

The trail of the **GIER ROMAN AQUEDUCT** from Saint Chamond to Lyon

Loire department

A little history ...

The Roman city of Lugdunum (Lyon) was founded in 43 B.C and was located on the hill of Fourvière. Over the next few decades the city grew very rapidly and, in order to meet its rapidly growing water needs, four aqueducts were built.

The longest of these is the aqueduct of the Gier which captured the water of the Pilat at Saint-Chamond and brought it to Lyon following a course of 86 km and passing through a total of 21 present day communes of which 11 and 10 are respectively in the Departments of the Loire and the Rhône. The difference in altitude between the location of the source in Saint-Chamond and Lyon is 105 meters.

After its arrival in Lugdunum, driven only by gravity, the water passed through a settling basin and supplied public fountains, bath houses and some private properties of the privileged rich.

The most recent research dates its construction to around the year 110 AD, which would make it the most recent of the four aqueducts serving Lugdunum.

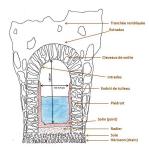
For 85% of its course the aqueduct was buried in a trench as it followed the curves of the land, but it can also be found on bridges or walls to cross minor valleys or in 'siphons' built to cross a few wider and/or deeper valleys.

Glossary

The channel

Over its entire course (except for the siphons) the water travelled through a vaulted and watertight channel whose internal dimensions are constant throughout the course (about 60 cm wide by 160 cm under the arch).





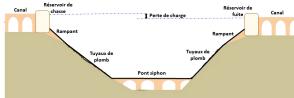
Bridges

These were structures built allowing the canal to cross small valleys such as the Mornantet (3D reconstruction).



Manholes (Regards)

These were originally intended to help to identify the direction to be followed by the aqueduct and to assist in the removal of excavated material. They were subsequently used for the cleaning and maintenance of the channel. They were usually located at every 250 Roman feet along the length of the channel, approximately 77 meters, and can be up to 20 meters deep.



Siphons

The principle of communicating vessels, known as a 'siphon' when used in the context of an aqueduct, was used four times along the course of the aqueduct of the Gier where valleys were too wide or deep to make the construction of a bridge feasible. Each syphon comprised a pair of reservoirs located on either side of the valley connected by lead pipes through which the water flowed.



Tunnels

A dozen tunnels have been identified, dug into the rock along the route of the aqueduct. These allowed the channel to pass through rocky outcrops or to shorten the route of the aqueduct.

Reticulated stonework

This very distinctive style of stonework, comprising squarecross-section stones arranged at 45°, covers most of the external surface of the above-ground parts of the aqueduct. Due to its systematic use this particular design feature gives the aqueduct a characteristic aesthetic dimension that is unique in the Roman world.





CHARACTERISTICS OF THE AQUEDUCT

Overall length : 86 km **Distance as the crow flies :** 42 km

Starting altitude : 405 m (Saint Chamond)

Arrival altitude : 300 m (Lyon)

Channel size : from 55 to 57 cm wide

Channel size : 1,60 m high

Average slope : 1,1 mm/m

Estimated flow rate : 14 000 m³/day

Date of construction : 110 AD

Lifespan :

two or three hundred years maybe...



A walk along the Gier roman aqueduct In the Loire department : 40 km...... In the Rhône department : 46 km

Section 1

FROM THE SOURCE OF WATER ON THE GIER RIVER TO THE COLLECTION BASIN

Car park : Piscine Roger Couderc ADA

Public transports : Bus routes 40 - 42 - 49 : Piscine Roger Couderc

Walking time : 20 min • Distance : 1 km • Difference in altitude : 25 m

🚺 The water intake

To find the point at which water for the aqueduct was taken from the Gier river you should take the Rue Louis Chatin (this is the name on Google Map although the local signage calls it the Chemin de l'Hermitage). The water intake is located at the level of the weir near the ADA (Association de Défense des Animaux) of Saint-Chamond. There is limited parking for a few cars on the left as you go up the road. A modern millrace can be seen on the left bank of the Gier at this point.

2 The second weir

Go downhill along the road for 250 metres to a second weir, which some authors consider to be the initial water intake.

