



**Hewlett Packard
Enterprise**

Efficiency surges for Brazilian port powerhouse

With new infrastructure in place, Porto Itapoá has increased productivity and nearly doubled its shipping container handling capacity

Porto Itapoá is rapidly emerging as a premier destination for international vessels. As part of a drive to boost productivity, the Brazilian container terminal recently upgraded its data and computing infrastructure. This modernization has significantly improved its container handling capacity and overall efficiency, leading to a 67% increase in daily gate transactions. As a result, Porto Itapoá is well on track to meet its target of processing 2 million containers per year while raising global port efficiency rankings and attracting more vessels.

Scaling for success

Porto Itapoá has always punched above its weight since it was founded in 2011. Despite being a relatively new player, it has quickly become one of Brazil's largest and most agile container terminals.

Today, the Santa Catarina-based company is expanding its capacity to handle 2 million shipping containers per year — a remarkable increase from just 500 in 2017. As the trend of larger container ships replacing smaller ones intensifies, the company is redoubling its efforts to improve container movement efficiency and cater to these bigger vessels. This strategic approach is helping Porto Itapoá position itself as Brazil's premier port of call for international vessels.

Highlighting the scale of the challenge, IT and innovation manager Sandro Luiz Martins points out, "Some ships can carry 30,000 to 32,000 containers. That's like the stocking capacity of the entire Porto Itapoá. So if we're currently handling around 1000 containers per ship, it means we really have to expand our capacity."



Industry: Maritime

Country: Brazil

Vision

Become the leading and preferred port of call in Brazil for international ships

Strategy

Expand capacity to handle cargo containers while improving efficiency through infrastructure modernization

Outcomes

- Supports the terminal's goal to handle 2 million containers and boosts global efficiency ranking
- Ensures uninterrupted operations 24/7, 365 days a year, and speeds up access to portals and data
- Increases truck capacity by 67% a day, enhancing moves per hour
- Improves data efficiency by 3.4x and accelerates virtual machine delivery by over 500x

Supporting rapidly growing operations

However, the company faced a significant challenge: its outdated IT infrastructure could no longer effectively facilitate expansion efforts. As the terminal's operations grew, its infrastructure was causing significant latency problems and integration issues between applications.

The terminal's infrastructure played a crucial role in supporting three vital systems: SAP HANA® S/4 for business processes, Navis Terminal Operating System for berth planning and implementation, and a network of portals for customers and external partners. As the infrastructure became outdated, system outages followed, bringing port operations to a halt, and making these portals inaccessible to importers, exporters, dispatchers for shipowners, regulators, and other partners.

“Whenever we had a large number of customers trying to release their containers at the same time, it strained the system,” says Martins. “The entire portal would then become inaccessible to anyone.” This led to a range of problems, including delays in container releases and customs authorities' inability to access cargo information during inspections.

“We could end up having thousands of customers asking to waive the storage fee for their containers,” shares Martins.



Our new infrastructure allows us to operate nonstop 24/7. That supports not only our productivity but also the reliability of the terminal.”

– **Sandro Luiz Martins**, IT and Innovation Manager, Porto Itapoá

¹ hpe.com/psnow/doc/A00058506ENW?from=app§ion=search&isFutureVersion=true

The Brazilian government can also impose fines on Porto Itapoá if it can't access the company's system during an outage. “And if we use manual processes for more than two hours, regulators can choose to close the terminal. So, it's very important that our systems run at all times.”

In addition, the company is building a large warehouse to enable customers to store goods for longer periods. This also requires an IT infrastructure that can support a warehouse management system. According to Martins, “Our operations were becoming too big for our existing solutions.”

Increased efficiency, continuous availability

To improve the performance and availability of its infrastructure, Porto Itapoá implemented HPE Alletra 9060 and HPE Synergy 480 across its enterprise resource planning, berth management, and external portal environments, with support from HPE Services and channel partner Sercompe. The deployment has ensured the constant availability of systems, accelerated access to portals and data, and increased container handling efficiency by speeding up berth planning and decision-making. These improvements can be attributed in part to a 100% data availability guarantee¹ from HPE Alletra 9060, consistent fast performance, and ultra-low latency at scale.



One of the important changes implemented under Porto Itapoá's new infrastructure is adopting a microservices architecture. In this approach, applications are developed as separate components and operate as standalone services. This ensures uninterrupted access for terminal users, even when a portal or service is having an issue. By maintaining the availability of other services, the company reduces the risk of fines from regulators and mitigates potential business losses.

Today, outages are a thing of the past for Porto Itapoá, according to Martins. "Our new infrastructure allows us to operate nonstop 24/7. That supports not only our productivity but also the reliability of the terminal."

Porto Itapoá has also improved its global efficiency ranking to 58th, as revealed by the World Bank's 2022 Container Port Performance Index. This represents progress from its previous position of 60th, based on a statistical approach. The index measures the efficiency of container ports worldwide

by evaluating the time a ship spends from arrival to departure at the berth.

