

Metasys Performance Verification Tool (PVT) User Guide

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Introduction

This document contains a high-level overview of the Performance Verification Tool (PVT) and detailed quick reference information for field personnel.

You can use PVT in the following modes:

- Autoscan mode

Autoscan mode is setup on a customer's Metasys Server machine. Configure PVT to automatically run scheduled scans. Unless the site uses a Split Server configuration, then PVT is configured for Autoscan on the SCT machine. PVT syncs the scan data to the cloud. The scan data is available in the PVT dashboard. You can also download reports from the cloud dashboard. The data that is retrieved from a PVT scan is used by OpenBlue Remote Diagnostics and Reporting (OB-RDR) deployments. If you install PVT as part of a OpenBlue Remote Diagnostics and Reporting (OB-RDR) deployment, you must configure PVT in Autoscan mode.

- Interactive mode

Interactive mode is used by Johnson Controls technicians and is set up on Johnson Controls machines with a Technician license. You can create scans, generate reports, save a scan in a PVT file, and view and export scan data on an as-needed basis.

Depending on your license, PVT starts in either Autoscan mode or interactive mode. See [Licensing PVT](#).

Use PVT for the following tasks:

- Scan supervisory devices and apply inventory and performance rules based on site preferences to raise awareness to potential issues.
- Identify the equipment and system controls.
- Determine the overall health of the Metasys system. See [Table 1](#).
- Generate reports from the PVT Client or Cloud Dashboard.
 - For more information about generating reports in interactive mode in the PVT Client, refer to [Generating reports](#).
 - For information about generating reports in the Cloud Dashboard, refer to [Generating reports from the Metasys PVT Cloud Dashboard](#).

Note: PVT is supported in Metasys releases that include the following component versions:

- Engine Site Director: 8.0 or later
- ADS/ADX: 6.5 or later. Auto upload and dbexport requires 9.0.
- Open Application Server (OAS)
- Child engines: 5.0 or later

Table 1. Overall system health

Category	Description
Performance and savings opportunity	This category measures the customer's equipment controls and performance, and identifies opportunities for improvements that could lead to energy savings.
Maintenance and reliability	This category measures how well the hardware and network are maintained, highlights at-risk devices and trunks, and makes recommendations for improving the reliability of the building automation system (BAS).
Comfort and health	This category measures how accurately the BAS meets and maintains comfort and health requirements, and identifies equipment that frequently have variations between actual and setpoint.
Security and standards	This category measures the security of the BAS network, identifies any areas of potential risk, and makes recommendations on how to decrease the likelihood of a security threat.
Feature assessment	This category measures how the customer uses their Metasys system and features.

Note: It is best practice to validate all reports and PVT results before sharing with the customer.

Summary of changes

The following information is new or revised for PVT Release 4.5:

- Updated [Metasys Performance Verification Tool Cloud Dashboard](#) to include enhancements and new features in the Cloud Dashboard.
- Added a new section, [Creating a site from the Metasys PVT Cloud Dashboard](#).
- Added a new section, [Configuring Metasys server and engine Logs settings from the Cloud Dashboard](#).

- Updated [Entering site configuration and scheduled scan data](#) to document changes in the procedure and to include a note regarding a separate scheduler for Metasys server and engine logs.
- Updated [Creating a new site](#) to document changes in the procedure.
- Added a new section, [Retrieving Metasys server and engine logs](#)
- Added a new section, [Mapping physical locations](#).
- Updated [PVT hardware and software requirements](#).
- Added a new section, [Setting up the EU Cloud Dashboard](#).
- Updated [Installing PVT](#), to include the European PVT Cloud Dashboard URL.
- Updated [PVT user interface](#) to include the updated PVT user interface in Autoscan mode.

PVT hardware and software requirements

To install PVT successfully, we recommend the following hardware and software configurations:

- Desktop operating systems:
 - Windows® 11 Pro and Windows® 11 Enterprise Editions (version 22H2, 23H2) (64-bit)
 - Windows® 10 Pro and Windows 10 Enterprise Editions versions 22H2 (64-bit)
- Server operating systems:
 - Windows Server® 2022
 - Windows Server® 2019 (version 1809 or later) (64-bit)
- Connectivity
 - Internet connectivity of 5 Mbps or greater to sync PVT scans to cloud without interruption (Autoscan mode)
- Configuration:
 - <15 Engines: 8 GB RAM
 - 15-25 Engines: 16 GB RAM
 - 25 or more engines: 32 GB RAM

Note: If PVT is installed on a Metasys Server machine, ensure an additional 8 GB of RAM is available to run PVT, beyond the standard requirements for Server software.

- 100 GB disk space
- Microsoft .Net 4.7.2 or later
- Microsoft Office® 2010 or later
- Microsoft Visio® 2013 or later for exporting Riser view

Data Points in Autoscan mode

When PVT is installed on a Metasys server, the following server machine data points are captured by PVT:

- Server Machine RAM usage
- Server Machine CPU usage
- USB port status
- OS version
- Hard drive free space
- Firewall status
- SQL version

Note:

- If the Software Manager and SQLite v3.27.2 do not exist on the computer, the PVT installer automatically installs them during PVT installation. You do not need to remove any other SQL Server version that is installed on the computer.
- If you install PVT on a server that runs ADS or ADX, the system requirements must match those outlined in *Application and Data Server (ADS) and Extended Application and Data Server (ADX) Product Bulletin (LIT-1201525)*.
- PVT UI requires minimum resolution settings 1920 x 1080. For the best viewing experience, set size of text, apps and other items to 100%.

Installing PVT

Before you begin

Before you install PVT, verify that you have the following information:

- A Johnson Controls Global ID, a connection to the internet, and a supported machine.
- Administrator permissions. If you do not have administrator permissions, an error appears. Contact your local IT department to receive the appropriate permissions.

Important: PVT does not support the reading of scan data from any PVT release before 3.1. Release 2.0.3 is a special version of PVT that you can use to read scans taken with older versions of PVT and to generate reports. You must not use 2.0.3 to take

new scans of a site unless you need to perform a PMI scan, which is not supported in version 3.1 and above.

Note:Ensure that you close Software Manager before you install PVT.

Note:If you want to perform a custom installation on a drive other than C:\, ensure that you uninstall any previous version of PVT, and delete the Metasys Performance Verification Tool folder under both C:\Program Files (x86)\Johnson Controls and C:\ProgramData\Johnson Controls. You cannot perform a custom installation if you upgrade PVT directly.

Note:Check with customer or the IT department for anti-virus or anti-malware software that may be installed on your machine. Installation of PVT may fail due to certain software.

Procedure

Complete all or part of the following steps according to your installation or upgrade scenario:

- If you are installing PVT 4.5 for the first time, complete steps 5 to 8.
- If you are upgrading to PVT 4.5 from version 3.1 or from a previous 4.x version, complete steps 1, and 5 to 8.

1. Ensure firewall (Outbound) port 443 is open in order for the tool to communicate with the cloud.

Note:If the machine on which PVT is being installed that does not receive automatic Windows system updates, additional configuration steps may be required for the cloud connection to operate. Please contact your local Field Support Center.

2. Perform a backup of all the projects as follows:

- Export the projects created as .PVT files.
- Save synchronized projects from the following location: C:\Program Files (x86)\Johnson Controls\Metasys Performance Verification Tool\CreatedPVTs.

3. Uninstall Metasys Performance Verification Tool from the computer.

Note:Do not cancel the uninstallation process or shut down your machine during the process to avoid malfunctioning of the application.

4. When the uninstallation is complete, delete the Metasys Performance Verification Tool folder under C:\Program Files (x86)\Johnson Controls\ and C:\ProgramData\Johnson Controls.

5. Check Microsoft Edge Enhanced Security configuration on the machine. Perform the following steps to ensure that the security settings do not restrict access to PVT.

Note:It is required to perform these steps in Edge even if the Windows machine uses a different browser as the primary, such as Chrome or Firefox. This will ensure that the installed PVT client functions as intended.

Note:It is best practice to perform these steps even if Enhanced Security is disabled. This prevent issues in the event that the setting is enabled at a later date, or customer network policies change in the future.

Note:For more information about enhanced security configuration, refer to the [Microsoft documentation](#).

a. Add the following sites to the Manage enhanced security for sites list:

- [https://\[*.\]microsoft.com](https://[*.]microsoft.com) (login service)
- <https://aadcdn.msauth.net> (Azure cloud)
- <https://login.microsoftonline.com> (login service)
- <https://jcib2c.b2clogin.com> (login service)
- <https://pvtjci.com> (PVT cloud)
- <https://autologon.microsoftazuread-sso.com> (login service)
- <https://ocsp.digicert.com> (Digicert certificate validation)
- <https://ocsp.digicert.com> (Digicert certificate validation)
- <https://aadcdn.msauthimages.net> (Azure cloud)
- <https://pvtprod-eu-api.pvt-jci.com> (Europe PVT Cloud Dashboard)
- <https://device.login.microsoftonline.com> (login service)

6. Enable Javascript for the default browser of your local machine.

Note:For more information, refer to <https://www.enable-javascript.com/>.

7. Navigate to the Johnson Controls [License Portal](#), log on with your Johnson Controls credentials, download the installer for PVT 4.5, extract the zip file, and run the executable file.

8. Follow the installation wizard to complete the installation.

Note:To ensure a successful installation, do not shut down your machine or cancel the installation process when it has started.

Custom installation on a drive other than C:\ was introduced at PVT 4.2. With this method, you can select any drive in your computer for the database location and installer file. To install PVT on a drive other than C:\, complete the following steps:

a. When the installation wizard opens, click Custom.

- b. On the next window, if you want to install PVT to a custom location, click **Browse** and select a location. The default filepath that displays is C:\Program Files (x86)\Johnson Controls.

Note: If you provide an invalid file path, you receive the error The users folder cannot be selected.

9. Activate a valid license with the Software Manager. See [Licensing PVT](#).

Note: To use the automated scans feature, the PVTAUTOSCAN 4.x license must be active.

10. Run the application to verify the license is now activated.

If you use PVT in Autoscan mode, see [Using PVT in Autoscan mode in the PVT client](#). If you use PVT in interactive mode, see [Using PVT in interactive mode in the PVT client](#).

Licensing PVT

Depending on your license in the Software Manager, PVT runs in either automatic scan mode or interactive mode.

Retrieving a Technician License for Interactive mode

About this task

If you have a Technician License, PVT can only run in Interactive mode. To retrieve and activate a Technician License, complete the following steps:

Procedure

1. Navigate to the Johnson Controls [License Portal](#) and log on with your Johnson Controls user name and password.
2. Under the My Tech Licenses tab, click the New Tech License button.
3. Search and select the product for PVT.
4. Accept the terms and conditions.

Note: When the system generates a request to create a Technician License, the first two requests are auto approved and any subsequent requests are sent to the employee's manager or direct supervisor for approval.

5. When the License is approved, navigate to the My Tech Licenses tab and click the actions list.
 - a. To retrieve the product key to use for license activation in online mode, click View Product Key and copy the product key from the pop up window.
 - b. To download the file for offline license activation, select Start a New Offline Activation and provide the system ID of the machine, and click Next. Verify the machine tag and click Next. Download the file for offline activation.
6. Navigate to the Software Manager and click Add License.
7. In the pop up window, click Online with product key or Offline with a License Activation File.

