



**RAYVENTORY®**

# Technology Asset Inventory

Release Notes Rayventory Data  
Hub 12.4

•rayNET

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## Release Notes RayVentory Data Hub RayVentory Data Hub 12.4

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## Introduction

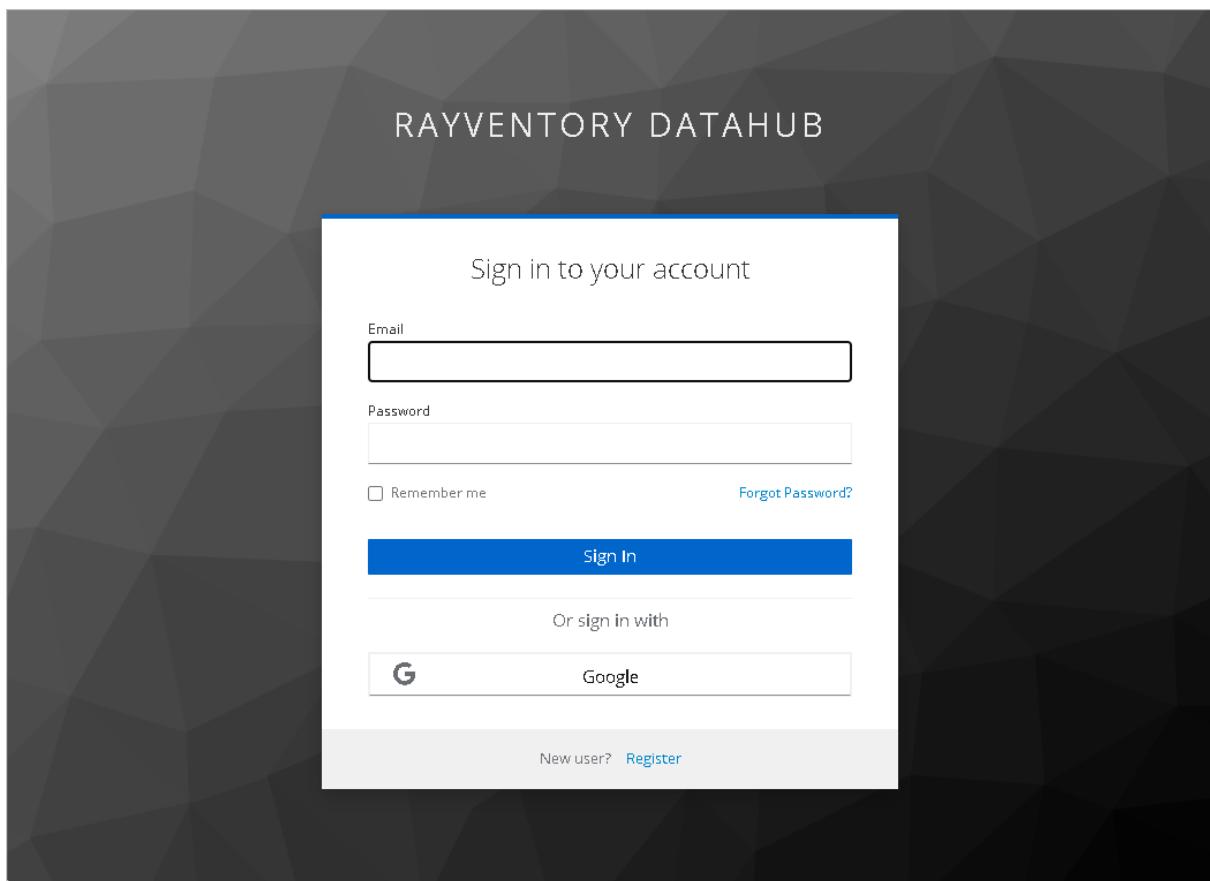
This new release 12.4 is a major upgrade to the previous release. It contains several new features, major product improvements and resolves reported issues. This document describes important changes and feature highlights using the base 12.3 version for comparison. When migrating from an older release (12.0, 12.1, or 12.2), refer to corresponding Release Notes for more information about changes and migration paths.

## What's new

### Single Sign-on and Support for External Identity Providers

RR-80 RR-2732 RR-3213

With this release, Rayventory Data Hub supports the usage of single sign-on and supports external identity providers. After the new support of Keycloak has been configured, instead of offering the default login screen, Rayventory Data Hub will now offer the login screen configured in Keycloak. This method enables users to use one account only for multiple applications and thereby significantly decrease the effort necessary to manage all the different credentials.



## New and Updated Cloud Connectors

RR-3262 RR-2968 RR-3117

RR-3143

In this version, the following new connectors have been added:



Amazon Athena



Heroku



Qualys



Amazon Organizations



Huawei Cloud Stack



SAP Ariba Contract Workspaces



CloudSphere iQSonar



Monday



SAP Concur



Couchbase



Nutanix Prism Central

SAP Hybris Cloud for Customer  
(SAP C4C)