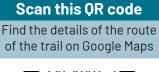
Turn left and go uphill to Allée François Gillet for 100 metres to reach Rue Marcellin Champagnat (this being the road from Saint-Chamond to La Valla). Continue along this road for 300 metres until you reach the roundabout of the Centre Nautique Roger Couderc. **3** The collection basin

The left turn at the roundabout, the Chemin de la Martinière goes towards the Centre Nautique. On the right of this path are gardens whilst on the left are the reservoirs that provide water to the city of Saint-Chamond. These reservoirs were installed at the edge of the collection basin which "served as a flow regulator as well as a settling pool which aided in the purification of the water". (Montauzan)

Presumed location of the collection basin



The water intake





DO YOU KNOW ?

The collecting basin

An existing basin, roughly circular in shape, clearly marks the location of the original collecting basin for the aqueduct. One edge of the basin was used in 1865 for the construction of the reservoir that distributes water to the city of Saint-Chamond. This is supplied by the same waters that the Romans tapped, although it was extracted 4 km upstream at the Rive reservoir dam on the Ban river. The capacity of the modern reservoir at La Martinière is 2,200 cubic metres whereas that of the ancient reservoir, having a radius of about 50 meters and, according to Gasparin, a height of 5 or 6 meters, could contain about 45,000 cubic meters. The basin also acted as a regulator for the flow of water into the aqueduct and played a role in the purification of the water by allowing for the settlement of sediment.

C. Germain de Montauzan Les aqueducs antiques de Lyon - 1909

4



A walk along the Gier roman aqueduct In the Loire department : 40 km In the Rhône department : 46 km

Section 2 **FROM THE COLLECTION BASIN TO THE LECLERC CENTRE**

Car park : Place du Creux Centre Leclerc Public transports : Bus routes 40 - 42 - 49 : Piscine Roger Couderc Bus routes 42 - M5 : Rivaud

Walking time : 40 min • Distance : 2,5 km • Difference in altitude : 15 m

1 The old Izieux dyeworks

Return to the roundabout and turn left along Rue François Gillet, in the direction of Le Creux. After about 100 m turn left onto Rue des Teinturiers, which leads to the site of the old lzieux dyeworks and where the aqueduct was, according to J-L Litaudon, seen «occupied by several pipes of different sizes». This site has been covered but could be uncovered in the future as part of a local development project.

Pachoa

Continue to the end of Rue des Teinturiers, turn right and immediately left on to Rue Antoine Dumaine. Proceed for 50 metres and turn right opposite the Rue des Jardiniers to go along the path that runs alongside the Joseph Vallat stadium (formerly known as «Pachoa»). After about 80 meters, go down the embankment on the right-hand side for a few meters, where a piece of the base of the aqueduct channel is visible.

3 The Leclerc Centre

Return to the path, and continue until you reach Rue Renée Peillon, turn right and after 100 metres turn left onto the D36 towards La Chabure. The road runs alongside the railway line, which crossed the route of the aqueduct which was destroyed in this area. Continue along the D36 for 200 metres then turn right to cross the railway by the bridge (Rue du Repos), and then immediately left on to the path that runs alongside the railway. At the end of the path, turn left onto Rue Benoît Marcet and follow this road for about 200 metres until you reach Rue Jean Rivaud. Turn left and continue until you reach the roundabout at MacDonalds.

Vestige round trip :

Turn left at the roundabout and proceed along Route du 17 octobre 1961, towards the Leclerc centre. Enter the parking area of the shopping centre and cross it to the railway embankment where you will find a fullsize reconstruction of the aqueduct together with an explanatory sign giving information about the aqueduct in general and this site in particular. Return to the roundabout.







DO YOU KNOW?

The brick aqueduct

Whilst generally built of stone, the agueduct was occasionally built from fired bricks. This is the case near the parking lot of the Leclerc centre where it was discovered in the early 1990s during the development of the commercial area.

« We knew to date only one place where bricks had been seen in the aqueduct, it was in the vault of the Vingtain tunnel in Sainte-Foy-les-Lyon. Here we saw what was left of the upper third of the specus (the channel of the aqueduct) built entirely in brick. In front of me the aqueduct was indeed really intact, facing east, made complete from brick and reflected in very clear water.»

