SWGfL Core Service Transformation Project – FAQ: PSTN Lines

Question? Call us on 0845 601 3203 or drop us a line at **sis@swgfl.org.uk**

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SOUTH WEST GRID FOR LEARNING

South West Grid for Learning
Schools Internet Services

1.   Introduction

This pack has been produced to help with the process of changing your SWGfL Schools Internet Service.

1.1   What will I have to do at the school?

There are a few things you need to do: some prior to deployment of your new solution, and some to make sure the deployment goes to plan

1.1.1   Prior to deployment

The key thing to work out is how we're going to get your new solution connected to everything it needs to connect to at the school end. The main aspects of this are:

- A power outlet (or more than one, depending on the solution you choose)
- A PSTN Line Master Socket (or more than one, depending on the solution you choose)
- The school LAN (your 'switch')

We provide cables with your new solution for each of these, but as they're 2 metres long you need to make sure that each of these are within 2 metres of each other, or make arrangements for extensions to be used. See Appendix 1 for more details.

You might also need to receive a BT engineer at school – for example to install a new PSTN Line, if you need one – and show them where they need to work.

1.1.2   Deployment

We're going to manage the project with the main intentions being minimum disruption, minimum cost and minimum interruptions to service.

Depending on the solution you choose, you may receive new CPE (stands for Customer Premises Equipment, also known as a router) to be connected, either by us, by you, or by your ICT technician. In situations where you connect the CPE yourself, we can arrange a 'supported installation' process where an engineer guides you through everything over the phone.

You'll need a spare port on your switch to connect the new CPE to. If there isn't one, you'll be able to use the port that the current CPE is plugged into if you're locating the new CPE in the same location as the current CPE.

You can leave the rest of it to us, and we'll let you know about anything important!

2.   PSTN Lines and your new solution

Lots of the solutions we're deploying require a phone line to operate, so we've provided some information below to help explain more about this. For more information, see Appendix 2.

2.1   What is a PSTN Line?

A 'PSTN Line' is, put simply, a standard BT analogue telephone line. For the purpose of your new SWGfL solution, we'll refer to your existing or newly installed analogue telephone line as a 'PSTN Line'. The phone number for this line will be referred to as the 'PSTN Number'.

2.2   Which solutions require a PSTN Line?

All ADSL and FttC solutions require a PSTN Line. This can be an existing line, providing it's suitable, or it could be a new line that'll need to be installed in order for the ADSL or FttC solution to run over it.

We'll be working closely with schools to distinguish whether or not a new PSTN Line is needed. In the event that it is, we can manage the installation of this (additional charges apply).

2.3   How do I know if need a new line?

Have a look through the guidance in Appendix 2. If you still have questions, give us a call.
Here's a checklist you can use to establish whether your existing line is suitable:

	Requirement	Confirmed
1	The PSTN Line has a Master Socket that will be used for connecting the ADSL or FttC solution, **NOT** an extension (see Appendix 2 for help identifying the Master Socket)	
2	It is a PSTN Line (standard BT analogue line), **NOT** an ISDN line (digital)	
3	The PSTN Line is in the correct location, or the school is going to make arrangements for it to be moved to the correct location or for a short extension cable to be used	
4	Any other PSTN Lines which may also be available have been checked, in case the one that's been identified turns out not to be usable	

Please note that if you identify that this line is available to use for your new ADSL or FttC solution and any issues with the PSTN Line arise at the point of order, we will liaise with you to come to a resolution. This may involve installing a new PSTN Line, or having the existing PSTN Line moved, but do be aware that this could delay the order process and incur additional charges.

2.4   What happens if I do need a new line?

I'm sure you know that SWGfL don't actually provide the PSTN Lines, but we work with TalkTalk Business who instruct 'Openreach' (the wires part of BT) to install the PSTN Lines. Once you've raised your Purchaser Order to SWGfL, we'll order the PSTN Lines through TalkTalk Business, and they'll contact the BT planning team.

BT will allocate an installation slot when they'll come to school to install the new line. This may fall within the school day, so please ensure that the Headteacher is aware and is able to relocate students/staff, if required, to enable the engineer to complete the installation in line with any health and safety regulations.

Please note that it's important you're prepared for the installation slot. The BT engineer will need to be shown where to install the PSTN Line (according to the guidance in Appendix 2), and mustn't install it anywhere else. Missed appointments carry a charge from BT, so it's also important someone is there at the time of the installation slot who knows where to take the engineer.

