Emerson Plantweb™ Insight

EMERSON™

Framework version 3.2.0

pwi-v3.2.0

Release date: November 2023

Release details

Version	3.2.0
Release date	November 10, 2023
Release type	Minor
In-place upgrade allowed on	2.4.1, 3.0.0, 3.1.0
Restore supported from	3.2.0

What is included in this release

Enhanced licensing capability

Enhanced licensing capability for application features to better support customer licensing.

Support of new data source MQTT - AMS data connector for Valve Health Application

AMS provides some of the valve health details in terms of data and alerts and Valve Health Application would like to consume those details. One of the protocols supported by AMS is MQTT and PWI is enhanced to leverage this information.

Location hierarchy configuration - ISA 95

Location hierarchy configuration - ISA 95 is a guided and flexible hierarchy configuration support to on-board location details of a customer. It is also a CSV-based import capability and hierarchy representation with an expandable/collapsible view. Necessary support from platform to applications in choosing location information during asset configuration and the ability to filter them accordingly.

Support for 250 Gateways for PWI on-premises instances

In the past, only 100 Emerson *Wireless*HART® gateways were allowed to be configured to the PWI appliance. This capacity has been increased to 250 gateways.

Default certificates enhancements

The following two enhancements are performed in this release. However, they are only reflected with a rebuild of default certificates on the v3.2.0 upgraded machine.

- CRL files generated and available for download.

- Certificate parameters like `keyUsage` and `extendedKeyUsage` are updated to support CRL and AMS connectivity.

Note

- Those customers who need the above capabilities would choose to rebuild certificates. Rebuild of certificates requires customers to re-establish client/server connections with new certificates.

- A new PWI v3.2.0 system will carry these changes by default and there is no need for certificates rebuild.

Other improvements

- Refactored and improved the performance of components that exchange data between on-Premises & cloud.

- Updated OpenSSL on infrastructure components (HART Client, OPC-UA Client & OPC-UA Server)

- Ensured support of large files (~10 GB) restoration on PWI-Edge & PWI-Cloud systems.

- Remove/Blocking root user to prevent any security concerns

- Updated npm packages with any vulnerabilities detected for the components impacted by this release.

- Ability to interact with the PWI system to perform network changes and diagnostics backup when the system fails to generate a License fingerprint. Users are not recommended to perform any operations with the system when they get into this state except performing a diagnostics backup and network configuration changes.

In-place upgrade

Upgrade bundle file name	`platform_upgrade-v3.2.0-build-7.plf.20231023_0358UTC-PRD.tar.gz.asc`
Upgrade bundle hash	`platform_upgrade-v3.2.0-build-7.plf.20231023_0358UTC-PRD.sha256`
Compatible with PWI-STD	Yes
Compatible with PWI-STD Enabled with IOTCS	Yes
Compatible with PWI-EDGE	Yes
Compatible with PWI-EDGE Enabled with IOTCS	Yes
Compatible with PWI-CLOUD	Yes

If you already have an existing PWI system, you can upgrade it to the current version v3.2.0 in following manner.
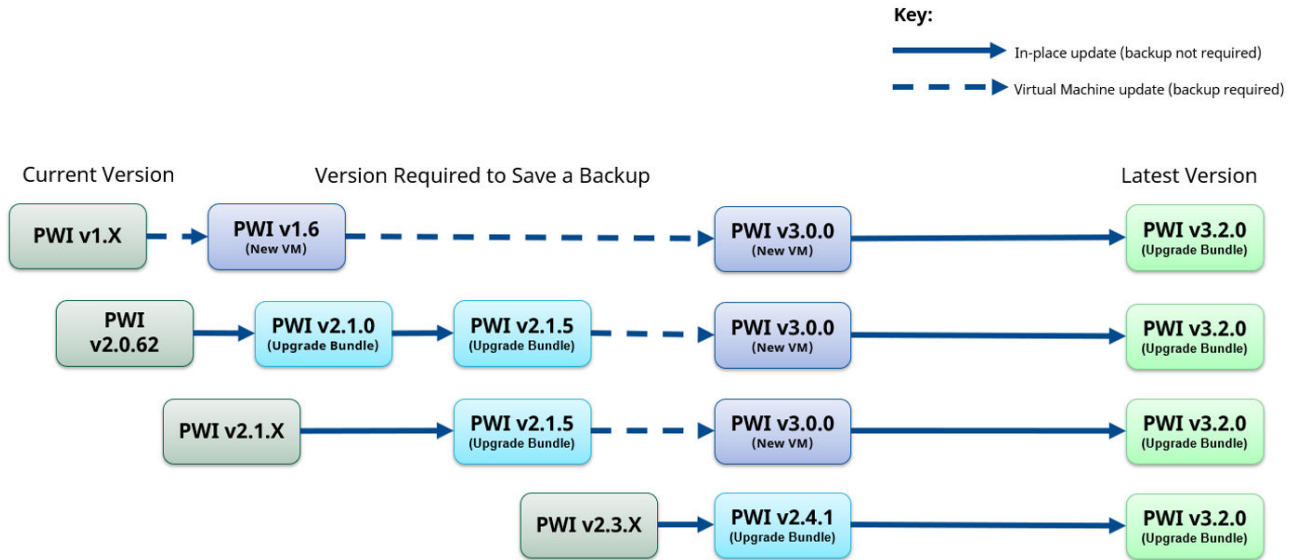
Upgrade paths from existing latest PWI versions

A direct upgrade is supported from following three PWI latest versions and no actions needed before or after the upgrade.
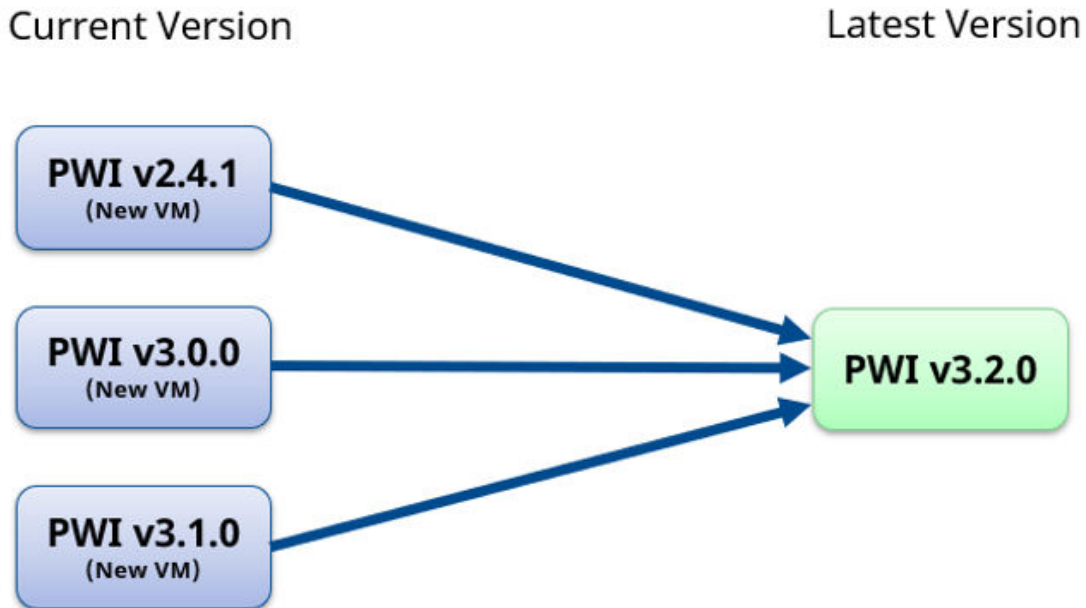
Upgrade paths from various PWI versions

If a customer has an older PWI version, they can choose to upgrade to latest PWI version v3.2.0 in the following upgrade path.

Key:

→ In-place update (backup not required)

⇢ Virtual Machine update (backup required)

| Current Version | Version Required to Save a Backup | | Latest Version |

New VM setup

This release also comes with an OVA/image to start a fresh PWI v3.2.0 instance. This OVA carries forward some of the following capabilities which were introduced in previous release.

- Hard Disk of 512 GB size
- Ability to expand disk with Logical Volume manager

A customer who is not on v3.1.0 may prefer picking this OVA to get the additional disk size benefits along with other 3.2.0 enhancements.

Restoration support

In v3.2.0, there are some improvements to default certificates and it is necessary to handle these appropriately during the backup & restoration. To ensure that, restoration of backup is only supported from v3.2.0.

