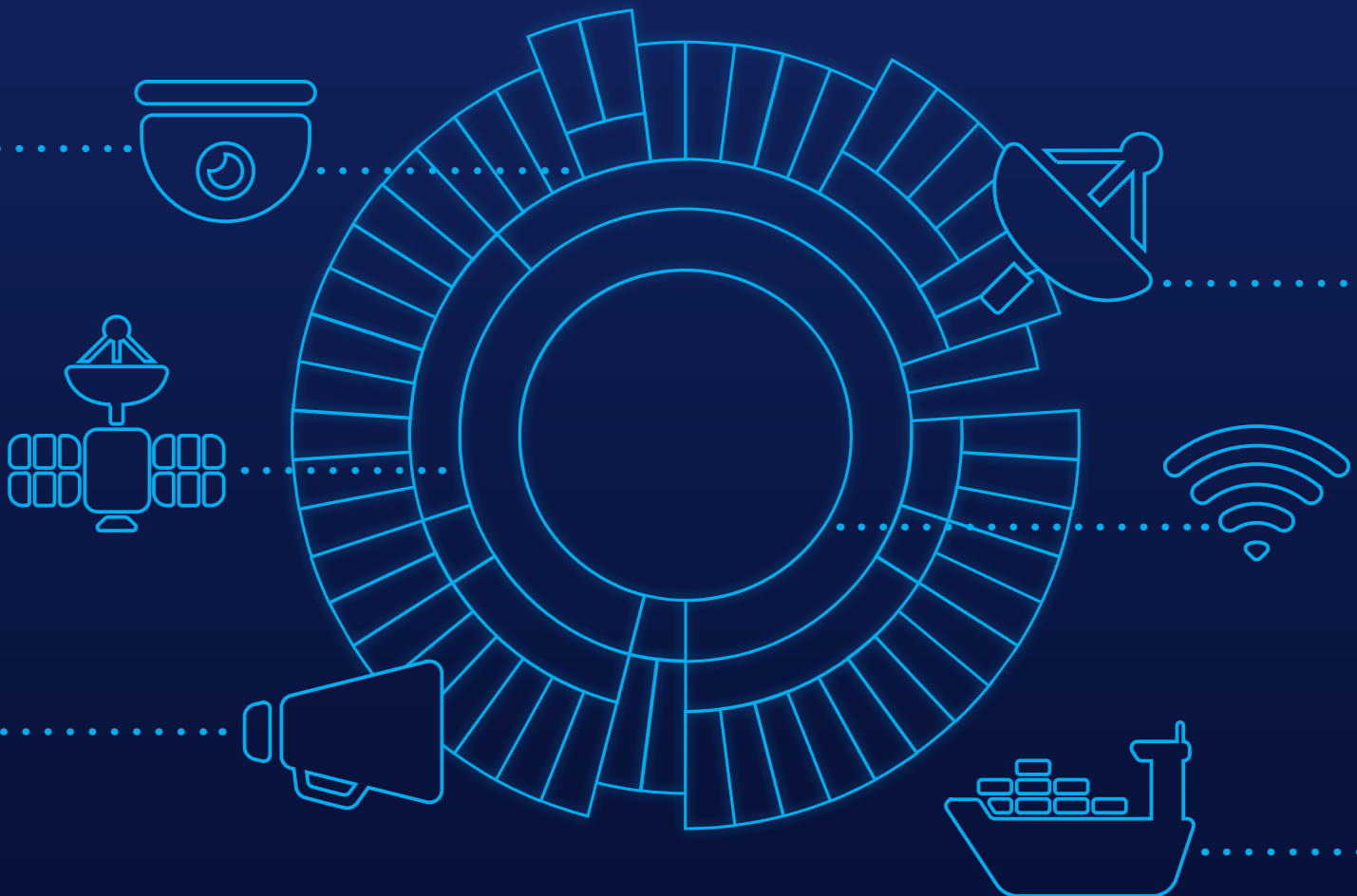


Case Study

Port of Douala

The Port of Douala IT team
relies on Paessler PRTG to ensure
all processes run smoothly





IT monitoring secures the gateway to Central Africa

The Port of Douala IT team relies on Paessler PRTG to ensure all processes run smoothly

"We save a lot of time and resources, and our team can focus on the core business. Imagine having to drive to a point several kilometers away only to get there and figure out that the issue is power-related, and one doesn't have the right tools to solve the problem – but with PRTG we can already focus on the root cause, troubleshoot, and solve the problem timeously."