2.5   Why are we using these technologies?

It's a good question. For some, moving from a fibre or copper solution to one that uses a PSTN Line seems like a step backwards. It's partly a matter of cost, and also to do with changes in the marketplace that are happening at the moment.
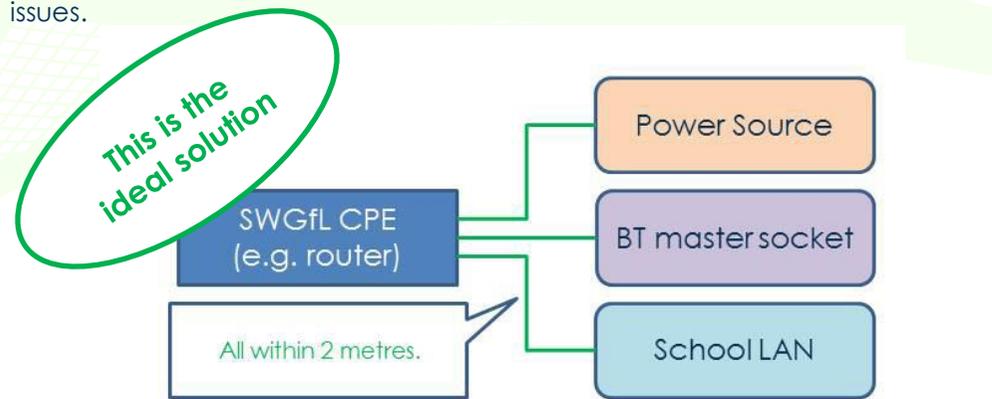
The main issue in regard to the cost is that the existing 'private network' solutions were put in place when government funding (the Harnessing Technology Grant) was provided to help. Now that funding has gone, it's critical to make sure the network evolves to be as cost effective as it can be. Also, some of the main companies involved in the UK broadband market – including BT – have been making significant investments in the infrastructure to support increasing demands. Most of this investment is in the range of products that run over a PSTN Line. So they're a lot better than they were three years ago!

We can exploit the investments that are being made to deliver lower cost connectivity to schools, but still connect it to our core network and our service so you get all the additional services and protections you need, as well as the highest performance.
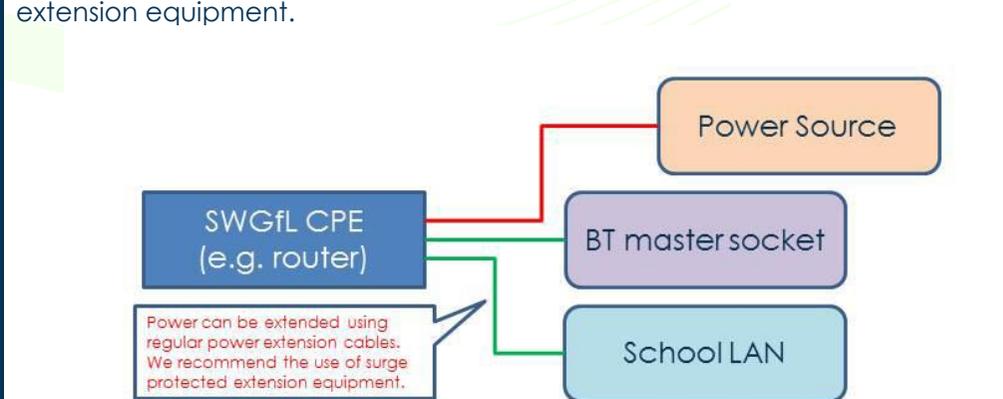
3. Appendix 1 – Location of your new solution