To fulfil this, customers are required to upgrade their existing PWI system to v3.2.0 with an in-place upgrade bundles and perform a restorable backup.
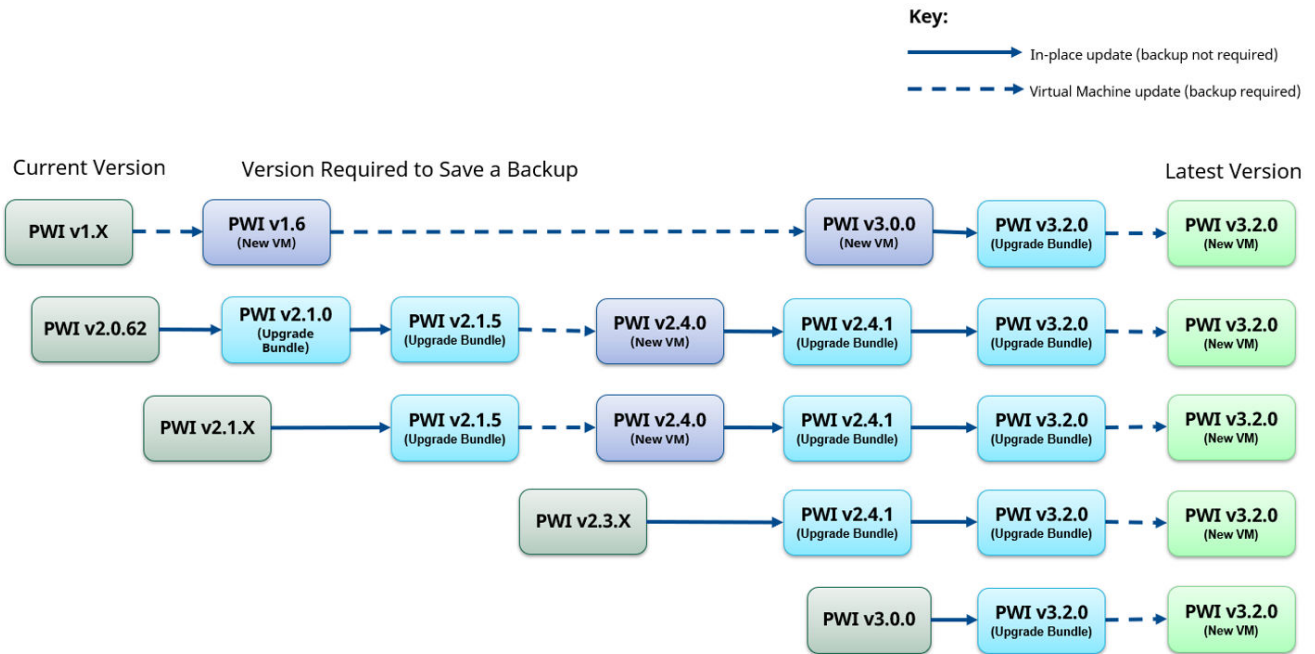
Note: If a customer is on v3.1.0, it is recommended to go with an in-place upgrade to reach v3.2.0 as there is no benefit of going for a new ova

Applications

App name	App version	Release date	Release notes
Cooling Tower	2.3.0-build-3	March 1, 2023	No changes from last release
Steam Trap	2.5.0-build-4	March 1, 2023	No changes from last release
Heat Exchanger	2.3.0-build-4	March 1, 2023	No changes from last release
Air Cooled Heat Exchanger	2.3.0-build-1	March 1, 2023	No changes from last release

App name	App version	Release date	Release notes
PRV	2.6.0-build-1	August 7, 2023	▪ Reduction of the calculation cycle interval from 5 minutes to 1 minute. Calculations are performed at a 1-minute interval providing more frequent updates to the asset status. This includes asset status updates to external OPC-UA and MODBUS connections. ▪ Introduce state latching for RELEASE events. Asset status published to OPC-UA and MODBUS now indicates if any new or ongoing release events were detected inside the 1-minute calculation window instead of the calculated current state of the asset once every minute.
Pump	2.4.0-build-2	March 1, 2023	No changes from last release
Network Management	3.1.1	June 8, 2023	No changes from last release
Power Module	3.1.1	June 8, 2023	No changes from last release
WPG	2.3.0-build-2	March 1, 2023	No changes from last release
Inline Corrosion	1.2.0-build-3	March 1, 2023	No changes from last release
Non-Intrusive Corrosion	1.6.0	October 10, 2023	▪ Corrosion Rate Threshold added. The threshold, above which the corrosion rate will be classified as high, can be specified for each measurement point. The default value is 0.1 mm/y (or 4 mpy). ▪ Measurement Intervals can be updated. The interval between measurements can be updated from the default of 12 hours. This should only be updated in consultation with Emerson as it can affect battery life and network stability. ▪ Support for Model A and Model M sensors. Model A sensors and Model M sensors (such as the WT210 A and WT210 M) are supported.
Connected Lighting	2.3.0	October 6, 2023	▪ Introducing Group Lighting Controls in Mercmaster Connect Asset Details – Calculate and track energy usage for standard dimmable luminaires controlled by the Mercmaster Connect luminaire ▪ Expansion of Group Motion Sensing Controls with Instrumentation - Operate lighting groups with the group motion sensing control when gateways are mixed with instrumentation devices
Location Awareness	1.3.8	Aug 16, 2023	Contact Brooklyn Husnik for latest release information.

Previous versions

Version	Date
3.1.0	July 2023
3.0.0	March 2023
2.4.1	July 2022
2.4.0	April 2022
2.1.5	April 2022
2.3.5	February 2022
2.3.4	November 2021
2.3.3	November 2021
2.3.2	September 2021
2.3.1	August 2021
2.3.0	June 2021
2.1.4	April 2021
2.1.3	March 2021
2.1.2	February 2021
2.1.1	January 2021
2.1.0	October 2020
2.0.062	June 2020
1.6.018	February 2020
1.6.017	January 2020
1.6.014	September 2019
1.5.022	January 2019
1.4.016	April 2018
1.3.002	September 2017
1.2.049	July 2017
1.1.016	February 2017
1.0.022	December 2016

Framework version 3.1.0

pwi-v3.1.0

Release date: July 2023

Security considerations

Category	Impacted?	Comments/details
Inbound ports	No	There are no new inbound ports opened as part of this release.

Category	Impacted?	Comments/details
Outbound ports	Yes	Plantweb Insight (PWI) IOTCS ■ host: all port: 8883 - For communication with Internet of things (IOT) devices on Azure IOT Hub PWI Cloud ■ host: all port 5671 - communication with Event Hub on Azure IOT Hub ■ host: 168.63.129.16 port: 32526 - For Azure Agent communication. For more information, see What is IP address 168.63.129.16? ■ host: all port: 80 - For communication with Emerson's Crowdstrike Agent
Data sensitivity	Yes	Emerson has introduced IOT Devices and Event Hub configuration screens for IOTCS and Cloud variants. These configuration screens capture some shared access keys of those Azure resources. ■ Ensured that only administrators can view these keys on the user interface (UI). ■ Ensured that data at rest is encrypted (client encryption). ■ Excluded those details as part of diagnostics backup
Security vulnerabilities	Yes	Emerson has addressed the following tickets which are related to security vulnerabilities. ■ PP-1274: Updated alpine image to 3.17 to patch sqlite vulnerability. ■ PP 1303: Fixed NPM vulnerabilities. ■ Open Ssl related ticket to be added

In-place upgrade

Existing Plantweb Insight (PWI) virtual machine (VM) instances have a disk capacity of 125 GB or 250 GB based on the version you are on.

If this disk capacity is good enough for the networks, you can remain on the same VM and use the in-place upgrade file `platform_upgrade-v3.1.0-build-13.plf.20230519_0928UTC-PRD.tar.gz.asc` to reach the latest version.

This in-place upgrade enables you with all the features and bugs of PWI 3.1.0 release. Disk size of 512 GB and ability to expand disk will only be available with a new PWI VM with x.

After upgrading to PWI 3.1.0, there is a new feature under the rescue console to check the available disk size. You can check the available disk space and move to a new 3.1.0 VM at a later time as well.

Upgrade requirements

■ Platform bundle (Platform v 3.1.0-build-12) should only be installed on PWI 2.4.0 or higher.

