Vertex® O Series 9.0 SR19 MP3 Release Notes

March 2025

These Release Notes provide information about the latest release of Vertex® O Series On-Premise and Vertex® O Series On-Demand. For each Major Release (for example, O Series 9.0), Vertex issues Service Releases (for example, O Series 9.0 SR18) that contain enhancements and fixes for defects. In between Service Releases, Vertex issues Maintenance Packs (for example, O Series 9.0 SR18 MP2) that address higher-priority defects.

Note: *O Series Cloud Release Notes are located here.*

These notes are not meant to replace the product documentation for release enhancements. For detailed information about installing and using Vertex software, refer to Documentation for O Series On-Premise and On-Demand.

All information in these Release Notes and the accompanying documentation is subject to change with subsequent service releases.

Release 9.0 SR19 MP3

This release is the latest SR19 release and replaces previous SR19 download files.

Supported platforms and software requirements changes

Newly supported platforms

Application server

Tomcat 10.1.39

Application Framework

Spring Boot Framework 3.3.8

For more information about supported platforms and software requirements in SR19, go here.

Calculation Engine changes

Fixes

Tax Assist rule with isBusinessIndicator

Issue: When a Tax Assist rule referenced the **isBusinessIndicator** as a parameter on a LOOKUP function, a value of `null` was returned when the **isBusinessIndicator** was not set on a line item. The **isBusinessIndicator** should return a result of `false` when it is not set.

Impact: Calculations did not complete as expected when a Tax Assist rule referenced the **isBusinessIndicator** parameter on a LOOKUP function and the **isBusinessIndicator** parameter was not set on a line item.

Resolution: When a Tax Assist rule references an **isBusinessIndicator** without a set value on a line item, the returned value is `false`. Calculations complete as expected.

Ticket: RQ-129433

Tax Assist rule setting a null lineType

Issue: When a Tax Assist rule set a **lineType** to `null`, the Calculation Engine still treated the line item as a telecom line-based line item. A line item should be treated as line-based only when a valid **lineType** is set.

Impact: Calculations with a **lineType** set to `null` failed.

Resolution: When Tax Assist sets the **lineType** field to `null`, the Calculation Engine no longer treats the line item as line-based. Calculations complete as expected.

Ticket: RQ-129433

Configuration parameter changes

Icons in documentation indicate when parameters were introduced

To make it easier for you to see which settings, preferences, and configuration parameters are available to you:

- Parameter descriptions now include icons that display the release in which the parameter was implemented.
- Where appropriate, an additional icon displays the release in which the parameter was deprecated.

If you need to troubleshoot a parameter issue, you can begin by checking whether a parameter is available in the version of O Series you are using.

Examples

- A configuration parameter that was added in O Series 9.0 Service Release 14 displays the 9.0 SR14 icon.
- A configuration parameter that was added in the original release of O Series 9.0 and deprecated in Service Release 14 displays the 9.0 and 9.0 SR14 icons.

New Vertex.cfg parameters

SAML 2.0 response encryption configuration parameters

Security Assertion Markup Language (SAML) response encryption safeguards sensitive information in SAML communications between identity providers and service providers by preventing unauthorized access and tampering during transmission, so only the intended recipient can access the data. These new configuration parameters support SAML response encryption:

- **spring.security.saml2.relyingparty.registration.xxx.decryption.credentials[yyy].certificate-location**
- **spring.security.saml2.relyingparty.registration.xxx.decryption.credentials[yyy].private-key-location**
- **spring.security.saml2.relyingparty.registration.xxx.assertingparty.verification.credentials[yyy].certificate-location**
- **spring.security.saml2.relyingparty.registration.xxx.signing.credentials[yyy].certificate-location**
- **spring.security.saml2.relyingparty.registration.xxx.signing.credentials[yyy].private-key-location**

More information is available in the SAML integration properties article.

Tax Setup changes

Fixes

Taxability mapping search criteria lost on search

Issue: When searching for taxability mappings in **Tax Setup > Taxability Mapping**, selected statuses in the Advanced Search criteria were deselected after a search completed. This issue occurred only when the Advanced Search panel was collapsed.

Impact: When making multiple searches, the **Status** check boxes in the Advanced Search panel had to be reselected between searches. When searching multiple times with the Advanced Search panel collapsed, the first search included mappings with statuses that are selected by default. However, any additional searches did not include any mappings because none of the status criteria were selected.

Resolution: An issue that caused criteria not to preserve between searches if the Advanced Search panel was collapsed is resolved. Taxability mapping search criteria now persists between searches, including criteria that is selected by default.

Ticket: RQ-131005

Second tax rule for a multi-jurisdiction imposition errors on save

Issue: When creating a new, user-defined tax rule for a multi-jurisdiction imposition, O Series produced a `Tax Rule ID already exists` error. This error occurred when a user-defined rule already applied to the new rule's assigned imposition, even when the new tax rule applied to different jurisdictions that were not impacted by a preexisting tax rule.

Impact: Impacted tax rules did not save and O Series generated this error:

`Tax Rule <Rule ID> ID already exists in this data range with the same criteria.`

Resolution: An issue with the process that checks for preexisting tax rules in the same jurisdiction, for the same imposition, is resolved. This error no longer generates when creating a new tax rule for a multi-jurisdiction imposition, as long as the rule being created applies to different jurisdictions than any preexisting tax rules of the same rule type.

Workaround reversal: If you created single-jurisdiction, user-defined impositions to avoid this error, you no longer need to do so. Tax rules for different jurisdictions now save as expected for multi-jurisdiction impositions.

Customer class cannot be selected as a qualifying condition for some tax rules

Issue: When selecting a customer as a qualifying condition during tax rule creation, **Customer Class** could not be selected as the **Customer Type** value in the Customer selector for some tax rules. Since **Customer Class** could not be selected as a **Type** in the selector, customer class values could not be added as qualifying conditions for impacted rules.

Impact: Customer class values could not be selected as a qualifying condition for these tax rule types:

- Calculation
- Credit
- Max Tax
- Post Calculation Evaluation

Resolution: A UI issue is resolved for impacted tax rules. **Customer Class** can now be selected as a **Type** in the Customer selector, so a customer class can now be selected as a qualifying condition for all tax rules.

Workaround reversal: If you were selecting multiple customers as qualifying conditions on tax rules because you could not select a customer class, you no longer need to.

Reporting change

Fix

Template selection for extract definitions

Issue: When moving between pages in **Reporting > Custom Reports - VRA**, the template selected on one page appeared to persist on the next page, but when an action was triggered, the selected template did not apply as expected.

Impact: The impacts from this issue include:

- When a template was selected prior to adding an extract definition on **Reporting > Custom Reports - VRA > Extract Definition**, the correct value appeared in the Template drop-down list while adding extract definition details, but the template was not actually selected. When adding fields or filters for the new extract definition, the fields available for selection were from the template that came first alphabetically, not from the selected template.
- After selecting a template and saving an extract definition, the selected template displayed in the **Template** drop-down list on **Reporting > Custom Reports - VRA > Extract Definition**, but the template was not actually selected. Initiating a search returned all extract definitions, not just definitions that used the selected template.

- After selecting a filter in **Reporting > Custom Reports - VRA > Extract Results** and selecting **Reporting > Customer Reports - VRA > Extract Definition**, the selected template displayed in the **Template** drop-down list, but the template was not actually selected. Initiating a search returned all extract definitions, not just definitions that used the selected template.

Resolution: An issue with template selection in **Reporting > Custom Reports - VRA** is resolved:

- When selecting a template prior to adding a definition, your template selection now persists while adding details to your extract definition.
- After saving an extract definition, your selected template now clears when you are returned to the **Extract Definition** landing page.
- After selecting a filter for Extract Results, your selected template now clears if you navigate to the **Extract Definition** landing page.

Ticket: RQ-131039

System change

Fix

Assigned taxpayer doesn't persist on user-defined roles

Issue: After assigning a taxpayer to a user-defined role, the assigned taxpayer did not persist when the role was saved.

Impact: New user-defined roles were not assigned to a taxpayer, even when a taxpayer was selected during role creation.

Resolution: An issue with API calls from the user interface during role creation is resolved. Assigned taxpayers now persist when user-defined roles are saved.