Bertin Pokaa – Maintenance Team Leader

Port of Douala – Gateway to Central Africa

The Port of Douala in Cameroon is described as an essential "Gateway to Central Africa", serving most of the landlocked countries of the Sub-Sahara African region, including Chad and the Central African Republic. Spread over several kilometers, the port has busy traffic with arriving and departing containers. Since virtually all the port's operational processes are computerized, it is vital to have tight security in such an environment as well as to ensure uptime and performance of all IT infrastructure and network components.

Monitor the port to keep the gate open

To ensure the reliable operation of the port, the security team works closely with the power supply team, which is responsible for the uninterrupted power supply to the port. The security team is also supported by DPC-SA, a local IT service provider and monitoring expert. These teams need a central monitoring solution that incorporates all levels of the port and provides both detailed information for the security team's IT experts and easy-to-understand overviews for the power supply team, some of whose members are less IT-savvy. The magnitude of the task becomes clear when one considers the large number of components involved in the operation of the port, whose availability and performance must be ensured around the clock:

- The classic IT with its infrastructure of servers and Windows systems, the network with its switches, routers and firewalls and network traffic, the WiFi network with its access points and the port's internal VoIP telephone system.
- Security systems such as cameras, radar systems, access control systems or public announcement systems.
- The power supply consisting of the main power supply and the backup system with its generators and uninterruptible power supply (UPS) system.

After several months of evaluation, the team decided on Paessler PRTG. The decisive factor was that, on the one hand, the solution is versatile enough to integrate the IT components, the security systems and the power supply into centralized monitoring without much effort, and, on the other hand, it offers the possibility to provide both detailed views for experts and the required overviews for the energy team quickly and easily. In addition, PRTG allows easy integration of custom components and systems.

What to monitor and how?

IT monitoring forms the basis of the monitoring scenario for the Port of Douala. Only when all IT systems are functioning can security systems and power supply be monitored and ensured. For example, the IT team uses WMI (Windows Management Instrumentation) to monitor the status of Windows systems. Predefined PRTG sensors for VMware and HyperV monitor the virtual machines. In the network area, PRTG monitors the status of switches, routers and firewalls as well as bandwidth usage. While communication is normally done via fiber optic cable, a microwave system is provided as a fallback that is also monitored with PRTG.