Jean-Claude Litaudon L'aqueduc romain du Gier ou du Pilat 2016



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Section 3 FROM THE LECLERC CENTRE TO LANGONAND Car park : Centre Leclerc Rond point du Maréchal de Lattre de Tassigny Public transports : Bus routes 42 - M5 : Rivaud Bus route 25 : Langonand

Walking time : 60 min • Distance : 3,5 km • Difference in altitude : 35 m

1 La Varizelle

3 Langonand

Vestige round trip :

Return to the MacDonalds roundabout, continue straight on and pass over the Rue Jean Rivaud and the highway and continue until you reach the Route de La Varizelle.

Vestige round trip :

Take the road to La Varizelle on the left for about 300 metres until you reach the Chemin des Prairies on the right. Until the early 1990s, the remains of some piers of the bridge that carried the aqueduct over the Janon valley could be seen on the right-hand side of this road. Sadly, these vestiges are now destroyed. Go back in the opposite direction.

2 Rue Ronsard

Take the Chemin de La Philippière in front of Rue Jean Rivaud. Go up for 150 metres and turn right onto Rue Ronsard where the aqueduct was seen during the construction of the housing estate (in the vicinity of the No. 42 Ronsard bus stop). Continue Rue Ronsard for about 300 metres, and take Rue du 19 mars 1962, then turn right on to Chemin de l'Ollagnière and continue for about 200 metres until you reach Route de Langonand. Turn left on to Route de Langonand and proceed for about 200 metres until you reach Chemin de Larcelet. Turn left immediately along the path that runs parallel to Route de Langonand until you reach Chemin de l'Aqueduc after about 150 metres. Turn left along Chemin de l'Aqueduc and continue until you reach Route de Langonand, turn left and continue for 50 metres where you will see, on your right, the piers of the bridge that carried the aqueduct over this valley. Return along Route de Langonand until you reach Chemin de l'Ollagnière.

DO YOU KNOW ?

The Langonand bridge

Judging by its bad design and the poor quality of the materials used in its construction, the Langonand Bridge was most likely rebuilt during the latter period of the aqueduct's life. Deformation of the ground by slippage and heaving were most likely responsible for the collapse of the bridge and this has continued over the centuries since the final abandonment of the aqueduct, leading to the bridge's current state. More dramatic effects could have caused fatal damage to the original structure, possibly including earth tremors and/or extreme meteorological events.

Jean Burdy *L'aqueduc romain du Gier* 1996



The Janon bridge (Reconstruction)





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Section 4

FROM LANGONAND TO GENTIALON

Car park : Station service de l'A47 Public transports : Bus route 25 : Langonand Bus route 78 : Rond point Stelytec

Walking time : 80 min • Distance : 5,4 km • Difference in altitude : 40 m

🚺 Chemin de Paradis

From Chemin de l'Ollagnière continue along Route de Langonand for about 100 metres until you approach the Maréchal de Lattre de Tassigny roundabout (which also serves as an entrance to the highway). Just before the roundabout, turn left on to Chemin de Paradis and follow this for about 500 metres until you reach Chemin de Saint-Pierre des Vignes. The aqueduct crosses Chemin de Paradis in a trench just before this junction.

2 Saint Ennemond

Turn right along the Chemin de Saint-Pierre des Vignes (Chemin du Milgranet) for about 800 metres until you reach Rue Pasteur. Shortly before this junction the aqueduct was seen below N°9 (Hamlet of St Pierre des Vignes) during the construction of the housing estate. Turn left along Rue Pasteur and at the crossroads turn right on to the Grande Rue de Saint-Ennemond. Continue along on Rue de Lavieu, Rue du Château and Rue Montdragon until you reach Rue des Capucins. Go down this street for about 250 metres until you reach the junction with Route de Chavanne.

3 Chemin du Ban

At the junction turn left onto Chemin de Rigaudin, proceed for 100 metres, and continue on to Chemin du Ban. Proceed for about 1 km and 200 metres after turning right at the junction with Chemin de la Croix Mazenod turn right into Rue du Clos Marquet. After a further 400 metres turn left at the crossroads with Route de Cellieu and continue for about 500 metres.