Retrieving a customer license for Autoscan mode

About this task

If the PVTAUTOSCAN 4.x license is active, PVT runs in Autoscan mode, even if another PVT license is also available.

Note: The machine that is running PVT must have an internet connection in order for PVT to open in Autoscan mode.

To retrieve and activate your license for PVT for Autoscan mode, complete the following steps:

Procedure

1. Place an order for CW-PVT-0 so that a licensable copy of PVTAUTOSCAN 4.x can be generated through the license portal.
2. Navigate to the Johnson Controls [License Portal](#) and log on with your Johnson Controls user name and password.
3. Search for the order number in the search bar on the upper right and click on the order number.
4. On the order information screen, locate the product code CW-PVT-0 and ensure that the version of the product is 4.2 or later.
5. Click the Actions dropdown and choose a license activation method:
 - a. To retrieve the product key to use for license activation in online mode, click View Product Key and copy the product key from the pop up window.
 - b. To download the file for offline license activation, select Start a New Offline Activation and provide the system ID of the machine, and click Next. Verify the machine tag and click Next. Download the file for offline activation.
6. Navigate to the Software Manager and click Add License.
7. In the pop up window, click Online with product key or Offline with a License Activation File.

Licensing for Fault Detection and Diagnostics (FDD) and API

About this task

FDD is a licensed add-on feature to the Metasys Server software products. This feature identifies building system-related faults and lists them in order of severity. It leverages Johnson Controls-defined rules and a semantic data model to ease configuration. To capture Fault data from Metasys UI with PVT, licenses are required for both Fault Detection and the Monitoring and Commanding API.

Procedure

1. Obtain the Fault Detection from the [License Portal](#) under the Software tab.
2. To import the package files double-click on the package collection file or navigate to Start > Johnson Controls > Package Importer and select the package file. The Package Importer displays the message **Finished importing device** when the import is complete.
3. Click Add License in the Software Manager to license FDD software. Choose an activation method: Online with a Product Key or Offline with a License Activation File. When added, the licenses appear in the License Inventory.

Note: Repeat these steps to license Monitoring and Commanding API, to capture fault data with PVT when you perform a scan as an API user.

Creating a user who can access the Metasys REST API

About this task

When you set up Autoscan in the PVT client on a Metasys Server machine, it is best practice to use a dedicated Metasys user account for that purpose. In order to scan Fault data from PVT, you require a Metasys Rest API user type in Metasys UI. To create a user with Metasys Rest API access, complete the following steps:

Procedure

1. Log on to Metasys UI as an Administrator.
2. Open User Management.
3. In the default tab (Users), tap or click + USER. The Create New User window opens.

Note: On a smartphone, tap + to create a new user.

4. Complete the fields in the Create New User window.
5. Tap or click CREATE AND EDIT to create the user and further edit the user details

Note: If you use a MAC platform, double-click CREATE AND EDIT to save the details.

6. In the User Details tab, select API from the Access Type drop-down menu.
7. Tap or click SAVE
8. Log out of Metasys UI.
9. Log on to Metasys UI with the new Metasys Rest API user account and accept the terms and conditions.

Note: To capture Fault data in PVT its mandatory to log on as a Metasys Rest API user in Metasys UI and accept the terms and conditions.

10. Log out of Metasys UI.

Note: You can edit the category access details in the Category Access tab in Metasys UI. Ensure the API user has View permission selected in order to perform a scan. For more information, refer to the *Categories and permissions* section in *Metasys UI Help (LIT-12011953)*.

Metasys Performance Verification Tool Cloud Dashboard

For information about how to sign up and log on to the Cloud Dashboard, refer to [Signing up for the Metasys Performance Verification Tool Cloud Dashboard](#).

You can use the Metasys PVT [Cloud Dashboard](#) to complete the following tasks:

- Use the Map Physical Locations tab from the Site Settings menu to perform one to one or one to many mapping of sites or devices with NxGen or Service Max sites. For more information, refer to [Mapping physical locations](#).
- PVT 4.5 and later client you can sync scans to a separate EU Cloud Dashboard based on configuration that you can set from the Client application.
 - When you perform a scan from the PVT Client, it syncs the scan to respective cloud based on Country selection within the scan.
 - If no country is selected, by default the scan syncs to the US Cloud Dashboard.
 - You can access the EU Cloud Dashboard [here](#).
 - For more information, refer to [Setting up the EU Cloud Dashboard](#).
- Create a site. Refer to [Creating a site from the Metasys PVT Cloud Dashboard](#) for more information.

- From PVT 4.5, you can configure Metasys Server log levels from Site Settings and download server and engine logs at site level based on upload date and time. You can view Metasys Server and engine logs of the site under a separate tab on the Cloud Dashboard.
 - In order to view engine logs, you must perform engine authentication in the PVT client application.
 - You require PVT 4.5 Autoscan.
- From PVT 4.5 you can configure a site on the Cloud Dashboard with Autoscan mode. When you view a site on the Cloud Dashboard, you can modify scheduler and supervisory settings from Site Settings. Refer to [Configuring Metasys server and engine Logs settings from the Cloud Dashboard](#) for more information.
 - You can modify site configuration from the Cloud Dashboard with Autoscan sites only. Modify the scheduler time and changes in supervisory selection and changes are picked up by the PVT client application in next instance of scheduled scan.
- View site timeline over a period of time from Site Settings to view site progress related to Inventory data, server information, critical issues, site parameters, and status.
- Use the enhanced Scan Results excel export to view Server Details and Latest Available Firmware details for supervisory engines.
 - On the Inventory Analysis sub sheet under the Metasys Server Information, you can view server information related to Hard Drive free space, Firewall Status, USB Port status, and Server Machine CPU and RAM usage.
 - On the Supervisory Devices, you can view the latest available firmware version for engines.
- Use the Site Assessment report to view Supervisory CPU and Board temperature limitation rules based on different engine series captured from the scan.
- View different times zones for scans on the View Scan List page.
- Sync existing PVT site with a ServiceMax ID, Work Order Number, or search site.
- Chat through Microsoft Teams embedded in the Dashboard at site level.
- Reprocess existing scans with updated Inventory, Performance, or Preference rules.
 - The Cloud Dashboard identifies scans which are required to be reprocessed based on outdated Inventory, Performance, or Preference rules on the View Site page. You can also click Reprocess Scan from the Actions column. For more information, refer to [Reprocessing scans from the Metasys PVT Cloud Dashboard](#).
- View the latest available firmware for scanned controllers as part of continuous updates of Inventory rules.
- View the Estimated versus Actual duration of a scan.
 - The client shows total scan duration for the entire site or engines selected for scanning based on project type and displays the estimated scan duration for each engine based on current loading and response time.
 - You can review the estimated versus actual duration of a scan in the Dashboard integrated Power BI report under Inventory data
- View Fault data captured from the PVT client with a Metasys User account with rights to Metasys API.
 - The Dashboard provides an interactive separate Faults view where you can review the Fault data. For more information, refer to [Metasys PVT Cloud Dashboard interactive view](#).
- Configure PVT log levels from the dashboard for an Autoscan site and upload the logs for PVT to the dashboard to scan.
 - The log levels are basic, intermediate, and advanced, with an option to specify the number of scans to run at an elevated level before automatically reverting the scan level back to basic.
 - When you configure and save the log settings, the client generates logs and uploads them to the dashboard. For more information, refer to [Configuring PVT Logs Level settings from the Cloud Dashboard for a Metasys Site](#).
- Use the View Sites page to search for sites based on Name, Branch, Branch number, address, Country, Project Name, Technician, PVT Site Name, NxGen Site Name, Service Max Site Name, Metasys Version, and SCT Version.
- Export PVT reports to Microsoft® Excel. This includes Scan results, taking estimates, and tasking lists.
- Download the OpenBlue Site Assessment Report. The report highlights issues that can impact Open Blue site readiness and categorize issues as either critical or a warning and provides recommendations to resolve the issue. You can download the report in Word or Excel format.
- Edit site details such as site name, address, city, state, zip code, country, and branch.
- View history of changes done by a user within the site.
- View Bus health and BACnet protocol diagnostic data in the scan results excel export.
- Use the Resource Library to access the User Guide, view the history of PVT releases, and navigate to the License Portal.
- Access Inventory data and Feature Assessment data reports. Refer to [Inventory data](#), [Feature Assessment data](#), and [Performance data](#) for more information about this data.
- Generate customer facing pdf reports. You can generate Inventory data, Feature Assessment data, and Performance data reports.
- Add and remove favorites from the Cloud Dashboard. You can now save sites as favorites to find scans associated with sites that you visit frequently.
- Upload PVT and DBexport files to the cloud. Use this to manually upload PVT files, and DBexport files to the cloud repository in cases where a machine or site does not have access to the internet.
- Download .pvt files from the cloud. You can download a .pvt file to a local machine and generate customer facing reports by opening the scan in the PVT client.
- In autoscan mode, PVT supports backing up SCT archives (DBexport file only) to the cloud. This is only possible when SCT and PVT are installed on the same machine.
- Measure MUI adoption, within a margin of error, for a given site. This includes the following metrics:
 - Count of spaces by type
 - Number of equipment objects
 - Number of points mapped to equipment objects
 - Equipment to space ratio
 - Ratio of controllers to equipment

- Count of graphics by type
- Metasys user login data

The available metrics vary depending on which version of Metasys is installed at your site.

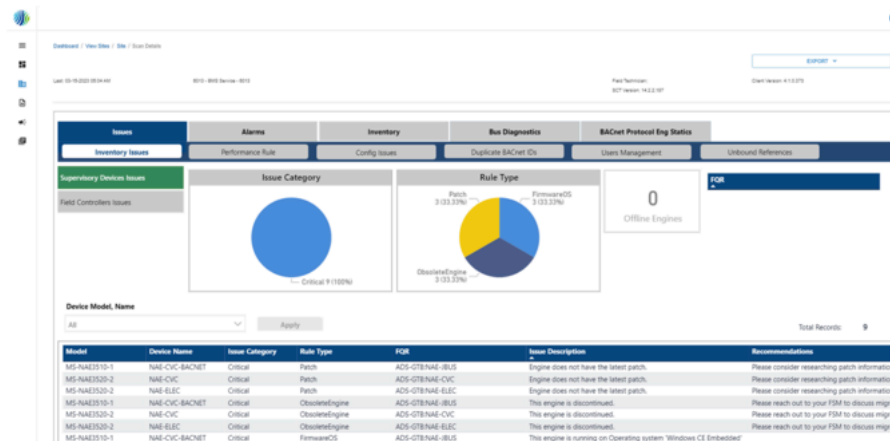
Note: In order for PVT to pull MUI metrics from your site, you must use a Metasys user account that is assigned to the Access Type called API Access. For more information, refer to [Creating a user who can access the Metasys REST API](#).

When you sign up for the Dashboard, you can choose only the Technician role. The Technician role has access only to the site of the branch that you select during the sign up process. You can request access to other branches in Account Settings.

The SME role has access to all sites across a global region. If you require an SME role, send an email request to pvt-support@jci.com and copy your manager.