■ If a customer is still on a version older than 2.4.0, they should first upgrade to 2.4.0 before installing this platform upgrade bundle.

Table 1: Upgrade bundle compatibility metrics with existing PWI variants

Version	PWI-STD	PWI-EDGE	PWI-IOTCS	PWI-CLOUD
2.4.0 & later	Compatible	Incompatible	Compatible	Compatible[1]
2.3.5 & older	Incompatible	Incompatible	Incompatible	Incompatible

[1]   *PWI-CLOUD upgrade requires configuration of eventhub. In the past, it was a file-based configuration. With the 3.1.0 release, it has changed to a user interface (UI) screen.*

Create new virtual machine (VM)

New and existing customers can get this ova and create Plantweb Insight (PWI) 3.1.0 VM, which enables the following additional capabilities:

- Disk space of 512 GB

- Ability to expand the disk (A disk should be fully allocated and should not be removed once allocated).

To support users moving from their existing VMs to the newer version of ova, we have introduced restoration support from the following versions:

- PWI 2.4.1 to PWI 3.1.0

- PWI 3.0.0 to PWI 3.1.0

- PWI 3.1.0 to PWI 3.1.0 (for those users who have initially upgraded to 3.1.0 in-place and later wish to move to new ova)

The following sections describe steps to move to the new PWI 3.1.0 VM. Pick the appropriate section based on the version you have.

From PWI v 2.4.1, v 3.0.0, and 3.1.0:

Procedure

1. Take restorable backup of platform.
2. Take restorable backup of each application.
3. Set up a new ***PWI v 3.1.0 ova***.
4. Restore the platform's backup on the new PWI v 3.1.0 VM.
5. Install the required latest apps on the new PWI v 3.1.0 VM.
6. Install the licenses of the applications.
7. Restore the applications' backups one by one to the new PWI v 3.1.0 VM.

From PWI v 2.4.2 patch version

There was a hotfix release to fix the OPC UA timeout issue that was released to specific customers. If you have upgraded to this version:

Procedure

1. Upgrade to PWI v 3.0.0 with an in-place upgrade: `platform_upgrade-v3.0.0-build-13.plf.20221012_0835UTC-PRD.tar.gz.asc`.
2. Follow these steps.

From PWI v 2.3.0, v 2.3.1, v 2.3.2, v 2.3.3, v 2.3.4, v 2.3.5, and v 2.4.0

Procedure

1. Upgrade PWI to v 2.4.1 by installing the `platform_upgrade-v3.0.0-build-13.plf.20221012_0835UTC-PRD.tar.gz.asc` upgrade bundle.
2. Follow these steps.

From PWI v 2.1.0, v 2.1.1, v 2.1.2, v 2.1.3, v 2.1.4, and v 2.1.5

If your VM is one of these PWI versions, do the following:

Procedure

1. Move to PWI v 2.4.0 VM, which has support for restoration of data from PWI v 2.1.5.
   a) Ensure you are using PWI v 2.1.5.

  b) If your PWI version is lower than v 2.1.5, perform the upgrade to v 2.1.5 by installing the `platform_upgrade-2.1.5.20220322_0318UTC-PRD.tar.gz` upgrade bundle.

  c) Install app versions required on version 2.1.5.

  d) Take a restorable backup of the platform.

  e) Take restorable backups of each application.

  f) Set up a new PWI v 2.4.0 VM.

  g) Install apps required on version 2.4.0.

  h) Restore v 2.1.5 platform's backup on PWI v 2.4.0 VM with the option **Restore from PWI V2**.

  i) Restore application backups one by one.

 You are now on PWI v 2.4.0.

2. Follow these [steps](#).

From PWI v 1.6

Restoration of backups from v 1.6 is obsoleted in PWI v 2.4.0. To perform the restoration:

Procedure

1. Set up a PWI 2.4.0 ova and restore backup from v 1.6.

  a) Take backups of the platform and apps from the v 1.6 system.
   This will be a single file on this version of the system.

  b) Set up a new PWI v 2.4.0 ova.

  c) Install the required apps on v 2.4.0 VM.

  d) Restore the v 1.6 backup file to v 2.4.0 VM with the option **Restore from 1.6**.

 You are now on PWI v 2.4.0.

2. Follow these [steps](#).

Applications

App name	App version	Release date	Release notes
Cooling Tower	2.3.0-build-3	March 1, 2023	No changes from last release
Steam Trap	2.5.0-build-4	March 1, 2023	No changes from last release
Heat Exchanger	2.3.0-build-4	March 1, 2023	No changes from last release
Air Cooled Heat Exchanger	2.3.0-build-1	March 1, 2023	No changes from last release
PRV	2.5.0-build-4	March 1, 2023	No changes from last release
Pump	2.4.0-build-2	March 1, 2023	No changes from last release
Network Management	3.1.1	June 8, 2023	▪ IOTCS support ▪ Improved handling of identical gateway tags ▪ Fixed device drop-down loading issue in network diagram ▪ Bug fix: Device count in network is doubled when a gateway tag is changed
Power Module	3.1.1	June 8, 2023	▪ IOTCS support ▪ Added Site and Location columns in *Alerts* screen ▪ Restrict acknowledgement of ongoing alerts ▪ Bug fix: Location details were missing when navigating from *Alerts* screen to asset details ▪ Quality assurance bug fixes
WPG	2.3.0-build-2	March 1, 2023	No changes from last release
Inline Corrosion	1.2.0-build-3	March 1, 2023	No changes from last release
Non-Intrusive Corrosion	1.5.1	April 3, 2023	No changes from last release
Connected Lighting	2.0.0	March 1, 2023	No changes from last release
Location Awareness	1.3.8	Aug 16, 2023	Contact Brooklyn Husnik for latest release information.

Previous versions

Version	Date
3.0.0	March 2023
2.4.1	July 2022
2.4.0	April 2022
2.1.5	April 2022
2.3.5	February 2022
2.3.4	November 2021
2.3.3	November 2021
2.3.2	September 2021

Version	Date
2.3.1	August 2021
2.3.0	June 2021
2.1.4	April 2021
2.1.3	March 2021
2.1.2	February 2021
2.1.1	January 2021
2.1.0	October 2020
2.0.062	June 2020
1.6.018	February 2020
1.6.017	January 2020
1.6.014	September 2019
1.5.022	January 2019
1.4.016	April 2018
1.3.002	September 2017
1.2.049	July 2017
1.1.016	February 2017
1.0.022	December 2016

Framework version 3.0.0

pwi-v3.0.0

Release date: March 2023

- Version 3.0.0 is available as an in-place system upgrade and as a new OVA or VHD.

- Version 3.0.0 as a new OVA or VHD introduces an increased disc size of 250 GB.

- Version 3.0.0 as an upgrade bundle will retain the previous version's disc size (100 GB).
  - Only install upgrade bundle (platform_upgrade-v3.0.0-build-14) on latest Plantweb Insight (PWI) 2.4.0 or 2.4.1.

  - If using a version older than 2.4.0, first upgrade to 2.4.0 before installing this upgrade bundle.

Note
The PWI 3.0.0 upgrade process takes slightly more time than usual upgrades. Emerson recommends avoiding navigating/refreshing the page during the installation. A completion status is shown once the system is ready for use.


- Application updates on this release are tied with framework version v3.0.0-build-14.
  - Only install application updates from this release after upgrading the framework.

  - Existing applications that do not have an update with this release can continue to run on this new version of the framework.