G Chemin de la Marquette

About 200 metres after the roundabout, turn left onto Allée Jean le Rond D'Alembert and pass under the highway. About 50 metres after the autoroute, at the junction with Chemin de la Marquette the road crosses the path of the aqueduct. Continue along Allée Jean le Rond D'Alembert until you reach the roundabout that leads to the highway services area.



The church of Saint-Ennemond

The course of the aqueduct went round the hill of Saint-Ennemond and along its south-east face without suspecting that it would one day have a neighbour, perhaps in the form of a modest chapel founded by the saint in the 7th century. This was replaced by a church with a complicated history, having been described in medieval times and subsequently damaged by the Religious Wars, fire and rain. Despite all these assaults, the church of Saint-Ennemond has stood the test of time, being rebuilt several times on adjoining sites and backed by its silent Roman neighbour, it still watches over the valley from its place on the promontory.

F. Morange 2023



The aqueduct at chemin de la Marquette



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Section 5

FROM GENTIALON TO CHAGNON

Car park : A l'entrée de Chagnon Public transports : Bus route 78 : Rond point Stelytec Bus route 48 : Salcigneux Mairie de Chagnon

Walking time : 180 min • Distance : 9,7 km • Difference in altitude : 40 m

1 La chapelle du Fay

At the roundabout, take the D37 Route de Cellieu for about 50 metres, then turn right onto the Rue de Planèze, then continue along Chemin du Ruisseau for 50 metres, then left again on the path towards the Chapelle du Fay. At the chapel continue straight ahead, cross Route du Fay and continue straight on to Côtes du Fay where you turn left until you rejoin Route de Cellieu.

2 Couttange

Turn right and follow Route de Cellieu for about 500 metres and turn left after a sharp right-hand bend and onto Rue des Bois des Côtes. Continue along and follow the D37 again until you reach the junction with Rue des Croix. Turn right and proceed for 100 metres until you reach Route de Couttange. Turn left and follow this road for 1.5 km until you reach the D106 (Route de Cellieu) where you cross onto Route des Charnières opposite.

3 Le Ban

Follow Route des Charnières for 400 metres, then take the track that goes up to the left shortly after a group of houses on the right of the road.

Follow this path for 200 metres, and turn right towards Le Ban, pass through the hamlet of Le Ban and continue straight through the orchards for 200 metres. After crossing the stream continue right for 100 metres until you reach the Chemin du Collenon and turn left.

4 Le chemin des Écoliers

At the top of the path, take the path on the left for 300 metres, then turn right and proceed for 150 metres until you reach Chemin des Cristaux. Turn left and proceed for 750 metres until you reach Montée des Roches. Cross the road and take the Montée Fermière opposite, go down it for 100 metres and turn left into Chemin des Écoliers, which reaches Chagnon after 500 metres.

5 The Chagnon stone

Vestige round trip :

Turn right as you enter the village, then immediately left between the houses until you reach the church where the Chagnon Stone is visible embedded in the wall. Go back to the Chemin des Écoliers.

DO YOU KNOW?

The Fay chapel

In the sixteenth and seventeenth centuries, bubonic plague periodically decimated the local populations, notably in 1628 when it reappeared throughout the district. In attempt to limit the spread of the «contagious disease» its unfortunate victims were transported to a place called «Le Fay». On this site a chapel was built « so that it would be easier for the sick to hear Holy Mass from their huts ».

Maurice-Jean Philibert, Gerval, n°12

DO YOU KNOW ?

The Chagnon stone

This stone, discovered in 1887, was intended to prevent any damage to the aqueduct.

It bears the inscription : By order of the Emperor Caesar Trajan Hadrian Augustus, no one is given the right to plough, sow or plant in this area of land which is intended for the protection of the aqueduct.



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Section 6 AROUND CHAGNON

Car park : A l'entrée de Chagnon Public transports : Bus route 48 : Mairie de Chagnon

Walking time : 150 min • Distance : 4,8 km • Difference in altitude : 100 m

1 Les Échèdes

From Chemin des Écoliers, turn left into the village and then quickly left again into Côte de l'Aqueduc in the direction of Les Echèdes. After about 1 km you arrive at Les Echèdes, take the path on the right between the last two houses. The aqueduct is visible on the left about 100 metres away, protected by a shelter. Continue along this path until you reach the river.