The Account Representative role has access to all sites across a country. You can request an Account Representative role in Account Settings.

Figure 1. Metasys Performance Verification Tool Cloud Dashboard



Signing up for the Metasys Performance Verification Tool Cloud Dashboard

Procedure

1. Click SIGN UP.
2. On the next window, fill in the required fields.
3. Click CONTINUE to send an email to your line manager for approval.

Results

When your manager approves access, you can log on to the Cloud Dashboard with your Global ID and password.

Note: When you sign up to the Cloud Dashboard you can choose between Technician or Account Representative roles. The Technician role provides access only to scans associated with the branch you select during sign up. The Account Representative role provides access to all scans within the selected country. If you want a different role, such as SME, indicate that in the email to PVT support group to pvt-support@jci.com.

Metasys PVT Cloud Dashboard interactive view

The Cloud Dashboard provides an interactive view where you can review issues, alarms, inventory, bus diagnostics and BACnet protocol statistics.

To access the interactive view, complete the following steps:

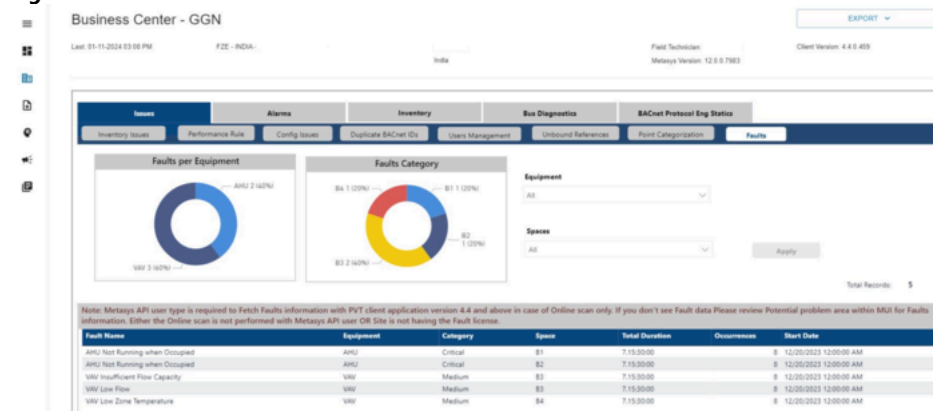
1. From the menu, select View Sites.
2. Search for your site and select View Site under the Actions menu.
3. Search for your scan and click the scan date.

Note: The scan date and time displayed on the View Site page are specific to the browser time zone.

The Dashboard opens an interactive view, where you can review the data captured in the scan.

From PVT 4.4, a separate Faults view is available. You require Metasys Rest API user type in Metasys UI and a Fault Detection license to capture Fault data with PVT. For more information, refer to [Licensing for Fault Detection and Diagnostics \(FDD\) and API](#) and [Creating a user who can access the Metasys REST API](#).

Figure 1. Fault Data



Creating a site from the Metasys PVT Cloud Dashboard

About this task

If you wish to use PVT with Autoscan or Interactive mode, first create the site in the Cloud Dashboard in order to export the details in a site config file. To create a site from the Cloud Dashboard, complete the following steps:

Procedure

- From the menu, click Create Site.
- On the next window, search for the site to check if it already exists in PVT to avoid site duplication. You can search by Site Name, Branch, Branch Number, Address and Country. If the site does not appear, select CONTINUE and proceed to step 3.
 - If the site does appear, select the site in the search results to view the site in the PVT dashboard.
 - Check to see if the site is syncd with NxGen.
 - If the site is not syncd with NxGen, select Site Settings under Site Options.
 - Select Sync Now to sync the site through the Site ID or Site Name and search for sites.
 - When the site is found, select CONFIRM SITE.
 - If the site is syncd with NxGen, proceed to step 8.
- On the next window, search for the site in NxGen or Service Max. You can search by Site Name, Site ID, Work Order number, Address, and Country. If the site does not appear, select CREATE SITE. If the site appeared in step 1, but does not appear in the NxGen or Service Max search, ensure you sync it with NxGen as outlined in step 2, then proceed to Step 8.
- On the next window, enter the the following data:
 - Enter the name of the site in the Site Name field, and specify the full address of the site in the Address, City, State/Province, and Zip/Postal Code fields.
 - Select the country where the site is located from the Filter Branch by Country list.
 - Select the branch from the Branch list.
 - Enter the Customer Name and System ID.
- Click CREATE SITE.
- When you receive the Do you want to Register a site based on the Inputs provided. Please select Yes to continue or No if you want to revisit the Inputs provided message, click YES to continue.
- When the Site Settings page appears, ensure the site details are correct.
- Click DOWNLOAD SITE CONFIG FILE to retrieve the latest data from the site config file and copy the Site Passphrase. The Site Passphrase is unique for a site and you must in the Site Passphrase along with the Site Config file to onboard the client Application in Autoscan mode or perform a manual scan in Interactive mode.

Reprocessing scans from the Metasys PVT Cloud Dashboard

About this task

The Cloud Dashboard identifies scans which can be reprocessed based on outdated Inventory, Performance, or Preference rules on the View Site page. To reprocess a scan, complete the following steps:

Procedure

- From the menu, select View Sites.
- Search for your site and select View Site under the Actions menu.
- Search for your scan and select Reprocess Scan from the Actions menu.
- On the Confirm Reprocessing of Scan window select the rules that you want to reprocess, and click APPLY AND REPROCESS.

Figure 1. Confirm Reprocessing of Scan window

Confirm Reprocessing Of Scan

×

Reprocess scan with Updated Performance rule only available when scans pushed from Client application 4.2 and above

Please select what type of rules you would like to reprocess the scan from 03-14-2023 with.

Updated Inventory Rules

Last Updated : 03-14-2023

Updated Performance Rules

Last Updated : 03-14-2023

Updated Inventory & Performance Rules

Last Updated : 03-14-2023

CANCEL

APPLY AND REPROCESS

Generating reports from the Metasys PVT Cloud Dashboard

Procedure

1. From the menu, select View Sites.
2. Search for your site and select View Site under the Actions menu.
3. Under the Actions menu on the next page, choose the report you want to download.

Figure 1. Report options from the Actions menu in the Cloud Dashboard

The screenshot shows the Metasys PVT Cloud Dashboard. The top navigation bar includes 'Dashboard / View Sites /', 'SITE SETTINGS', and 'SITE PREFERENCES'. The main content area displays a table of scans. The 'Actions' menu for a selected scan is open, showing the following options: Reprocess Scan, Download Inventory Analysis Report, Download Performance Analysis Report, Download Feature Assessment Report, Download Scan Results - Excel, Download Tasking Estimate - Excel, Download Tasking List - Excel, Download Site Assessment Report - Word, Download Site Assessment Report - Excel, and Download PVT File.

Editing Site Preferences

Procedure

1. From the menu, select View Sites.
2. Search for your site and select View Site under the Actions menu.
3. Search for your site and select Site Preferences under the Actions menu.

Figure 1. Site preferences

The screenshot shows the 'Site Preferences' page in the Metasys PVT Cloud Dashboard. The page is divided into two main sections: 'Global' and 'Site'. The 'Global' section contains preferences for 'Pattern', 'Instance Number', 'Units of Measure', and 'Client Type'. The 'Site' section contains preferences for 'Field Point List', 'Field Point Alias', and 'Field Point Filter'. The 'Field Point List' section is currently active, showing a list of field points with columns for 'Field Point List', 'Field Point Alias', and 'Field Point Filter'. The 'Field Point List' column is expanded, showing a list of field points with their corresponding aliases and filters.

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4. From the Site Preferences screen, you can edit point information, Equipment Type, and Rule preferences for your site.

Configuring PVT Logs Level settings from the Cloud Dashboard for a Metasys Site

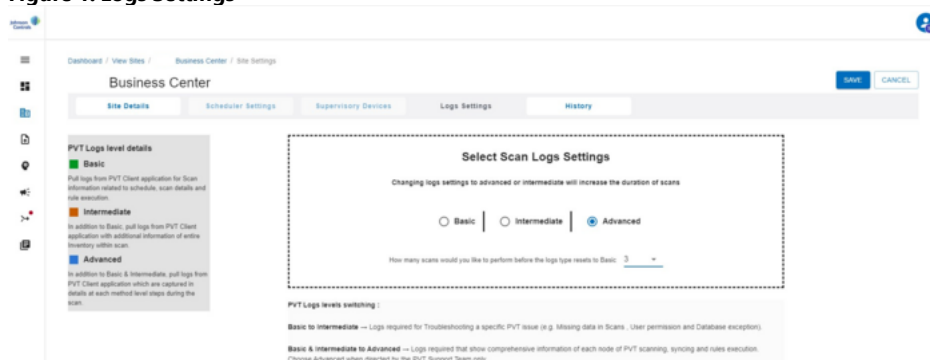
About this task

You can only configure PVT logs level settings from the PVT Cloud Dashboard for sites with PVT 4.4 or later in Autoscan mode.

Procedure

1. From the menu, select View Sites.
2. Search for your site and select Site Settings under the Actions menu.
3. Click the Logs Settings tab.
4. From the Logs Settings tab, you can choose Basic, Intermediate, and Advanced with an option specify the number of scans to run at an elevated level before automatically reverting the scan level back to basic.

Figure 1. Logs Settings



Configuring Metasys server and engine Logs settings from the Cloud Dashboard

About this task

You can only configure Metasys server and engine logs settings from the PVT Cloud Dashboard for sites with PVT 4.5 or later in Autoscan mode.

Procedure

1. From the menu, select View Sites.
2. Search for your site and select Site Settings under the Actions menu.
3. Click the Metasys Server Logs Settings tab.
4. From the Metasys Server Logs Settings tab, you can choose Basic, Intermediate, and Advanced with an option to specify the number of scans to run at an elevated level before automatically reverting the scan level back to basic.

Mapping physical locations

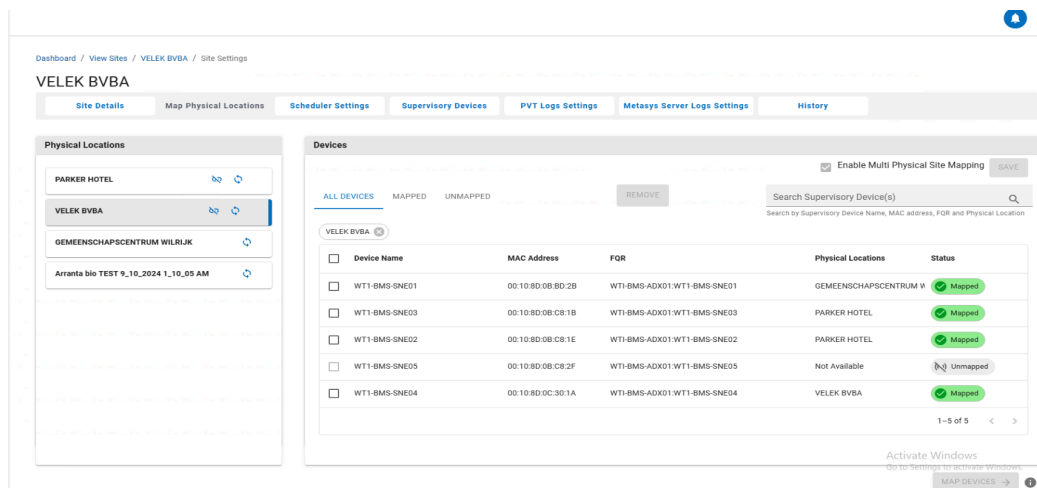
About this task

From PVT 4.5, you can map a PVT Site with one to one mapping or one to many mapping with NxGen or Service Max sites. To map physical locations, complete the following steps:

Procedure

1. From the menu, select View Sites.
2. Search for your site and select Site Settings under the Site Options menu.
3. Click the Map Physical Locations tab.
4. Under Devices, you can search for devices under ALL DEVICES, MAPPED, UNMAPPED, or use the Search Supervisory Device(s) field. You can search by Supervisory Device Name, MAC address, FQR, and physical location.