Steps to perform proper upgrade:

1. Ensure you are using PWI version 2.4.0 or 2.4.1. See below for backup/restore paths from previous framework versions.

2. Uninstall any of the existing apps that have updates available (do not check "clean uninstall" unless desired).

3. Install framework upgrade bundle (platform_upgrade-v3.0.0-build-14).

4. Install new app bundles.

Figure 1: User upgrade paths to version 3.0.0
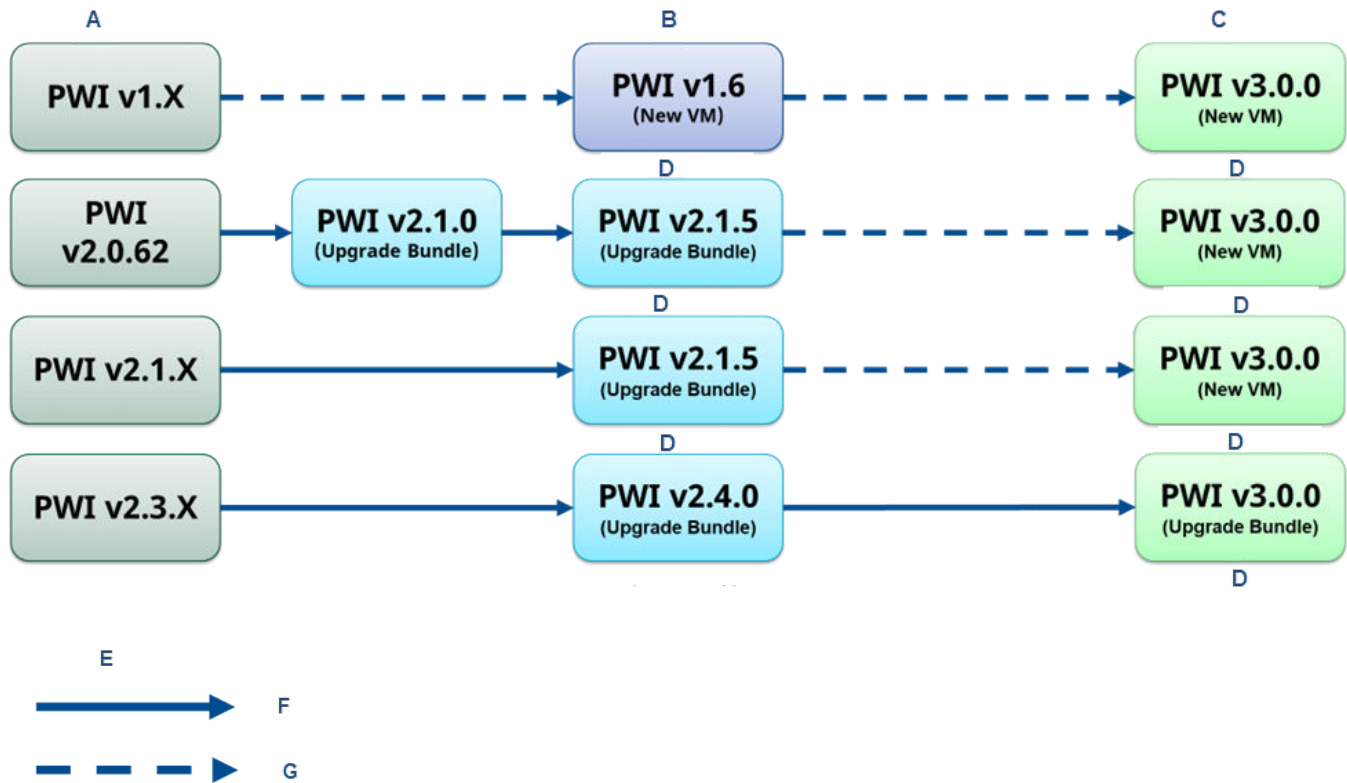
A. *Current version*
B. *Version required to save a backup*
C. *Latest version*
D. *Requires new apps*
E. *Key*
F. *In-place update (backup not required)*
G. *Virtual Machine update (backup required)*

	Changes
Framework	■ Increased disc size of 250 GB for OVA/VHD only
	■ Support for licensing
	■ Defaulted number of allowed gateway data sources
	■ OPC-UA – Granular timeout support from default/template/publish
	■ Bug fix – Related to data handling from gateways
	■ Bug Fix – Restore status stuck at `In Progress` when performing a restore on PWI 3.0.0

Table 2: Applications

App name	App version	Release date	Release notes
Cooling Tower	2.3.0-build-3	March 1, 2023	■ Support for licensing
			■ Security vulnerability fixes

Table 2: Applications *(continued)*

App name	App version	Release date	Release notes
Steam Trap	2.5.0-build-4	March 1, 2023	▪ Support for licensing ▪ Security vulnerability fixes ▪ User interface (UI) footer update
Heat Exchanger	2.3.0-build-4	Mar 1 - 23	▪ Support for licensing ▪ Security vulnerability fixes ▪ Bug fix: Exported asset detail – installation date was split into two columns ▪ Bug fix: Search function was not fully functional in **Alerts** page ▪ Bug fix: Null value from OPC-UA server for asset cost when value was 0
Air Cooled Heat Exchanger	2.3.0-build-1	Mar 1 - 23	▪ Support for licensing ▪ Security vulnerability fixes
PRV	2.5.0-build-4	Mar 1 - 23	▪ Email notifications for PRV releases ▪ Support for licensing ▪ Security vulnerability fixes ▪ Bug Fix: Status of >2500th asset not showing on **Asset Summary** page
Pump	2.4.0-build-2	Mar 1 - 23	▪ Support for licensing ▪ Security vulnerability fixes
Network Management	3.1.0-build-1	Mar 1 - 23	▪ Support for licensing ▪ Security vulnerability fixes
Power Module	3.1.0-build-2	Mar 1 - 23	▪ Support for licensing ▪ Security vulnerability fixes
WPG	2.3.0-build-2	Mar 1 - 23	▪ Support for licensing ▪ Security vulnerability fixes
Inline Corrosion	1.2.0-build-3	Mar 1 - 23	▪ Support for licensing ▪ Updated to openssl
Non-Intrusive Corrosion	1.5.1	Apr 3 - 23	▪ Fix OPC bad timeout error ▪ Fix disk storage filling up ▪ Added support for new ET410 v4 sensor ▪ Fix Permasense Shape Indicator (PSI) calculation ▪ Restorable backups ▪ UI refresh ▪ Support for licensing
Connected Lighting	2.0.0	Mar 1 - 23	Support for licensing
Location Awareness	1.3.8	Aug 16 - 23	Contact Jacob Tardoni for latest release information.

Previous versions	Release date
2.4.1	July 2022
2.4.0	April 2022
2.1.5	April 2022
2.3.5	February 2022
2.3.4	November 2021
2.3.3	November 2021
2.3.2	September 2021
2.3.1	August 2021
2.3.0	June 2021
2.1.4	April 2021
2.1.3	March 2021
2.1.2	February 2021
2.1.1	January 2021
2.1.0	October 2020
2.0.062	June 2020
1.6.018	February 2020
1.6.017	January 2020
1.6.014	September 2019
1.5.022	January 2019
1.4.016	April 2018
1.3.002	September 2017
1.2.049	July 2017
1.1.016	February 2017
1.0.022	December 2016

Framework version 2.4.1

pwi-v2.4.1

Release date: July 2022

- Version 2.4.1 is available as an in-place system upgrade applicable on v2.4.0 and above (822 MB).
- Only install Framework bundle (platform_upgrade-v2.4.1-build-5) on latest Plantweb Insight (PWI) LTS v2.4.0.
  — If using a version older than v2.4.0, first upgrade to v2.4.0 before installing this framework bundle.
- Application upgrades on this release are tied with framework version v2.4.1-build-5.
  — Install both platform and application upgrades at the same time. Do not upgrade only platform or only applications.
- Once applications are upgraded, do not downgrade application versions.

Steps to perform proper upgrade:

1. Make sure you are using PWI v2.4.0.
2. Uninstall any of the existing apps:

- Steam Trap
- Network Management
- Air Cooled Heat Exchanger
- Heat Exchanger
- PRV
- Pump
- Pressure Gauge

Do not select clean uninstall unless desired.

3. Install framework upgrade bundle (platform_upgrade-v2.4.1-build-5).

4. Install new app bundles.

	Changes
Framework	- Dual HART® support on same Gateway IP - Modbus® default timeout for all variables increased from 60 sec to 600 sec. - Minimum validity period of user uploaded certificates changed to 90 days instead of 180 days. - Session idle time out configuration - Indicate when exceeding the recommended idle time - Security vulnerability fixes - Bug fixes

Table 3: Applications

App name	App version	Release date	Release notes
Cooling Tower	2.2.5	Jul 1-22	- Security vulnerability fixes - Support for dual wireless HART - Bug fix: cooling tower efficiency calculation
Steam Trap	2.4.0	Jul 1-22	- Temperature units are now user configurable - Asset names of existing assets can be edited - Security vulnerability fixes - Support for dual wireless HART - Bug fix: status of >2500th asset was not showing
Heat Exchanger	2.2.4	Jul 1-22	Support for dual wireless HART
Air Cooled Heat Exchanger	2.2.4	Jul 1-22	- Support for dual wireless HART - Bug fix: variable status was not shown when status was bad
PRV	2.3.2	Jul 1-22	- Support for dual wireless HART - Bug fix: variable status was not shown when status was bad
Pump	2.3.2	Jul 1-22	Support for dual wireless HART
Network Management	3.0.4	Jul 1-22	- Security vulnerability fix - Bug fix: Network diagram not loading - Bug fix: Unable to hide alerts
Power Module	3.0.2	Mar 24-22	No changes from last release

Table 3: Applications *(continued)*

App name	App version	Release date	Release notes
WPG	2.2.3	Jul 1-22	Support for dual wireless HART
Inline Corrosion	1.1.5	Mar 24-22	No changes from last release
Non-Intrusive Corrosion	1.3.0	Jan 26-22	No changes from last release
Connected Lighting	1.2.0	Feb 18-22	No changes from last release
Location Awareness	1.3.6		Contact Jacob Tardoni for latest release information.

