

Vaillant's plain English guide to

boiler jargon

simple, concise and precise

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What's a diverter valve? Why do you need a TRV? And what happens when you get sludge in your system?

The boiler world is a minefield of technical terms, abbreviations and jargon - and it can be hard to understand exactly what your installer tells you when fitting or repairing a system. In this guide, we simplify the language and cut through the jargon, laying out the terminology of the heating industry in plain English. So next time you have a problem with your boiler, you'll know exactly what's needed, and can better understand your installer and heating system.

We have developed this guide in partnership with Plain English Campaign, who are dedicated to promoting crystal-clear communication and precise, jargon-free information for everyone. You can find out more about the campaign at www.plainenglish.co.uk





Installing a new boiler

what they say what they mean

“You need a combi boiler, system boiler or open-vent boiler.”

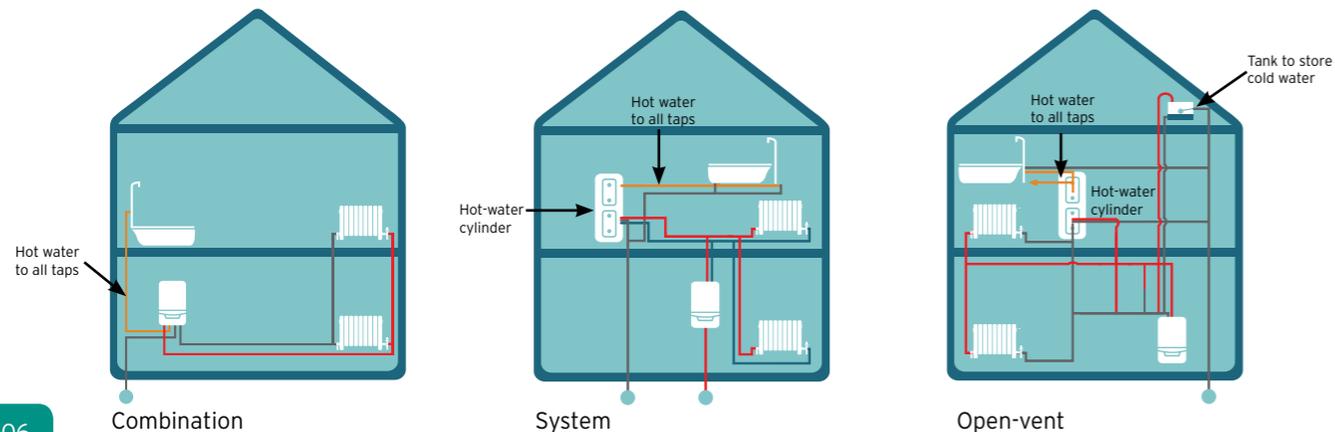
Your installer is recommending what sort of heating system best suits your house. There are three main types of boiler systems:

- **Combination (or ‘combi’) boiler** - the boiler heats the hot water as you need it. There are no storage tanks as the boiler is connected to the water mains.
- **System** - the boiler works together with a hot-water cylinder but may not need tanks (usually in the loft) as the system can be filled directly from the water mains.
- **Open-vent** - traditional systems that are normally found in older houses. They work alongside a separate hot-water cylinder (usually found in the airing cupboard) and need tanks (normally in the loft) to store cold water.

What you should know (or do): A combi boiler heats water on demand rather than heating and then storing a large volume of hot water in a separate cylinder. This is efficient and makes it ideal for properties with limited space as the separate cylinder is not needed. Combi boilers are best suited to homes with a single bathroom. Homes which need larger supplies of hot water (for example, those with several bathrooms) are usually better suited to a system boiler or open-vent boiler with an adequately sized cylinder.

Systems with cylinders benefit from having a back-up electric immersion heater within the cylinder. This means you can still have hot water if your boiler breaks down.

Types of boiler systems



what they say what they mean

“You might benefit from changing your open-vent system to one that uses either a combi or system boiler.”

An open-vent system may not be the best boiler system for you. Usually this is because you want to make changes to your home such as adding a loft conversion or freeing up space currently needed for a cylinder (for example an airing cupboard).

What you should know (or do): If you are planning changes to your house, a combi or system boiler may be more suitable. Open-vent systems need further space for tanks, which are often in the loft. This means that if you are converting your loft, you may need more space.