Google Cloud BigQuery



OpenStack



SAP Qualtrics



Google Cloud Storage Download



Proxmox



VMware Customer Connect



*Google Cloud VM Manager*

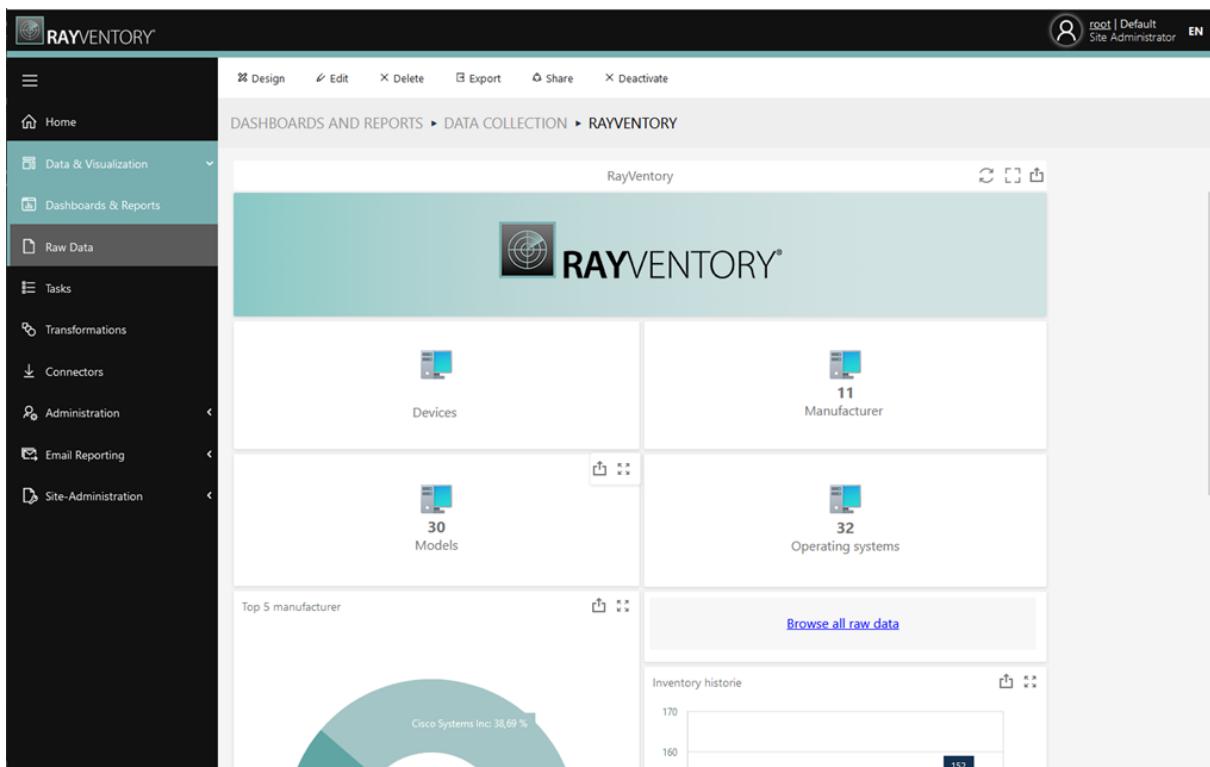


*Workday*

## New Way of Browsing the Raw Data RR-3200 RR-3211

In this version, several older raw data reports were deprecated in favor of general-purpose data viewer. In order to have an overview of the imported raw data, a set of new dashboards for each import category has been provided (for example a generic overview of inventory, directory services etc.). The reports (after import) are available in the **Data and Visualization** tab. Each offers a few quick numbers, source information, and ability to drill-down the required tables.

Together with the table viewer, this provides an excellent overview and ability to take a quick peek of the collected data.



The screenshot shows the Rayventory Data Hub interface. The left sidebar navigation includes Home, Data & Visualization (selected), Dashboards & Reports, Raw Data (selected), Tasks, Transformations, Connectors, Administration, Email Reporting, and Site-Administration. The main content area displays the 'RAYVENTORY' dashboard under 'DASHBOARDS AND REPORTS > DATA COLLECTION > RAYVENTORY'. The dashboard features a title 'Rayventory' and a teal header. It contains four cards: 'Devices' (11), 'Manufacturer' (11), 'Models' (30), and 'Operating systems' (32). Below these are sections for 'Top 5 manufacturer' (Cisco Systems Inc: 38,69 %) and 'Inventory historie' (a line chart from 152 to 170). A blue link 'Browse all raw data' is also present.



## Scrollable (Vertical) Dashboards RR-3211

Dashboards can be now configured to be scrollable. This way, users can stack various controls and widgets and display them on a single page without needing to open new tabs and without relying on available resolution.

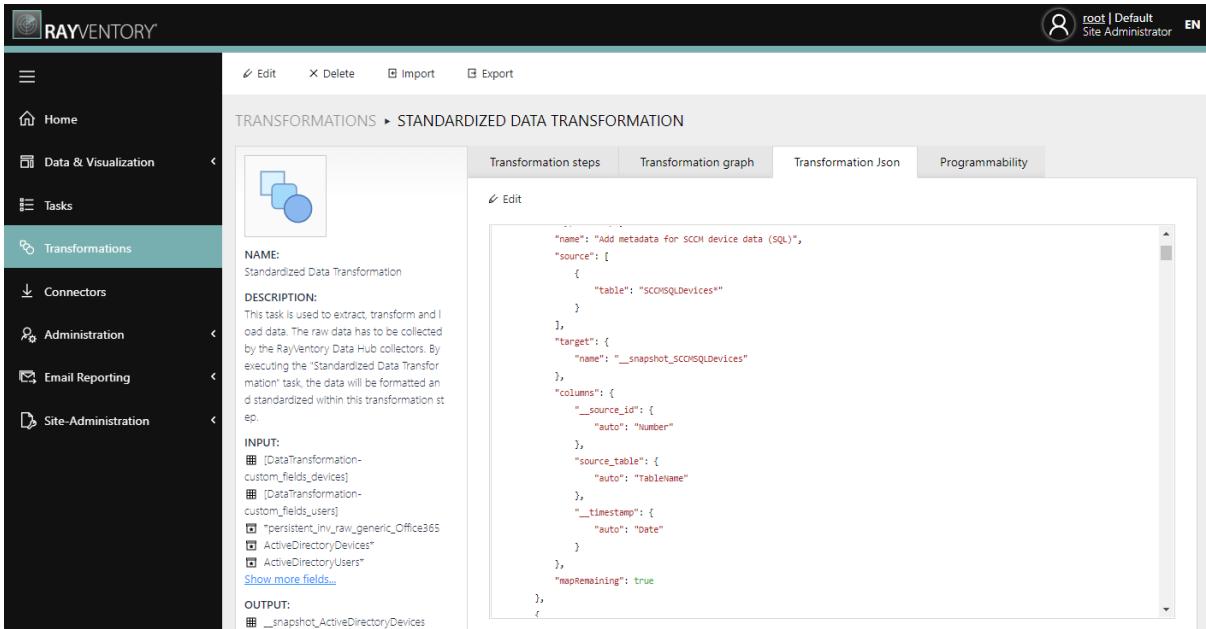
In order to get started with this feature, head out to the dashboard design view and enter the desired vertical height (in pixels).