Increased gate transactions

With the improved performance of its Navis platform, Porto Itapoá can now handle a higher volume of daily gate transactions. Previously, its gates could accommodate around 1,200 trucks to drop off or pick up containers. Now, approximately 2000 trucks enter its gates every day.

"While we have built additional gates to increase our transaction capacity, our new environment has also sped up day-to-day operations, which means faster entry and exit processes," says Martins. This ultimately contributes to the terminal's moves per hour, or the total number of containers it can process on or off a vessel each hour. This, in turn, enables Porto Itapoá to attract more shippers and freight forwarders.

The improved efficiency also translates into cost savings. "By accelerating our gate operations, we don't need to build more gates, and that saves us money."

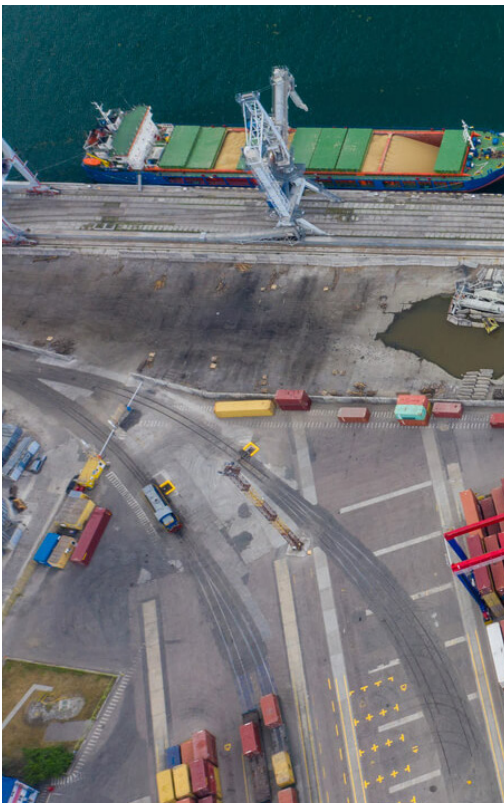
Doubling container management capacity

Porto Itapoá is now on its way to doubling its capacity to handle 2 million shipping containers per year, each measuring twenty-foot equivalent unit (TEU).

According to Martins, the company has nearly achieved 1 million TEUs in capacity. "The plan is to reach 2 million TEUs by around 2026."

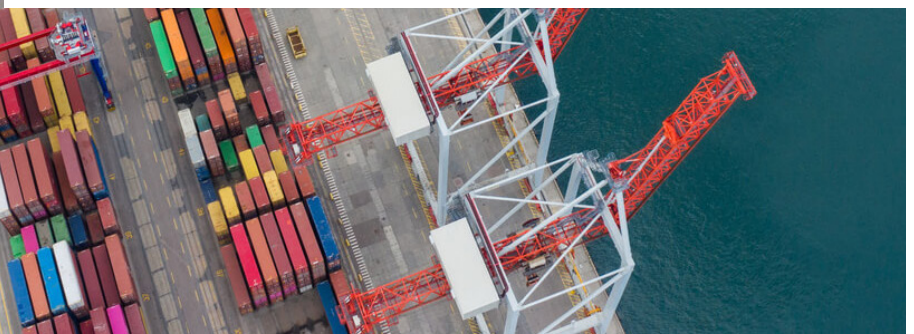
In terms of actual volumes, Porto Itapoá grew more than 14% to almost 886,000 TEUs in 2022, the highest rate among Brazil's five largest container terminals. The number of vessels calling the terminal also increased by almost 5%.

This moves Porto Itapoá closer to its goal of becoming the main port of call for large, international ships transiting through Brazil. The company is looking for ways to fund a project to deepen access to the channel of Babitonga Bay — where the terminal is located — to accommodate larger vessels. "This will allow us to serve ships that are not coming to Brazil because they can't reach ports like Paranaguá, Navegantes, Itajaí, or Itapoá."



We expect an increase in our trans-shipments, where containers can be loaded or unloaded at the terminal for ports that are not accessible to larger vessels. This will encourage large ships to make Porto Itapoá their first port of call in Brazil."

– Sandro Luiz Martins, IT and Innovation Manager, Porto Itapoá



Once this happens, “we expect an increase in our trans-shipments, where containers can be loaded or unloaded at the terminal for ports that are not accessible to larger vessels,” says Martins. “This will encourage large ships to make Porto Itapoá their first port of call in Brazil.”

Improved data efficiency for growing demands

Thanks to the increased processing power and storage capacity of HPE Synergy 480 and HPE Alletra 9060, Porto Itapoá can now complete projects faster by allocating IT resources more efficiently. Likewise, the integration of HPE InfoSight and HPE OneView has streamlined infrastructure management and enhanced visibility, increasing the IT team’s productivity and enabling them to identify and resolve issues quickly.

“Our executive who manages virtual machines was so frustrated with our old environment,” shares Martins. “To set up a new virtual machine, he had to

ask several users if they could turn off theirs because we didn’t have enough space. Now, he manages without problems, and it only takes seconds to prepare a new machine, compared to eight hours before.”