Security changes

Enhancement

Support for Microsoft Entra Authentication

O Series now supports Microsoft Entra Authentication, which allows you to connect to Azure SQL Databases and Azure SQL Managed Instances via identities from Microsoft Entra ID.

Fixes

On-Demand customers using SSO directed to incorrect link

Issue: O Series On-Demand customers on SR19 who use Single Sign-On (SSO) received an error when they logged out or when their session timed out. When attempting to log back in, they were directed to a URL for O Series Cloud, rather than the expected URL for O Series On-Demand.

Impact: Users were directed to the incorrect login URL and had to navigate back to the O Series On-Demand login URL.

Resolution: SSO users are directed to the correct URL after logout and when a session expires.

Tickets: RQ-131842, RQ-131617

Encrypted SAML responses

Issue: Encrypted SAML responses cause login failures with a DecryptionException error.

Impact: Users are unable to log in when encrypted SAML responses are enabled.

Resolution: New configuration parameters enable support for SAML response decryption and verify an identity provider's response signature using verification certificates.

Ticket: RQ-131784

Vulnerabilities

This release includes security-vulnerability resolutions.

Performance change

Latency reduced

Issue: Some customers observed unusually high latency after deploying SR19 on the Vertex LITE environment. The issue was caused by a validation check for Tax Assist rules using expired or deleted parameters and flexible fields.

Impact: Orders failed in production due to increased latency.

Resolution: The validation check is modified to minimize latency issues.

Ticket: RQ-132620

Release 9.0 SR19 MP2

Tax Setup change

Fix

Record start dates become corrupted

Issue: When adding and/or editing records for taxability mappings, lookup tables, allocation tables, and schedules, the Start Date of a record incorrectly populated with a date that was one day earlier than the As of Date. This issue occurred only if the user's time zone was behind Greenwich Mean Time (GMT). For time zones ahead of GMT, dates populated as expected.

Impact: Records were created with unintended Start Dates. With lookup tables and allocation tables, if a user did not detect and correct the incorrect Start Date before adding the table, an exception occurred when attempting to edit and save the table at a later time.

Resolution: The time zone conversion function is modified, and expected Start Dates now display and apply to taxability mappings, lookup tables, allocation tables, and schedules.

Tickets: RQ-130632, RQ-130697

System change

Fix

Tax Data Export error when qualifying conditions were included in taxability mappings

Issue: After the deployment of SR19 MP1, Tax Data Exports completed with failure if any qualifying conditions were included in taxability mappings.

Impact: Customers were unable to successfully run a Tax Data Export if their taxability mappings included qualifying conditions.

Resolution: The Tax Data Export template XML files are updated. Tax Data Exports now complete successfully when qualifying conditions are included in taxability mappings.

Release 9.0 SR19 MP1

REST API change

Fix

500 error for REST API calculation requests with a tax date on a child line

Issue: Calculation requests made via the O Series RESTful v2 Calculation API failed when the `taxDate` field was populated on a child line in the request.

Impact: Calculation requests with a `taxDate` value on a child line failed and generated a 500 Internal Server Error.

Resolution: A Java exception error is resolved. Calculation requests that include a value for `taxDate` on a child line now calculate as expected.

Release 9.0 SR19

O Series Release 1 2025

Change to Release Notes

To reduce the size of the O Series Release Notes and make them easier to use, we will begin publishing year-specific Release Notes for the current year only. This edition of the O Series Release Notes contains information about the first release of 2025 – the 9.0 SR19, January 2025 release. When we issue the next 2025 releases and maintenance packs, we will add them to the 2025 Release Notes.

This edition doesn't include information about SR18, SR17, SR16, SR15, and SR14 and their associated maintenance packs. All these are still supported releases. You can find the Release Notes for them in the Downloads section of Vertex Community.

Major new feature: Multi-jurisdiction tax rules and impositions

Managing user-defined tax rules for multiple jurisdictions can be complex, so we've enhanced Vertex® O Series and Vertex® O Series for Communications to simplify the configuration of user-defined rules and user-defined impositions. O Series now supports calculation tax rules, inclusion tax rules, and impositions configured with *multiple* jurisdictions or by franchise area!

With multi-jurisdiction tax rules and impositions in O Series, now you get the same calculation results with fewer tax rules. You can:

- Propagate changes across multiple jurisdictions with a single change.
- Add multiple main-level (country, state, province, territory) jurisdictions as needed.
- Create a single rule that applies to as many lower-level (county, city, district) jurisdictions as you select.

With the new franchise area options for O Series for Communications, configuring rules and impositions for franchise fees is more streamlined and more closely aligns with franchise options in other Vertex products you've used. Create a user-defined imposition that defines your franchise area, then you're ready to add tax rules that tell O Series for Communications how to calculate and report on your franchise fees.

These new features are available in O Series deployments with Tax Rule Optimization (TRO). See the following sections for details on these enhancements, including changes to tax setup, import/export, settings, APIs, reports, and tools.

Multi-jurisdiction rules and impositions

Calculation rules, inclusion rules, and impositions now support configurations with multiple jurisdictions. Various reports, system features, and settings are enhanced to support this new feature.

Calculation and inclusion tax rules

- The workflow for rule creation is reordered so rule details are now added in this order: **Impositions**> **Qualifying Conditions**> **Rule Conclusions**> **General information.** Rules must be created following these steps in this order. When creating a rule, you cannot continue to the next step until your current step is complete. When editing a tax rule with multiple jurisdictions, the Edit Rule page includes tabs for each step.

Note: *When you edit a tax rule with one jurisdiction that applies to an imposition with one jurisdiction, the tabs on the Edit Rule page are:* ***General, Qualifying Conditions,*** *and* ***Details.***

- The jurisdiction selector for calculation and inclusion rules is updated so selecting multiple jurisdictions during rule creation generates one tax rule that applies to all selected jurisdictions. Selecting multiple jurisdictions when creating a rule no longer generates multiple tax rules.
- When you select an imposition type for a calculation or inclusion rule, the imposition selector now displays the number and level of jurisdictions impacted for each imposition type. When only one jurisdiction is selected, you see the impacted imposition name in parentheses next to the imposition type. For example:

  `Example imposition type (Example imposition name)`

- When you edit a calculation tax rule with multiple jurisdictions selected, the rule persists to all previously selected jurisdictions, and jurisdictions can be added to or removed from a rule as needed.

Note: *Tax rules created with multiple jurisdictions can be edited to add or remove jurisdictions. Rules created with one jurisdiction are limited to one jurisdiction per rule. To add additional jurisdictions to an existing tax rule with one jurisdiction, you need to end date your existing rule and create a new rule with multiple jurisdictions.*

- When you select an Imposition Type for a calculation or inclusion rule, the imposition selector now displays the number of impositions impacted based on the jurisdictions selected on the rule. This total includes impositions for lower-level jurisdictions.
- The **Rule Conclusions** for inclusion rules now includes a **Direction** setting. This new setting configures how impositions added to the inclusion rule interact.
  - An inclusion rule set to **Include tax amounts from other impositions in the basis of this rule's imposition** includes tax amounts from selected Included Impositions in the taxable basis of the rule’s impositions.
    - When Included Impositions are added to an inclusion rule with this configuration, a portion of the tax amounts calculated for the Included Impositions are included in the basis of the **Imposition Type** that is selected for the inclusion rule's **Impositions**.
    - The percentage of the tax amount applied is defined by the **Inclusion Rate** set for each Included Imposition.
  - An inclusion rule set to **Include tax amounts from this rule's imposition(s) in the basis of other impositions** includes tax amounts from the rule’s impositions in the taxable basis of selected Included Impositions.

  - When Included Impositions are added to an inclusion rule with this configuration, a portion of the tax amount calculated for the **Imposition Type** selected for the inclusion rule's **Impositions** is included in the basis of the Included Impositions.
  - The percentage of the tax amount applied is defined by the **Inclusion Rate** set for each Included Imposition.
- The view pages for calculation and inclusion rules now support rules configured with multiple jurisdictions.

Impositions

- User-defined impositions now allow multiple jurisdictions per imposition. When creating an imposition, adding multiple jurisdictions to an imposition no longer generates separate impositions per jurisdiction. Adding multiple jurisdictions during imposition creation now generates *one* imposition that applies to all selected jurisdictions. You can now edit existing impositions with multiple jurisdictions to add or remove jurisdictions as needed.

