEGO Mindstorms and 2Control NXT are both software programs which work with the LEGO NXT brick. They are available for purchase separately (see www.2simple.com/mindstorms)

While there is some overlap of functionality between these programs, they complement each other well and both provide value in a unique way.

2Control NXT is software developed by 2Simple in partnership with LEGO to work with the NXT brick. It is perfect for those pupils that are less confident with control. It has a clear visual interface, with an on-screen model which mimics what happens off-screen. There is a progression from simple screens to more advanced ones, with help videos for each screen. The last part in 2Control, “My Model”, provides a flow-chart based screen which serves as a good introduction to the LEGO Mindstorms software.

LEGO Mindstorms is software developed by LEGO to work with the NXT brick. It is a powerful program which provides comprehensive and advanced flowchart capabilities, allowing you to specify behaviour of the NXT brick to a fine-grained level.

Some specific differences between Lego Mindstorms and 2Control:

- With 2Control you can use the light, sound and touch sensors. If you want to use any other types of sensors, you need to use the LEGO Mindstorms software.
- 2Control requires that the NXT Brick remains plugged into the computer via a USB cable to be able to work with the program. LEGO Mindstorms is more flexible in this regard as it also supports **Bluetooth** connections to the NXT Brick, as well as allowing you to **download programs** to the NXT brick and then disconnect the USB cable and run those programs.

Q: Where can i find out more information on LEGO Mindstorms software and hardware?

A: <http://mindstorms.lego.com>. You can also view the user guide here:

http://support.2simpleweb.com/public/docs/userguides/LEGO_Mindstorms.pdf

Other questions

Q: Do I need to have the USB cable plugged in to the NXT brick the whole time in order for 2Control to work with it?

A: Yes, you do. With the LEGO Mindstorms software, however, you can disconnect the cable and instead use Bluetooth or download a program to the NXT brick itself – see below for more differences between 2Control and LEGO Mindstorms.

Q: How do I check what firmware version my LEGO NXT brick has?

A: Turn the brick on by pressing the orange button. Press the left triangle button twice to get to the spanner icon “Settings” and press the orange button to select. Press the left triangle button twice to get to “NXT Version” and press the orange button. The firmware version will now be displayed on the top line of the display, with the top left displaying “FW” and the top right displaying the firmware version.

Q: How do I upgrade the firmware on my NXT brick?

A: If you have LEGO Mindstorms NXT installed, you can check if a newer firmware version is available online via the TOOLS menu. If you do not have LEGO Mindstorms NXT installed, contact 2Simple for help updating your firmware.

Q: Can 2Control work with other LEGO robots like the RCX brick?

A: Although the RCX brick itself cannot be used with 2Control, the LEGO bricks, sensors and motors can all be integrated into the current NXT system and therefore used with 2Control NXT.

Q: What do I use the 4 buttons on the NXT brick itself for?

Q: Is it possible to program the NXT brick directly without any software at all?

A: It is possible to a very limited extent to program the brick using the 4 buttons on the brick itself. Here is a very brief guide on what you can do using the brick's buttons:

- **Switch on:** Hold down the orange button
- **Switch off:** Press the rectangular button under the orange button, when the main menu is being displayed, to switch the brick off. Press the orange button to confirm.
- **Navigation:** Within any menu, use the left and right triangle buttons to navigate to different option. Use the orange button to select an option. Use the bottom darker grey rectangle button to jump out to the previous menu.
- **Main menu:**
 1. **My files** - load saved files – this option works with LEGO Mindstorms
 2. **NXT program** - add basic commands to a 5 step flowchart
 3. **View** - get immediate readings from sensors plugged into the brick
 4. **Bluetooth** - this option works with LEGO Mindstorms
 5. **Settings** – various general settings
 6. **Try me** - quick sensor and motor tests

See also pages 20-29 in the LEGO Mindstorms user guide:

http://support.2simpleweb.com/public/docs/userguides/LEGO_Mindstorms.pdf

Q: How do I use the touch sensor?

A: See http://support.2simpleweb.com/public/docs/userguides/LEGO_Mindstorms.pdf , pg 32.

In 2Control, you can use the touch sensor in the *Sensors* and *My Model* screens.

Q: When using the NXT brick as a floor robot with 2Control, I am unable to get the floor robot to turn exactly 90 degree angles - with the Logo part of the program, for example.

A: We spent a lot of time trying to get the turning accuracy to be as exact as possible. We did not achieve 100% accuracy, but 2Control can still be used very well at a classroom level. A few points to consider:

- Even small inaccuracies will accumulate to become larger ones over the course of many turns.
- The **surface** that the floor robot is moving on can make a great difference to the turning accuracy. Try different surfaces.
- The teacher options (press ctrl + shift + the letter "o") provide the ability to change the turning angle (see "wheel degrees per 360" setting). The default values are meant to work with the 9797 model, but you can change them if required.
- The 3rd wheel of the floor robot (the small one) can also affect the turning accuracy – we have had reports that using a rod instead of a wheel can improve this.
- The LEGO Mindstorms NXT v2.0 software can be used for this. Chris Butlin has kindly provided detailed instructions on how to use LEGO Mindstorms NXT v2.0 to instruct the floor robot to turn at 90 degree angles. Contact 2Simple for further information.

Q: 2Control connects to the LEGO bricks but does not recognise the light and sound sensors

A: This can occur when the LEGO bricks have a new firmware version. A solution to this issue is to use the LEGO brick with the Mindstorms software first. After this, 2Control should recognise the sensors. This only needs to be done once.

2Simple Software

support@2simple.com

020 8203 1781

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