

The Integrated Membrane Solutions
for Water Treatment in the Oil and Gas Industry



OFFSHORE PRODUCTION



OIL SANDS

HYDRAULIC FRACTURING



CONVENTIONAL PRODUCTION, IOR & EOR



DOWNSTREAM OIL & GAS

Serving Oil & Gas Markets

Water treatment requirements in the Oil and Gas industry are increasingly complex, varying widely from customer to customer and from region to region. Hydranautics provides integrated membrane solutions and services to fathom and resolve the emergent water related challenges in the oil fields. .

Hydranautics as the pioneering membrane company in the Oil and Gas section, we supply high quality and differentiated membrane products to satisfy your operation needs. We pledge to continuously offer supreme technical services to the field.

OIL SANDS

CONVENTIONAL PRODUCTION, IOR & EOR

HYDRAULIC FRACTURING

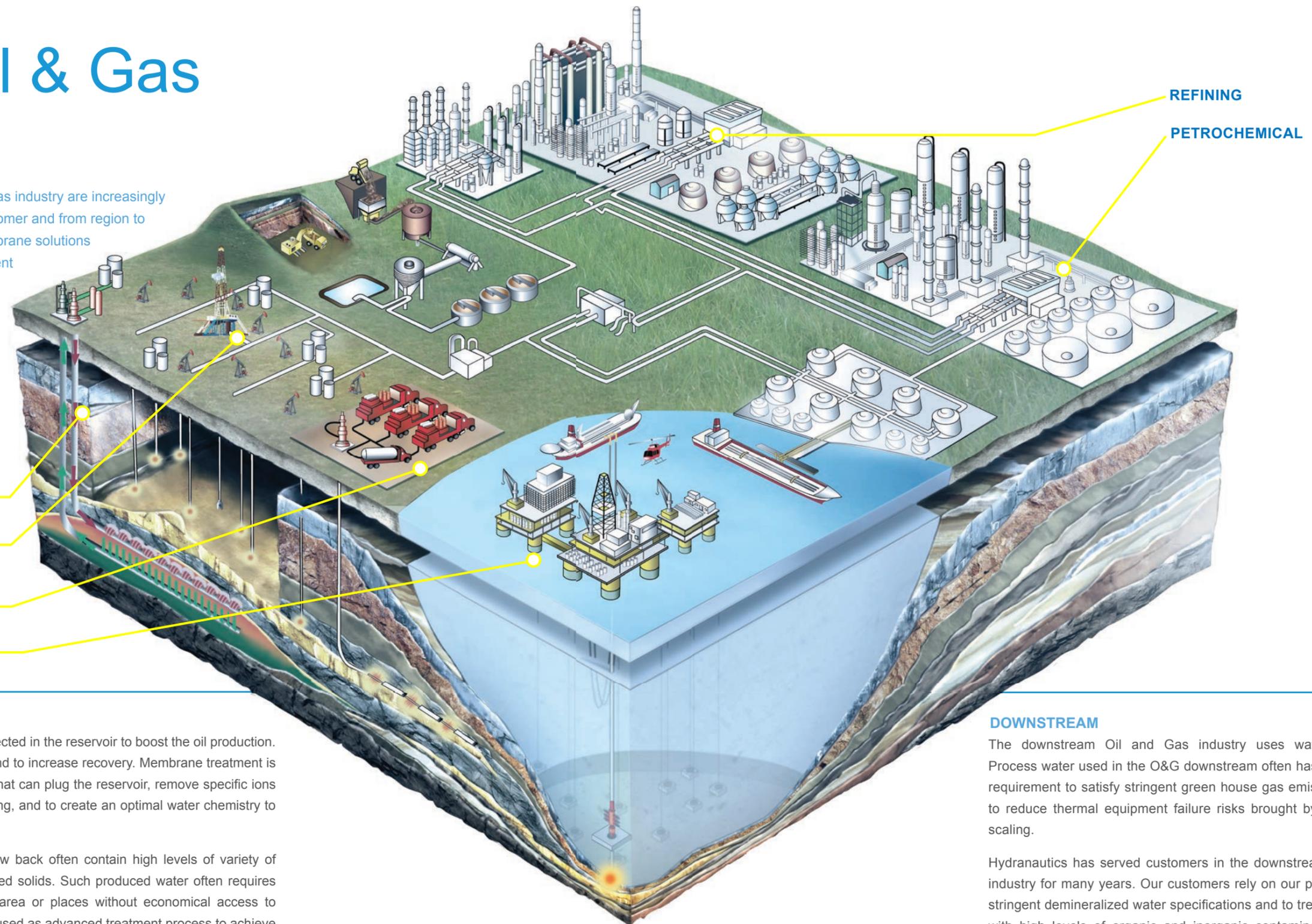
OFFSHORE

UPSTREAM

In the upstream Oil and Gas industry, water is injected in the reservoir to boost the oil production. This water is treated to protect injection assets and to increase recovery. Membrane treatment is often required to remove fine particulate matter that can plug the reservoir, remove specific ions to decrease the risk of scale formation and souring, and to create an optimal water chemistry to increase the reservoir's productivity.