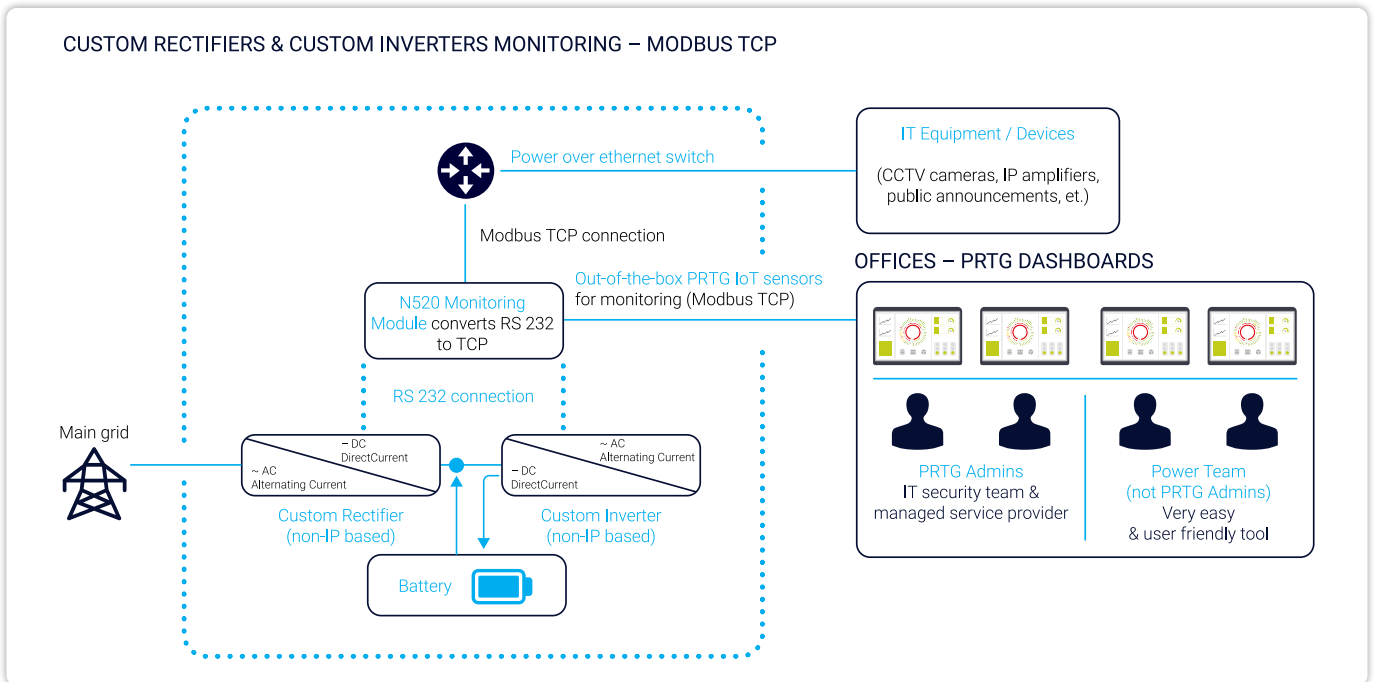
Another important task for PRTG is monitoring the security systems. Radar systems monitor restricted areas with motion detection and focus the security cameras accordingly. The team uses ping sensors to monitor the availability of the radar systems and more than 600 security cameras from different vendors. If there are failures, a technician can be dispatched immediately to fix the problem. Many doors are equipped with access control systems – PRTG monitors both the status of the doors (open or closed) and the readers. This allows the team to ensure that the right people can always get to the right place. Another important security system is the public announcement system. Accidents that require evacuation measures can occur at any time in a port. In such cases, people depend on public announcement systems and alarm systems to function reliably.

Power supply monitoring – a very special task

The monitoring of the power supply is of particular importance. If failures occur, the entire operation of the port is affected. To avoid this, the Port of Douala's power team operates both uninterruptible power supply (UPS) systems and several generators. And, of course, it monitors all power supply components with PRTG. Thus, PRTG can monitor the UPS systems using Modbus TCP and SNMP. If voltage fluctuations occur that exceed defined thresholds, the power team is immediately informed and can intervene and solve the problem. In addition to SNMP-ready UPS, custom-built stand-alone 'units' of rectifiers and inverters are additionally deployed at the port of Douala.

"At the beginning of the project, the focus was to have the system up and running – therefore several pieces of equipment were ordered. This way, custom (non-IP based) devices were also ordered. Then the discussion was about how to save time and resources yet proactively solve issues and avoid downtime with a reliable monitoring solution." Bertin Pokaa, Maintenance Team Leader.

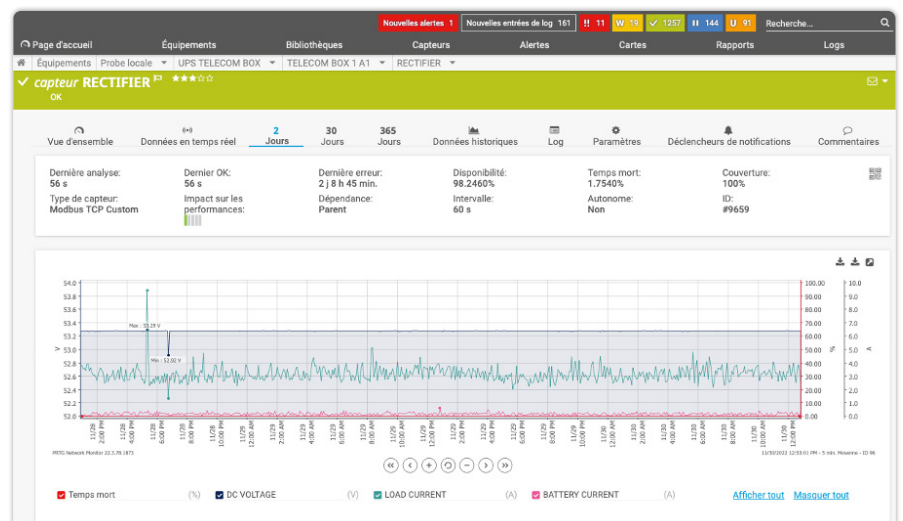
"After several months of research and ordering different equipment from many vendors, we finally found a solution to use N520 monitoring modules. Most of all, we were happy to discover that Paessler PRTG offers out-of-the-box Modbus TCP sensors that could monitor the custom inverters and custom rectifiers as well SNMP-ready UPSs and all other devices. We made this proposal to our customer and did the PRTG set-up for them" – Raoul Talla, General Manager MV Digital Limited (Partner for Paessler PRTG products).