Note: *Impositions created with multiple jurisdictions can be edited to add or remove jurisdictions. Impositions created with one jurisdiction are limited to one jurisdiction per imposition. To add multiple jurisdictions to an existing imposition with one jurisdiction, you need to recreate the imposition with multiple jurisdictions.*

- The view page for impositions now supports impositions configured with multiple jurisdictions.

New setting

A new calculation response setting enables the `TaxInclusion` element in calculation responses. When you set **Show Detailed Tax Inclusions in response** to `true`, calculation responses for transactions impacted by inclusion rules include the `TaxInclusion` element. The `TaxInclusion` element contains details about the inclusion rules that impact tax calculations, including the new `Direction` configuration for inclusion rules.

Custom Reports - VRA

- New data extracts report on impositions and tax rules configured with multiple jurisdictions:
  - Tax Imposition Coverage and Tax Rule Coverage extracts report on the jurisdictions of rules and impositions impacted by multi-jurisdiction configurations.
  - The Tax Imposition Coverage Jurisdictions and Tax Rule Coverage Jurisdictions extracts report on jurisdiction *exceptions* for rules and impositions configured with **All** options when selecting jurisdictions. For example:

> If a tax rule is configured with the **All Cities** option for jurisdictions in the state of Pennsylvania, but the city of Philadelphia is *deselected*, Philadelphia is included in the Tax Imposition Coverage Jurisdiction extract for the rule.

- The Tax Rules extract and Impositions extract now support configurations with multiple jurisdictions.

Import/export

Tax Data Import (TDI) and Tax Data Export (TDE) now support configurations with multiple jurisdictions. The enhancements are:

- New Tax Imposition Coverage and Tax Imposition Coverage Jurisdiction tax data file formats for impositions.
- New Tax Rule Coverage and Tax Rule Coverage Jurisdiction tax data file formats for tax rules.

Tax Engine Extract

Tax Engine Extract now supports imposition and tax rule configurations with multiple jurisdictions.

Franchise fees

For O Series for Communications, calculation rules, inclusion rules, and impositions now support the configuration of franchise areas and the calculation of franchise fees. Various reports, tools, system features, and APIs are enhanced to support this new feature.

Impositions

- Imposition creation now includes the **Add Imposition** option to configure an imposition by franchise area. Select **By Franchise Area**, enter a Franchise Area Id, and select a Jurisdiction Level to create an imposition that represents a franchise area in O Series.

Note: *Impositions can be configured by franchise area only during creation. You* cannot *edit an existing imposition to configure by franchise area. Instead, create a new imposition and configure the new imposition as needed.*

- The search page for impositions now includes filter criteria to search by franchise area.
- The view page for impositions now supports impositions configured by franchise area.
- The delete process for impositions is enhanced so that deleting impositions configured by franchise area also deletes tax rules associated with the deleted imposition. This mirrors the behavior in O Series when deleting impositions configured by jurisdiction.

Calculation and inclusion tax rules

- The **Add Imposition** option is added to the Impositions step of calculation and inclusion tax rules. This new option configures a rule by jurisdiction or by franchise area. Select **By Franchise Area** and identify a user-defined imposition configured by franchise area to create a rule that applies when a Franchise Area Id is passed on your transactions.
- The search pages for calculation rules and inclusion rules now include filter criteria to search by franchise area.
- The view pages for calculation and inclusion rules now support rules configured by franchise area.

Calculation Engine

The Calculation Engine now supports the calculation of franchise fees. This enhancement includes the addition of Franchise Area ID (`franchiseAreaId`) as an invoice-level and line-level field on transactions. When a Franchise Area ID (`franchiseAreaId`) that corresponds with a tax rule configured by franchise area is passed on a transaction request, the Engine applies the tax rule when calculating tax.

API

The Tax Calculation and Tax GIS REST API now supports the addition of Franchise Area ID (`franchiseAreaId`) as an invoice-level and line-level field on tax calculation requests and responses. See the Vertex Developer Network for details on Vertex REST APIs.

Tools

Franchise Area ID is added to the Other tab at both the invoice-level and line-level in the Transaction Tester. Use these new fields to test impositions and tax rules configured by franchise area in O Series.

Custom Reports - VRA

The Impositions data extract now supports configurations by franchise area. **Franchise Area ID** and **Franchise Jurisdiction Level** fields are added to the extract.

Import/export

Tax Data Import (TDI) and Tax Data Export (TDE) now support configurations by franchise area. There are new `franchiseAreaId` and `frnchAreaJurTypeId` fields for the Tax Imposition data file format.

Tax Engine Extract

Tax Engine Extract now supports imposition and tax rule configurations by franchise area.

Batch Client Interface

Batch Client Interface (BCI) now supports `franchiseAreaId` as a column value for CSV inputs.

Supported platforms and software requirements changes

Retired platforms

Database server

SQL Server 2019

Upcoming support changes

Support will be *ending* in a future service release for:

Database server

PostgreSQL 13

For more information about supported platforms and software requirements in SR19, go here.

API changes

Enhancement

Franchise Area Id field added to tax calculation requests and responses

To support the new franchise fee feature (see page 10) for O Series for Communications, the Franchise Area Id (`franchiseAreaId`) field is added to tax calculation requests and responses in the Tax Calculation and Tax GIS RESTful API.

This change impacts calculation requests and responses for sellers (Supplies), buyers (Procurement), and owners. The new field is added at both the invoice level and the line level. See the Vertex Developer Network for details on O Series REST API fields, requests, and responses.

Fixes

High latency when running the FindCertificate service

Issue: Customers experienced high latency when using the FindCertificate service due to a high number of queries on the TaxabilityDriver table.

Impact: SOAP calls to find certificates returned results more slowly than expected or timed out.

Resolution: An issue with the SOAP API when a large number of queries against taxability driver tables were executed is resolved. The FindCertificate service now returns results as expected.

Ticket: RQ-122293, RQ-125455

Timeouts when calculating SOAP transactions

Issue: O Series SOAP transactions with `IncludeChildJurisdictionsIndicator` enabled timed out when calculating tax.

Impact: SOAP calls to calculate tax returned results more slowly than expected or timed out.

Resolution: An issue with the SOAP API when a large number of queries against taxability driver tables were executed is resolved. SOAP calculations with `IncludeChildJurisdictionsIndicator` enabled return results as expected.

Ticket: RQ-125564

Accessibility changes

Vertex is committed to ensuring the use of O Series for all users, including people with visual, auditory, and neurological disabilities. We periodically run Accessibility Conformance Reports via a third party to measure and improve conformance with Web Content Accessibility Guidelines (WCAG). With this release, we implemented these changes:

- Improved responsiveness when adjusting the browser's zoom settings or adjusting the text size
- Improved page layout and flow across varied screen resolutions

These improvements are completed for many O Series features and will apply across all features in upcoming releases.

For information about Vertex's WCAG conformance, see O Series support for accessibility.

Database changes

New tables

- To support multi-jurisdiction tax rules in deployments with Tax Rule Optimization (TRO) activated, the TPS database now includes these tables:

  ### TaxImpositionCoverage

  The table columns are:

  – taximpositioncoverageid
  – taximpsnsrcid
  – taximpsnid
  – allstatesind
  – allcitiesind
  – allcountiesind
  – allothersind
  – juractiveind
  – jurisdictionId
  – effdate
  – enddate

  ### TaxImpositionCoverageJur

  The table columns are:

  – taximpositioncoveragejurid
  – taximpsnsrcid
  – taximpositioncoverageid
  – jurisdictionid
  – coverageactiontypeid

- To support a future data transfer feature, the UTIL database now includes these tables:

CdtPackage

The table columns are:

- id
- uuid
- sourceId
- name
- description
- isDraft
- isDeleted
- createdBy
- createTimestamp
- lastUpdatedBy
- lastUpdateTimestamp

CdtPackageDatabase

The table columns are:

- id
- uuid
- logicalName
- tablePrefix

CdtPackageEntityType

The table columns are:

- id
- uuid
- entityTypeId
- entityTypeName
- logicalName
- precedence

- tableName
- idColumnName
- domainClassName
- labelMakerClassName
- handlerClassName
- createdBy
- createTimestamp
- lastUpdatedBy
- lastUpdateTimestamp

UtilPackageDetail

The table columns are:

- id
- uuid
- packageId
- entityId
- entityTypeId
- effectiveDate
- sourceId
- createdBy
- createTimestamp
- lastUpdatedBy
- lastUpdateTimestamp

• To support a future data transfer feature, the RPT database now includes the **RptPackageDetail** table. The table columns are:

- id
- uuid
- packageId
- entityId

- entityTypeId
- effectiveDate
- sourceId
- createdBy
- createTimestamp
- lastUpdatedBy
- lastUpdateTimestamp

- To support a future data transfer feature, the TPS database now includes the **TpsPackageDetail** table. The table columns are:
  - id
  - uuid
  - packageId
  - entityId
  - entityTypeId
  - effectiveDate
  - sourceId
  - createdBy
  - createTimestamp
  - lastUpdatedBy
  - lastUpdateTimestamp

New columns

To support multi-jurisdiction tax rules in deployments with Tax Rule Optimization (TRO) activated, the `TaxImpsnDetail` table now includes the **jurisdictionBasedIndicator** column.