“A combi boiler won’t meet your hot-water demands.”

A combi boiler will not be able to produce all the hot water you need. This means you will not get enough hot water out of all of your taps at the same time. You would be better suited to a system with a hot-water cylinder.

What you should know (or do): Combi boilers are not necessarily suitable for every home. If you have more than one bathroom or a large family who all need hot water at the same time, you should bear this in mind.

“This boiler is very efficient and has a fantastic SEDBUK rating.”

The boiler your installer is showing you is a very efficient model. SEDBUK stands for Seasonal Efficiency of Domestic Boilers in the UK. It’s a Government database that provides a simple way of comparing the energy efficiency of boilers.

What you should know (or do): The SEDBUK rating shows the efficiency of boilers as a percentage. The most efficient boilers today are rated as being around 90% efficient. For more information visit the SEDBUK website www.boilers.org.uk

what they say what they mean

“You need to upgrade from a standard-efficiency boiler to a high-efficiency boiler.”

You have an old boiler that isn't working efficiently. Recent changes in the law mean all new gas boilers fitted in the UK should be high-efficiency condensing models. This simply means that the boiler will extract more energy from the fuel and turn it into useable heat.

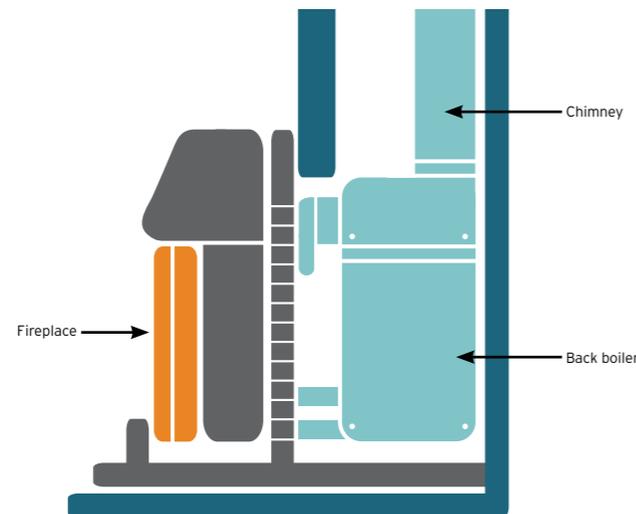
What you should know (or do): Old standard-efficiency boilers can waste over a third of the energy they produce. Modern high-efficiency boilers can be 90% efficient. Upgrading to a condensing boiler can save as much as 30% on your heating and hot-water bills.

“You should consider changing your back boiler as they are really inefficient.”

You have an old boiler, located behind a wall and fire front, that is inefficient and should be replaced.

What you should know (or do): Back boilers provide hot water and sometimes heat radiators. They are usually fitted behind an open fireplace or stove and are not efficient as a lot of the heat they produce is lost up the chimney.

Back boiler



what they say what they mean

“Have you considered the type of control you would like with your boiler?”

You have a choice of what controls you can have fitted to help you manage your boiler. Better (more sophisticated) controls will give you greater control of your heating system and can make it more efficient.

Basic boiler controls allow you to adjust the heating temperature, the time your heating system switches on and off, and the length of time it will operate. More sophisticated controls allow you to fine-tune your system, allowing you to turn it on and off at different times in the week or at the weekend, and controlling it by thermostats so the boiler works according to room temperature.

What you should know (or do): There are many different boiler controls on the market to help you save money and give you greater control over your system. It is important to check that the controls you would like to add to your system are compatible with your boiler. Your installer should be able to advise you about this.

“Would you like to have RF (wireless) controls?”

Radio Frequency (RF), or wireless, controls pass information between the controls and the boiler without the need for wires.

What you should know (or do): Installing RF controls usually causes less disruption to your property, as you don't need connecting wires. Often an RF control gives you more choice about where you put the thermostat than a wired version.

Radio Frequency (wireless) controls



what they say what they mean

“Would you like weather compensation control to make your system more efficient?”

Weather compensation control is an optional control available for modern boilers. It works by monitoring the temperature outside and using this information to help the boiler work as efficiently as possible.