Schematic diagram of power supply monitoring

The diagram above illustrates the set-up of the custom rectifier (non-IP based) & inverter (non-IP based) monitoring using the out-of-the-box Modbus TCP sensors of Paessler PRTG.

It is important that PRTG provides the power supply team with the required information in a clear and understandable way. After all, the power technicians are not necessarily IT experts. PRTG offers clear graphs on the one hand and so-called maps on the other: HTML dashboards that can be easily created using an editor and that then present all important information as HTML pages in an easy-to-understand manner.



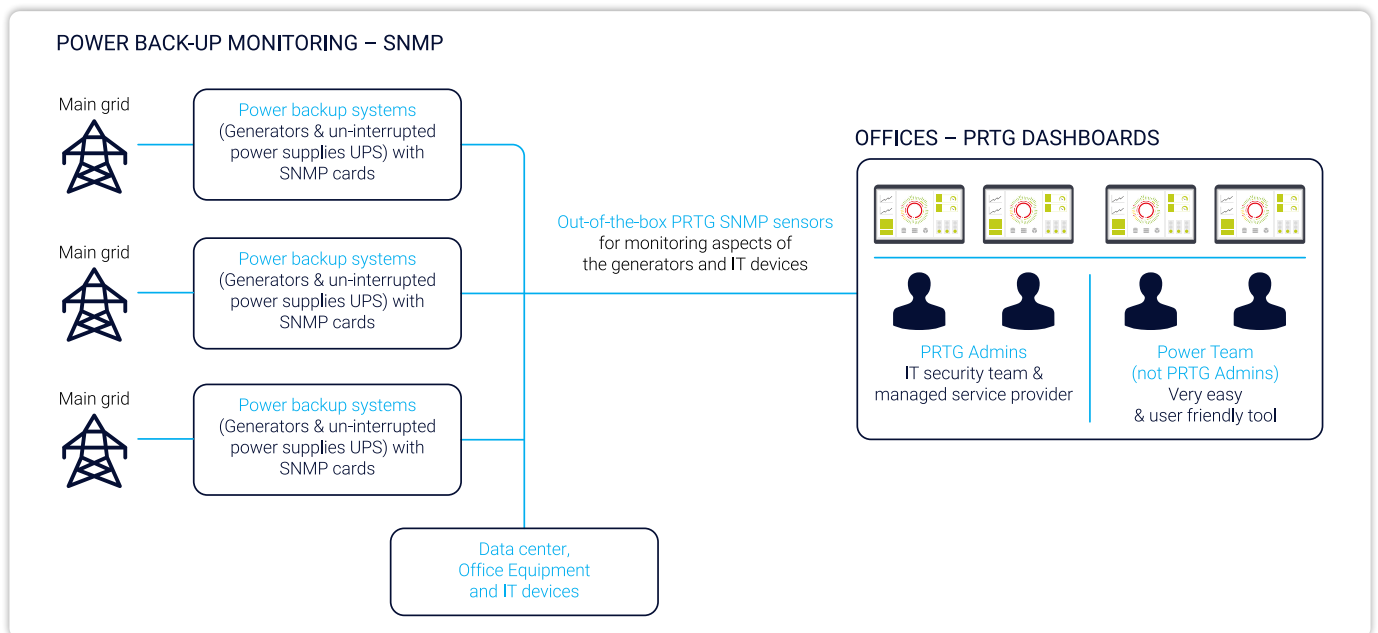
Example of a graph for monitoring a rectifier in PRTG