Calculation Engine changes

Fixes

Fair Market Value timeouts for Brazil

Issue: Brazil transactions with a difference between the Extended Price and the Fair Market Value resulted in high-response times and timeouts when calculating tax.

Impact: Some of these Brazil transactions completed successfully with an unexpectedly long wait time for calculation to complete. Others failed to complete calculation and generated an `Exception Timeout` error or an `Unable to Process the Price` error.

Resolution: The algorithm used by the Calculation Engine to resolve deltas between Extended Price and Fair Market Value is changed to prevent time-consuming loops when calculating tax for Brazil. Calculation response times are improved and these transactions now consistently complete calculation as expected.

Ticket: RQ-120755

No tax for subsequent transaction lines with a different year

Issue: When lines other than the first line on a transaction included a transaction date with a different year than the date on the first line, no tax calculated for those lines.

Impact: Some transaction lines unexpectedly calculated zero tax, even when tax was expected.

Resolution: A caching issue for impositions with taxability that varies depending on the tax date is resolved. Subsequent transaction lines after the first that have a different year no longer calculate zero tax.

Workaround reversal: If you are creating multiple transactions to avoid submitting lines with dates in different years on the same transaction, you no longer need to. Lines with differing years on the same transaction now calculate as expected.

Ticket: RQ-92466

Flexible fields impacted by Tax Assist rules not included in REST API response

Issue: When a Tax Assist rule impacted a flexible field on an Asset Movement or Inventory Removal transaction, the rule and the changes to the flexible field were not included as `assistedParameters` in the REST API response from the Calculation Engine.

Impact: Tax Assist rules triggered as expected, but REST API responses for Asset Movement and Inventory Removal transactions did not include the Tax Assist rule nor the changes to the flexible field in the response. SOAP responses were not impacted.

Resolution: An error when converting responses from JSON is resolved. Tax Assist rules and flex fields are now included in REST API responses for Asset Movement and Inventory Removal transactions as expected.

Ticket: RQ-106237, RQ-122697

Incorrect filing category applied to transaction lines for the same impositions

Issue: When multiple lines on a transaction applied the same tax rules during calculation but should have been assigned different filing categories, the filing category from the final line overrode the categories for preceding lines.

Impact: For transactions calculating using the same tax rules but with different expected filing categories, the wrong filing category was returned for all but the last line on the transaction.

Resolution: An issue with the application of situs during calculation for transaction lines that reference the same tax rules is resolved. Filing categories are now returned for each line as expected, even when categories differ between lines on the same transaction.

Ticket: RQ-115879, RQ-115006

MIN Unit of Measure results in no tax

Issue: Including a Unit of Measure (UoM) value set to **MIN** (minutes) on a transaction caused tax not to calculate.

Impact: Transactions with **UoM** set to **MIN** did not calculate tax, even when tax was expected.

Resolution: The Calculation Engine is updated so it no longer applies the derived taxability category for Call Minutes when **UoM** is set to **MIN.** The tax result type of `NO_TAX` no longer automatically applies to these transactions.

Workaround reversal: If you are using a **UoM** other than **MIN** to avoid impacting taxability, you no longer need to. Tax now calculates when passing **MIN** as the **UoM** on a transaction.

Ticket: RQ-66759

Post-calculation Tax Assist rules running twice when Do not Show NoTax results is disabled

Issue: When the **Do not Show NoTax results** setting was disabled, post-calculation Tax Assist rules were executing twice on each line during tax calculation.

Impact: There was no impact to calculated tax totals. In the XML response for transactions impacted by post-calculation Tax Assist rules, `originalValue` was populated when the second execution of a Tax Assist rule overwrote data elements populated by the initial execution of the rule. This meant that `originalValue` was populated in instances when it should have been blank.

Resolution: An issue with line-level assistors for Tax Assist rules is resolved. Post-calculation Tax Assist rules now execute only once when **Do not Show NoTax results** is disabled, so `originalValue` is populated as expected in XML responses for transactions impacted by post-calculation Tax Assist rules.

Ticket: RQ-91775

Tax for ICMS ST and FECOP ST in Brazil calculated lower than expected

Issue: Tax calculation for ICMS ST and FECOP ST in Brazil calculated lower than expected when tax credit rules were applied to a transaction.

Impact: When tax credit rules were applied to Brazil transactions, total taxes for ICMS ST and FECOP ST unexpectedly recalculated. This recalculation reduced the total tax and resulted in lower tax than expected for these impositions.

Resolution: A Calculation Engine issue that caused tax to needlessly recalculate for ICMS ST and FECOP ST when a credit rule was applied is resolved. Taxes for ICMS ST and FECOP ST now calculate as expected when a credit rule is applied to a Brazil transaction.

Ticket: RQ-120946, RQ-114059, RQ-121714

Rounding issue for tax-inclusive transactions

Issue: Tax-inclusive transactions in Brazil, Iceland, and other countries calculated with a taxable basis that was less than the extended price passed on the transaction.

Impact: Tax-inclusive calculations used a taxable basis that was .01 less than the extended price for each line of the transaction. This may have caused tax results that were .01 less than expected.

Resolution: A Calculation Engine rounding error with how taxable basis was apportioned across impositions after situs was determined is resolved for tax-inclusive transactions. Each imposition now determines situs individually, and the taxable basis for each line now matches the extended price passed on the transaction.

Ticket: RQ-122304

Tax credit rules with basis reductions for Brazil ICMS DIFAL

Issue: Brazil transactions that calculate ICMS DIFAL did not apply tax credit rules as expected when the tax calculation rule had a basis reduction for impositions that are self-inclusive. Self-inclusive impositions are impositions that are included in their own taxable basis when calculating tax.

Impact:

When a tax credit rule applied in a tax imposition, the rules were not applied as expected when:

- The imposition was self-inclusive.
- The calculation rule that applied in the imposition included a basis reduction.

Resolution: An issue with tax credit rule logic in the Calculation Engine is resolved. Tax credit rules now apply as expected to Brazil transactions for self-inclusive impositions and where the calculation rule includes a basis reduction.

Invoice-scope max tax rules on tax-inclusive transactions

Issue: For O Series 9.0 SR14 and later, invoice-scope max tax rules did not calculate as expected for tax-inclusive transactions. Both single-component and multi-component tax-inclusive transactions were impacted.

Impact: When applying an invoice-scope max tax rule to a tax-inclusive transaction, the Calculation Engine did not use the expected tax-inclusive total during recalculation and instead used the derived tax-*exclusive* total for each recalculation. These recalculations effectively backed out the tax a second time, resulting in understated tax-exclusive amounts and understated tax amounts.

For multi-component tax-inclusive lines, the issue impacted each component, so the unexpected total from each component line impacted all subsequent lines.

Resolution: An issue with the application of max tax rules and tax-inclusive adjustments is resolved. The Calculation Engine now uses the expected total when recalculating after applying an invoice-scope max tax rule to a tax-inclusive transaction, resulting in the expected tax-exclusive amounts and expected tax amounts.

Ticket: RQ-124626

Null pointer exception errors for Brazil transactions with logging enabled

Issue: Certain Brazil transactions generated a `java.lang.NullPointerException` error when `OverrideLoggingThreshold` was enabled and `thresholdScope` was set to `DEBUG` and `TRACE`.

Impact: Tax calculation failed for some Brazil transactions when logging was enabled. Calculation completed as expected when logging was *not* enabled.