Figure 1. Map Physical Locations tab



5. Check Enable Multi Site Mapping in order to select individual devices and map to a physical location.

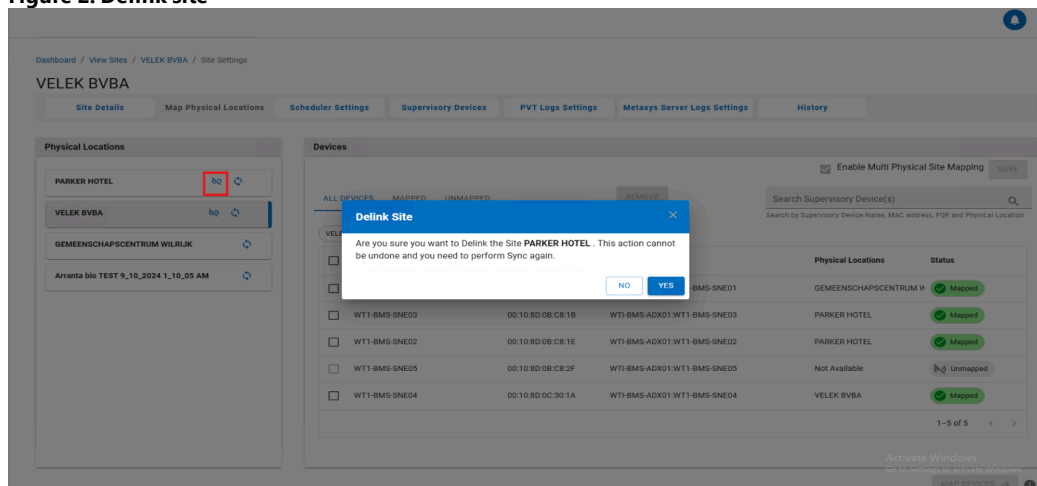
Note: If you do not check Enable Multi Site Mapping you must perform one to one mapping under the UNMAPPED devices.

Note: If you select Enable Multi Site Mapping, you cannot revert back to one to one mapping. If you do wish to revert back to one to one mapping, contact the PVT support team @pvt-support@jci.com.

6. Select the devices you want to map and click Map Device(s).

Note: To remove all devices from a physical location use the Delink icon under Physical Locations.

Figure 2. Delink site



Note: If you select a physical location as the primary physical location in Site Settings you cannot remove all devices until it is removed as primary the site and delinked.

Note: When you set a primary physical location, the Site demographic details are updated accordingly and disabled.

Note: When you perform any changes in Map physical location, the changes appear under the History tab in Site Settings.

Using PVT in Autoscans mode in the PVT client

Use the Autoscans mode in the PVT client to schedule scans to automatically occur at a defined interval. The data is uploaded to the PVT cloud and is available to view through PVT Dashboard reports. Autoscans mode is setup on a customer's Metasys Server machine.

In the local installed PVT Client, you can perform on-demand scans, view and export scan data, generate scan reports, delete a scan, and compare scans.

Note: In autoscans mode, the following functions are not available: updating and editing scans, saving scans as a PVT file, and exporting a riser.

Note: Autoscans mode is only accessible to users with Johnson Controls credentials.

Note: After Autoscans are scheduled, opening PVT in Interactive Mode cancels an in-progress auto scan.

Note: There is no scan type in Autoscan mode. It scans Inventory, Performance and Feature Assessment data by default.

Starting PVT

1. Double-click the Metasys Performance Verification Tool desktop icon.
2. If the PVT application prompts you to add sites as trusted sites or to enable JavaScript, do so based on your browser.
3. Sign in with your global ID and password.

Note: You do not need to sign in for every sync; the credentials are required to access the application.

4. When you start PVT for the first time, click I agree in the Terms of Service window.
5. Enter site configuration and scheduled scan data, see [Entering site configuration and scheduled scan data](#).

After you enter the data or when you start PVT later, the PVT interface opens.

6. If you want to activate the automatic scheduled scans, click Sign off to log off PVT or click the X icon to close PVT.

Note: The automated PVT scans run only when the PVT application is closed. If PVT is open at the scheduled time of a scan, the scheduled scan does not start. Do not open PVT until the scan is complete. See step 8.

If you want to perform manual tasks, see [PVT user interface](#) for more information.

Note: PVT closes automatically after 30 minutes of inactivity.

Note: The PVT cloud identifies all scans from a single site and groups them based on a site correlation ID.

7. After you close PVT, ensure that PVT sync Service is running in Task Manager > Services so the Autoscan runs when it is scheduled to.
8. To ensure that the scan is complete, review the pvt-WindowsService-Info.log file in C:\ProgramData\Johnson Controls\Metasys Performance Verification Tool\logs and look for the message: 2023-xx-xx xx:xx:xx INFO|PvtSyncWinSvc|PVTAutoSyncJob event completed. |. This shows the Autoscan completed successfully and is synced to the cloud.

Entering site configuration and scheduled scan data

About this task

When you start PVT for the first time, you must enter site configuration and schedule scan data. If you want to change these settings later, select Site Configuration from the menu.

Note: If Metasys Fault Detection (FDD) is licensed on the Metasys Server, you must create a separate user in Metasys UI to assign the API access type which you need to scan Fault data from PVT.

Note: To run scheduled scans, you must complete all six steps of the site configuration.

Note: From PVT 4.5, it is mandatory to import a site config file in order to perform an Autoscan. The Next button is disabled until the import is successful and the required fields are populated.

Procedure

1. In the Site Configuration screen, enter the following data:
 - a. Enter your site passphrase and click Next.

Note: The import is unsuccessful in the following scenarios:

- You did not download the site config file and passphrase. For instructions about how to retrieve a site config file, refer to [Creating a site from the Metasys PVT Cloud Dashboard](#).
- The site config file and passphrase belong to a different site.

Note: Ensure the site details that populate the fields from the site config file are correct before you proceed with configuration.

- b. Click Import to import the site config file. For more information about how to generate a site config file, refer to [Creating a site from the Metasys PVT Cloud Dashboard](#).
- c. From PVT 4.2 or later, you can set up the retrieval of scheduled backups of an SCT archive and sync the dbexport to the cloud dashboard. Under Do you want to set up Autoscan or SCT Archive (DBexport) backup? you can choose Autoscan Only, SCT Archive (DBexport) back up Only, Both, or None.

Note: When you choose SCT Archive (DBexport) back up Only, .dbexport files upload to the cloud, but .backup files do not.

Note: You require SCT Pro 14.1 or later to use the SCT Archive (DBexport) back up Only option. PVT retrieves those files from the machine that PVT is installed on. Refer to *How do I schedule a backup to run automatically?* in *SCT Pro Help (LIT-12013035)* for details.

- d. Enter the Metasys server information in the IP (or Hostname) of Server, Metasys Server Username, and the Metasys Server Password fields.
- e. Click Next.

Figure 1. Site Configuration screen

2. The Supervisory Devices screen contains all the online and offline devices that are connected to the server. Click Next. You can select what engines to include or exclude from the scan.

Note: The next time a scan is set up, the list of engines are updated to reflect any new engines you add as a site expands.

Figure 2. Supervisory Devices Screen

Device Name	Model Name	IP Address	PQR	Status	Discovery State	Estimated Scan Duration	Engine Authentication Status
TestPVT2	MS-NAE5510-2	10.108.144.15	c7245mVOST...	Online	Existing	00:08:37	
TestPVT1	MS-NAE5510-3	10.108.144.9	c7245mVOST...	Online	Existing	00:05:24	
NAE74E46A6F3B	MS-NAE5510-3	10.108.145.243	c7245mVOST...	Online	Existing	00:01:54	

- a. **Optional:** From PVT 4.5 you can scan multiple site directors in a single PVT scan. To scan multiple site directors in an archive, log into SCT and select the archive you wish to scan. Enter the Metasys server information in the IP (or Hostname) of Server, Metasys Server Username, and the Metasys Server Password fields. Then select Autoscan Only. The other options are grayed out. You must also bulk authenticate engines in order to perform a multi site director scan.

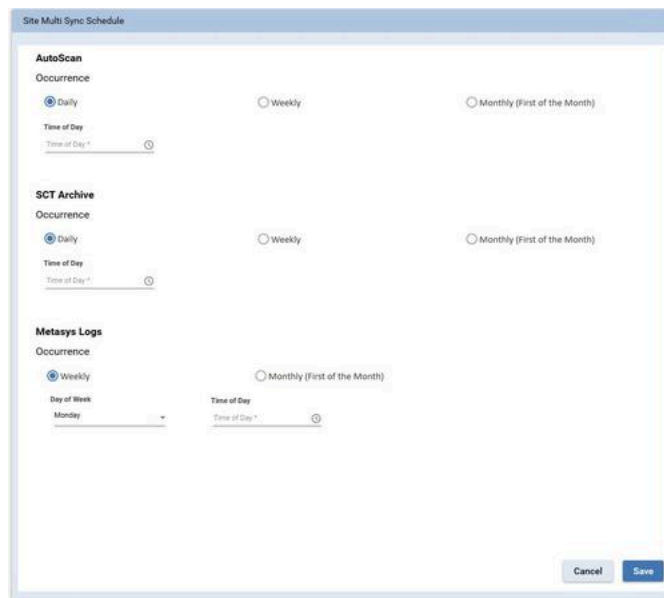
Figure 3. Bulk Authentication screen

3. On the Site Multi Sync Schedule screen, select a daily, weekly, or monthly recurrence pattern for the automated scans, and specify the timing of the scan.

Note: From PVT 4.5, you can use a separate scheduler for Metasys server and engine logs.

Note: To configure the scan to run always on the last day of the month for monthly recurrence, enter 31 in the Recur on day field. If a month has less than 31 days, PVT triggers the schedule on the last of the month.