Previous versions	Release date
2.4.0	April 2022
2.1.5	April 2022
2.3.5	February 2022
2.3.4	November 2021
2.3.3	November 2021
2.3.2	September 2021
2.3.1	August 2021
2.3.0	June 2021
2.1.4	April 2021
2.1.3	March 2021
2.1.2	February 2021
2.1.1	January 2021
2.1.0	October 2020
2.0.062	June 2020
1.6.018	February 2020
1.6.017	January 2020
1.6.014	September 2019
1.5.022	January 2019
1.4.016	April 2018
1.3.002	September 2017
1.2.049	July 2017
1.1.016	February 2017
1.0.022	December 2016

Framework version 2.4.0

pwi-v2.4.0

Release date: April 2022

Version 2.4.0 is available as both an in-place system upgrade applicable on v2.3.0 and above (663 MB) and as a standalone virtual machine (2.59 GB).

	Changes
Framework	▪ Backup/restore functionality — Plantweb Insight (PWI) v2.4.0 introduces two types of backups: diagnostic and restorable backups — You can perform a backup of either type for either the framework and/or specific application(s). — If using PWI v2.1.X or older versions, first upgrade to v2.1.5 to take restorable system and application backups. — If using PWI v2.3.X or later, you can apply the in-place update to get to v2.4.0. ▪ Ability to configure internal docker network to avoid subnet conflicts ▪ OPC-UA client fix related to servers that use a hostname instead of an Internet Protocol (IP) address (Delta V) ▪ Security updates
Applications	Applications now support restorable backups.

App name	App version	Release date	Release notes
Cooling Tower	2.2.4	Mar 24-22	▪ Ability to capture restorable backup ▪ Ability to restore a backup
Steam Trap	2.3.1	Mar 24-22	▪ Ability to capture restorable backup ▪ Ability to restore a backup
Heat Exchanger	2.2.3	Mar 24-22	▪ Ability to capture restorable backup ▪ Ability to restore a backup
Air Cooled Heat Exchanger	2.2.3	Mar 24-22	▪ Ability to capture restorable backup ▪ Ability to restore a backup
PRV	2.3.1	Mar 24-22	▪ Ability to capture restorable backup ▪ Ability to restore a backup
Pump	2.3.1	Mar 24-22	▪ Ability to capture restorable backup ▪ Ability to restore a backup
Network Management	3.0.3	Mar 24-22	▪ Ability to capture restorable backup ▪ Ability to restore a backup
Power Module	3.0.2	Mar 24-22	▪ Ability to capture restorable backup ▪ Ability to restore a backup
WPG	2.2.2	Mar 24-22	▪ Ability to capture restorable backup ▪ Ability to restore a backup
Inline Corrosion	1.1.5	Mar 24-22	▪ Ability to capture restorable backup ▪ Ability to restore a backup
Non-Intrusive Corrosion	1.3.0	Jan 26-22	▪ New remaining life analysis ▪ New application program interface (API) capabilities ▪ Performance and useability improvements ▪ Improved functionality over legacy Data Manager software

App name	App version	Release date	Release notes
Connected Lighting	1.2.0	Feb 18-22	No changes from last release
Location Awareness	1.2.4	Mar 29-22	Contact Jacob Tardoni for latest release information.

Previous versions	Release date
2.1.5	April 2022
2.3.5	February 2022
2.3.4	November 2021
2.3.3	November 2021
2.3.2	September 2021
2.3.1	August 2021
2.3.0	June 2021
2.1.4	April 2021
2.1.3	March 2021
2.1.2	February 2021
2.1.1	January 2021
2.1.0	October 2020
2.0.062	June 2020
1.6.018	February 2020
1.6.017	January 2020
1.6.014	September 2019
1.5.022	January 2019
1.4.016	April 2018
1.3.002	September 2017
1.2.049	July 2017
1.1.016	February 2017
1.0.022	December 2016

Framework version 2.1.5

pwi-v2.1.5

Release date: April 2022

Version 2.1.5 is available as an in-place system upgrade applicable on version 2.1.X (395 MB).

Version 2.1.5 is intended for customers on version 2.1.X or earlier to provide an upgrade path to carry system data to version 2.4.0.

	Changes
Framework	Restorable backup functionality ■ Plantweb Insight (PWI) v2.1.5 allows the user to capture a restorable backup file. ■ A restorable backup can be performed for either the framework and/or specific application(s). ■ If using PWI v2.1.4 or older versions, first upgrade to v2.1.5 to take restorable system and application backups. ■ If using PWI v2.3.X or later, you do not need this release and can simply apply an in-place update to get to v2.4.0.
Applications	■ No changes to applications in PWI v2.1.5, but ensure you have the versions listed below before capturing a restorable backup that will be restored into v2.4.X. ■ Application backups can only be restored on PWI v2.4.0 or later.

App name	App version	Release date	Release notes
Cooling Tower	2.1.1	Dec 18-20	No changes from PWI v2.1.4 release
Steam Trap	2.1.2	Dec 16-20	No changes from PWI v2.1.4 release
Heat Exchanger	2.1.3	Feb 11-21	No changes from PWI v2.1.4 release
Air Cooled Heat Exchanger	2.1.3	Feb 22-21	No changes from PWI v2.1.4 release
PRV	2.1.1	Jan 7-21	No changes from PWI v2.1.4 release
Pump	2.2.0	Apr 22-21	No changes from PWI v2.1.4 release
Network Management	2.3.0	Apr 1-21	No changes from PWI v2.1.4 release
Power Module	2.1.0	Oct 26-20	No changes from PWI v2.1.4 release
WPG	2.1.0	Oct 26-20	No changes from PWI v2.1.4 release
Inline Corrosion	1.1.0	Mar 15-21	No changes from PWI v2.1.4 release
Non-Intrusive Corrosion	1.2.0	Jul 15-2021	No changes from PWI v2.1.4 release
Connected Lighting	N/A	N/A	Does not exist for PWI v2.1.X
Location Awareness	N/A	N/A	Contact Jacob Tardoni for latest release information.

Previous versions	Release date
2.3.5	February 2022
2.3.4	November 2021
2.3.3	November 2021
2.3.2	September 2021
2.3.1	August 2021
2.3.0	June 2021
2.1.4	April 2021
2.1.3	March 2021
2.1.2	February 2021
2.1.1	January 2021
2.1.0	October 2020

Previous versions	Release date
2.0.062	June 2020
1.6.018	February 2020
1.6.017	January 2020
1.6.014	September 2019
1.5.022	January 2019
1.4.016	April 2018
1.3.002	September 2017
1.2.049	July 2017
1.1.016	February 2017
1.0.022	December 2016

Framework version 2.3.5

pwi-v2.3.5

Release date: February 2022

Version 2.3.5 is an in-place system upgrade applicable on v2.3.0 and above (621 MB).

