

# Vertex O Series Edge— delivering customer satisfaction and easing the burden on IT management for retail tax calculation.

## Introduction:

As business operations continue transforming through technology, edge computing represents the next phase of that evolution, serving as an overall architecture—taking critical processing capability and putting it at the point of need. That means wherever a customer needs transaction processing is where the transaction processing software is placed - as opposed to traditional cloud computing, where computation is performed remotely in the Cloud. In fact, edge computing is the very foundation of technology we use every day in products like smart phones, fitness trackers and gaming consoles.

Processing at the point of need is especially relevant in the retail industry, where the effective management of software in retail stores requires edge computing to both create consistent experiences across large numbers of stores and to ensure software operates in a stable, consistent manner within the store. Tax calculation software is a critical component of the retail technology stack from a customer experience [both acquisition and retention], IT management, and compliance perspective **because it is a core component of conducting the actual sale with the customer.**

A recent Gartner® study, *Understanding Edge Computing*, stated “Edge computing is a rapidly growing topic of inquiry. Most enterprises have a robust cloud computing strategy, focused on modernizing for a more agile and scalable back office. But digital business requires more — it requires an agile and real-time front office, at the “edge,” where customers, employees, assets, and equipment interact with each other and the enterprise.”

The prevailing way that edge computing systems are created with enterprise application software is through the creation of “containers” that can be deployed locally. A container is a pre-packaged unit of software containing all the dependencies that are required to run the software (software, operating system, tax content and configuration with containers being deployed as copies while having the ability to be customized to a specific location’s needs. Container environments create the necessary agility to deploy standard software anywhere and automate IT processes, without disrupting the core business that depends on that software.

Vertex Indirect Tax O Series Edge is the newest development in the evolution of Vertex® Indirect Tax O Series®—the industry-leading solution to automate and centralize global indirect tax determination across multiple billing and financial systems. With Edge, it is now possible to utilize edge computing technology for tax needs and integrate it into an e-commerce strategy. An edge tax solution helps:

- Accelerate global commerce by creating tax calculation nodes that can be deployed anywhere in the world with a direct sync to a central hub
- Mitigate risks and drive benefits in the realm of remote transactions and payments that do not depend on connectivity or bandwidth
- Leverage technology to achieve business agility, build scalable, disruption-proof systems/platforms, improve efficiency and lower costs—with zero drop off in accuracy
- Calculate tax at the point of transaction—local to the need and securely inside the client’s network for the highest availability, improved control over performance and security, and a streamlined tax technology landscape



## The Evolution of Containerization

- Enables flexibility and control
- Configure and create container images of the O Series tax engine
- Manage the tax system centrally and deploy using automation
- Deploy containers locally at point of need
- Deploy many localized copies of the tax calculation engine
- Utilize existing infrastructure for scaling and distribution
- Track version and performance information
- Stream transaction data back to a central location for reporting

## Challenges:

Retailers are facing a marketplace where according to a Gartner® study *Top Trends in Retail Digital Transformation and Innovation for 2022*, “Customers expect a unified experience that traverses easily between online and offline; converges with mobile, social media and Internet of Things (IoT); and can serve them wherever and whenever they desire. Coupled with this is the retailer’s business requirement to build interconnected systems for real-time visibility of data and channels.” The report further states, “Retailers are, therefore, urgently implementing strategies to execute on the delivery of unified retail commerce to both keep pace with new and emerging customer expectations, as well as to remain agile and resilient to risk in rapidly changing market conditions.”

With omni-channel—meaning customers have the same experience regardless of where they engage with a retailer—the challenges they need to solve for include:

- Centralized configurations that can be performed in one system, so experiences are consistent across business channels
- Systems that integrate consistently across business channels that interact with each-other
- Data management systems that can aggregate data from multiple channels and understand where it came from
- Distributed, localized instances for critical calculations, especially those that require real-time or near real-time response
- Full centralized visibility into localized calculation activities to ensure peak performance
- A data security plan that can be regionalized or localized to ensure compliance with regulations that may differ across the company’s footprint

**“With Edge, it is now possible to utilize edge computing technology for tax needs and integrate it into an e-commerce strategy.”**