Figure 4. Site Multi Sync Schedule



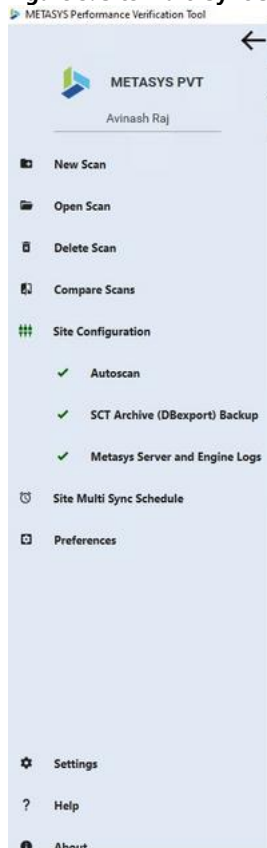
The dialog box is titled "Site Multi Sync Schedule". It contains three sections for configuring different types of scans:

- AutoScan:** Occurrence options are ☒ Daily, ☐ Weekly, and ☐ Monthly (First of the Month). There is a "Time of Day" field with a clock icon.
- SCT Archive:** Occurrence options are ☒ Daily, ☐ Weekly, and ☐ Monthly (First of the Month). There is a "Time of Day" field with a clock icon.
- Metasys Logs:** Occurrence options are ☒ Weekly and ☐ Monthly (First of the Month). It includes a "Day of Week" dropdown menu set to "Monday" and a "Time of Day" field with a clock icon.

At the bottom right, there are "Cancel" and "Save" buttons.

Note: From PVT 4.5, you can use Site Multi Sync Schedule option, to change the schedule without going through the configuration process again.

Figure 5. Site Multi Sync Schedule in main PVT menu



4. Click Save.

The configuration saves and a green tick appears next to the Site Configuration item in the main menu.

Note: The automated PVT scans run only when the PVT application is closed. If PVT is open at the scheduled time of a scan, the scheduled scan does not start. Close the PVT application five minutes before the scheduled time to trigger the scan. You can check or track your scans from the PVT cloud dashboard.

5. When you close PVT, ensure PVT Sync Service is running in task manager.

Setting up the EU Cloud Dashboard

From PVT Release 4.5 you can sync scans to a separate EU Cloud Dashboard. To configure scans to the EU Cloud Dashboard from the PVT Client application, complete the following steps:

Procedure

1. From the Menu, click Settings.
2. From the Settings menu, click Select Country to identify PVT scan data Cloud Storage.

Note: If you do not select a country, the scans sync to the US PVT Cloud Dashboard.

3. Select any of the following countries:
 - o Germany
 - o Netherlands
 - o Belgium
 - o Norway
 - o Austria
 - o Czech Republic
 - o Hungary
 - o Poland
 - o Switzerland
 - o Spain
 - o Italy
 - o France
4. Click Save.

Results

Scans sync to the EU Cloud Dashboard [here](#).

PVT user interface

The main PVT user interface in autoscan mode contains the following options: New Scan, Open Scan, and Compare Scans. Use the menu icon with three lines in the top-left corner of the interface to access these options and also the following options: Delete Scan, Compare scans, Site Configuration, Site Sync Schedule, Preferences, Settings, Help, and About.

Figure 1. PVT user interface in Autoscan mode

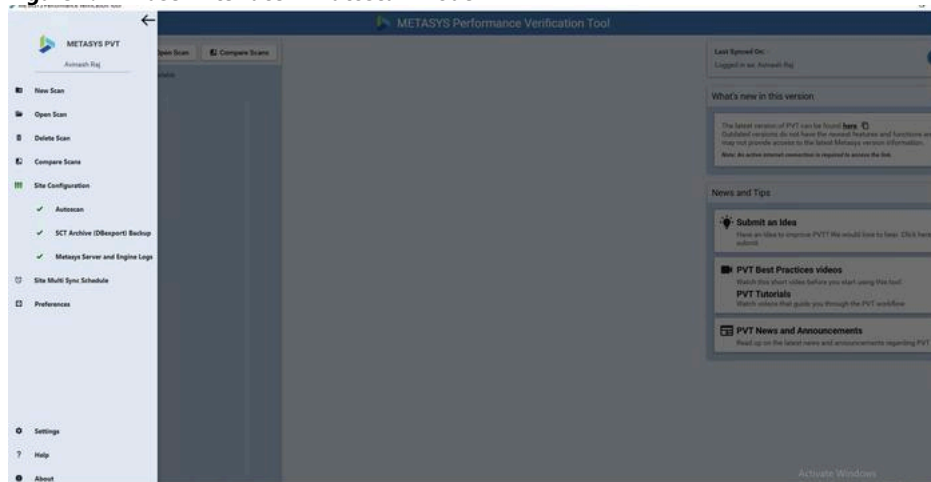


Table 1. PVT user interface options

Option	Description
New Scan	Open the New Scan interface to create a new scan.
Open Scan	Open an existing scheduled or on-demand scan from the local database or from a PVT file. Note: You can open PVT files from PVT version 3.0 and above.
Delete Scan	Delete an existing scan from your local system.
Compare Scans	Compare two scans from different points in time to identify any changes in site data.

Option	Description										
Site Configuration	Perform the steps to change the site configuration and the scheduled scan details. These are the same steps that you go through when you sign in to PVT Autoscan mode for the first time.										
Site Sync Schedule	From PVT 4.2 or later, you can use this feature to change the schedule of a scan without going through the site configuration process again.										
Preferences	Use preferences to specify user defined names for points and equipment.										
	<table><tr><th>Tab</th><th>Description</th></tr><tr><td>Field Point</td><td>Modify the point names search criteria for better point results.</td></tr><tr><td>Instance Number</td><td>Modify the instance number search criteria for better point results.</td></tr><tr><td>Equipment Type</td><td>Modify the equipment type names search criteria for better point results on equipment identification.</td></tr><tr><td>Rule Preferences</td><td>Trigger alerts when the performance rules run.</td></tr></table>	Tab	Description	Field Point	Modify the point names search criteria for better point results.	Instance Number	Modify the instance number search criteria for better point results.	Equipment Type	Modify the equipment type names search criteria for better point results on equipment identification.	Rule Preferences	Trigger alerts when the performance rules run.
	Tab	Description									
	Field Point	Modify the point names search criteria for better point results.									
	Instance Number	Modify the instance number search criteria for better point results.									
	Equipment Type	Modify the equipment type names search criteria for better point results on equipment identification.									
Rule Preferences	Trigger alerts when the performance rules run.										
Settings	Modify language settings and work hours information. Enable or disable sync status. Modify rule preferences for scheduling, setpoints, filters, alarm events, user management, thermal waste, fan motor, and different modules of variation form set points.										
Help	View PVT documentation in the browser.										
About	Modify rule preferences for View version and license information for your PVT installation. Check the latest rule version synchronized from the cloud.										

PVT rules

PVT rules are updated with every release of Metasys. When you upgrade PVT to 4.1 or later, rules are updated to comply with Metasys Release 12.0. PVT can highlight possible issues and suggest recommendations if the scan finds any non-compliance.

The following types of rules are supported for PVT 4.1 or later:

Table 1. PVT rules

Rule	Description
Patch	Identifies if any of the scanned engines are missing a critical patch.
Latest Firmware	Identifies if engines are running on latest available patch.
Object Count	Identifies if any engine is running beyond maximum capacity in terms of the specified object count limit.
Controller Count	Identifies if any engine is running beyond maximum capacity in terms of the specified controller count limit.
Obsolete engine	Identifies which engines are running an obsolete version of the operating system.
JCI devices	Identifies Johnson Controls devices and third party devices.
Performance	Identifies performance issues. For example, duplicate BACnet IDs assigned to multiple devices, or Fan motors running at maximum speed.

Creating a new scan

Procedure

1. Click Create Scan in the toolbar or click New Scan in the main menu.
2. Select the online supervisory devices that you want to scan, and click Scan Selected.

Note:From Release 4.4, PVT scans up to three engines simultaneously. Parallel scanning results in significantly lower scan duration times than previous versions of PVT.

Note:From Release 4.4, PVT shows total scan duration for the entire site or engines selected for scanning based on project type and displays the Estimated scan duration for each engine based on current loading and response time.

Figure 1. New Scan window showing Estimated Scan Duration

New Scan								
Select one or more devices to start the scan:								
Note : During a PVT scan, please be aware that the engine CPU usage will increase. It has been observed that small frame engines like the NAE35, NAE45 and NCE are more impacted than the NAE55 and SNV's. Scan times on average for small frame engines will be longer than the NAE55 and SNV's. The significance of the impact is predicated on how the engine is configured. The closer the engine is configured to its design limits the greater the impact the scan will have on the CPU usage and scan time of the engine.								
Estimated Engine(s) Scan Duration						08:48:21m 12s		
Estimated Feature Assessment Scan Duration						08:25:59m 38s		
Total Estimated Scan Duration						0d 6h 30m 50s		
<input type="checkbox"/>	Device Name	Model Name	IP Address	FQR	Status	Discovery State	Estimated Scan Duration	Progress
<input type="checkbox"/>	wisconsin	MS-NAE5510-2	10.10.76.24	USA:wisconsin	Online	Existing	00:07:18	<div><div></div></div> <div>Send: USA:wisconsin/BA/Cnet Protocol File</div>
<input type="checkbox"/>	SystemN40-60	MS-NAE4510-2	10.10.76.136	USA:SystemN40-60	Online	Existing	00:08:00	<div><div></div></div> <div>Complete</div>
<input type="checkbox"/>	SystemN40-51	MS-NAE4510-2	10.10.76.126	USA:SystemN40-51	Online	Existing	00:08:21	<div><div></div></div> <div>Complete</div>
<input type="checkbox"/>	PEN50-51	MS-NAE5521-1	10.10.76.186	USA:PEN50-51	Online	Existing	00:09:16	<div><div></div></div>
<input type="checkbox"/>	Area-51	MS-NAE5515-2	10.10.76.215	USA:Area-51	Online	Existing	00:09:53	<div><div></div></div>
<input type="checkbox"/>	NAE74FE4819341F	MS-NAE5511-3	10.10.76.66	USA:NAE74FE4819341F	Online	Existing	00:10:06	<div><div></div></div>
<input type="checkbox"/>	SystemGNC-06	M4-GNC25150-0	10.10.76.49	USA:SystemGNC-06	Online	Existing	00:10:07	<div><div></div></div>
<input type="checkbox"/>	SystemGNC-05	M4-GNC16121-0	10.10.76.83	USA:SystemGNC-05	Online	Existing	00:10:17	<div><div></div></div>

Viewing scan results

Procedure

1. To open a scan, click Open Scan in the toolbar or main menu, and select the scan you want to open. To open a recent scan, click on the card of a scan in the main PVT window.
2. See the results of the scan and perform additional functions on the following tabs:

Table 1. Scan result tabs

Tab	Data	Functions
Inventory Analysis	See Inventory data .	n/a
Performance Analysis	See Performance data .	n/a
Feature Assessment	See Feature Assessment data .	n/a
Supervisory Devices	See Inventory data .	To show or hide columns in the supervisory device details list, click Show/Hide Column. To filter the list, start typing into the search field under the header of a column. To clear the search results filters, click Clear Filters.
Controllers		To filter the list, start typing into the search field under the header of a column. To clear the search results filters, click Clear Filters.
Points		Click Select Supervisory Devices to display the points from specific supervisory devices.

Generating reports

About this task

When you open a scan, you can generate a report that contains the scan data in a document format. You can export the report as a PDF or Microsoft Word document from the PVT Client, or PDF report only from the PVT cloud dashboard. For more information about generating reports from the Cloud Dashboard, refer to [Generating reports from the Metasys PVT Cloud Dashboard](#).