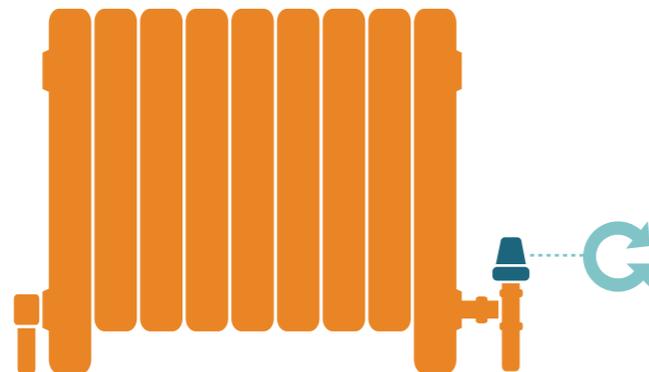
What you should know (or do): Weather compensation control is worth adding to a modern central-heating system as it works out when the boiler needs to operate. You simply tell the system what time you want the house to be warm and the controls take care of this in the most efficient way possible. Controls like this can also save you more on your energy bills.

“You should upgrade your radiators with TRVs.”

TRV is short for Thermostatic Radiator Valve. This is an adjustable valve connected to each radiator that allows you to alter the temperature of each room by regulating the flow of hot water to each individual radiator. The valve regulates the flow depending on how hot or cold the room is. Your installer should assess the condition of your radiators and fittings and may recommend you use TRVs.

What you should know (or do): TRVs are a simple way of adjusting the temperature in individual rooms. Also, if you have rooms that you are not using, TRVs give you the option to not heat them at all, but they still provide low-temperature frost protection (this is the setting indicated by the snowflake symbol on the valve).

Thermostatic Radiator Valve (TRV)



what they say what they mean

“We’ll need to flush your system before fitting the new boiler.”

Your heating system should be thoroughly cleaned by flushing it with pressurised water in line with the boiler manufacturer’s instructions. This should always be done before installing a new boiler.

What you should know (or do): This is done to clear out any sludge that has built up over time and could cause the system to run ineffectively or damage the boiler. It’s normal in older heating systems for sludge to have built up so this should be flushed away before introducing a new boiler.

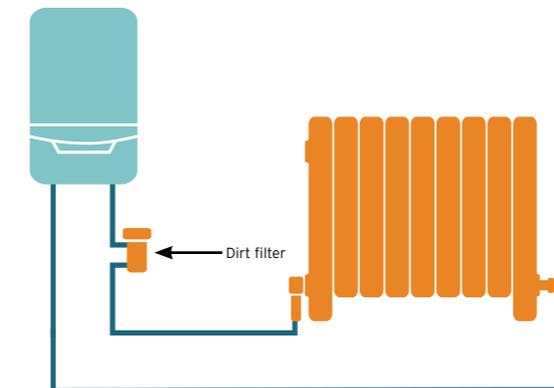
The process does come with some risk - poorly made or damaged joints may leak under this extra pressure. Your installer should warn you about any risk to your property and be ready to deal with any leaks.

“You should have a filter installed on the system.”

Your boiler system will benefit from having a filter installed. A filter will help keep the water in the system as clean as possible. This will help the system run efficiently and will extend the life of your boiler.

What you should know (or do): It is sensible to add filters to your system. The water within any system can become dirty over time, creating what’s known as sludge. This sludge means your system won’t work as efficiently and can damage the boiler. There are various types of filter available and your installer will be able to advise what’s best for your system.

Filter installed on the system





Servicing and repairing

what they say what they mean

“The water pressure needs topping up on your system.”

Combi and system boilers and your heating system work under pressure. If the pressure drops below a certain level the boiler will not fire (start).

What you should know (or do): Combi and system boilers need a minimum pressure within the system to work. Leaks in the system will cause your boiler to lose pressure. Leaks can be very small and you may not be able to see them. It is easy to solve this loss in pressure by topping up your system - your installer will be able to do this quickly. However, it is essential they also find and fix the leak.

It is a good idea to regularly check the pressure gauge to make sure there are no tiny leaks within your system - ask your installer to show you how if you're not sure. You can find the correct pressure levels for your boiler and instructions for repressurising the system in the user instructions. If you are in any doubt, we recommend you ask a competent person, such as an installer, to repressurise your system for you.

“Your flow switch is not working.”