The screenshot displays the Rayventory Data Hub interface. On the left is a dark sidebar with navigation links: Home, Data & Visualization, Dashboards & Reports (which is currently selected), Raw Data, Tasks, Transformations, Connectors, Administration, Email Reporting, and Site Administration. The main area shows a dashboard titled "PORTFOLIO OPTIMIZATION > EOL/EOS" in "EDITING" mode. The dashboard features several widgets: a bar chart for "Top 5 EOL/EOS by business function" with categories like Services, Runtime, Application framework, and Programming language; a treemap for "Top 5 installed products with most EOL/EOS" showing Firefox, Chrome, Office Proofing Tools, Windows Server Datacenter, and System Types for 50% Cover; and a donut chart for "Top 5 publisher with most EOL/EOS" showing Microsoft. Below these is a line chart for "EOL/EOS" showing the number of versions over time from Q1 2010 to Q1 2023. A large circular callout highlights the line chart with the text "254 EOL versions". At the top of the dashboard, there are configuration options for width (W: AUTO, FIXED, 2000 px) and height (H: AUTO, FIXED, 2000 px).

## Advanced Transformation Editing (JSON)

RR-3057 RR-3007

User can now edit transformation steps using a raw, JSON editor. This is also a bridge to a CLI usage of transformations (with help of ETL CLI), which makes simple copy-and-paste, import, and exporting even easier.



The screenshot shows the Rayventory Data Hub web interface. The left sidebar has a dark theme with the following navigation items:

- Home
- Data & Visualization
- Tasks
- Transformations** (selected)
- Connectors
- Administration
- Email Reporting
- Site-Administration

The main content area is titled "TRANSFORMATIONS > STANDARDIZED DATA TRANSFORMATION". It displays a preview icon, a "Transformation steps" tab, a "Transformation graph" tab, a "Transformation Json" tab (which is active and highlighted in blue), and a "Programmability" tab. The "Transformation Json" tab contains a JSON editor with the following code:

```

{
  "name": "Add metadata for SCCM device data (SQL)",
  "source": [
    {
      "table": "SCCMSQLDevices"
    }
  ],
  "target": {
    "name": "__snapshot_SCCMSQLDevices"
  },
  "columns": [
    {
      "_source_id": {
        "auto": "Number"
      },
      "source_table": {
        "auto": "TableName"
      },
      "__timestamp": {
        "auto": "Date"
      }
    }
  ],
  "mapRemaining": true
}
  
```

## Download Log Files from the Task View RR-2933

Complete log files from agent execution can now be downloaded from the Task view. This feature can be configured to specifying how long the logs should be stored. Additionally, an excerpt of each log is stored permanently, even for tasks that have already been cleaned-up.



# Task history details

**STATUS:**

Failed

--:--:--

**TRIGGERED:**

Oct 6, 2022, 12:24:34 PM by root

**START DATE:**

Oct 6, 2022, 12:24:39 PM

**END DATE:**

Oct 6, 2022, 12:24:39 PM

**ERROR:**

The parameter 'domain' is missing in the job configuration.

**AGENT LOG:**

[06-10-2022 12:24:39] [DEBUG] : Payload for the task:

```
{  
    "type": "computers"  
}
```

[Download full log](#)



# Interactive Viewer of Raw and Transformed Data RR-

3044 RR-1115

All tables produced by connectors, import tasks and transformation layers can be now browsed directly from the web UI. Interactive features allow for simple data shaping - filtering, sorting, paging etc. The data can be displayed as a list, or grouped by the parent task or the task type.