To generate and save a report of a scan, complete the following steps:

Procedure

1. To open a scan, click Open Scan in the toolbar or main menu, or click on the card of a recent scan in the main PVT window.
2. In the top menu, click Report.
3. Select the report type from the list.

The report window opens where you can scroll through the report.

4. To change the page layout, click the Page Setup icon in the toolbar.
5. To save the report, click the Export icon in the toolbar, and select PDF or Word.
6. To print the report, click the Print icon in the toolbar.

Exporting scan results, a tasking estimate, and a tasking list

About this task

When you open a scan, you can export the scan results, a tasking estimate, or a tasking list into a Microsoft Excel file.

To export the scan data, perform the following steps:

Procedure

1. Open a scan. Click Open Scan in the toolbar or main menu, or click on the card of a recent scan in the main PVT window.
2. Click Export and from the list, select Scan Results, Tasking Estimate, or Tasking List.
3. In the dialog window, change the file name if needed, and click Save.

On-demand Scan

About this task

You can now scan the devices when needed. To complete an on-demand scan, complete the following steps:

Procedure

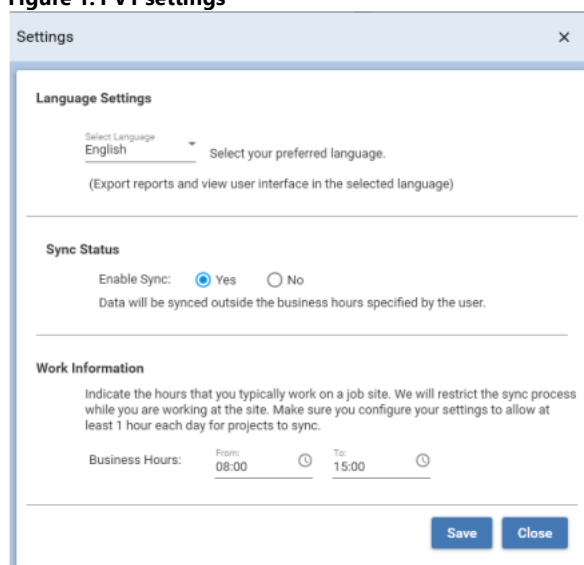
1. Click New Scan.
2. Select one or more devices, then click Scan Selected.

Sync Status

You can enable or disable syncing to the cloud in Automatic scan mode or Interactive mode. The Sync status is set to Yes by default. If you select No, scans are not synced to the cloud.

Note: This option is hidden by default. In order to display this option, set the value of HideSyncSetting=False in the JCI.Applications.PVT.exe.config file located in C:\Program Files (x86)\Johnson Controls\Metasys Performance Verification Tool.

Figure 1. PVT settings



Click Open Scan > Sync Status

The following table shows a series of conditions that would prevent a scan from syncing or not:

Table 1. Sync conditions

Settings in Sync Status	Work hours	Project Sync Status	Will the project sync?
Disable	*	*	No
Enable	Yes	*	No
Enable	*	External file	No
Enable	No	Not external file	Yes

Note:An external file refers to any scan that is not performed on the PVT application but imported into the PVT from a .pvt file or downloaded from the PVT Dashboard.

Retrieving Metasys server and engine logs

In order to retrieve Metasys server and engine logs, you require PVT Autoscan mode. Run PVT as JCI elevated and complete the following steps to provide access to the logs.

To retrieve Metasys.userlogs from the client machine, complete the following steps to provide access to the logs:

1. Navigate to C:\Users\<Administrator>\JohnsonControls.Metasys\logs, then right-click > Properties.
2. On the Properties window, click the Security tab.
3. In the Security tab, click Edit.
4. In the Group user name field, select Network Service. If Network Service does not appear in the list, click Add, then Search Network, and select Network Service.
5. In the Permissions for Users field, select Full control and click OK.
6. On the Properties window, click OK and close the window.

In order to retrieve and upload adsadx .eventx logs from client machine, complete the following steps to provide special permissions:

1. Click Windows+R, the services.msc.
2. Search for PVT sync services.
3. Right-click sync services and click Stop.
4. Right-click services.msc, and click Properties.
5. On the Properties window, navigate to the Log on tab.
6. Update the radio button from This Account to Local System Account.
7. Click the Allow service to interact with desktop checkbox, then click Apply and OK.
8. Start PVT Sync Service.

You can configure Metasys server and engine log levels from the Cloud Dashboard, see [Configuring PVT Logs Level settings from the Cloud Dashboard for a Metasys Site](#) for more information. Metasys server and engine logs are then retrieved in the next scheduled scan, provided the option to pull Metasys server and engine logs was selected during site configuration, see [Entering site configuration and scheduled scan data](#).

You can download the report, which included Metasys server and engine log information from the Cloud Dashboard. See [Generating reports from the Metasys PVT Cloud Dashboard](#), for more information

Using PVT in interactive mode in the PVT client

In PVT interactive mode, you cannot configure automated scans. The interactive mode contains the full functionality of PVT that was introduced at version 3.1, including creating scans, generating reports, saving a scan in a PVT file, and viewing and exporting scan data.

Interactive scans are performed with a technician license.

Starting PVT

1. Double-click the Metasys PVT desktop icon.
2. If a User Account Control screen appears, click Yes.

PVT user interface in interactive mode

The main PVT user interface contains the following options: New Scan, Open Scan and Compare Scans. Use the menu icon with three lines in the top left corner of the interface to access these options and also the following options: Delete Scan, Preferences, Settings, Help, and About.

Figure 1. PVT user interface in interactive mode

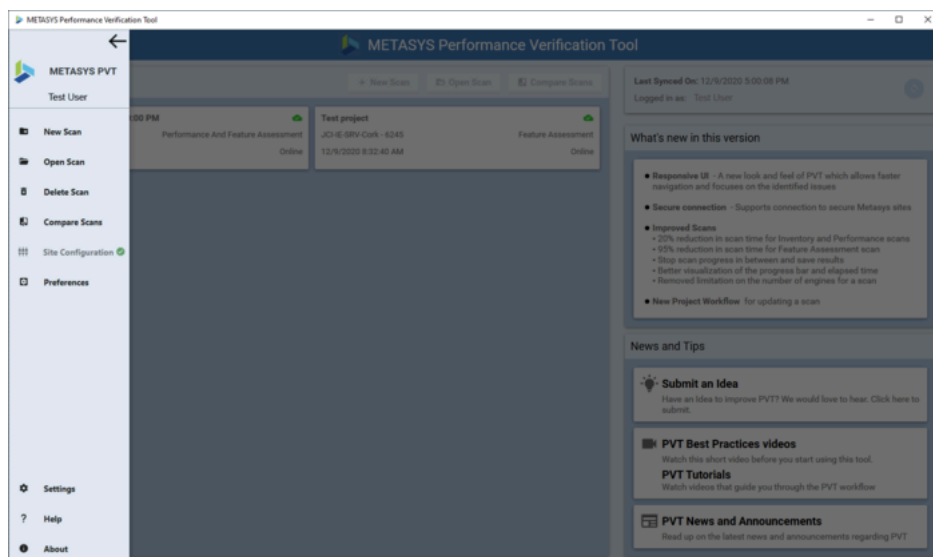


Table 1. PVT user interface options

Option	Description	
New Scan	Open the New Project interface to create a new project.	
Open Scan	Open an existing project from the local database or from a PVT file. Note: You can open PVT files from PVT version 3.0 and above.	
Delete Scan	Delete an existing project from your local system.	
Compare Scans	Compare two projects by performing a fresh scan and compare with another scan to identify any changes in site data.	
Preferences	Tab	Description
	Field Point	Modify the point names search criteria for better point results.
	Instance Number	Modify the instance number search criteria for better point results.
	Equipment Type	Modify the equipment type names search criteria for better point results on equipment identification.
	Rule Preferences	Modify rule preferences for scheduling, setpoints, filters, alarm events, user management, thermal waste, fan motor, and different modules of variation form set points.
Settings	Modify language settings and work hours information. Enable or disable sync status.	
Help	View PVT documentation in browser.	
About	View version and license information for your PVT installation. Check the latest rule version synced from the cloud.	

Creating a new site

Prerequisites: Before you create a new site, ensure that you can access the customer's Metasys BAS or System Configuration Tool (SCT) archive.

1. To create a new site, from the main menu, click New Scan.
2. Enter the Metasys server information in the IP (or Hostname) of Server, Metasys Server Username, and the Metasys Server Password fields.
3. Click Import to import the site config file. For more information about how to generate a site config file, refer to [Creating a site from the Metasys PVT Cloud Dashboard](#).
4. Enter your site passphrase and click Next.
5. In the The Customer Information message box, enter the customer's information and click the right arrow.

6. Select your Server OS and SQL Server Version, and indicate if you have Metasys UI implemented on your site. You can also provide information on your Metasys license. If you are unsure of what information to provide in the Metasys license field, hover over the info icon. Click the right arrow.
7. Select either SCT Archive or Online.

Note:Online refers to scanning a Metasys system directly by connecting to Metasys Sever or Site Director of a live system. SCT Archive refers to scanning an SCT Archive. To scan an SCT Archive, PVT connects to SCT. You must install SCT before you proceed with this option. If SCT is installed on the same machine as PVT, set the host name to localhost.

8.
 - a. If you initiate an Online scan, enter the IP or host name of the server or site director.
 - b. If you initiate a scan for an SCT Archive, enter the IP or host name of the computer that SCT is installed on.

Note:You can specify a different port number to access a site by placing a colon followed by the port number after the address. For example: localhost:443. There is no default port selection.

9. Enter your user name.
 - a. For Online scans, enter the Metasys user name.
 - b. For SCT Archive scans, enter the SCT user name.

10. Enter your password and click the right arrow.
 - a. For Online scans, enter the Metasys password.
 - b. For SCT Archive scans, enter the SCT password.

Note:The Get Archive List and Archive are only enabled when you select the SCT Archive radio button.

- o If you select the SCT Archive option, complete the following steps:
 - Click the Get Archive List button to gather a list of existing archive that PVT can scan.
 - In the Archive drop-down menu, select the archive you want to scan.
11. Click the right arrow.
12. Select the type of scan to perform:
 - o Inventory: Scans the engine or controller excluding point information. Inventory scan with points scans point information as well. The Points tab is only visible when the inventory scan with points is complete.
 - o Performance: This scan is only available for online sites, and is not available for SCT Archive.
 - o Feature Assessment: Scans the features of the Metasys System and how the customer uses them.
13. Click Perform Scan. The PVT presents a list of the supervisory devices in the system. Select the supervisory devices to scan.

Note:See [Table 1](#) for information on the different types of scans.

14. Click Scan Selected to begin the scan.

If you want to stop a scan before it completes, you can select one of the following:

 - o Don't save: cancel the entire scan and do not create a site.
 - o Save: save the completed data.

Editing a site

Procedure

1. Click Open Scan from the main menu to view existing sites.
2. Select a site and open it.
3. Click Edit. You cannot change the selected branch in edit mode.
4. From the Edit Site dialog box you can edit your site your site information, customer information and site information in the available fields. See [Creating a new site](#) for details on the type of fields and their use.
5. Click Save.