The company has also improved its data efficiency by 3.4x, leading to an efficiency ratio of 8.4:1. By adopting a powerful data infrastructure solution, it can store 36.3 TiB of data using just 4.3 TiB of storage capacity. These enhancements provide substantial data savings and enable Porto Itapoá to expand its container-handling capacity while meeting growing demands effectively.

In Martins’ words, “Our Alletra and Synergy platforms give us the reliability we need for our growing operations.”

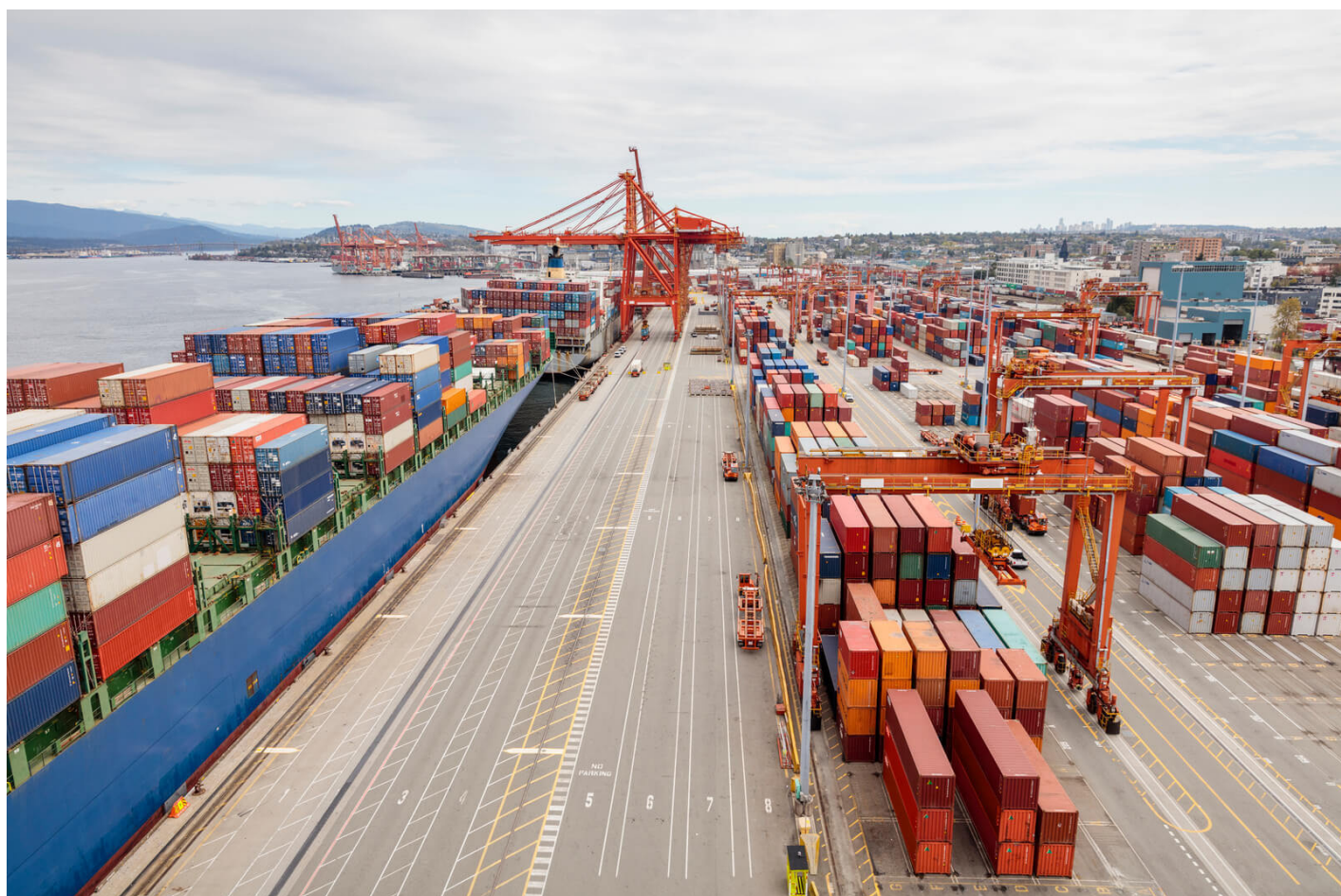
Scalability for future growth

The new platforms have also paved the way for Porto Itapoá to scale and meet larger requirements in the

future as it looks to expand and diversify its business further. With HPE Alletra 9060, the company expects to enjoy a cloud-like experience in managing its data infrastructure throughout its lifecycle, spanning from edge to cloud.

“If the company decides to venture into new business areas and requires additional systems and capacity, we’re confident HPE can quickly deliver the needed infrastructure to support these changes,” says Martins.

“I know we can depend on HPE Services to help us increase the capacity of our environment. This could mean accessing processing power as a service in our data center, making sure we have our required infrastructure at the edge, or using the cloud when necessary.”





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– Sandro Luiz Martins, IT and Innovation Manager, Porto Itapoá



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