2 Chemin de Lachal Vestige round trip :

Turn left, then after 100 metres into the Chemin de Lachal which goes up on the right. After about 150 metres the path intersects the aqueduct, which is visible on both sides. Return to the river.



3 La cave du curé (The priest's cellar)

Return down to the tarmac road, cross the Durèze and follow the road that runs along the river until you reach the Trévin stream. Take the path on the left that runs along the stream, at the top of this path turn right until you reach the opening of the tunnel known in history as the Priest's Cellar. Here there are two options; you can either crawl through the tunnel (good boots and torches are essential) or you can bypass the aqueduct and walk around the hill until you reach the other end of the tunnel.

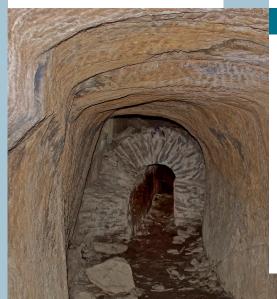
4 The upper trench

At the exit of the tunnel continue on the path along the hillside, after 150 meters turn to the left to see the upper trench, then take the path again for 100 meters until you reach Chemin de Bourchanin and turn right.

5 The Colombier regard

After 200 metres, at the bottom of the path, after the house, take a sharp turn to the left in the direction of Genilac. Continue in this direction for 500 metres until you reach Chemin du Colombier, the Colombier regard is on the right 100 metres before Chemin du Colombier.





DO YOU KNOW?

The upper trench

On the first part of the structure and up to the border of the Rhône and Loire departments, you can see each time notches in the bedrock, about 14 metres above the aqueduct, to form a trench cut in the shape of a trapezoid and flared upwards. Among the many hypotheses on this structure, the one that seems most plausible to us would be that work on the originally planned route was stopped when the engineers realized that this route would be much too long and the associated structures too high.

Jean-Claude Litaudon, 2016

DO YOU KNOW?

La cave du curé - The priest's cellar

This tunnel is easily accessible and can be traversed with care (and a good torch!) from end to end. The tunnel was cut into the rock and the walls still bear clear traces of the tools used by the workers, and in a number of places there are the little niches cut to allow oil lamps to be placed to light the tunnel. The aqueduct channel, comprising masonry walls and vault, was built along its entire length, but the first 13 meters have been demolished, leaving however a beautiful cross-sectional view showing how it was installed in the tunnel.

Jean Burdy, 1996



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Section 7

FROM GENILAC TO SAINT MARTIN LA PLAINE

Car park : Mairie de Genilac PI. de la Bascule - St Martin Public transports : Bus routes 47 - 104 : Bourdonnes Bus route 47 : Le Plantier -Saint Martin la Plaine

Walking time : 60 min • Distance : 3,2 km • Difference in altitude : 80 m

1 Chemin des Châtaigniers

4 The Fontanes tunnel

Continue along the Chemin du Colombier for about 100 metres until you reach the Route de Tapigneux. Turn right and then left after 50 metres into Chemin des Châtaigniers. After 150 metres at the bottom of this path, turn right and continue for 500 metres until you reach the Route de Beaulieu.

2 Féloin bridge

Turn right on to Route de Beaulieu and proceed for 200 metres until you reach the Chemin du Féloin. Turn immediately left on to the path that goes down into the valley. After 250 meters you will find the remains of the upstream abutment of the Féloin bridge on the right-hand side of the path. Continue along the path for 100 metres, cross the river, turn right and proceed until you reach a very steep path on the left that passes along a coniferous wood.

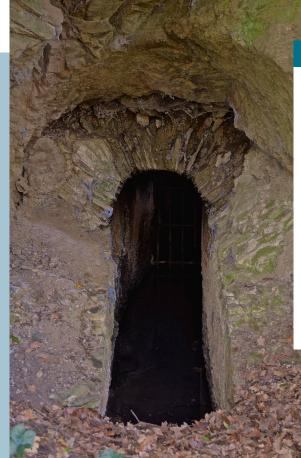
3 Ruisseau de Beaulieu

Take the path opposite for 150 metres, then the path on the right until you reach the cross. Go straight ahead, then immediately right onto the path that goes downhill. At the bottom of the path, cross the Beaulieu stream (which was crossed below by a canalbridge of which some vestiges remain) and turn right onto the path that goes up towards Saint-Martin, 300 metres away. In the village, take a slight left and continue straight along Rue Marrel Bertholon until you reach the Place de la Bascule. Go to the right until you reach the crossroads and continue along Rue de Fontanes for 150 metres.

then turn left onto Rue des Cèdres.