	Changes
Framework	■ Security upgrade in conjunction with Emerson *Wireless*HART® Gateway firmware updates. — If using Plantweb Insight (PWI) 2.3.5 or later that are using HART-IP secure connection to an Emerson *Wireless*HART Gateway, you must also use firmware versions 4.8.1 or later for the V4 gateway (1410, 1420, 1552, 1410D) or firmware version 6.6.1 or later for the V6 gateway (1410S). — Please refer to Emerson Cyber Security disclosure EMR.MSOL22001-1 for more details. ■ Bug fix – NTP sync flag on *About* page displaying incorrectly
Applications	Updates to: ■ Steam Trap ■ PRV ■ Pump ■ Network Management

App name	App version	Release date	Release notes
Cooling Tower	2.2.1	Nov 25-21	No changes from last release
Steam Trap	2.3.0	Feb 9-22	■ Create option to Acknowledge All Alerts Simultaneously ■ Fixes to sorting issues for columns in *Asset Summary and Event* page ■ *Exported Asset Detail* is increased to 5000 assets ■ Bug fix - *Exported Asset Detail* - Installation date is split and copied over to the next column ■ `RUNNING CALCULATIONS` state is published to OPC UA and Modbus® as `NO_DATA/ ERROR` state

App name	App version	Release date	Release notes
Heat Exchanger	2.2.2	Nov 25-21	No changes from last release
Air Cooled Heat Exchanger	2.2.2	Nov 25-21	No changes from last release
PRV	2.3.0	Feb 9-22	▪ Create option to Acknowledge All Alerts Simultaneously ▪ Fixes to sorting issues for columns in ***Asset Summary and Event*** page
Pump	2.3.0	Feb 9-22	▪ Create option to Acknowledge All Alerts Simultaneously ▪ Fixes to sorting issues for columns in ***Asset Summary and Event*** page
Network Management	3.0.2	Feb 9-22	Bug fix related to devices not appearing in network diagram after changing networks
BMA	3.0.1	Nov 25-21	No changes from last release
WPG	2.2.1	Nov 25-21	No changes from last release
Inline Corrosion	1.1.4	Nov 25-21	No changes from last release
Non-Intrusive Corrosion	1.2.2	Nov 25-21	No changes from last release
Connected Lighting	1.1.0	Aug 5-21	No changes from last release
Location Awareness	1.1.19	Jul 1-21	▪ No changes from last release ▪ Contact Jacob Tardoni for latest release information.

Previous versions	Release date
2.3.4	November 2021
2.3.3	November 2021
2.3.2	September 2021
2.3.1	August 2021
2.3.0	June 2021
2.1.4	April 2021
2.1.3	March 2021
2.1.2	February 2021
2.1.1	January 2021
2.1.0	October 2020
2.0.062	June 2020
1.6.018	February 2020
1.6.017	January 2020
1.6.014	September 2019
1.5.022	January 2019
1.4.016	April 2018
1.3.002	September 2017
1.2.049	July 2017
1.1.016	February 2017

Previous versions	Release date
1.0.022	December 2016

Framework version 2.3.4

pwi-v2.3.4

Release date: November 2021

Version 2.3.4 is an in-place system upgrade applicable on v2.3.0 and above (621 MB).

	Changes
Framework	▪ Various security patches ▪ Other minor bug fixes encountered during regression testing
Applications	Security patches

Note

For this release, update both platform and applications. Recommended upgrade procedure is as follows:

1. Uninstall old applications.

2. Upgrade the platform.

3. Install new applications.

App name	App version	Release date	Release notes
Cooling Tower	2.2.1	Nov 25-21	▪ Security patches ▪ Fix to Optics application programming interface (API). `Supply Water Conductivity` should have header `cooling_tower` instead of `other`
Steam Trap	2.2.1	Nov 25-21	Security patches
Heat Exchanger	2.2.2	Nov 25-21	Security patches
Air Cooled Heat Exchanger	2.2.2	Nov 25-21	Security patches
PRV	2.2.1	Nov 25-21	Security patches
Pump	2.2.1	Nov 25-21	Security patches
Network Management	3.0.1	Nov 25-21	Security patches
BMA	3.0.1	Nov 25-21	Security patches
WPG	2.2.1	Nov 25-21	Security patches
Inline Corrosion	1.1.4	Nov 25-21	Security patches
Non-Intrusive Corrosion	1.2.2	Nov 22-21	No changes from last release
Connected Lighting	1.1.0	Aug 5-21	No changes from last release
Location Awareness	1.1.19	Jul 1-21	▪ No changes from last release ▪ Contact Jacob Tardoni for latest release information.

Previous versions	Release date
2.3.3	November 2021
2.3.2	September 2021
2.3.1	August 2021
2.3.0	June 2021
2.1.4	April 2021
2.1.3	March 2021
2.1.2	February 2021
2.1.1	January 2021
2.1.0	October 2020
2.0.062	June 2020
1.6.018	February 2020
1.6.017	January 2020
1.6.014	September 2019
1.5.022	January 2019
1.4.016	April 2018
1.3.002	September 2017
1.2.049	July 2017
1.1.016	February 2017
1.0.022	December 2016

Framework version 2.3.3

pwi-v2.3.3

Release date: November 2021

Version 2.3.3 is an in-place system upgrade applicable on v2.3.0 and above.

	Changes
Framework	■ Bug fix - Modbus® server timeout issue with Permasense devices (Non-Intrusive Corrosion app) ■ Bug fix – Disk UUID mismatch for Hyper-V virtual machine

App name	App version	Release date	Release notes
Cooling Tower	2.2.1	Jun 1-21	No changes from last release
Steam Trap	2.2.0	Jun 1-21	No changes from last release
Heat Exchanger	2.2.1	Jun 1-21	No changes from last release
Air Cooled Heat Exchanger	2.2.1	Jun 21-21	No changes from last release
PRV	2.2.0	Jun 1-21	No changes from last release
Pump	2.2.0	Jun 1-21	No changes from last release

App name	App version	Release date	Release notes
Network Management	3.0.0	Jun 1-21	No changes from last release
BMA	3.0.0	Jun 1-21	No changes from last release
WPG	2.2.0	Jun 1-21	No changes from last release
Inline Corrosion	1.1.0	Jun 1-21	No changes from last release
Non-Intrusive Corrosion	1.2.2	Nov 22-21	Fixes a Modbus® server timeout issue that resulted in NaN/stale values
Connected Lighting	1.1.0	Aug 5-21	No changes from last release
Location Awareness	1.1.19	Jul 1-21	No changes from last release

Previous versions	Release date
2.3.2	September 2021
2.3.1	August 2021
2.3.0	June 2021
2.1.4	April 2021
2.1.3	March 2021
2.1.2	February 2021
2.1.1	January 2021
2.1.0	October 2020
2.0.062	June 2020
1.6.018	February 2020
1.6.017	January 2020
1.6.014	September 2019
1.5.022	January 2019
1.4.016	April 2018
1.3.002	September 2017
1.2.049	July 2017
1.1.016	February 2017
1.0.022	December 2016

Framework version 2.3.2

pwi-v2.3.2

Release date: September 2021

Version 2.3.2 is an in-place system upgrade applicable on v2.3.0 and above.

	Changes
Framework	■ Bug fix - Rescue console user scripts were not accessible after upgrade to 2.3.1 ■ Bug fix - OPC server connection issue upon host port change ■ Bug fix - Internet protocol (IP) is not renewed after 30 minutes with the latest released ova (v2.3.0) ■ Bug fix - Plantweb Insight (PWI) certificate exchange failure after CSRF fix in old and next generation gateways ■ Bug fix - Ethernet configuration change host name issue ■ GDS - Publish device Tag change messages when there is a change (in preparation for BMA update) ■ Bug fix - OPC UA server publishing confusion caused by reusing NodeID of a deleted variable ■ Improvement - Reduce journal log size to 100 MB (currently this is 2.5 GB) ■ Bug fix - Application backup is failing due to space constraint ■ Improvement in startup behavior

App name	App version	Release date	Release notes
Cooling Tower	2.2.1	Jun 1-21	No changes from last release
Steam Trap	2.2.0	Jun 1-21	No changes from last release
Heat Exchanger	2.2.1	Jun 1-21	No changes from last release
Air Cooled Heat Exchanger	2.2.1	Jun 21-21	No changes from last release
PRV	2.2.0	Jun 1-21	No changes from last release
Pump	2.2.0	Jun 1-21	No changes from last release
Network Management	3.0.0	Jun 1-21	No changes from last release
BMA	3.0.0	Jun 1-21	No changes from last release
WPG	2.2.0	Jun 1-21	No changes from last release
Inline Corrosion	1.1.0	Jun 1-21	No changes from last release
Non-Intrusive Corrosion	1.2.1	Sept 7-21	Contact Permasense development team for details
Connected Lighting	1.1.0	Aug 5-21	No changes from last release
Location Awareness	1.1.19	Jul 1-21	No changes from last release

Previous versions	Release date
2.3.1	August 2021
2.3.0	June 2021
2.1.4	April 2021
2.1.3	March 2021
2.1.2	February 2021
2.1.1	January 2021
2.1.0	October 2020
2.0.062	June 2020
1.6.018	February 2020

Previous versions	Release date
1.6.017	January 2020
1.6.014	September 2019
1.5.022	January 2019
1.4.016	April 2018
1.3.002	September 2017
1.2.049	July 2017
1.1.016	February 2017
1.0.022	December 2016

Framework version 2.3.1

pwi-v2.3.1

Release date: August 2021

Version 2.3.1 is an in-place system upgrade applicable on v2.3.0 and above.