Vertex O Series Edge is an essential component of an omni-channel setup because it can help meet all of the above needs as they pertain to transaction taxes:

- Creates localized tax calculation instances based on the client’s central O Series configuration
- Supports all the same tax calculation calls as O Series
- Streams transaction data back to the central O Series reporting database
- Local tax calculation instances run fully offline, resistant to connectivity issues and are fully scalable to respond to volume changes
- Contains a central dashboard to view and monitor performance across all instances
- Keeps transaction calls behind the firewall and allows for transactions to be delivered to multiple locations for optimal data security

## Actions:

Retailers must continue to leverage efficiencies of scale while engaging with individual customers where they live, work and play—every touchpoint with a customer requires at least a degree of individualized attention to the unique person, including appropriate tax calculations.

Customers expect to have the same, seamless experience regardless of how, where and when they engage with a retailer. As a result, retailers need to ensure that their systems are integrated and can support an omnichannel strategy and provide a unified experience. Customers want to be able to search, transact, acquire, and consume products and services safely and easily across a retailer’s entire ecosystem. This means retailers need strong store teams—and robust technology—in place to create a fluid experience for customers, while simultaneously managing costs.

In particular, these retailers require reliable tax performance—and the ability to meet the unique needs of the multiple channels they are doing business in. Vertex O Series Edge provides that solution—giving IT departments ultimate flexibility and control.



## Companies Who Can Benefit from Vertex O Series Edge:

- In-store retailers who require high availability checkout solutions.
- e-Commerce operations who require a fast, highly scalable, stable solution.
- Companies who want to deliver a frictionless customer checkout experience.
- Companies who want a backup system to ensure uptime for their cloud or on-premise tax engine.
- IT departments who have already adopted edge computing, or who want more creative implementation options.
- Companies with security concerns about sending data outside their firewall.

### In store:

- Tax is calculated locally at store location so bandwidth/connectivity is not an issue
- Scale stores independently so changes in foot traffic do not impact business in other locations
- Keep transaction data secure
- Manage tax changes centrally within O Series and updates flow to local stores automatically
- Data from all stores streamed back to a central location for reporting and compliance

### eCommerce:

- Tax is calculated locally within the data center hosting the e-commerce site so latency is not an issue
- Scale quickly to handle increases in online traffic
- Tax solution can be distributed – deployed in every data center where the website is hosted
- Easily maintain backup tax engines, so it is always available
- Keep transaction data secure
- Maintain control of the customer experience at checkout

### Results:

Vertex O Series Edge results in a solution for retailers around the globe that provides localized, on-premise tax engines that can be deployed anywhere and scale as transaction volume increases while still taking advantage of a cloud-based solution for setup, compliance, reporting and any other downstream business processes. Implementing Vertex O Series Edge makes it possible for retailers to extend the resiliency and performance of the applications that support their commerce to include the critical function of tax.

The additional benefits that Vertex O Series Edge provides include:

- The ability to filter content and consolidate data
- Version control
- Compatibility with existing connectors
- Controlling scalability at each end point
- The confidence of a high reliability back up
- Controlling and managing the checkout experience on the backend
- Processing transactions anywhere and managing the transaction flow in a manner consistent with local and regional regulations.

### Conclusion:

O Series Edge, as part of an end-to-end tax solution, can help retailers navigate a taxation landscape that has never been more complex. In addition, O Series Edge effectively meets retailers needs to provide a rapid, secure, reliable customer experience every time. To learn more about how Vertex O Series Edge can provide the tax technology solution to support the POS or e-commerce cart experience you need, contact a Vertex representative at **1-800-355-3500** or visit [vertexinc.com](https://vertexinc.com).



Gartner, Infographic: Understanding Edge Computing, Thomas Bittman, 5 April 2022, Published 4 June 2021

Gartner, Report: Top Trends in Retail Digital Transformation and Innovation for 2022, Jonathan Kutner, Miriam Burt, Kelsie Marian, Max Hammond, Robert Hetu, Sandeep Unni, Hanna Karki, Published 14 March 2022

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