Vestige round trip :

Just before Impasse de l'Aqueduc, turn right through the 'verger conservatoire' (an orchard of specialist and rare varieties of fruit trees) and descend for 100 meters to the Fontanes tunnel which is on the right at the bottom. Return to Rue des Cèdres.



DO YOU KNOW?

The Fontanes tunnel

With a length of 200 metres and a maximum depth below ground of 12 metres, this tunnel has an exceptional peculiarity (three known examples in the Roman world). Unlike the Priest's Cellar tunnel where the aqueduct was built inside the tunnel from start to finish, in the Fontanes tunnel the channel was not continuous and gave way to the native rock before resuming a few meters further. This might have resulted from a need to correct an orientation error by the two teams working from either end of the tunnel when they did not meet up with each other.



The Féloin bridge



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Section 8

FROM SAINT MARTIN LA PLAINE TO SAINT MAURICE SUR DARGOIRE

Car park : Mairie de Saint Joseph Public transports : Bus route 47 : Le Plantier -Saint Martin la Plaine Bus route 46 : Mairie de Saint Joseph

Walking time : 120 min • Distance : 6,7 km • Difference in altitude : 140 m

Popenot

Continue along Rue des Cèdres for 150 metres until you reach a roundabout. Turn right on the D37 and continue for 500 metres until you reach the Route de la Vigne on the left. Into the hamlet turn right on to Rue du Hameau de Popenot. Continue straight on Route du Mas for 1 km until you reach the hamlet of Le Mas. At the crossroads take the path that goes down to the right, at first this an earth path which becomes covered with grass, cross the Vaille stream and go up the Route de Grange Blanche.

2 Saint Joseph's stone

Head opposite to the Mairie car park where there is a replica of the Saint-Joseph stone, similar to the Chagnon stone. Take the Route de Stade turn left on to Route de Milisieux then right on to Route de la Jubilière and left on to Route des Granges. After 200 meters turn right at the fork, do not take the first track on the right (signed to Navon) but take the second on the right after a further 100 metres.

3 The pont des Granges

Follow the track for about 300 metres until you reach the path that goes down to the right, continue until you reach the bridge that crosses the Bozançon and turn left just after the bridge. After 200 metres take the path on the right and after 150 metres turn right to go to the Pont des Granges, or on the left the very steep path which leads to the Route des Aqueducs at a place called La Chandelle.

DO YOU KNOW ?

The Granges bridge

The bridge is a magnificent structure, its picturesque lines being complemented by its wooded site. Originally 44 metres long with a height of just over 10 meters, including the aqueduct channel, it had five arches of which three remain intact. The facing stonework is of very high with reticulated quality, granite blocks facing the pillars, spandrels and jambs of the channel and with the arches made of large slabs of qneiss.

Jean Burdy, 1996



The Saint Joseph

stone This copy of the original stone which was discovered in 1996 (the original is in the

was discovered in 1996 (the original is in the Gallo-Roman Museum of Fourvière) can be found in front of the village hall. It bears the same text as on Chagnon's stone, but with the first four lines missing.

This booklet is brought to you by the **SYNDICAT INTERCOMMUNAL DE L'AQUEDUC ROMAIN DU GIER**

www.aqueduc-romain-du-gier.fr

SIARG was created to coordinate actions for the protection and enhancement of the Roman aqueduct of the Gier.

The Syndicate is responsible for offering assistance to member municipalities in seeking funding from administrations and local authorities together with advice on the coordination of their actions to protect the aqueduct.

The main priorities of SIARG are :

- The cultural and touristic enhancement of the entire Gier Aqueduct.
- The development of scientific and other research activities that support a better understanding of the aqueduct.

• The necessary protection, maintenance and restoration of the aqueduct.



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