	Changes
Platform	■ Fixes an issue that caused a certificate exchange failure with the following gateway firmware: — Old generation gateway: 4.7.100 (and above) — Next generation gateway: 6.4.5 (and above) ■ Reduces journal log size to 100 MB ■ Bug fix – Application backup failing due to space constraints ■ Bug fix – Ethernet configuration change host name propagation to DHCP server ■ Bug fix – Improved handling of device tag changes (for BMA)

App name	App version	Release date	Release notes
Cooling Tower	2.1.1	Jun 1-21	No changes from last release
Steam Trap	2.2.0	Jun 1-21	No changes from last release
Heat Exchanger	2.2.1	Jun 1-21	No changes from last release
Air Cooled Heat Exchanger	2.2.1	Jun 21-21	No changes from last release
PRV	2.2.0	Jun 1-21	No changes from last release
Pump	2.2.0	Jun 1-21	No changes from last release
Network Management	3.0.0	Jun 1-21	No changes from last release
BMA	3.0.0	Jun 1-21	No changes from last release
WPG	2.2.0	Jun 1-21	No changes from last release
Inline Corrosion	1.1.0	Jun 1-21	No changes from last release
Non-Intrusive Corrosion	1.2.0	Jul 15-21	No changes from last release
Connected Lighting	1.0.2	Jun 30-21	No changes from last release

App name	App version	Release date	Release notes
Location Awareness	1.1.19	Jul 1-21	No changes from last release

Previous versions	Release date
2.3.0	June 2021
2.1.4	April 2021
2.1.3	March 2021
2.1.2	February 2021
2.1.1	January 2021
2.1.0	October 2020
2.0.062	June 2020
1.6.018	February 2020
1.6.017	January 2020
1.6.014	September 2019
1.5.022	January 2019
1.4.016	April 2018
1.3.002	September 2017
1.2.049	July 2017
1.1.016	February 2017
1.0.022	December 2016

Framework version 2.3.0

pwi-v2.3.0

Release date: June 2021

Version 2.3.0 is a disruptive upgrade and requires a new virtual machine.

There is no system update or backup/restore for users on previous versions.

	Changes
Platform	■ Ubuntu 20.04 LTS – new OVA build
	■ Enhanced Role Management (for Location Awareness)
	■ Audit Log Service (for Location Awareness)
	■ Email Service (for Location Awareness)
	■ Increased file upload size – 2.5 GB (for Location Awareness)
	■ Improved system upgrade process – baseline — Improved user interaction and responsiveness — Allows for future enhancements to handle disruptive / informed upgrades
	■ PWI Rescue Console – allows users to reconfigure system settings through the VM console. Refer to document in PWI Technical Support Teams site for instructions. — Ability to assign static IP — Ability to reset HTTP whitelist
	■ Enhanced API key management – API keys are now assigned to users
	■ Azure cert generation bug fix
	■ Preferred DNS settings
	■ NTP synchronization
	■ Unique machine ID during deployment (for licensing/entitlement)
	■ Deployment type handling: — Environment variable – for smart updates — Deployment type: PWI-STD, PWI-IOTCS, PWI-CLOUD — UI display on About page and footer
	■ Split virtual disk – flexibility to enable backup/restore functionality for future disruptive upgrades
	■ Additional banner message on VM console on health of PWI data disk
Applications	■ Location Awareness migrated to application bundle
	■ All applications ported to new version for compatibility with v2.3.0 platform

App name	App version	Release date	Release notes
Cooling Tower	2.1.1	06-01-21	Fixes a units issue with AMS 9530 / 9420
STA	2.2.0	06-01-21	No changes from last release
Heat Exchanger	2.2.1	06-01-21	No changes from last release
Air Cooled Heat Exchanger	2.2.1	06-21-21	Fixes a units issue with AMS 9530 / 9420
PRV	2.2.0	06-01-21	Changed default display settings to hide "Emission Loss" and "Lost Production Cost" columns in Asset Summary display

App name	App version	Release date	Release notes
Pump	2.2.0	06-01-21	▪ Fixes an issue where OPC variables in the Asset are always returning an Inactive status. ▪ Fixes a units issue with AMS 9530/9420.
NMA	3.0.0	06-01-21	▪ Supports cloud installations ▪ Assets & Alerts APIs for OPTICS: — Testing with optics team (pending) ▪ Data publish to OPC-UA & Modbus servers ▪ Compatible with pwi-v2.1.4
BMA	3.0.0	06-01-21	▪ Supports cloud installations ▪ Assets & Alerts APIs for OPTICS: — Testing with optics team (pending) ▪ Data publish to OPC-UA & Modbus servers ▪ Compatible with pwi-v2.1.4
WPG	2.2.0	06-01-21	No changes from last release
Inline Corrosion	1.1.0	06-01-21	No changes from last release
Non-Intrusive Corrosion	1.2.0	07-15-21	▪ Bug fixes ▪ Supports cloud installations ▪ Users cannot upgrade from previous versions to v1.2.0, must install on a clean VM which has never had the NIC app.
Connected Lighting	1.0.2	06-30-21	Initial release
Location Awareness	1.1.19	07-01-21	Initial release as a PWI application bundle

Previous versions	Release date
2.1.4	April 2021
2.1.3	March 2021
2.1.2	February 2021
2.1.1	January 2021
2.1.0	October 2020
2.0.062	June 2020
1.6.018	February 2020
1.6.017	January 2020
1.6.014	September 2019
1.5.022	January 2019
1.4.016	April 2018
1.3.002	September 2017
1.2.049	July 2017
1.1.016	February 2017
1.0.022	December 2016

Framework version 2.1.4

Release date: April 2021

Users can upgrade from v2.1.0 and higher.

	Changes
Platform	This upgrade is a minor change to HART-IP configuration to support the Connected Lighting application (not released yet).

App name	App version	Release date	Release notes
Cooling Tower	2.1.1	12-18-20	No changes from last release
STA	2.1.2	12-16-20	No changes from last release
Heat Exchanger	2.1.3	02-11-21	No changes from last release
Air Cooled Heat Exchanger	2.1.3	02-22-21	No changes from last release
PRV	2.1.1	01-07-21	No changes from last release
Pump	2.2.0	04-22-21	▪ Fixes a bug where OPC variables in the Asset were always returning an Inactive status. ▪ With the fix, OPC variables are now displaying Active - Good and data is displayed in the Process Data table for each Asset.
NMA	2.3.0	04-01-21	Fixes a bug in graphics rendering when there are lot of neighbors (>19) reflected for a device
BMA	2.1.0	10-26-20	No changes from last release
WPG	2.1.0	10-26-20	No changes from last release
Inline Corrosion	1.1.0	03-15-21	No changes from last release
Non-Intrusive Corrosion	1.1.0	05-05-21	

Previous versions	Release date
2.1.3	March 2021
2.1.2	February 2021
2.1.1	January 2021
2.1.0	October 2020
2.0.062	June 2020
1.6.018	February 2020
1.6.017	January 2020
1.6.014	September 2019
1.5.022	January 2019
1.4.016	April 2018
1.3.002	September 2017
1.2.049	July 2017
1.1.016	February 2017
1.0.022	December 2016

Framework version 2.1.3

Release date: March 2021

Users can upgrade from v2.1.0 and higher.

	Changes
Platform	Vibration device variable handling fixes – all published variables are available for all apps

Application deployment notes for AMS 9530 Wireless Vibration Monitor (Pump, ACHE):

1. Configure the AMS 9530 update time to be one hour or less – very important.
    a. Due to the slow update rate of the device, user must have patience during configuration.