Water is also a byproduct of production, the flow back often contain high levels of variety of oil compounds, suspended particles and dissolved solids. Such produced water often requires intensive treatment in regulation stringent arid area or places without economical access to disposal wells. In such cases, membrane is also used as advanced treatment process to achieve reuse, recycle or direct surface discharge purposes.

Hydranautics' products are used to treat injection and produced waters for applications including conventional production, thermal production, IOR/EOR, and hydraulic fracturing. Our Oil and Gas customers can get out tailored membrane design and services in responding to specific requirements for individual project.

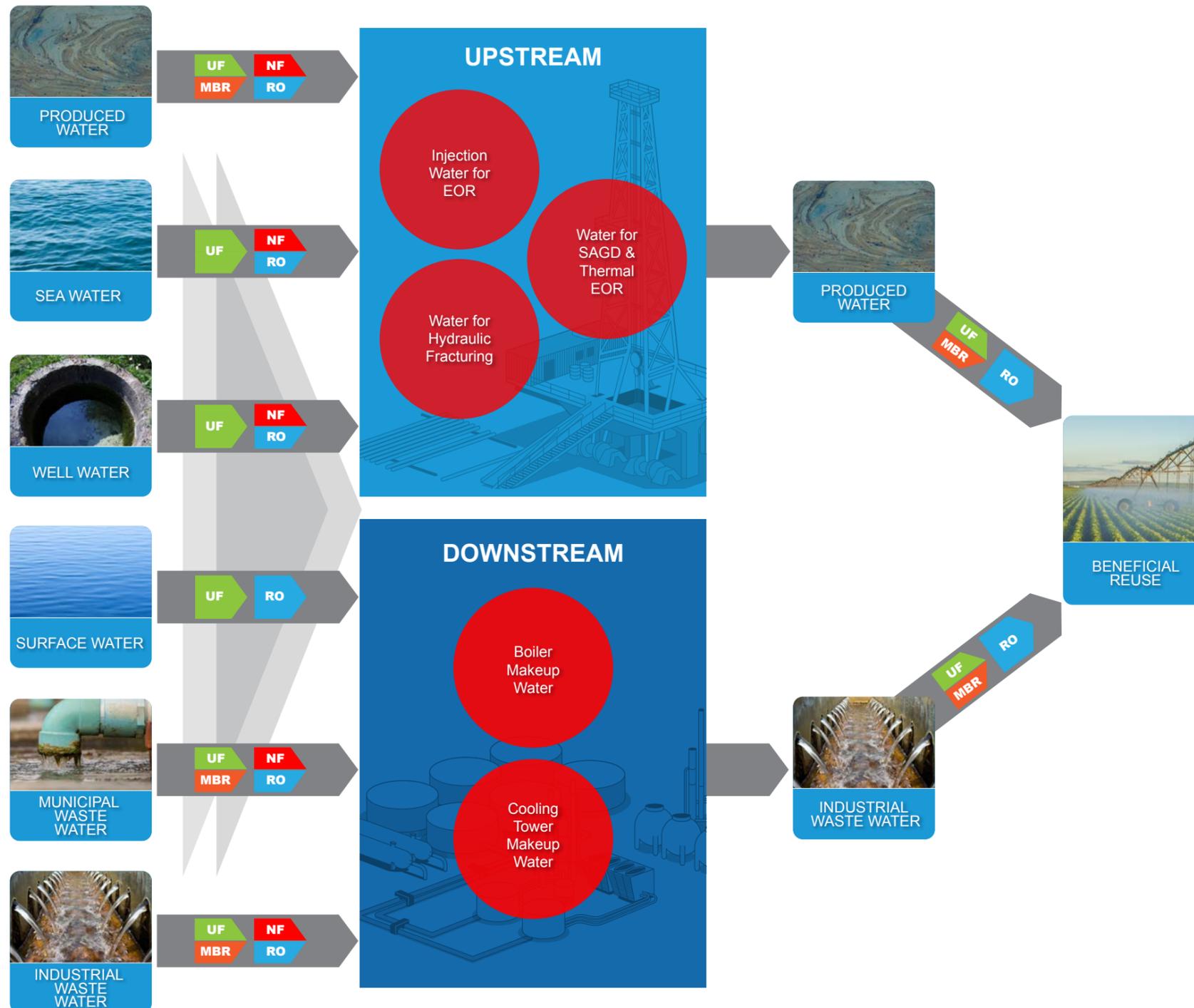


DOWNSTREAM

The downstream Oil and Gas industry uses water extensively. Process water used in the O&G downstream often has special quality requirement to satisfy stringent green house gas emission quota and to reduce thermal equipment failure risks brought by corrosion and scaling.