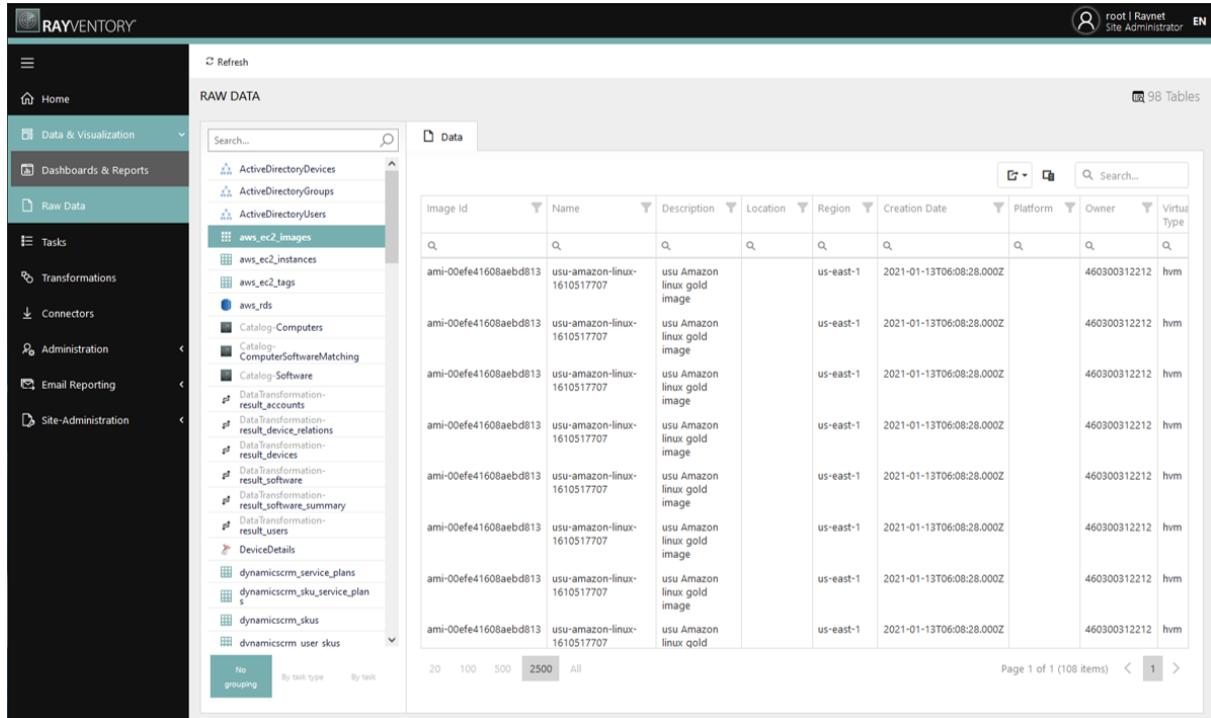
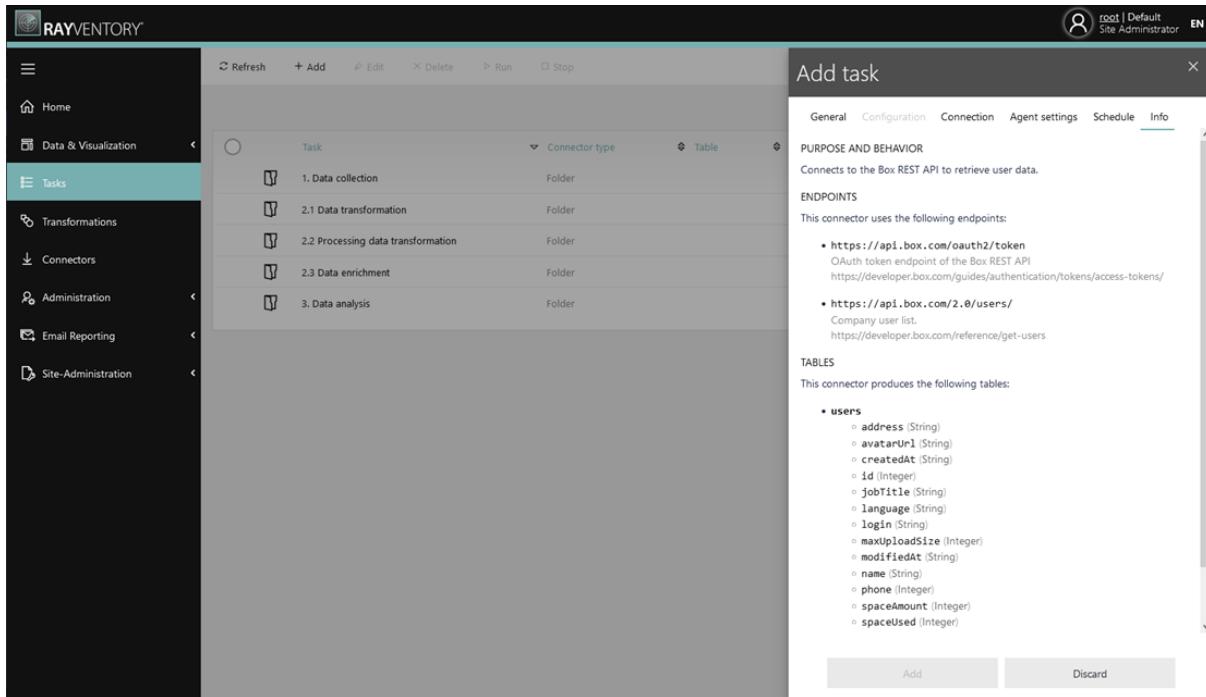


Image Id	Name	Description	Location	Region	Creation Date	Platform	Owner	Virtual Type
ami-00efe41608aebdb13	usu-amazon-linux-1610517707	usu Amazon linux gold image		us-east-1	2021-01-13T06:08:28.000Z		460300312212	hvm
ami-00efe41608aebdb13	usu-amazon-linux-1610517707	usu Amazon linux gold image		us-east-1	2021-01-13T06:08:28.000Z		460300312212	hvm
ami-00efe41608aebdb13	usu-amazon-linux-1610517707	usu Amazon linux gold image		us-east-1	2021-01-13T06:08:28.000Z		460300312212	hvm
ami-00efe41608aebdb13	usu-amazon-linux-1610517707	usu Amazon linux gold image		us-east-1	2021-01-13T06:08:28.000Z		460300312212	hvm
ami-00efe41608aebdb13	usu-amazon-linux-1610517707	usu Amazon linux gold image		us-east-1	2021-01-13T06:08:28.000Z		460300312212	hvm
ami-00efe41608aebdb13	usu-amazon-linux-1610517707	usu Amazon linux gold image		us-east-1	2021-01-13T06:08:28.000Z		460300312212	hvm
ami-00efe41608aebdb13	usu-amazon-linux-1610517707	usu Amazon linux gold image		us-east-1	2021-01-13T06:08:28.000Z		460300312212	hvm
ami-00efe41608aebdb13	usu-amazon-linux-1610517707	usu Amazon linux gold image		us-east-1	2021-01-13T06:08:28.000Z		460300312212	hvm
ami-00efe41608aebdb13	usu-amazon-linux-1610517707	usu Amazon linux gold image		us-east-1	2021-01-13T06:08:28.000Z		460300312212	hvm