The location for your ADSL or FttC solution needs to be close enough to the power source, PSTN Line and your school network to be connected. For more information see www.swgfl.org.uk/equipment-and-power and www.swgfl.org.uk/telephonelines. Here are four scenarios:
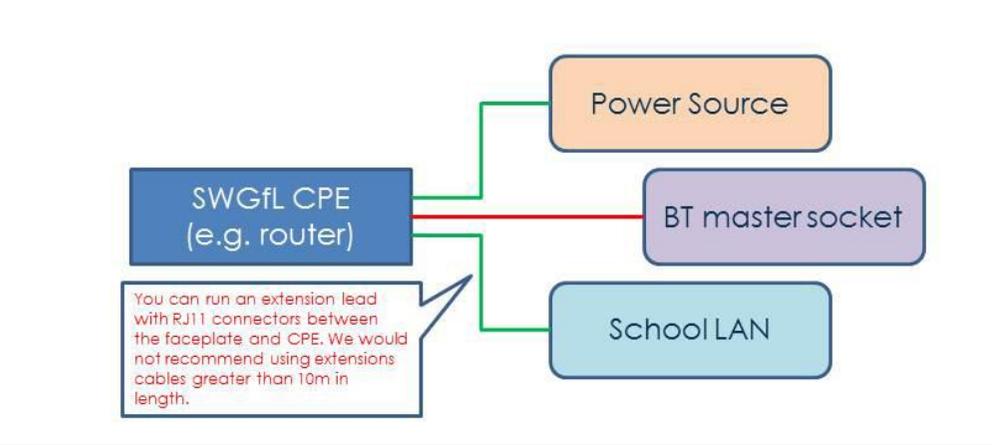
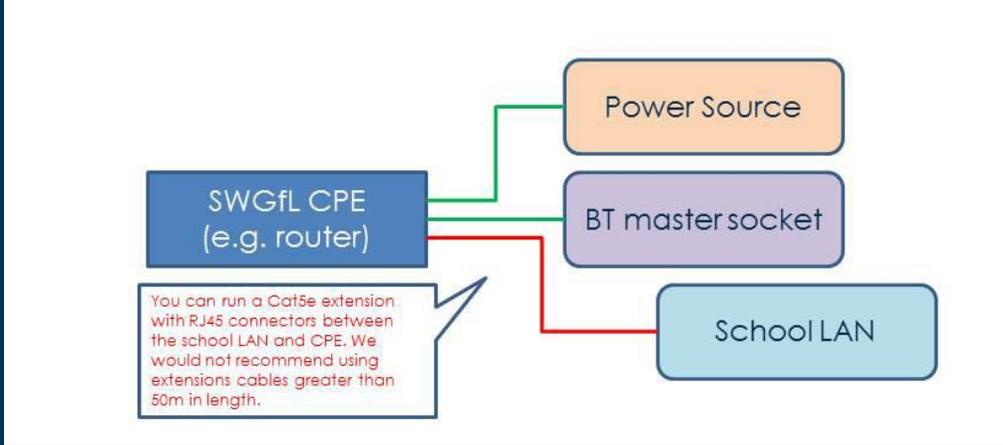|	
The location of the CPE is within 2 metres of the required power outlet(s), the Master Socket and the school LAN. This means that the supplied cables should be sufficient for connecting the ADSL or FttC solution without any issues. *This is the ideal solution* All within 2 metres.	The location of the CPE is more than 2 metres from available **power outlet(s)**. In this situation, you can use suitable power extension cables to connect the SWGfL CPE to the power source. We recommend the use of surge protected extension equipment. Power can be extended using regular power extension cables. We recommend the use of surge protected extension equipment.
The location of the CPE is more than 2 metres from the **BT Master Socket**. You may be able to run an extension cable from the BT Master Socket to the CPE, though extensions longer than 10m are not recommended. It may be better to install a new PSTN Line, or locate the CPE closer to the existing BT Master Socket. You can run an extension lead with RJ11 connectors between the faceplate and CPE. We would not recommend using extensions cables greater than 10m in length.	The location of the CPE is more than 2 metres from the **school LAN**. In this situation, you can use suitable Cat5e cables to connect the SWGfL CPE to the school LAN. We do not recommend the use of extension cables greater than 50m in length in these cases. You can run a Cat5e extension with RJ45 connectors between the school LAN and CPE. We would not recommend using extensions cables greater than 50m in length.

4.   Appendix 2 – PSTN Lines

This section explains all about PSTN Lines, but for more information see www.swgfl.org.uk/telephonelines.

4.1   FttC, ADSL and PSTN Lines

Whether you've ordered an FttC or an ADSL solution, you'll need a PSTN Line allocated or newly installed for the sole purpose of provisioning your new broadband solution. If you've ordered a 'bonded solution', you'll need more than one PSTN Line.

4.2   The Master Socket

The ADSL or FttC solution has to connect to the 'Master Socket', **not to an extension**. You should be able to identify the Master Socket fairly easily: it usually has the BT logo on it, and has a split in the faceplate, with the upper and lower parts of the front being separate pieces. This feature will identify a Master Socket against an extension socket, which is usually slightly smaller in size and has a one-piece, complete faceplate. Master Sockets are likely to look like this:

Please note that extensions will **not support** your ADSL or FttC solution, so a Master Socket must be used.