Flow switches are a major part of a combi boiler and would be familiar to a competent installer. The flow switch's job is to sense when you turn on a hot-water tap and the boiler. Very occasionally, they can become blocked and need replacing.

What you should know (or do): If your combi boiler is running your central heating successfully but not producing hot water, the flow switch or diverter valve may be faulty. An installer will be able to tell you which of these items needs replacing, or if something else is causing the problem.

what they say what they mean

“Your radiators need bleeding.”

'Bleeding' is the term used for letting air out of a radiator and heating system. Bleeding a radiator involves opening a small valve at the top of the radiator to allow any trapped air to escape.

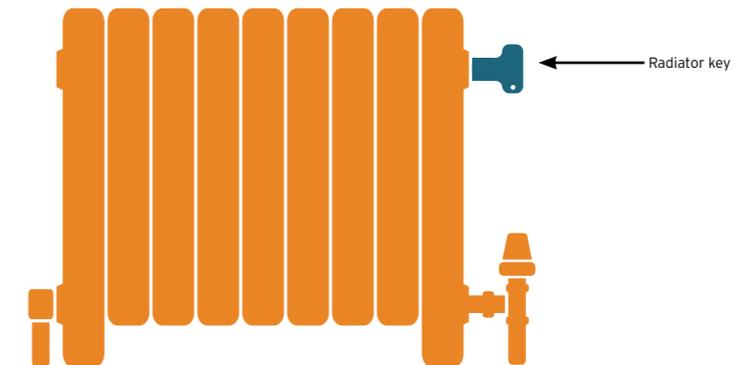
What you should know (or do): If a radiator will not heat up or if it gets hot at the bottom but not at the top, this is probably due to trapped air. Air in the system can also cause a bubbling noise when the heating is running. Bleeding all the radiators will often solve this.

You can easily bleed a radiator yourself, using a radiator key. You need to be ready to close the valve immediately once the air has been released (at the point water starts to come out). This water could be hot and may be dirty so you should have an old towel or something similar to hand to protect furnishings, carpets and of course yourself.

If you are the least bit unsure how to bleed a radiator you should contact your installer to do it for you.

It is often necessary to repressurise your system after bleeding radiators and your installer will be able to show you how to do this, or do it for you.

Bleeding a radiator



what they say what they mean

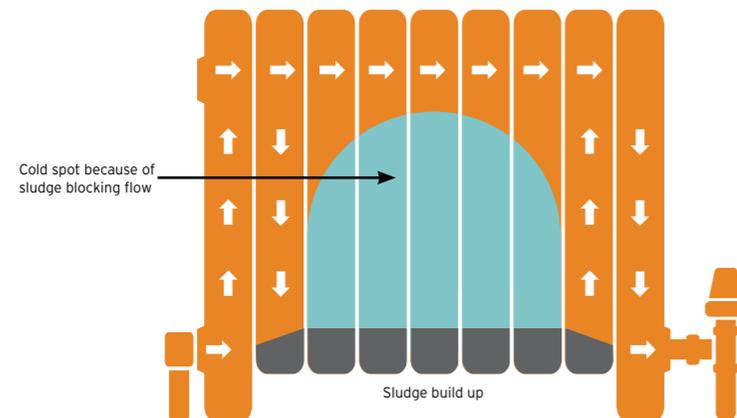
“You have air in your system.” Heating systems should contain only water. Your system has air in it, which needs to be removed as it is either causing a problem or threatens to.

What you should know (or do): For your system to be running as efficiently as possible, only water should be present in pipework and radiators. If you have air in your system it will not work efficiently. You will often notice this by bubbling noises in the radiator, or the top of your radiators will be cool. Your installer should investigate the cause of air building up in the system. They can often easily solve the problem by bleeding the radiators.

“You have sludge in your system.” Sludge is the material that has settled to the bottom of a heating system (usually your radiators). It will make your heating system run less efficiently and can lead to boiler parts failing.

What you should know (or do): Sludge is usually caused by having air in the system, and can make the inside of radiators rusty. Sludge builds up in the bottom of the radiators and sometimes on parts within the boiler, such as the pump. You can tell if there is sludge in your system as there will usually be cold spots at the bottom of your radiators. For the system to run as efficiently as possible, a competent installer needs to remove the sludge, using chemical cleaners or a power flush (or both).