## Extra Information and In-app Help for Cloud Connectors

[RR-2689](#) [RR-3302](#)

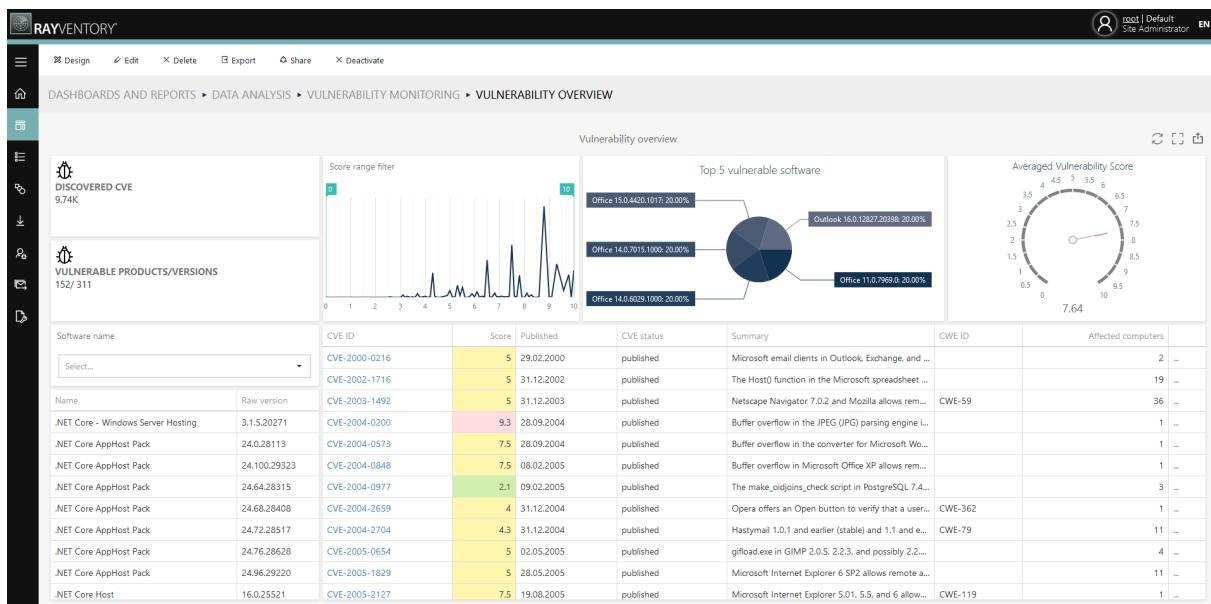
Cloud connectors now have an extra Info tab which - depending on availability - shows information, like the list of used endpoints, required permissions and resources, produced tables and column names. This information (combined with previously available hints and tooltips for various configuration parameters) makes it easier to set up each cloud connector, and makes important technical information available without navigating away from the product.



# New Default Vulnerability Management Dashboards

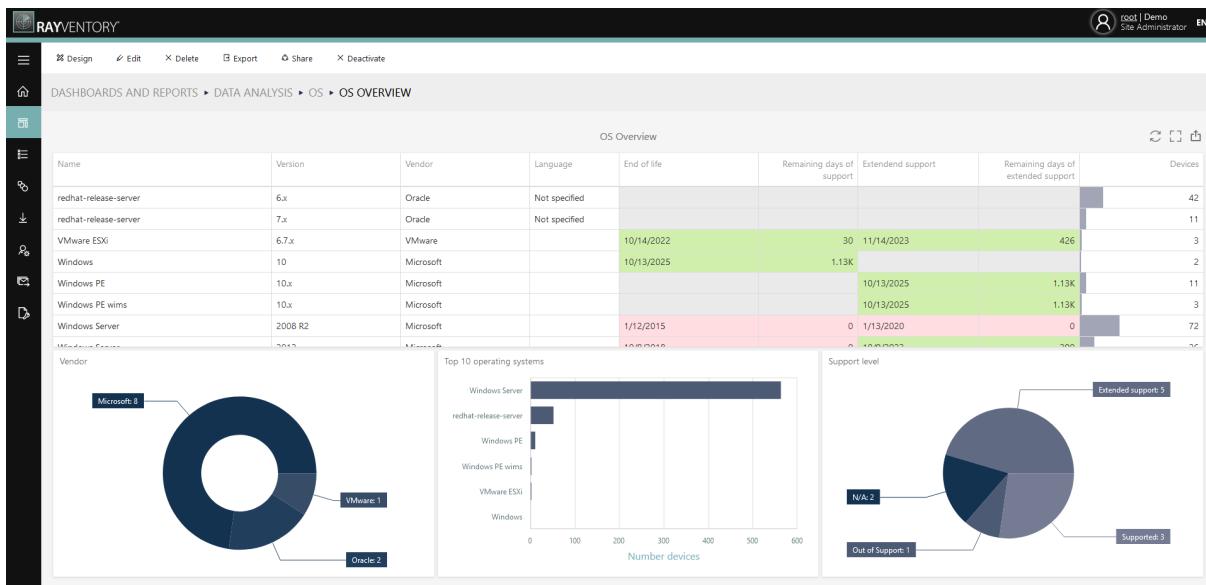
[RR-3046](#) [RR-2906](#) [RR-3114](#) [RR-3075](#) [RR-3073](#)

In this version, we reworked and optimized the default Vulnerability Monitoring Dashboard. These changes improve the performance and resolve minor issues, but also give new overviews and widgets, for example to show vulnerability status, CWE classification etc.