Resolution: A null check is added to the calculation process for Brazil transactions when logging is enabled. Calculation for impacted transactions completes as expected when logging is enabled.

Ticket: RQ-70808

Incorrect imposition values for "No Responsibility" for transactions in some jurisdictions including Malaysia and India

Issue: Tax calculations for Malaysia and India, where the Calculation Engine arrived at a No Responsibility conclusion, were assigned incorrect values for Imposition Name and Imposition Type in calculation responses. The Calculation Engine was always choosing the imposition with the VAT Imposition Type even if this was not the primary imposition in the jurisdiction.

Impact: Impacted transactions were not assigned the expected Imposition Name and Imposition Type:

- Malaysian transactions were assigned an Imposition Name of GST and an Imposition Type of VAT.
- India transactions were assigned an Imposition Name and an Imposition Type of VAT instead of IGST.

Resolution: An issue with the assignment of Imposition Name and Imposition Type for transactions that receive a No Responsibility conclusion is resolved. Transactions in Malaysia and India now apply the expected Imposition Name and Imposition Type in calculation results.

Ticket: RQ-108756, RQ-91226

Amount Billed to Date missing from ARBillingSync responses

Issue: The Amount Billed to Date field was not included in transaction responses for ARBillingSync financial events.

Impact: Transaction responses for the ARBillingSync financial event did not include a value for Amount Billed to Date (`amountBilledToDate`). Responses for tax calculation requests and other adjustment events were not impacted.

Resolution: The Amount Billed to Date field is added to responses for ARBillingSync financial events.

Ticket: RQ-113526

Configuration parameter changes

New settings

New max tax calculation setting

A new calculation setting enables nontaxable line items to impact max tax rules. When you set **Include Nontaxable Amounts in Max Tax Basis** to `true`, nontaxable line items contribute towards the maximum taxable basis for multicomponent and invoice-scope tiered max tax rules.

New calculation response setting

A new calculation response setting enables the `TaxInclusion` element in calculation responses. When you set **Show Detailed Tax Inclusions in response** to `true`, calculation responses for transactions impacted by inclusion tax rules include the `TaxInclusion` element. The `TaxInclusion` element contains details about the inclusion rules that impact tax calculations, including `Direction`, `InclusionRuleId`, `Jurisdiction`, `Imposition`, `ImpositionType`, and `IncludedTax`.

Tax Setup changes

Enhancements

New qualifying condition on the taxability category tree

Unit Price is now a qualifying condition on the Business Drivers branch of the taxability category tree. You can use this new qualifying condition to create calculation tax rules that trigger depending on the value of a line item's Unit Price, such as exempting line items that exceed a specific price threshold.

Tax Rules and Impositions now support franchise fees, multi-jurisdiction impositions, and multi-jurisdiction tax rules

Impositions, inclusion tax rules, and calculation tax rules now support new franchise fee and multi-jurisdiction features (see page 10).

Fixes

Logic improvements for deleted mappings returned by search

Issue: Deleted taxability mappings were returned in O Series search results for taxability mappings to archived user-defined tax rules. The logic that determined when to include deleted mappings in search results occasionally included deleted mappings that were not mapped to archived, user-defined rules.

Impact: Unexpected deleted mappings that were not mapped to archived user-defined rules were included when searching for mappings in O Series.

Resolution: The logic that determines when to include deleted mappings in search results is updated. Deleted mappings are not returned in search results when:

- They are not mapped to an archived rule.
- The taxability mapping is to a Vertex-defined rule that was manually deleted or overridden prior to the existence of the corrected indicator (correctedInd) in the tax rule database.

Tickets: RQ-121574, RQ-120824

Reporting changes

Enhancements

Improved tools for moving columns in Custom Reports - VRA

To more efficiently organize columns for an extract definition, a **Move** menu is added to each selected field on the **Fields** tab. For a particular field, this menu provides options to move the field up or down one position, move the field to the first or last position, or identify the exact position in the column order.

New naming conventions for Custom Reports - VRA data extracts

There are new guidelines for the names of extract definitions in Custom Reports - VRA. When entering a name in the **Name** field on the General tab in the Extract Definition feature:

- The name can be up to 60 characters.
- The name may cause compatibility issues if it contains any of these special characters: | / ? * { } ( ) [ ]

  These special characters may not be compatible with some operating systems, and they may pose security risks. You can still save an extract definition that has a name containing one of these characters, but the name may cause errors in future releases.

If you have existing extract definition names from releases prior to 9.0 SR19 that include any of the special characters, you can still open them, but Vertex recommends that you change the name to adhere to the naming conventions.

New data extracts for impositions and tax rules

New data extracts in **Reporting > Custom Reports - VRA** report on new multi-jurisdiction features (see page 10) for impositions and tax rules:

- Tax Imposition Coverage
- Tax Imposition Coverage Jurisdictions
- Tax Rule Coverage
- Tax Rule Coverage Jurisdictions

Data extracts now support franchise fees, multi-jurisdiction impositions, and multi-jurisdiction tax rules

Impositions and Tax Rules data extracts now support new franchise fee and multi-jurisdiction features (see page 10).

Data Update Impact (Tax Rules) data extract adds two fields

The Data Update Impact (Tax Rules) extract better supports tax rules with multiple taxability categories. If there is more than one taxability category for an updated tax rule, each taxability category makes up its own row in the report. Report rows for the same tax rule are grouped together and have the same data, except for the **Category Name** and **Details** fields, which are unique for each taxability category in the tax rule.

Fix

Missing tax rules in Data Update Impact (Tax Rules) data extract for optimized data

Issue: A Data Update Impact (Tax Rules) extract that was run after application of an optimized Monthly Data Update (MDU) missed some records for tax rule changes that were made in the MDU.

Impact: With the missing tax rule records, this report could not be used to comprehensively identify impacts of optimized MDU tax rule changes to your implementation.

Resolution: After a conversion to the optimized MDU, the Data Update Impact (Tax Rules) extract is now as functional as it was prior to conversion. For changes that impact a particular O Series implementation, the extract filters records based on driver mappings to taxability categories and includes the pertinent MDU tax rule changes. Two fields - **Category Name** and **Details** (described in the previous note) - are added to the extract for optimized MDUs. These fields can help you to see the full impact of the MDU against your configuration.

Ticket: RQ-122900

System changes

Enhancements

Single Sign-On is a read-only field instead of a check box

A user's access to **Single Sign-On** is now a read-only field that displays as either `Enabled` or `Disabled`. Previously, O Series showed a disabled **Enable Single Sign-On for this user** check box.

Duplicate save no longer required when changing settings

Changes to settings are applied after clicking **Confirm Edits**. Previously, O Series marked a setting as **Pending Save** and required you to click **Save** after clicking **Confirm Edits**.

Duplicate role names for user-defined roles across partitions

When creating partition-level, user-defined roles, you can now assign the same name to roles in different partitions. Previously – via functionality delivered in 9.0 SR16 MP2 – O Series prevented you from assigning the same role name to roles in different partitions. Note that O Series still prevents you from using the same name for roles *within* a partition.

Copy Client Secret for creating an API credential

To simplify API credential setup, you can now click **Copy Client Secret** to copy the client secret to your clipboard. Previously, you had to manually select and copy the client secret from the dialog box.

BCI, TEE, TDE, and TDI support franchise fees, multi-jurisdiction impositions, and multi-jurisdiction tax rules

Batch Client Interface (BCI), Tax Engine Extract (TEE), Tax Data Export (TDE), and Tax Data Import (TDI) now support new franchise fee and multi-jurisdiction features (see page 10) for impositions and tax rules. The enhancements are:

- New tax data file formats for impositions:
  - Tax Imposition Coverage
  - Tax Imposition Coverage Jurisdiction
- New tax data file formats for tax rules:
  - Tax Rule Coverage
  - Tax Rule Coverage Jurisdiction
- New `franchiseAreaId` and `frnchAreaJurTypeId` fields for the Tax Imposition data file format.
- New `franchiseAreaId` column supported for Batch Client Interface CSV inputs.

Fixes

Taxpayer modifications in Returns Export and VAT Returns Export filters

Issue: When editing a Returns Export filter or VAT Returns Export filter, changes to the **Taxpayer** field selections did not persist when saving the filter.

Impact: This limitation required you to create a new filter with your **Taxpayer** selections.

Resolution: Edits to the **Taxpayer** field selections in a Returns Export filter or VAT Returns Export filter now save as expected.