Emergency generators play an important role in the event of a prolonged outage of the main grid. PRTG provides the power team with all relevant data on their availability and performance, mainly using standard SNMP sensors:

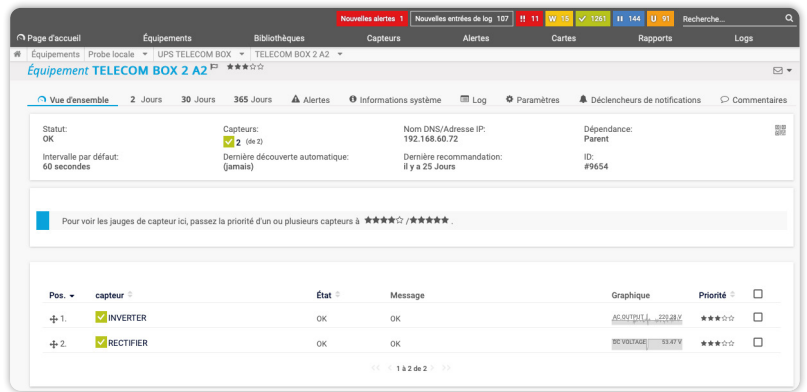
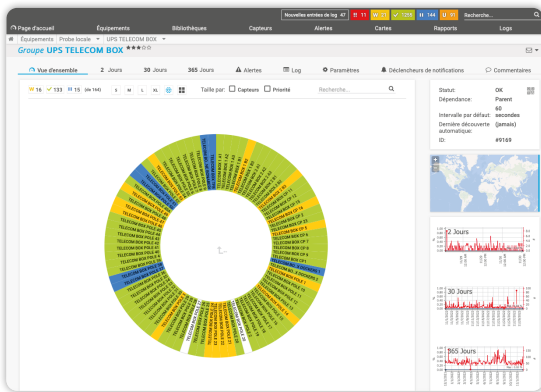
- Ping – for the availability of the monitoring module of the generator.
- Main Power Supply – Three-phase Line1, Line2 and Line3 are monitored. In case the main grid is off, then these sensors would be in the down state in PRTG and the generator related sensors would be in the up state.
- Generator Line1, Line2 and Line3
- Mains Frequency
- Generator frequency
- Engine Battery – State of the battery (charging, charged etc.)
- Fuel Level
- Coolant Temperature
- Oil Pressure
- Engine running hours (know when and which generator is due for servicing)
- State of the generator (if the generator is on automatic mode or manual mode)
- System Uptime

Sensible monitoring is important to prevent unnecessary alarms and short-circuit reactions:

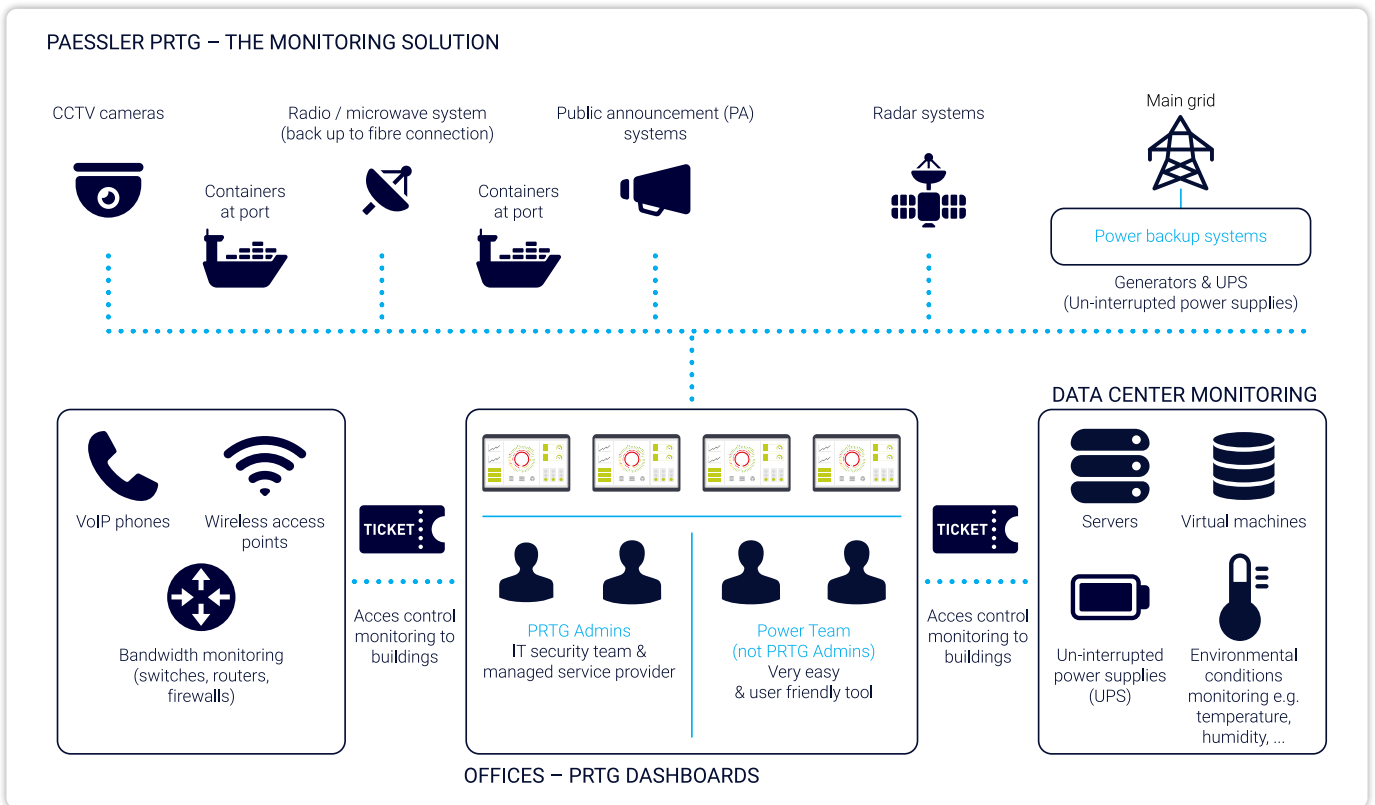
“Voltage is monitored in case of surges/fluctuations to avoid damage to the devices, but the monitoring data is also used to inform the electricity company of such surges. PRTG has been set up with the effective use of error limit messages in order not to cause unnecessary panic. For example, when the mains are off, it will indicate that the mains are off, and not that the generator is down.” Bertin Pokaa – Maintenance Team Leader



With Paessler PRTG, different power supplies are monitored including the main grid, generators and SNMP-ready Uninterrupted Power Supplies.



PAESSLER PRTG – THE MONITORING SOLUTION



One monitoring solution for the entire Port of Douala

Paessler PRTG, the central monitoring solution

“With PRTG, we found a monitoring solution that can monitor all of our relevant systems and devices and provide each colleague with exactly the information they need – in a way that they can understand, whether they are IT experts or power technicians.” Bertin Pokaa – Maintenance Team Leader. “In day-to-day operations, we always have an overview of all the systems, and in the event of a malfunction, we now have the certainty that the responsible expert is alerted immediately and receives all the information they need to correct the malfunction before it becomes a problem.”

Still questions about Paessler & PRTG?

Contact us and our experts will be happy to help you.

SALES@PAESSLER.COM

ABOUT PAESSLER

Paessler believes monitoring plays a vital part in reducing humankind's consumption of resources. Monitoring data helps its customers save resources, from optimizing their IT, OT and IoT infrastructures to reducing energy consumption or emissions – for our future and our environment. That is why Paessler offers monitoring solutions for businesses across all industries and all sizes, from SMB to large enterprises. Paessler works with renowned partners, and together they tackle the monitoring challenges of an ever-changing world.

Since 1997, when Paessler first introduced PRTG Network Monitor, it has combined its in-depth monitoring knowledge with an innovative spirit. Today, more than 500,000 users in over 170 countries rely on PRTG and other Paessler solutions to monitor their complex IT, OT and IoT infrastructures. Paessler's products empower its customers to monitor everything, and thus help them optimize their resources.

Check out all the possibilities within the Paessler Solutions Universe



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