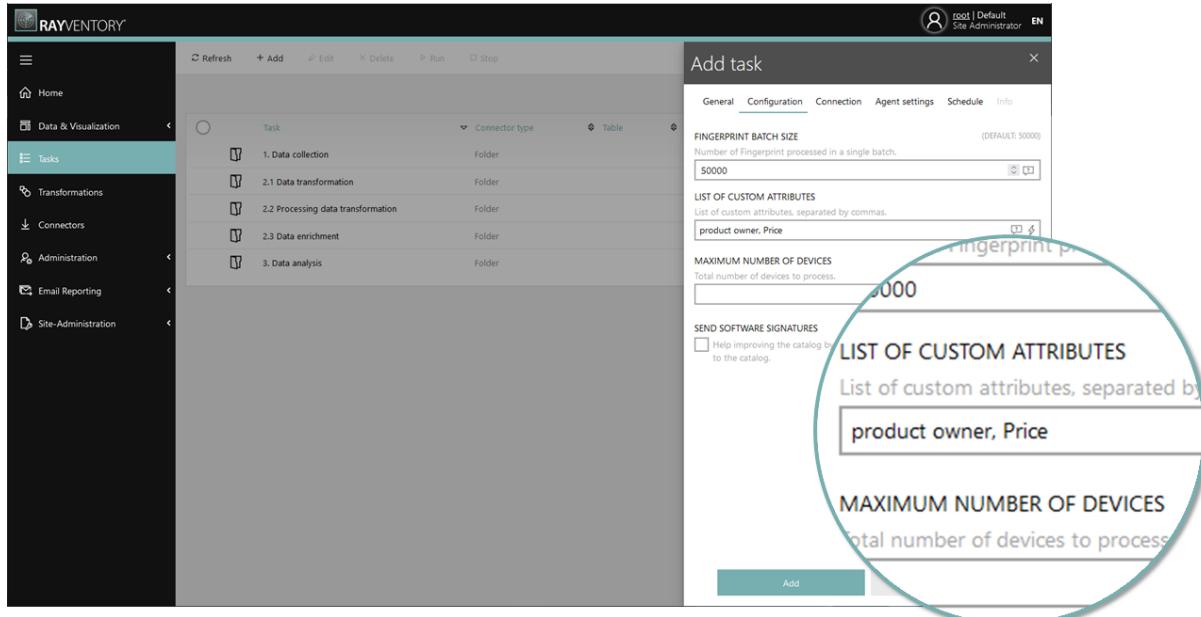
## New Default OS Reporting Dashboard **RR-2955**

New dashboards showing an overview of operating systems can be now imported via template.



## Support for Custom Attributes from Rayventory Catalog RR-3047

Rayventory Catalog connector can now be configured to specify which custom attributes should be queried. To use this feature, a private cloud or on-prem instance of the Rayventory Catalog is required.



The screenshot shows the Rayventory Data Hub interface with the 'Tasks' section selected in the sidebar. A modal dialog titled 'Add task' is open, specifically the 'Configuration' tab. This tab contains several configuration options:

- FINGERPRINT BATCH SIZE**: A field set to 50000 with a note '(DEFAULT: 50000)'.
- LIST OF CUSTOM ATTRIBUTES**: A text input field containing 'product owner, Price'.
- MAXIMUM NUMBER OF DEVICES**: A field set to 1000 with a note 'Total number of devices to process'.
- SEND SOFTWARE SIGNATURES**: A checkbox followed by a note about improving catalog visibility.
- LIST OF CUSTOM ATTRIBUTES**: A note: 'List of custom attributes, separated by commas.'
- product owner, Price**: A highlighted section of the 'LIST OF CUSTOM ATTRIBUTES' input field.
- MAXIMUM NUMBER OF DEVICES**: A note: 'Total number of devices to process'.

A large green circle highlights the 'LIST OF CUSTOM ATTRIBUTES' input field and its value 'product owner, Price'.

## Security Improvements



### Note:

The following security improvements have already been released as hotfixes for affected installations.

- Fixed a security issue with handling of user sessions, which - under rare circumstances - when using the correct timing and certain unlikely preconditions, could lead to an issue known as "session hijacking". [RR-3315](#) [ZEN-20095](#)
- Fixed a security issue (CVSS 3.1 scoring = 4.3) where a user outside of the Data Administrator group could access the list of tasks via REST API. [RR-2862](#)
- Fixed a possible XSS injection in the history of changes view, where the input from the user was not properly escaped (CVSS 3.1 scoring = 4.6). [RR-3181](#) [RR-2861](#)
- Fixed a possible XSS injection using the file storage (CVSS 3.1 scoring = 4.6). [RR-2860](#)
- Removed detailed stack trace from exceptions in case finding a task by table name fails. (CVSS 3.1 scoring = 5.3). [RR-2859](#)
- Resolved security issues [CVE-2020-9488](#), [CVE-2018-10237](#), [CVE-2021-4104](#), [CVE-2018-1000844](#), [CVE-2018-1000850](#), [CVE-2021-43797](#) in various cloud connectors. [KOT-13](#) [KOT-14](#) [KOT-15](#) [KOT-16](#) [KOT-17](#) [KOT-18](#)