Hydranautics has served customers in the downstream Oil and Gas industry for many years. Our customers rely on our products to meet stringent demineralized water specifications and to treat waste waters with high levels of organic and inorganic contaminants. Refineries and petrochemical plants often utilize membrane processes. Our Integrated Membrane Solutions provide reliable resolutions to satisfy specific treatment requirements for downstream applications.

Integrated Membrane Solutions to Meet the Needs of the Oil and Gas Industry



ULTRAFILTRATION AND MEMBRANE BIOREACTOR

Hydranautics offers a complete range of UF solutions for pretreatment and post-treatment of feed water, wastewater and produced water for onshore and offshore applications. These products are used in a variety of applications such as pretreatment to sulfate removal NF membranes, removal of oil and suspended solids from produced water, and for the reduction of organics in industrial wastewater or wastewater from LNG production. Our product line is customized for the industry to reduce weight and footprint and to operate in a wide range of temperatures and pressures.

NANOFILTRATION AND REVERSE OSMOSIS

Hydranautics is a pioneer and leading company in Nanofiltration and Reverse Osmosis technologies. RO and NF technologies are core to our business and they are increasingly vital to oil and gas industry globally. Desalination technologies are used for a variety of applications in the oil and gas industry from offshore SRU to local seawater injection treatment; from treating produced water for beneficial use to recycling boiler blowdown water in the refinery plants. The breadth of our product line offers unique and reliable design approaches to satisfy water chemistry requirements for onshore, offshore and even subsea applications.

SERVICE AND SUPPORT

Hydranautics has a global support structure capable of addressing urgent customer needs including:

- Engineering assistance for system design
- Full laboratory capabilities for membrane autopsy and analysis
- Lab and field testing capabilities
- Global field support including engineers qualified to support offshore operations
- System troubleshooting
- Membrane autopsy analysis

INTEGRATED MEMBRANE SOLUTIONS

Ultimately, partnering with Hydranautics offers value and peace of mind to our oil and gas partners and clients around the world. When client request specific solutions to meet their specific needs, our capability to offer a single source of technical expertise to integrate different membranes has proven to deliver the right solution to conquer challenges. We take pride in creating value for our customers through offering the most comprehensive, versatile, innovative, and supreme quality products to the market.

MISSION:

Create additional values for customers through innovation

ABOUT HYDRANAUTICS

Since our founding in 1963, Hydranautics has been committed to the highest standards of technology research, product excellence and customer fulfillment. Hydranautics entered the Reverse Osmosis (RO) water treatment field in 1970 and is one of the most respected and experienced firms in the membrane separations industry. We joined the Osaka, Japan based Nitto Denko Corporation in 1987 which was founded in 1918 and now has 117 companies in more than 20 countries, with over 30,000 employees worldwide. Our alliance with this global firm industry giant boosts Hydranautics to a superior level of technological sophistication, product performance and customer response.

We are not simply product manufacturers; we are your membrane technology partners. As the leaders of high quality membrane solutions, we believe our obligations extend beyond manufacturing and selling our products. Our skilled staff of technicians, engineers and service professionals assists in designing, operating and maintaining a robust, reliable and efficient membrane system to meet your requirements and exceed your expectations. Our support is offered from early stage conceptual design and engineering to start-up and maintenance, no matter the location globally whether it is on land or offshore.

OCCUPATIONAL SAFETY AND HEALTH POLICY

Our goal is to achieve zero accidents and injuries under the slogan **"We Place Safety Before Everything Else"**. Hydranautics will work together to firmly establish a safe and healthy work place for all employees by observing company rules. In order to realize our policy of "Zero-Accidents and Injuries", we will carry out the following safety principles.

- We have a strong belief that all accidents are preventable.
- We will always consider the consequences of unsafe behaviors and visualize any potential hazards.
- The first priority is to take accident prevention measures. We will make continual efforts to improve our ability to identify risks.
- We will establish behavior in the workplace so that safety and peace of mind are the primary considerations.
- We will always take actions to avoid risks.

QUALITY POLICY

Hydranautics is committed to continuous improvement and delivering best-in-class quality products and services that meet or exceed customer needs in the pursuit of 100% customer satisfaction.

We know the importance of water treatment processes to our customers in the Oil and Gas industry whether for production enhancement or environmental stewardship and we strive to supply our customers with the highest quality products in the market. Hydranautics is the first membrane manufacturer to meet the highest quality industry standards with ISO 9001 Quality System Certification and we test every full scale element that leaves any of our factories, giving each product full traceability.



Hydranautics,

R&D and
Production
RO/NF/UF/MF



Oceanside, CA, USA
Founded: 1963



Shiga, Japan,

HQ of Global
Div. R&D membrane
and Production
RO/NF/UF/MF



Shiga, Japan
Founded: 1986



Manufacturing Facility



Sales and/or Technical
Service Operation Sites

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