Deleting a site

Procedure

1. Select Delete Scan from the main menu.
2. Select a site to delete.
3. Click Delete. You cannot select more than five sites for deletion at a time.

Generating reports

About this task

When you open a scan, you can generate a report that contains the scan data in a document format. You can export the report as a PDF or Microsoft Word document from the PVT Client, or PDF report only from the PVT cloud dashboard. For more information about generating reports from the Cloud Dashboard, refer to [Generating reports from the Metasys PVT Cloud Dashboard](#).

To generate and save a report of a scan, complete the following steps:

Procedure

1. To open a scan, click Open Scan in the toolbar or main menu, or click on the card of a recent scan in the main PVT window.
2. In the top menu, click Report.
3. Select the report type from the list.

The report window opens where you can scroll through the report.

4. To change the page layout, click the Page Setup icon in the toolbar.
5. To save the report, click the Export icon in the toolbar, and select PDF or Word.
6. To print the report, click the Print icon in the toolbar.

Saving a site as a PVT file

Procedure

1. Open a site. Click Open Scan in the toolbar or main menu, or click on the card of a recent scan in the main PVT window.
2. Click Save as PVT in the upper right.
3. Select a save location and click Save.

Exporting scan results, a tasking estimate, and a tasking list

About this task

When you open a scan, you can export the scan results, a tasking estimate, or a tasking list into a Microsoft Excel file.

To export the scan data, perform the following steps:

Procedure

1. Open a scan. Click Open Scan in the toolbar or main menu, or click on the card of a recent scan in the main PVT window.
2. Click Export and from the list, select Scan Results, Tasking Estimate, or Tasking List.
3. In the dialog window, change the file name if needed, and click Save.

Exporting the riser diagram

About this task

When you open a scan, you can export a riser diagram of the scanned devices into a Microsoft Visio file.

Note: This function is available only for inventory and performance scans. You must have Microsoft Visio 2013 or above installed for this process to work.

Procedure

1. Open a scan. Click Open Scan in the toolbar or main menu, or click on the card of a recent scan in the main PVT window.
2. Click Export Riser in the upper right.
3. Microsoft Visio opens and the riser diagram is automatically created.

Updating the scan

About this task

You can update the list of supervisory devices in the scan and then restart the scan. For example, you can include the points of additional supervisory devices in the scan data.

To update a scan, complete the following steps:

Procedure

1. Click Open Scan in the toolbar or main menu, or click on the card of a recent scan in the main PVT window.
2. Click Update Scan in the upper right.
3. Enter your user name and password.

4. In the supervisory device list, select the check box next to a device to add the device to the scan, or clear the check box next to a device to exclude the device from the scan.
5. Click Scan Selected.

Type of scans

The following table explains the different types of scans.

Table 1. Scan types

Type of scan	Description
Inventory	Identifies an inventory list of all controls hardware, such as supervisory devices and controllers, along with several key attributes of those controllers.
Performance	<p>This feature performs the following tasks:</p> <ul style="list-style-type: none"> Identifies opportunities for improvements, which could lead to energy savings. Identifies areas of the network that could use some maintenance, such as cleaning up unbound references or removing duplicate BACnet® IDs. Measures how accurately setpoints are being met and maintained, and identifies equipment that frequently deviates from setpoint. Identifies areas of security risk, such as dormant accounts and use of the Metasys default credentials.
Feature Assessment	Measures how well the Metasys features are being utilized and reports on commonly underutilized features, such as Tailored Summaries, Optimal Start, or Demand Limiting/Load Rolling (DLLR).

Inventory data

The following information is gathered from Metasys during an Inventory scan:

Table 1. Inventory Analysis tab

Analysis attributes	Description
Summary	Displays information about any critical issues, corrective maintenance, or other recommendations.
Server Information	Displays server name, IP address, number of supervisory devices, operating system version, SQL server version, Hard Drive free space, Firewall Status, USB Port status, and Server Machine CPU and RAM usage..
Scanned Information	<p>Displays the number of servers, supervisory devices, field controllers, objects, controller templates and equipment definitions.</p> <p>Note:For online scans, server information does not show the count of controller templates, equipment definitions, spaces, or equipment.</p>

Table 2. Supervisory Devices tab

Supervisory Device attributes	Description
Device Name	The name of the supervisory device.
Device description	The description of the supervisory device.
Extended Label	The extended description of the supervisory device.
Model Name	The model name of the supervisory device.
Firmware	<p>The current firmware version of the device.</p> <p>Note:If there is a more current critical patch, the device is flagged.</p>
Integrations	Identifies the types of integration trunks configured on the supervisory device.
Controllers	The number of field controllers for each integration type.

Supervisory Device attributes	Description
	<p>Note:If the number of controllers for an integration exceeds Metasys recommendations the device is flagged. The Metasys recommendations are based on total number of controllers per engine or number of controllers supported on a particular integration trunk.</p>
Object Count	<p>The total object count on the supervisory device (hardware points and software objects).</p> <p>Note:If the Object Count exceeds the Metasys recommendation based on the model of the device, it is flagged.</p>
CPU Usage	If CPU usage exceeds 60%, the device is flagged.
Flash Usage	If flash usage exceeds 100%, the device is flagged.
Memory Usage	If memory usage exceeds 90%, the device is flagged.
Samples Lost	The number of trend samples that could not be sent successfully to the ADS/X repository due to an overfilled network engine buffer.
Sample Rate	Monitors the rate at which trend samples are collected on the network engine.
Events Lost	The number of events that could not be sent to the ADS/X repository.
Transport Failure Rate	A list of communication failures between the device list server and each device. This field was introduced at release 5.0.
Repository	The IP address of the reporting server.
NAE Last Restart (UTC)	The timestamp of the last time the network engine restarted.
NAE Battery Condition	If the battery is in fault, the device is flagged.
Transport Buffer in Use	Indicates the percentage full of the engine trend consolidation buffer.
Time between Buffer Reads	Indicates the time, in minutes, between engine trend consolidation buffer readings from the Metasys server.
BACnet ID	The BACnet ID of the device.
BACnet COV Receive Rate	Specifies the number of COV messages the engine receives from other supervisory devices or field controllers per minute.
BACnet Broadcast Receive Rate	Indicates the number of BACnet broadcast messages the device received in the previous minute.
Tag	This column highlights any unique device characteristics, such as UL-Listed Devices.
Issues	Displays a list of issues related to the device.
Patch Status	<p>OK—No critical patches are available for this device. The device is up-to-date.</p> <p>Critical—A critical patch is available for this device. This device is flagged.</p>
Available Patches	Shows the patch version and synopsis of any critical patches that need to be applied to the supervisory device.
Patch Description	Shows the patch description to inform the user of the importance of the patch.
Patch Options	Shows patch implementation options.
Prerequisite	Shows the requirements before patching.
Latest Available Firmware	Cloud Dashboard Scan Results show the latest available firmware for engines.

Table 3. Controllers tab

Field Controller attributes	Description
Controller Name	The name of the field controller.
Controller Description	The description of the field controller.
Extended Label	The field controller's extended label.
Model Name	The field controller model.

Field Controller attributes	Description
Firmware	Current firmware version of the field controller.
App Info	Controller Configuration Tool (CCT) application type.
Operational Status	Shows if a controller is offline or not at the time of scan.
Physical Points	Physical points (sensor/actuator) mapped to a field controller.
Mapped Points	The number of points mapped to the field controller.
Equipment	Based on the name, description, and extended label of the controller, the tool tries to identify the type of equipment that the device controls: VAV or AHU. This field is editable. To mass edit, go to Preference > Equipment Details and edit the search criteria for identifying equipment.
Tag	This column highlights unique controllers such as third-party devices or legacy equipment Network Control Modules.
Issues	Displays a list of issues related to the device.
BACnet ID	The BACnet ID of the device. If duplicates are found, they are flagged during a Performance scan.
Network Address (N2)	The unique address used to identify physical devices on an N2 trunk.
MAC Address	The unique address used to identify physical devices on a MS/TP trunk.
FQR (Fully Qualified Reference)	The unique identifier of objects in the Metasys interface.

Table 4. Points tab

Field Controller attributes	Description
System Name	Field controller and point type details.
Temperature	Temperature sensing element.
Humidity	Humidity sensing element.
Pressure	Pressure sensing element.
Flow	Flow sensing element.
Meter	Meter objects.
Damper/Valve	Damper or valve command point.
Command	Binary command point.
Alarms	Alarm point.
Status	Binary status point.
Unknown	All other point types that do not fit in a category.
Quantity	Total quantity of points in the row.

Table 5. Server Details

Server Details attributes	Description
Model	Server model. Note: ADS shows up for both ADS and ADX models.
Server Name	Name of the server.
IP Address	IP address of the Metasys server that is used to scan the site in PVT.
Count of Engines	Total count of engines both online and offline.
Metasys Version	Metasys version number of the server.
SQL Version	For autoscan mode, the SQL version is read from the machine that PVT is installed on. For a manual scan, this shows the SQL version that you input during scan creation.
Server Machine CPU Usage	This value is read from the machine when the scheduled scan starts.

Server Details attributes	Description
	This value is not available for manual scans or SCT Archive scans.
Server Machine RAM Usage	<p>This value is read from the machine when the scheduled scan starts.</p> <p>This value is not available for manual scans or SCT Archive scans.</p>
OS Version	<p>For autoscan mode, the OS version is read from the machine that PVT is installed on.</p> <p>For a manual scan, this shows the OS version that you input during scan creation.</p>
Hard Drive Free Space	Total hard drive space free on the server.
Firewall Status	<p>For Autoscan mode, this shows the firewall status of the machine that PVT is installed on.</p> <p>This value is not available for manual scans.</p>
USB Ports Status	<p>For Autoscan mode, this shows if USB ports are enabled or disabled on the machine that PVT is installed on.</p> <p>This value is not available for manual scans.</p>

Note:The points tab only displays AI, AO, BI and BO points of a controller you scan. To view all other point types, click Export > Scan to export scan results, and see the Points sheet of the exported Excel file.