## Other Improvements

- **[DATA TRANSFORMATION]** Logs for transformation tasks are now more detailed and easy to follow. For example, executed steps are referenced by their names and each step contains extra information about tables used and produced, the number of input and output rows, etc. [RR-2965](#) [RR-2992](#)
- **[DATA TRANSFORMATION]** Optimized disk space consumed by the transformation process. Depending on the size and structure of the transformation, up to 80-90% of savings can be expected. [RR-1823](#)
- **[DATA TRANSFORMATION]** When migrating from 12.2 to 12.3 Update 1, the existing transformation definitions will now be automatically migrated to the new format. [RR-2943](#)
- **[DATA TRANSFORMATION]** It is now possible to change the temporary location for transformation files and configure some further diagnostic options. [RR-2999](#) [RR-2963](#)
- **[DOCKER]** Configuring Docker containers is now much easier thanks to the idiomatic usage of environment variables. Additionally, these changes result in better login performance on both Windows and Docker platform. [RR-3004](#)
- Various improvements, resolved issues, and improved performance of the following cloud connectors:
  - 15five [KOT-62](#)
  - Adobe Admin Console [KOT-99](#)
  - AWS Organizations [KOT-68](#)
  - Azure SDK [COKCON-790](#) [KOT-2](#)
  - Big Query [KOT-77](#)
  - DocuSign [KOT-78](#)
  - Google Cloud [KOT-90](#) [KOT-103](#)
  - Intune [KOT-72](#)
  - Microsoft 365 [RR-3242](#)
  - Microsoft Azure Compute [KOT-27](#)
  - Salesforce [KOT-73](#) [KOT-50](#) [KOT-89](#)
  - SAP Qualtrics [KOT-82](#)
  - Veeva Vault [COKCON-791](#) [COKCON-750](#) [KOT-25](#)
  - VMware Airwatch [KOT-102](#) [COKCON-767](#) [KOT-9](#)
- **[DEFAULT REPORTS]** Many minor tweaks and fixes in the default set of reports. [RR-2792](#) [RR-](#)



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2800 RR-2850 RR-2900 RR-2912 RR-2914 RR-2947 RR-2948 RR-2934 RR-3301 RR-3153 RR-  
3154 RR-3137 RR-3130 RR-3125 RR-3122 RR-3118 RR-3097 RR-3089 RR-3056

- Tenant name is now displayed in the top bar next to the user name. **RR-2795**

- Improved handling of reboots by the agent. In this version, if the agent was rebooted during the execution of the task, it will restart the task once the reboot of the operating system is complete. [RR-2727](#)
- **[ECM CONNECTOR]** SCCM connector has been renamed to ECM. [RR-2938](#)
- While editing passwords (as parameters to cloud or on-prem connectors), it is now possible to reference variables. [RR-2950](#)
- Improved sorting of tasks for a human-friendly sorting of numbers. [RR-2951](#)
- On the login page, added a button to remember the user session. Visibility of this switch can be changed in the instance settings. [RR-2954](#)
- **[ACTIVE DIRECTORY]** Improved querying for users by the Active Directory connector. [RR-3026](#)
- **[DATA TRANSFORMATION]** Improved stability, minor improvements and resolved minor issues in the transformation editor UI. [RR-2918](#) [RR-2925](#) [RR-2926](#) [RR-2978](#) [RR-2913](#) [RR-2917](#) [RR-2924](#) [RR-2920](#) [RR-3088](#) [RR-3013](#) [RR-2979](#) [RR-2986](#) [RR-3030](#) [RR-3039](#) [RR-3053](#) [RR-3112](#)
- Added automatic clean-up of task history entries. This setting is configurable from the configuration file / docker environment variables. [RR-3041](#)
- It is now possible (although not recommended) to use SMTP servers without authentication. [RR-3105](#)
- A new option *Move to parent* has been added to the Task context menu. [RR-3092](#)
- Updating of cloud connectors is now possible without re-installing the product. This change is available for consultants and designed for better change management and testing. [RR-3160](#)
- **[CATALOG]** It is now possible to define a fixed timeout for Catalog operations. [RR-3228](#)
- Improved memory consumption of reports with huge number of sites. [RR-3191](#)
- Improved contrast and colors in USU Discovery Data Hub. [RR-3346](#) [RR-3347](#)
- Internal standard reports optimizations. [RR-3337](#)

## Resolved Issues

The following issues have been resolved in this build:

- **[CATALOG]** Resolved multiple issues which may lead to catalog recognition leaving some raw data unrecognized. [RR-3172](#) [RR-3174](#) [RR-3226](#) [RR-3366](#)
- Fixed an issue with improper schedule settings (daily vs hourly). [RR-2998](#)
- **[DOCKER]** Fixed an issue where saving a report in a Docker-hosted instance would show an error. [RR-3068](#)
- **[DOCUMENTATION]** Resolved contradictory information in the User Guide. [RR-2944](#)
- Improved installation and upgrade logic of Windows Installer of the agent. [RR-2730](#)
- Improved localization and non-English UI messages. [RR-2093](#) [RR-2663](#) [RR-2744](#) [RR-2882](#) [RR-2903](#) [RR-3175](#)
- The default sorting of connectors on the Connectors page is now case insensitive. [RR-2749](#)
- **[DEFAULT REPORTS]** Internal improvements of the default reports and dashboards resulting in better performance during the importing phase. [RR-2777](#) [RR-2850](#) [RR-2960](#) [RR-2967](#) [RR-3079](#)
- **[DEFAULT REPORTS] [DATA TRANSFORMATION]** Various minor fixes and improvements of the default transformation. [RR-2916](#) [RR-3016](#) [RR-3017](#) [RR-3018](#) [RR-3019](#) [RR-3025](#) [RR-3033](#) [RR-3048](#) [RR-3294](#) [RR-3139](#) [RR-3123](#) [RR-3108](#) [RR-3082](#) [RR-3060](#) [RR-3055](#) [RR-3053](#) [RR-3055](#)
- **[ECM CONNECTOR]** Improved stability and resolved parsing issues in ECM (SCCM) WMI connector. [RR-2923](#)
- Improved performance of the user interface. [RR-2923](#)
- **[DOCKER]** Fixed rendering of reports and other issues on non-Windows builds. [RR-2973](#) [RR-3303](#)
- **[DOCKER]** Fixed an issue where default database log appender would write no logs in the Docker installation. [RR-3043](#)
- Fixed issues with the Query Designer editor where tables having reserved names were not properly supported. [RR-3328](#)
- **[ACTIVE DIRECTORY]** Fixed improper character escaping in LDAP queries. [RR-3155](#)
- **[ACTIVE DIRECTORY]** AD connector now returns all groups. [RR-3085](#)
- **[REST API]** Fixed an issue with encoding of special characters returned by the REST API. [RR-3256](#)
- **[DATA TRANSFORMATION]** Fixed an issue where the transformation task (executed on the