Sludge in the system



what they say what they mean

“You have poor flow rate at your taps.” Flow rate is the term used to describe the rate at which water comes out of taps or a shower. A poor flow rate means that the flow of water from some or all of your taps or shower (or both) will be low - your sink and bath will take a long time to fill, or the flow of water from your shower will be weak.

What you should know (or do): Flow rate is measured in litres per minute. An installer may calculate this by timing how long it takes to fill a measuring jug from a tap. Flow rate problems are typically found in open-vent systems. These systems rely on gravity to push water from a storage tank to taps and showers. The greater the vertical distance between the sink or bath taps (or shower) and the tanks in your loft, the better the flow rate will be. If the tank is too close to the outlet, the flow rate may be poor.

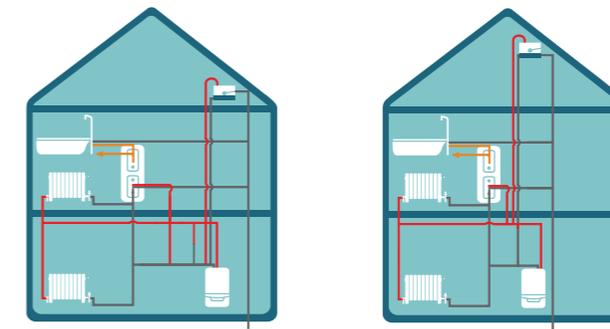
Your installer is likely to recommend one of the following:

- Change your open-vent heating system to one that uses either a combi or system boiler.
- Raise the height of the tanks in your loft.
- Fit a pump to independently force water to specific outlets (usually showers).

The right solution for you will depend on many things, including your budget, the space you have available and other work needed on your system.

There are other, less common, reasons for poor flow rates. These include pipework that's too small or too long, and blocked or corroded pipework. A competent installer will be able to identify the cause and recommend how to fix the problem.

Improving flow rate at your taps



Open-vent system with poor flow rate

Open-vent system with raised tank to improve flow rate

what they say what they mean

"I'm Gas Safe-registered." The Gas Safe Register is the official list of gas engineers who are qualified to work safely and legally on gas appliances.

What you should know (or do): The Gas Safe Register is the official gas registration body for the United Kingdom, Isle of Man and Guernsey, appointed by the relevant health and safety authority for each area. By law all gas engineers must be on the Gas Safe Register. Gas Safe Register has replaced CORGI as the gas registration body. For more information visit www.gassaferegister.co.uk

"Your pilot light has gone out or is not working correctly." A pilot light is a small constant gas flame that ignites your boiler when heat or hot water is needed. Pilot lights are only found in older boilers. If the pilot light is not working properly, the boiler will not work.

What you should know (or do): Pilot lights are not found in modern high-efficiency boilers, as more efficient and reliable electronic ignition systems have been developed. Pilot lights can go out for a variety of reasons - sometimes it's as simple as a strong wind or draught blowing the flame out or a build-up of deposits on the nozzle - but your installer will need to investigate the cause.

A boiler with a pilot light is likely to be an old model, inefficient by modern standards - it may be time to consider replacing it.

Pilot light



what they say what they mean

"Your PCB is faulty." PCB is short for Printed Circuit Board. Modern boilers are controlled electronically and the PCB is the 'brain' of the boiler. If there is a problem with the PCB it may lead to the boiler working incorrectly or not at all.

What you should know (or do): Like all electronic parts, PCBs are complex electronic devices that occasionally become damaged or stop working properly. But the PCB isn't always at fault and a good installer will check the rest of the boiler and system before automatically changing the PCB. If the PCB is faulty, the installer should replace it with a new part from the original manufacturer.

"Your diverter valve is sticking." The diverter valve is a part inside the boiler that switches between hot water at your taps and the central heating. Valves can jam or become 'sticky', preventing them from working properly.

What you should know (or do): If a diverter valve sticks, you may find that you only have heating or only have hot water to your taps. In some circumstances your boiler may not work. A common cause of valve failure is sludge in the system.

An installer can easily replace a faulty diverter valve but should always investigate the problem and find out what happened. Because there are so many models of boiler and exact types of valve, your installer will probably need to collect the part you need from a plumbing merchant.

what they say what they mean

“Your time switch is faulty.” Time switches turn the boiler on or off at the times you set. If the time switch fails, the boiler may not work.