Ticket: RQ-120266

Running a Tax Engine Extract file created prior to 9.0 SR17 MP1

Issue: Customers who upgraded to O Series 9.0 SR18 MP2 received an error from the Tax Engine Extract (TEE) when running a TEE filter that was created in a release prior to 9.0 SR17 MP1.

Impact: O Series prevented customers from running the TEE when using a filter that was created prior to 9.0SR17 MP1. The workaround was to open the TEE filter for editing, save it without making changes, and then run the filter.

Resolution: The issue is resolved and the workaround is no longer required. You can now run a TEE when using a filter created in a previous release.

Workaround reversal: It's no longer necessary to complete the workaround.

Ticket: RQ-124715, RQ-124726

Retail Tax Extract shows status of "Completed with failure" when exceptions are logged

Issue: When the Retail Tax Extract (RTE) encountered an error inserting tax rules into the RTE database, it stopped further rules and rates from being inserted, but did not mark the job as failed.

Impact: An RTE that completed with exceptions was incorrectly marked with the status **Completed successfully** rather than the expected status, **Completed with failure.**

Resolution: When the RTE job encounters this error, it now shows the expected status of **Completed with failure**.

Ticket: RQ-124173

Parameter modifications for API client credential life

Issues: This release fixes the behavior of two parameters in the API credential setup under **System > Security**:

- When an API credential was defined with the **Credential Expires in Days** field set to 0 (zero) or left blank, the credential erroneously expired in 24 hours. The intended behavior is to require a value in this field and for a value of 0 to never expire the credential.
- When the **Token Expires in Seconds** field was left blank, the token life defaulted to 60,000 seconds (1,000 minutes), rather than the intended default of 1,800 seconds (30 minutes).

Impacts: API credentials that were set up for no expiration actually expired in 24 hours, requiring administrators to recreate the credentials. Leaving the **Token Expires in Seconds** field blank resulted in an unintended long lifetime that could expose it to malicious activity.

Resolution: The parameters are modified to use the expected behaviors:

- The expiration behavior is fixed so that a credential never expires if the value in the **Credential Expires in Days** field is 0. If you leave the field blank, a message displays to notify you that the field requires a positive integer value greater than or equal to 0.
- The token life is now 1800 seconds when the **Token Expires in Seconds** field is left blank.

Ticket: RQ-121877

Security changes

Recommendation

For security best practice, Vertex recommends that you add the `oidc.post_logout_redirect_uris` configuration parameter to the vertex.cfg file. When no `post_logout_redirect_uri` query string is provided, this parameter redirects users to a specified URL after a successful logout.

Fixes

This release includes security-vulnerability resolutions.

Performance change

Cache refresh enhancement

Issue: Some customers using O Series On-Premise experienced intermittent outages when updating their taxpayer registrations. This was the result of repeated, direct calls to the cache refresh during the registration process, rather than the expected, periodic calls of the default cache refresh cycle.

Impact: Customers needed to reprocess transactions that occurred during the intermittent outages caused by the repeated cache refresh calls.

Resolution: O Series now calls the cache refresh on the default cycle, approximately once every five minutes, and outages no longer occur.

Ticket: RQ-127585

Support policies

Click for up-to-date details about O Series support, including supported platforms and how long service releases are supported:

- Support policy overview
- O Series On-Premise with Exemption Certificate Manager
- O Series On-Premise, O Series On-Demand, Retail LITE, and O Series Edge
- Accessibility

Previous releases

Release Notes for releases prior to 2025 are available in Downloads on Vertex Community.

Installation notes

If you are installing Vertex O Series On-Premise for the first time, click here. To apply a Service Release or Maintenance Pack, follow the instructions below. Applying a release installs files on your system. Do not remove these files.

Applying this release

Before you begin

Review these requirements before applying a release:

- Ensure that your Vertex O Series 9.0 License file is copied into the Vertex Home directory.
- You must provide passwords for the admin and sysadmin accounts during installation.
- Ensure that your application server user account and the user account that you used to install this release have full read, write, create, and delete access to the Vertex root directory and all subdirectories.
- Ensure that the Web Archive (WAR) and Enterprise Archive (EAR) files for the O Series components are in your web directory. If these files were moved, the service release or maintenance pack may not install as expected.
- The JavaFX deployment libraries are no longer bundled with Java in Java 11. If you use the user interface version of the O Series installation, you need to download and install the JavaFX libraries in addition to Java. Alternatively, use a properties file installation.

Caution: If you have modified Tomcat's default logging configuration, make sure you back up your Tomcat logging properties before applying the update. If you have modified the settings, they will be overwritten when a patch is applied.

Database considerations

- Vertex recommends that you back up all O Series databases before applying a release. To ensure the integrity of the system, always back up all O Series databases at the same time. If you need to restore any one database, you must restore all the databases.
- For service releases, ensure that the user applying the patch has the appropriate permissions to make database schema changes.
- Vertex recommends that you turn off schema validation before applying a release.
- If you have multiple instances of O Series pointing to one database, you *must* wait until the patch application is completed on one instance before applying the patch to the next instance. If you have multiple instances of O Series for load balancing, refer to "Avoid downtime in a load-balanced cluster" for information about minimizing downtime when applying an O Series patch.

Server-specific notes

- Review the installation information for deploying your servlet container, as well as the pre-installation and post-installation information, for any notes or special instructions that are related to your particular web application server.
- If you are applying this release to a system running the AIX Operating System, be sure to perform the installation of the release as a user in the root group.
- If you plan to deploy O Series by using Oracle WebLogic, you must deploy the O Series WAR files after applying the patch.
- To implement Windows Integrated Authentication for the database connection between O Series and Microsoft SQL Server using Microsoft SQL Driver, ensure that the `sqljdbc_auth.dll` file is in the windows system path on each application server. The sqljdbc_auth.dll is bundled with the Microsoft JDBC driver. Download the driver from Microsoft and extract the DLL.

Avoid downtime in a load-balanced cluster

If you have multiple instances of O Series pointing to one database and are applying an O Series patch, you can avoid downtime by following this process *for each instance*:

1. Remove an application instance from the load balancer.
2. Stop the application instance.
3. Apply the O Series patch.
4. When the patch completes installation, start the instance.
5. Wait a few minutes for the cache to load.
6. Add the instance back to the load balancer.

Caution: ***You must wait until the patch installation is complete before applying the patch to the next instance.***

Applying this release

Note: *You must install O Series 9.0 SR19 MP3 with Java 17 or 21.*

Complete these steps to apply the release:

1. Copy the JAR file for the release (`vertex-o-series-patch-9.0.19.3.nn.jar`) to the patch directory, located under the Vertex root directory where O Series is installed.

Note: *This is an approximate file name for the JAR file, where* `nn` *represents the final number in the build process for this release.*

2. Change the working directory to the patch directory.
3. Stop the application server.
4. Undeploy the web applications.
5. Enter the following command to launch the installer and apply the release:

```
java -jar vertex-o-series-patch-9.0.19.3.nn.jar
```

   (Alternative) If you use a jdbc driver other than one that Vertex supplies, enter this command:

```
java -cp jdbc_driver_files;vertex-o-series-patch-9.0.19.3.nn.jar
com.vertexinc.tpc.common.install.patch.PatcherBootstrap
```

   where:

   `jdbc_driver_files` is the full path and file name of the installed jdbc driver file or files.

6. Deploy the web applications.

Removing this release

Before you begin

Review the following information before removing a patch:

- Back up the information in your vertex.cfg file before removing the patch. When you remove the patch, a new Vertex configuration file (vertex.cfg) is created and the current vertex.cfg file is overwritten, causing any information that you entered to be lost.
- Do not replace the vertex.cfg file that was created during patch removal with the vertex.cfg file from the current patch. Doing so may result in errors or unwanted system behavior because configuration options may have changed.

Procedure

Complete the following steps to remove this release:

1. Stop the application server.
2. Undeploy the web applications.
3. Change the working directory to the Vertex `root\patch` directory.
4. Enter the following command to launch the installer and remove the release:

   ```
   java -jar vertex-o-series-patch-9.0.19.3.nn.jar -remove
   ```

   (Alternative) If you use a jdbc driver other than one that Vertex supplies, enter the following command:

   ```
   java -cp jdbc_driver_files;vertex-o-series-patch-9.0.19.3.nn.jar
   com.vertexinc.tps.common.install.patch.PatcherBootstrap -remove
   ```

   where:

   jdbc_driver_files is the full path and file name of the installed jdbc driver file or files.
5. Deploy the web applications.