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server) did not perform a proper clean-up of existing tables. [RR-3241](#) [ZEN-19695](#)

## Migration from Previous Versions

- This version is backward incompatible with release 12.0.
- For versions 12.1, 12.2, and 12.3, there is automated migration, which ensures that both the server and the agent can be migrated, together with user data

For detailed information about the migration process, refer to the [Installation Guide](#).

## Getting Data for USU ITSM Overview

This chapter describes how to get the data for the newly added USU ITSM connector. These steps should be executed after the update of the server instance to the newest version.

1. Start the import wizards "Import > From template..." in the library view.
2. Select dashboard "USU-ITSM-Overview" under Connectors section and enter the necessary data for a new task:
  - USUVALUEMATION\_PNP\_MATCHINGTABLE\_URL = "http://www.linux-usb.org/usb.ids.gz"
  - USUVALUEMATION\_INVENTORY\_DATA\_TABLESTART = "Inventory"
  - USUVALUEMATION\_INVENTORY\_DATA\_CONNECTION = "Data Source=(local);Initial Catalog=[DataHub];Integrated Security=True"
  - USUVALUEMATION\_DISPLAYNAME\_FQDN = 1
  - USUVALUEMATION\_DEVICE\_IMPORTID = 1
3. Add the variable USUVALUEMATION\_PNP\_MATCHINGTABLE\_URL with value http://www.linux-usb.org/usb.ids.gz manually, if it is not shown in Wizard
4. Run 5 tasks in "TASKS > USU > ITSM > IMPORT" folder to generate import data.
5. Run all 22 tasks in "TASKS > USU > ITSM > EXPORT" folder to generate export CMP data.

## Breaking Changes and Important Notes

- Default Rayventory tasks have now dependency on stored procedures, installed with AsperaConnector version **12.2.0.11458** or later. The version may be installed as a part of Rayventory server installation or separately (as a SQL file). The new version of the connector is required to use the newly added USU ITSM connector tasks.
- Some tasks and reports might need to be re-imported to benefit from changes and fixes brought by this release. This is especially valid for SQL-based tasks, where the logic is encapsulated as a SQL script in the *Task Configuration*.

- 
- The server should be always installed with the matching version of the agent. Mixing versions (for example 12.4 Data Hub and 12.1 Data Hub Agent) is not recommended and may lead to unexpected issues.



- Important changes for users migrating from version 12.2 (without Service Packs)
  - We have changed the way the report table name resolution works. The previously used separator (dot) is not used anymore in favor of a minus sign.
  - This means that the tables created by 12.2 extraction tasks followed the following naming convention `dataset.tablename`, whereas the new one puts out `dataset-tablename`. The migration script included in this build should be able to convert your existing reports to the new format, but the data will only be available once all tasks are restarted. You may also do the renaming on your own.

# System Requirements

## Hardware Requirements

### RayInventory Data Hub

Requirements when SQL Server and RayInventory Data Hub are installed on the same machine:

- Min. 4 CPU cores
- Min. 8 GB of RAM
- Min. 20 GB of disk space

Requirements when only RayInventory Data Hub is installed on the machine:

- Min. 4 CPU cores
- Min. 4 GB of RAM
- Min. 10 GB of disk space

### RayInventory Data Hub Agent

- CPU: Intel Core i5
- RAM: 4GB
- Disk space: 500 MB

## Software Requirements

The following are the minimum software requirements for the installation and running of Rayventory Data Hub Server:

- Microsoft Windows Server 2012 R2 or higher
- IIS 8 or higher
- Microsoft .NET 6.0 – Windows Server Hosting Bundle (<https://dotnet.microsoft.com/en-us/download/dotnet/6.0>)
- Microsoft SQL Server 2016 or SQL Server Express 2016



### Note:

In order to run hosting bundles, the “Universal C Runtime” is required. Modern Windows Servers should already have it, but it may be required to download for older ones. The oldest supported OS is currently Windows Server 2012 R2. More information can be found here: <https://support.microsoft.com/en-us/help/2999226/update-for-universal-cruntime-in-windows>

The following are the minimum software requirements for the installation and running of Rayventory Data Hub Agent:

- Windows Vista SP2 / Windows Server 2008 R2 or newer
- Microsoft .NET 6.0 – Windows Server Hosting Bundle (<https://dotnet.microsoft.com/en-us/download/dotnet/6.0>)
- Java / OpenJDK version 11 or newer is required to execute data collection from SaaS platforms

## Supported Web Browsers

- Microsoft Edge version 80 and newer
- Mozilla Firefox version 74 and newer
- Google Chrome version 80 and newer

## Additional Information

Visit [www.raynet.de](http://www.raynet.de) for further information on RayVentry Data Hub, and take a look at the additional resources available at the Knowledge Base: <http://raynetgmbh.zendesk.com/>.

Raynet is looking forward to receiving your feedback from your RayVentry Data Hub experience. Please contact your Raynet service partner or use our [Support Panel](#) to add your ideas or requirements to the RayVentry Data Hub development roadmap!



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