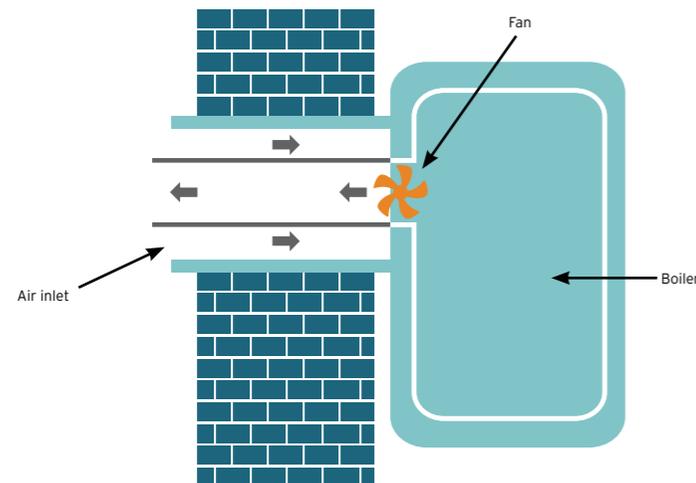
What you should know (or do): There are various types of time switch available, from simple mechanical dials to sophisticated digital multi-function controls. Your installer will be able to tell you how to fix the time switch or advise you about a replacement.

“The fan in your boiler needs replacing.” Boilers contain a fan that pushes waste gases through a pipe (known as a flue) to the outside of your home, where they are safely released into the air. If for any reason your fan stops working, your boiler will not work, so the fan is an important safety feature.

What you should know (or do): Boilers produce waste gases which must be safely released. The fan’s job is to push these gases out of the boiler and into the flue. The flue is very similar to the exhaust pipe on a car.

Replacing a fan is straightforward but your installer will need to investigate why it failed to work.

Boiler fan



what they say what they mean

“Your condensate pipe is frozen.” Condensation is a normal by-product of a boiler and is made when gas is burned to create heat. This condensation is discharged automatically into a drain either inside or outside the house. Unprotected or incorrectly installed condensate pipes can freeze in extreme conditions, preventing the boiler from working.

What you should know (or do): It is best to install condensate pipes inside the house to avoid freezing. Sometimes this is not possible, in which case you can position the pipe so that it discharges to an outside drain. In this situation, the pipe must be installed in line with manufacturer’s instructions, be of an adequate size and be insulated to prevent freezing.

“Your boiler needs a service.” Just like a car or other complex household appliances, regular servicing is essential to extend the life of your boiler and keep it running efficiently. It is also a requirement of the guarantee. You should have your boiler serviced each year by a Gas Safe-registered, qualified and approved engineer.

What you should know (or do): Servicing your boiler will help to make sure it stays safe and uses fuel efficiently. There are clear regulations and standards for testing and servicing a boiler. The manufacturer’s manual will set out the procedures the engineer should follow.

what they say what they mean

“Your expansion vessel has lost its pressure.”

Expansion vessels are found in most boilers, especially combi boilers, and are needed to cope with the extra water created by expansion during the heating process. Expansion vessels work at pressure. If this pressure is lost, the expansion vessel cannot do its job and the boiler will fail to start or will automatically shut down.

What you should know (or do): An installer can usually tell if the expansion vessel has failed as the boiler pressure gauge will show a great increase of pressure as the boiler heats up. A faulty expansion vessel will not always need replacing - often it will simply need repressurising (pumping up). Your installer will be able to tell you the most cost-effective way to fix the problem. They may recommend replacing the external expansion vessel but this can be more expensive.

“Your PRV is ‘letting by’ or dripping.”

PRV is short for ‘Pressure Release Valve’. This is a safety device built into a boiler that activates if the water pressure rises to a level the boiler cannot cope with. The PRV switches the flow of water to a pipe that usually discharges outside of the house.

What you should know (or do): The PRV is a key safety feature of the boiler. If you see any dripping from the PRV or discharge pipe you should contact your installer. Often they may simply have to recharge the expansion vessel.

The PRV should reset and any dripping should stop once pressure returns to normal levels, but sometimes the PRV will continue to let water drip from the system. When this happens, the valve may need replacing.

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