Use the Knowledge Base to learn about O Series

The Knowledge Base is a resource on Vertex Community for accessing the information you need to use Vertex® O Series. It includes how-to procedures, best practices, and reference information.

Before you can access the Knowledge Base

You must have access to Vertex Community and you must be logged on to the site. You can obtain login credentials on the Vertex website.

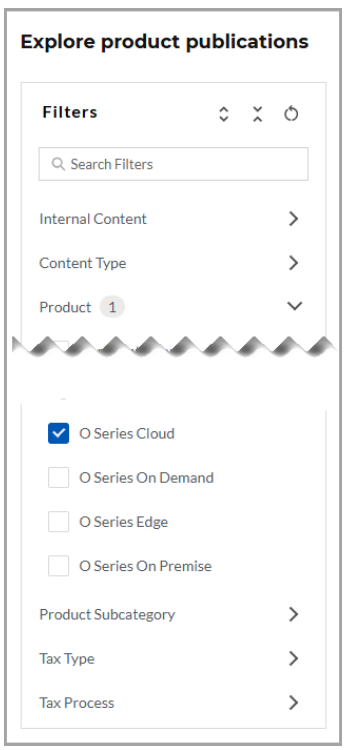
Access the Knowledge Base

- We suggest that you log on to Vertex Community at the same time you log on to O Series. This way, you can quickly switch to a knowledge base search while in the user interface.
- From O Series, click , and then select **Find help at Vertex Community**. An overview of the current feature opens in Vertex Community. If you don't already have Vertex Community open, you are prompted to log in.
- From Vertex Community, select **Knowledge > Explore Product Documentation**. The Product Documentation page initially displays an alphabetical list of publications.

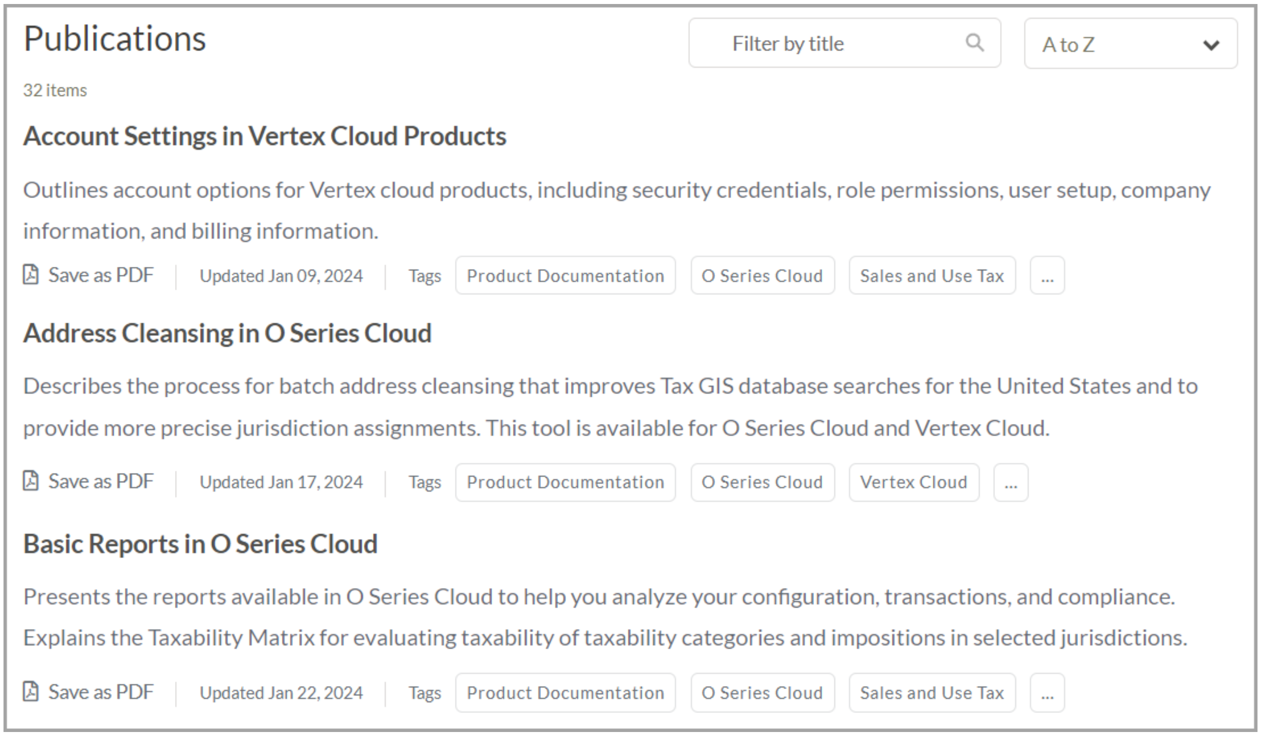
Find a publication

A publication is a collection of articles on a particular subject - such as *account settings* or *basic reports*. When you initially access the Product Documentation knowledge base, you see the publication view, which is an alphabetical list of publications in the knowledge base. To see publications for your O Series deployment:

1. Use the **Filters** panel to select the **Product** and to filter by other criteria.



2. Scroll through the alphabetical list of publications that displays to find the area of interest.

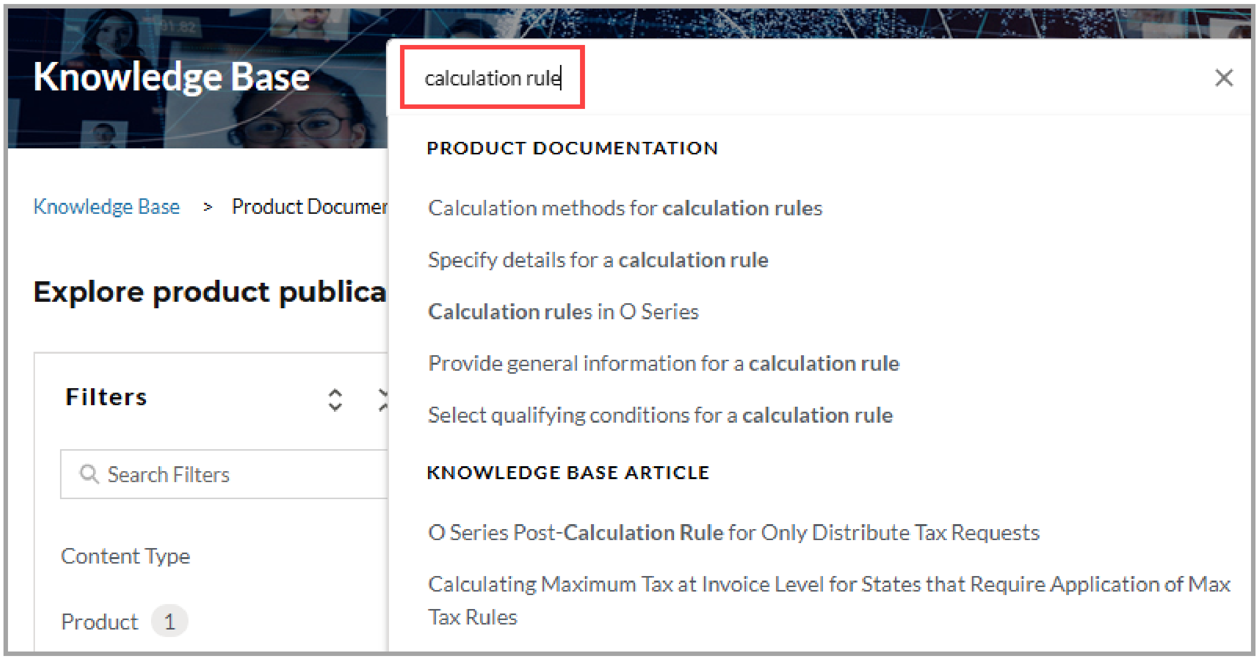


3. Click on the publication to see the knowledge articles on specific topics.

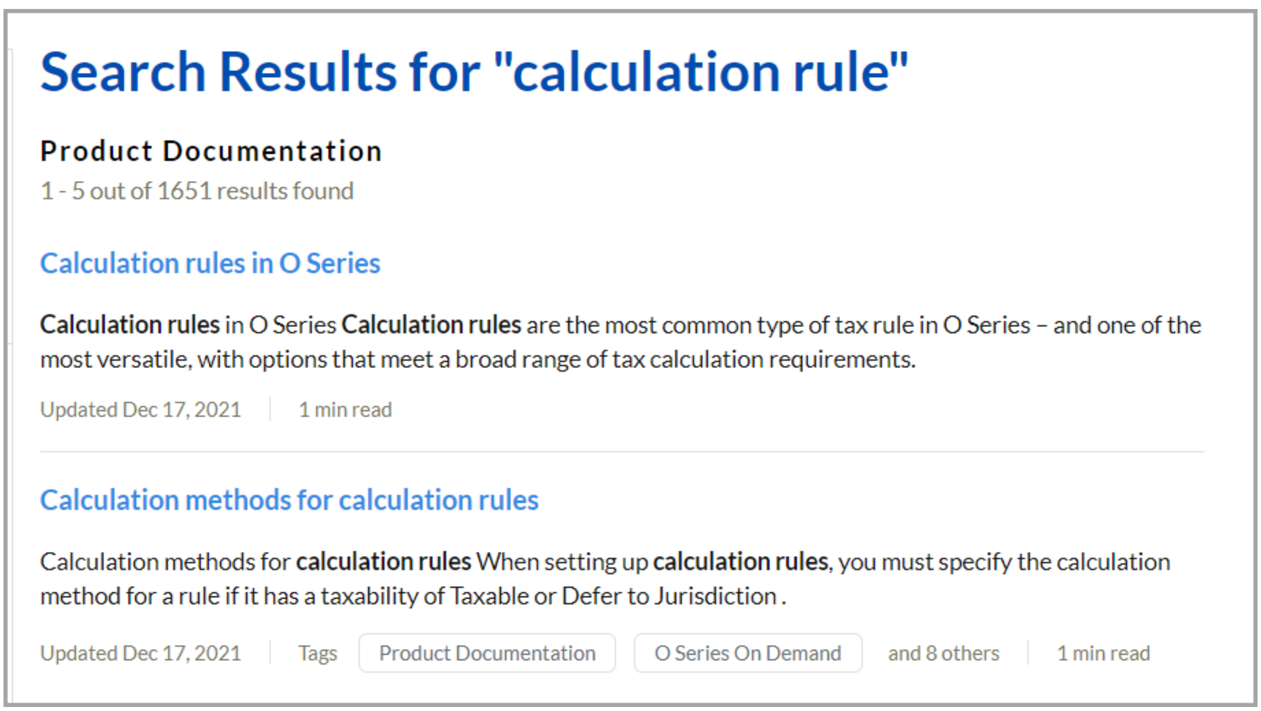
Search on a topic

1. Type the key words for the topic in the **Search Knowledge** field. A drop-down list of some articles matching those key words displays as you type.

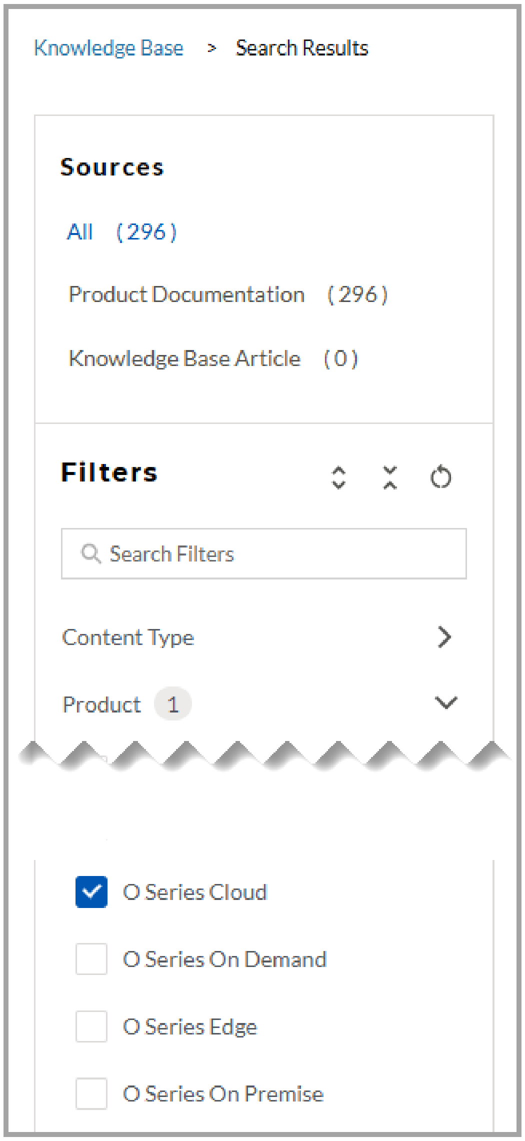
- If you see the article of interest, click it in the drop-down list. In this example, we're searching for information about calculation rules.



- To see additional search results, click . You can page through the search results for a relevant article. The Tags indicate the products, tax processes, and tax types to which the articles relate.

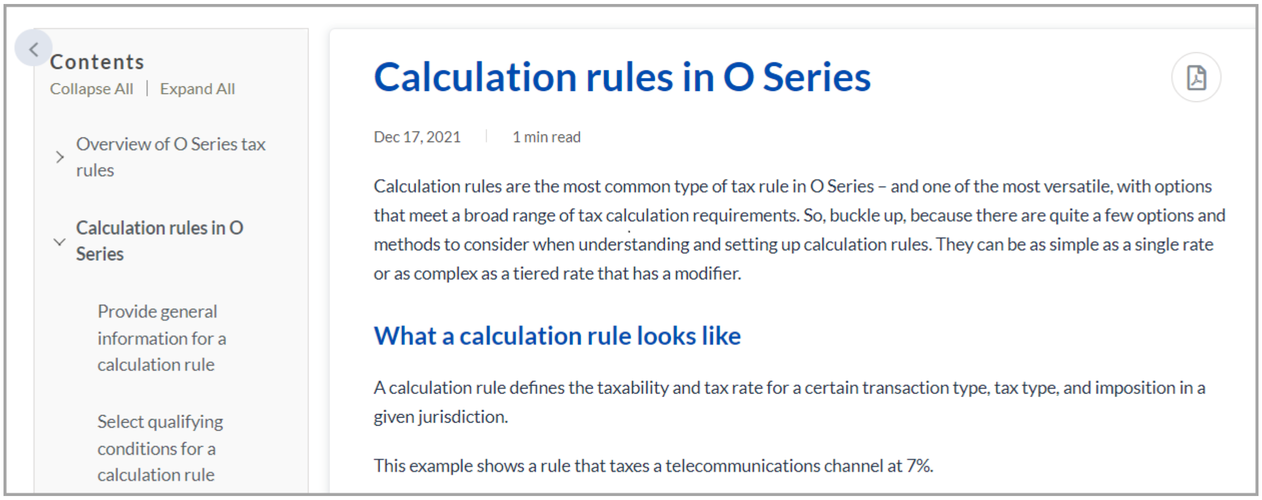


2. To filter the search results by product or other criteria, use the **Filters** options.



3. In the list of returned articles, select a title that suits your needs.

The article opens, with a Contents pane to help you navigate to related articles. You can read the information online or select to download the information as a PDF file.



Tips for navigating through articles

- Each article is part of a publication, which is a collection of related articles that displays in the Contents panel. You can use this panel like a table of contents to navigate to related information.
- Articles contain links to other articles. If you click a link to another article and want to return to the previously viewed article, click the browser's back arrow (←).
- If the images in an article are not visible, click F5 to refresh your browser and display the images.

Generate a PDF of selected content

For content that you want to save for later use, you can generate a PDF by clicking .

You have the options to save:

- The selected topic
- The selected topic and all subtopics
- The entire publication

Contacting Vertex

- **Vertex Customer Support**: Log in to https://community.vertexinc.com and select **Support & Services > Support > Create Case,** or call 800.281.1900. Please have your Customer Number or Case Number available.
- **Vertex Community**: https://community.vertexinc.com.
- **Mail**: 2301 Renaissance Blvd. King of Prussia, PA 19406 United States.
- **Telephone**: 800.355.3500 or 610.640.4200.
- **Web**: www.vertexinc.com/.