Performance data

The following information is gathered during a performance scan:

Table 1. Performance Analysis Tab

Type of analysis	Description
Performance and Savings	
Scheduling	If the Occupancy Command object has a value in its priority array between priorities 1 to 15, the device is considered Scheduled. If no values exist in the priority array between priorities 1 to 15, the device is considered Unscheduled. If the Occupancy Command object cannot be found based on the search criteria the device is categorized as Undetermined. You can configure the search criteria using the options under the Preference menu.
Economizer	For Air Handling Units (AHUs): if the Economizer Status object value is True when the Outdoor Air Temperature object value is less than the Discharge Air Temperature Set Point object value during a trended 24-hour period, then the equipment is categorized as AHUs With Economizer. If the Economizer Status object value is not True when the Outdoor Air Temperature object value is less than the Discharge Air Temperature Set Point object value during a trended 24-hour period, the equipment is categorized as AHUs Without Economizer. If none of the required objects are found based on the search criteria or they do not have trends, the equipment rule is categorized as Undetermined. You can configure the search criteria using the options under the Preference menu.
Fan Motors	For AHUs: if the Supply Fan Output object always shows a value of 100% for a trended 24-hour period, then the equipment is categorized as Fans always running 100% and shows the message

Type of analysis	Description
	<<Point name>> is running on maximum speed. If the Supply Fan Output object is not found based on the search criteria the equipment is categorized as Undetermined. You can configure the search criteria using the options under the Preference menu.
AHU Reset Strategy	If the Discharge Air Temperature Setpoint or the Duct Static Pressure Setpoint does not change within a 24-hour period, then it is assumed that no reset strategy is implemented and the device is flagged. If neither point can be found, then the device is marked as Undetermined.
100% Outdoor Air Handling Unit	For AHUs: if the Mixed Air Damper and Mixed Air Temperature objects are found, or the Outdoor Air Damper object value shows variable modulation between 0% and 100%, then the device is categorized as AHU Without 100% Outdoor Air. If neither Mixed Air objects are found and the Outdoor Air Damper object value shows 2-stage operation (0% or 100%), then the device is categorized as AHU With 100% Outdoor Air. If none of the objects identified above are found based on the search criteria the device is categorized as Undetermined. You can configure the search criteria using the options under the Preference menu.
Heating or Cooling Waste	For AHUs: if the Heating Output object value is greater than 0% when the Outdoor Air Temperature object value is above 80°F within a trended 24-hour period, then the equipment produces Heating Waste. If the Cooling Output object value is greater than 0% when the Outdoor Air Temperature object value is below 60° F within a trended 24-hour period, then the equipment produces Cooling Waste. If none of the objects or trends identified above could be found based on the search criteria the equipment is considered Undetermined. You can configure the search criteria using the options under the Preference menu.
Maintenance and Reliability	
Dirty Filter	For AHUs: if the pressure drop across the filter triggers the differential pressure switch or the Differential Pressure Sensor object value shows a pressure drop greater than 0.5 in. W.C., the equipment is considered to have a dirty filter. If the pressure drop across the filter does not trigger the differential pressure switch and the Differential Pressure Sensor object value shows a pressure drop less than 0.5 in. W.C., no notification is generated. If neither of the identified objects that represent the filter pressure switch or the filter pressure sensor are found during the performance scan, the equipment rule is categorized as Undetermined. You can configure the search criteria using the options under the Preference menu.
Unbound References	Identifies the unbound references by supervisory device. To view unbound references in the Power BI (PBI) report, navigate to Issues > Performance Issues.
Duplicated BACnet IDs	If more than one controller on the entire network has the same BACnet ID, the controller is included in the duplicate BACnet ID list. Controllers with duplicate BACnet IDs may cause communication problems when non-Metasys devices are part of the network. To view duplicate BACnet IDs in the PBI report, navigate to Issues > Performance Issues.
Alarm/Events	<p>Identifies controllers and points with alarms in the Metasys system and groups them based on alarm priority.</p> <p>Investigate and acknowledge alarms because they could be an indication of equipment issues or other underlying root causes that need to be addressed. Alternatively, it could mean that alarm thresholds need to be adjusted to produce fewer alarms, so that operators can focus on alarms that are true indicators of problems.</p> <p>The performance report shows alarms that are not considered urgent.</p>
Operator Overriding	<p>Lists objects that are currently in an operator override state. Investigate and release the override if it is no longer needed to allow Metasys to automate control of that object.</p> <p>Beginning with Metasys 7.0, the Temporary Operator Override feature was added to prevent objects from remaining in an override state for a long time.</p>
Comfort and Health	

Type of analysis	Description
AHU DA-T Variation from Setpoint	<p>Analyzes the Discharge Air Temperature object value for a trended period of 24 hours, and then calculates an average deviation from setpoint for each Air Handling Unit (AHU). If the calculated average deviation from setpoint is greater than the user-specified deviation limit, the equipment rule generates a notification.</p> <p>Absolute value of Discharge Air Temp minus the Discharge Air Temp Setpoint is greater than the value set in the preferences.</p>
AHU-DAP-SP Variation from Setpoint	<p>Analyzes the Duct Static Pressure object value for a trended period of 24 hours, and then calculates an average deviation from the setpoint for each Air Handling Unit (AHU). If the calculated average deviation from the setpoint is greater than user specified deviation limit, the equipment rule generates a notification.</p> <p>Absolute value of Discharge Air Pressure minus the Discharge Air Pressure Setpoint is greater than the value set in the preferences.</p>
AHU CO2 Variation from Setpoint	<p>Analyzes the CO2 sensor object value for a trended period of 24 hours, and then calculates an average deviation from the setpoint for each Air Handling Unit (AHU). If the calculated average deviation from the setpoint is greater than user specified deviation limit, the equipment rule generates a notification.</p> <p>Average CO2 minus the CO2 setpoint is greater than the value in the preferences.</p>
Zone Humidity Level variation	Analyzes the humidity object value for a trended period of 24 hours.
Zone Humidity Level variation from setpoint	<p>Analyzes the Zone Humidity Level object value for a trended period of 24 hours, and then calculates an average deviation from the setpoint for each zone. If the calculated average deviation from the setpoint is greater than user specified deviation limit, the equipment is flagged.</p> <p>You can change the initial values of 30% and 60% in Preferences.</p>
Security and Standards	
Default Users	Identifies if the Metasys Default user and password are being used.
All Admin Users	Lists the users that have administrative privileges.
Dormant Accounts	<p>Identifies users that have not logged into Metasys within the last six months.</p> <p>Active users have Active status.</p> <p>Dormant users show as Yes in the dormant account user report.</p> <p>If you perform a scan through ADS/ADX, PVT only shows users that are configured on ADS/ADX and their status according to the dormant account user report.</p>

Type of analysis	Description
	If a scan is done as engine site director, users and associated configurations are shown in PVT.
Point Categorization	Identifies whether all points are categorized the same. As a best practice, categorize points in order to set up and receive alarms on important points.

Note:You can view the results of the rules in the application by reviewing the scan results, and in the PBI report after the scan is transferred from the local machine to the PVT cloud repository.

Note:For details about the Inventory Analysis, Supervisory Devices, Controllers, and Points tabs, see [Inventory data](#).

Feature Assessment data

Feature Assessment searches for the use of the following Metasys features:

Table 1. Feature Assessment Tab

Feature Assessment	Description
Metasys UI	Location-based approach to finding information about the Metasys site.
Solar Clock	Computes Present Value (Night or Day), Sun Position, and Sunrise/Sunset times based on local position and local time.
User Views	User navigation view in Metasys.
Tailored Summaries	Allows viewing and modification of large quantities of similar data in a tabular view in Metasys.
Optimal Start	Aids in the reduction of energy costs during a building's transition from unoccupied to occupied. You can view and edit this feature in Metasys.
Demand Limiting/Load Rolling (DLLR)	Helps save money by limiting energy use during times of peak demand. You can view and edit this feature in Metasys.

PVT Sync Service

The PVT Sync Service installs with PVT and runs in the background to sync your PVT data to the cloud. The service can run in Autoscan mode or Interactive mode. The service requires an active internet connection and only performs the synchronization after you close PVT. After you launch PVT for the first time, you must enter your Single Sign On (SSO) credentials. Sync options remain unavailable until you log on.

After logging on, a new column, Sync Status, appears in Open Project.

- If a project is not synced, the status reads Ready to Sync.
- If a project is synced, the status reads Synced.

In the Recent Project list, the cloud icon in each synced project turns green.

If you have set working hours, all projects with Ready to Sync are synced outside of these hours. To manually sync projects, click Sync now in the Open Project dialog box. Click Sync now to override the set working hours and sync all projects with Ready to Sync status.

Note:If all projects are synced, the Sync now button is disabled.

Note:Only the data from the last 7 days can display.

For autoscan mode, the sync is triggered by the scheduled scan time. When the scan completes, the scan is sent to the cloud immediately. The cloud may take some time to process the scan so it does not show up immediately.

Bus diagnostics data points

The following data points related to bus diagnostics are captured by PVT and display in the PVT dashboard, not the PVT client:

Table 1. Bus diagnostics data points

Data point	Category
Bus health index	MS/TP Trunk diagnostic tab
Bus performance Index	
Execution time	
Framing Errors	

Data point	Category
Overrun Errors	
Header CRC Errors	
Data CRC Errors	
Reply Too Slow Datalink Errors	
Reply Too Slow Application Errors	
Internal Errors	
Buffer Overflows	
Lost Token	
Retries	
Max Output Queue Used	
Local Abort Tx	BACnet protocol diagnostic tab
Seg Retries Tx	
Reg Retries Tx	
Tx Record Count	
Rcv Record Count	
Record Count	
Tx Messages Discarded	
Rcv Messages Discarded	
Allocate Record Count	
Pending Queue Count	
Peak Pending Queue Count	
Unknown Queue Count	
Peak Unknown Queue Count	
Rcv Message Rate	
Transmits Per Minute	
Transactions Timeouts	
Net Messages Tx	
Net Messages Rcv	
Net Unknown Routes	
Net Rejects Rcv	
Net Routes Busy	
Net Unknown Msg Rcv	
Net Routed Messages	

Troubleshooting PVT

The following table includes general troubleshooting information.

Table 1. General troubleshooting

Error message or scenario
An error occurred while using PVT.

Error message or scenario
When generating a Riser diagram, the following error occurs: An error occurred in the creation of the Visio document.
When you log on to the server machine to complete changes in Site Configuration which was originally completed by another user, you error: Access to path C:\ProgramData\Johnson Controls\Metasys Performance Verification Tool\ServerCreds.bir not possible to make site configuration changes.
The PVT installation fails and the following error appears in the pvt-error.log file: Error 1920. Service 'PVT Sync Service' (PVT Sync Service) failed to start. Verify that you have sufficient privileges to start system services.
Scan does not start, and the following error appears in the pvt-WindowsService-Error.log file:
<pre> ERROR PvtSyncWinSvc System.Security.Authentication.AuthenticationException: Invalid Credentials System.Security.Authentication.AuthenticationException: Invalid Credentials at JohnsonControls.Tools.Metasys.ScanEngine.Providers.Authentication.MmdaAuthenticationProvider.Authenticat credentials, Boolean isSctArchive)at JohnsonControls.Tools.Metasys.ScanEngine.Providers.Authentication.OnlineAuthenticationProvider.Authentic JohnsonControls.Tools.Metasys.ScanEngine.Service.AuthenticationService.Authenticate()at JohnsonControls.Tools.Metasys.ScanEngine.Service.PvtScanService.<AuthenticateAsync>b__21_0()at System.Threading.Tasks.Task`1.InnerInvoke()at System.Threading.Tasks.Task.Execute()</pre>
An error occurs while you install PVT.
You receive the following error when you install PVT: In autoscan mode, PVT requires an internet connection for configuration setup.
PVT installation fails.

Product warranty

This product is covered by a limited warranty, details of which can be found at www.johnsoncontrols.com/buildingswarranty.

Software terms

Use of the software that is in (or constitutes) this product, or access to the cloud, or hosted services applicable to this product, if any, is subject to applicable end-user license, open-source software information, and other terms set forth at www.johnsoncontrols.com/techterms. Your use of this product constitutes an agreement to such terms.

Contact information

Contact your local branch office: www.johnsoncontrols.com/locations

Contact Johnson Controls: www.johnsoncontrols.com/contact-us

Contact PVT support: <mailto:pvt-support@jci.com>