4.3   PSTN Line location

You need to be able to connect your CPE (router) to the PSTN Line, as well as to your school LAN (local network) and to a power outlet. See Appendix 1 for diagrams showing these connections, and guidance if they're not within 2 metres of each other.

4.4   Preparing a PSTN Line for your ADSL or FttC solution

It's important that you follow the guidelines below to prepare a PSTN Line for your new solution.

If you're having a new PSTN Line installed	*If you're using an existing PSTN Line*
• An Engineer from the PSTN Provider will need to attend on site • You must show the Engineer to the decided location of your CPE, and instruct him / her to install the new PSTN Line Master Socket within 2 metres of this area • Tell the engineer what you intend to use the PSTN Line for (i.e. either an ADSL or an FTTC broadband solution) • Make a note of the PSTN Number of the newly installed line, and the location. If possible, mark the PSTN Master Socket with a permanent marker for ease of reference in future	• You must ensure that the master socket for this line is situated within 2 metres of the decided location of your CPE • You must ensure that the PSTN Line is not supporting any other service, e.g. an alarms or fax machine • If you suspect that the PSTN Line operates features such as RedCare, Meterpulse facility, or PBX, you must contact your PSTN Provider to check whether these features can and / or need to be removed from the line, in order to provision your ADSL or FttC solution. See below for details

4.4.1   Is the PSTN Line used for anything else at the moment?

The reason for checking this is that some things can cause compatibility issues with a broadband solution running over a PSTN Line.

Normal telephones are hardly ever a problem (and the use of 'Filters' is effective); however here are some things that are known to cause issues:

- Phone systems (for example, BT Inspiration) can be connected directly into the PSTN Line, meaning there's no BT Master Socket. This means we cannot connect the ADSL or FttC solution to it
- Fax machines, particularly older machines, can cause problems in the way they transmit their data over the line that conflicts with the data the ADSL or FttC solution is sending
- Alarm systems can also cause issues, as some signal to monitoring systems regularly which can disrupt the ADSL or FttC solution

If in doubt, drop us a line, or consider ordering a new PSTN Line for the ADSL or FttC solution.

4.4.2   Are any features active on the PSTN Line?

Similarly to the issues that fax machines and alarm systems can cause, 'features' have been known to cause compatibility issues with a broadband solution running over a PSTN Line. Features are products provided on the PSTN Line to deliver a particular service or benefit.

A couple of options are to call BT customer services on 150: they should be able to tell you which feature would be preventing broadband compatibility, and what steps can be taken to remove the incompatible feature. Alternatively, your phone bill might show which features are present (as most features are chargeable). This problem is not related to the SWGfL service: all ISPs would be unable to provide you with a broadband service while the incompatible feature is present.

Incompatible features include: 30k Loop, DACS, Subscriber Private Metering, PBX lines, RedCare, Red ABC, Featurenet 5000 services, other Broadband xDSL Services (inc. BT Videostream & BT Datastream S), some Caller Display Units and Meterpulse facility.

You should contact your PSTN Provider to check whether these features can and / or need to be removed from the line, in order to provision your ADSL or FttC solution. If you're in any doubt drop us a line and we'll try to help.

4.5   Checking your PSTN Line is working

As a PSTN Line is a standard analogue telephone line, it should be possible to make and receive voice calls via this line, if an analogue telephone is connected via the PSTN Line master socket. Your ADSL or FttC solution cannot be provisioned via the PSTN Line until it is working.

4.5.1   You will need

1. A working, analogue (non-cordless) telephone, connected only to the power supply and within reach of the PSTN Line master socket in question
2. A mobile phone or use of a landline with a caller-ID service

4.5.2   To test your PSTN Line

a) Simply plug the RJ11 cable of the analogue (non-cordless) telephone into the single port on the front of the PSTN Line Master Socket, and make a telephone call to the mobile phone number, or landline number with caller-ID
b) If you are successfully able to make a call, your PSTN Line is 'live'. Check that the PSTN Number (displayed on your mobile phone or landline handset, or by dialling '1471' on the landline you called) is the correct number
c) If you cannot make an outgoing call from your PSTN Line master socket, it could indicate a fault on the line, or that the line has not yet been registered with BT. You must contact your PSTN provider to check the line.

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