2. Steps during initial deployment of Pump/ACHE in pwi-v2:
    a. Upgrade platform and application.

    b. Configure data sources and other parameters. Ensure data sources are active.

    c. Let the system run for a duration ≥ slowest device update duration (≥ 1 hour).

    d. Next, go in and configure the required assets / devices in the application – full device variable list will be available now.

    e. Wait for next device update as specified in step (c.) (≥1 hour).

    f. Verify on Details tab if all required variables have current values.

    g. Capture baseline.

    h. Application setup is complete and live for monitoring.

App name	App version	Release date	Release notes
Cooling Tower	2.1.1	12-18-20	No changes from last release

App name	App version	Release date	Release notes
STA	2.1.2	12-16-20	No changes from last release
Heat Exchanger	2.1.3	02-11-21	No changes from last release
Air Cooled Heat Exchanger	2.1.3	02-22-21	No changes from last release
PRV	2.1.1	01-07-21	No changes from last release
Pump	2.1.5	03-11-21	▪ Fixed data extraction from polling db for specific device variable ▪ Updating asset health correctly when data sources are disconnected/re-connected ▪ Polling db purge duration set to 70 mins to support 1-hour bursts reliably
NMA	2.2.2	03-11-21	Fixes issue where removing/adding devices under the same tag name causes the network diagram to show duplicate devices.
BMA	2.1.0	10-26-20	No changes from last release
WPG	2.1.0	10-26-20	No changes from last release
Inline Corrosion	1.1.0	03-15-21	No changes from last release
Non-Intrusive Corrosion	1.0.4	03-08-21	

Previous versions	Release date
2.1.2	February 2021
2.1.1	January 2021
2.1.0	October 2020
2.0.062	June 2020
1.6.018	February 2020
1.6.017	January 2020
1.6.014	September 2019
1.5.022	January 2019
1.4.016	April 2018
1.3.002	September 2017
1.2.049	July 2017
1.1.016	February 2017
1.0.022	December 2016

Framework version 2.1.2

Release date: February 2021

Users can upgrade from v2.1.0 or v2.1.1.

	Changes
Platform	▪ HART-IP client WIOC fix (Non-Intrusive Corrosion app only) ▪ OPC UA client fixes ▪ OPC UA server fixes

Application deployment notes for AMS 9530 Wireless Vibration Monitor (Pump, ACHE):

1. Configure the AMS 9530 update time to be one hour or less – very important.
   a. Due to the slow update rate of the device, user must have patience during configuration.

2. Steps during initial deployment of Pump/ACHE in pwi-v2:
   a. Upgrade platform and application.
   b. Configure data sources and other parameters. Ensure data sources are active.
   c. Let the system run for a duration ≥ slowest device update duration (≥ 1 hour).
   d. Next, go in and configure the required assets / devices in the application – full device variable list will be available now.
   e. Wait for next device update as specified in step (c.) (≥1 hour).
   f. Verify on Details tab if all required variables have current values.
   g. Capture baseline.
   h. Application setup is complete and live for monitoring.

App name	App version	Release date	Release notes
Cooling Tower	2.1.1		No changes from last release
STA	2.1.2		No changes from last release
Heat Exchanger	2.1.3	02-11-21	Fixes a bug with app data being published to OPC UA server
Air Cooled Heat Exchanger	2.1.3	02-22-21	Fixes vibration unit issue encountered with AMS 9530 device
PRV	2.1.1		No changes from last release
Pump	2.1.4	02-22-21	Fixes vibration unit issue encountered with AMS 9530 device
NMA	2.2.0		No changes from last release
BMA	2.1.0		No changes from last release
WPG	2.1.0		No changes from last release
Inline Corrosion	1.1.0		No changes from last release
Non-Intrusive Corrosion	1.0.3		No changes from last release

Previous versions	Release date
2.1.1	January 2021
2.1.0	October 2020

Previous versions	Release date
2.0.062	June 2020
1.6.018	February 2020
1.6.017	January 2020
1.6.014	September 2019
1.5.022	January 2019
1.4.016	April 2018
1.3.002	September 2017
1.2.049	July 2017
1.1.016	February 2017
1.0.022	December 2016

Framework version 2.1.1

Release date: January 2021

No backward compatibility with PWI v2.0.062.

	Changes
Platform	■ OPC Client update: — Small footprint — Handling 'localhost' endpoint correctly — Appl URI, Product URI in config file ■ HART-IP Client update: — Allow configuration to peg data_ts to host_ts or device_ts — Default set to host_ts — Takes care of time-sync issues when NTP is not reachable ■ LTS tied to PWI v2.1.0
Applications	■ Translation ready for all applications – (except Inline Corrosion) ■ Optimized disk IO (data injector app interaction) ■ Data flow disruption fixes ■ OPC-UA output calc (OPC templates) ■ OPC-UA data source config ■ Bug fixes
Compatibility	■ No backward compatibility with PWI v2.0.062 — Platform and apps should be updated together ■ Restore from PWI v1.6.018 supported

App name	App version	Release notes
Cooling Tower	2.1.1	Unit fixes

App name	App version	Release notes
STA	2.1.2	■ Unit fixes ■ "Running Calculations" fix caused by bug + 5 min update rate from device ■ "NO_DATA / ERROR" due to time sync issue with gateway when there is no access to NTP ■ Corner case to handle multiple burst messages
Heat Exchanger	2.1.1	Unit fixes
Air Cooled Heat Exchanger	2.1.1	Unit fixes
PRV	2.1.1	Unit fixes
Pump	2.1.3	Unit fixes
NMA	2.2.0	No changes from last release
BMA	2.1.0	No changes from last release
WPG	2.1.0	No changes from last release
Inline Corrosion	1.1.0	No changes from last release
Non-Intrusive Corrosion	1.0.3	Initial release

Previous versions	Release date
2.1.0	October 2020
2.0.062	June 2020
1.6.018	February 2020
1.6.017	January 2020
1.6.014	September 2019
1.5.022	January 2019
1.4.016	April 2018
1.3.002	September 2017
1.2.049	July 2017
1.1.016	February 2017
1.0.022	December 2016

Framework version 2.1.0

Release date: October 2020

	Changes
Platform	■ Allow Hostname change ■ Email format – upper case ■ Translation Ready ■ OPC-UA server (output calculations, dynamic variables, out of service handling) ■ Small footprint MODBUS and OPC-UA servers ■ Robust application install process (status bar and app misloading prevention) ■ Uninstall option to allow clean install of applications ■ Improved UX for restore from pwi-1.6 ■ Optimized disk IO (GDS) ■ OPC-UA data source config ■ Certificate Management – user cert handler UI
Applications	■ Translation ready for all applications – (except Inline Corrosion) ■ Optimized disk IO (data injector app interaction) ■ Data flow disruption fixes ■ OPC-UA output calc (OPC templates) ■ OPC-UA data source config ■ Bug fixes
Compatibility	■ No backward compatibility with PWI v2.0.062 — Platform and apps should be updated together ■ Restore from PWI v1.6.018 supported

App name	App version	Release notes
Cooling Tower	2.1.0	No changes from last release
STA	2.1.1	No changes from last release
Heat Exchanger	2.1.0	No changes from last release
Air Cooled Heat Exchanger	2.1.0	No changes from last release
PRV	2.1.0	No changes from last release
Pump	2.1.0	No changes from last release
NMA	2.2.0	No changes from last release
BMA	2.1.0	No changes from last release
WPG	2.1.0	No changes from last release
Inline Corrosion	1.1.0	No changes from last release

Previous versions	Release date
2.0.062	June 2020
1.6.018	February 2020

Previous versions	Release date
1.6.017	January 2020
1.6.014	September 2019
1.5.022	January 2019
1.4.016	April 2018
1.3.002	September 2017
1.2.049	July 2017
1.1.016	February 2017
1.0.022	December 2016

Framework version 2.0.062

Release date: June 2020

	Changes
Log-in	■ Local DB ■ LDAP with AD ■ AD configuration page ■ User management for local login ■ Two roles: Admin, Users ■ Password change ■ Password & Login options
Data Source config	■ Gateway connection → secure, non-secure ■ OPC-UA server connection → secure, non-secure ■ MODBUS server connection → non-secure[1]
Application management	■ Install / uninstall application bundle ■ Upgrade bundles for OS, platform and applications ■ Signed & encrypted bundles
Certificate management	■ Default SSL Certificate: — Can be used for all services — Can be modified by users ■ 3rd party certificate installation for: — HTTPS — OPC-UA client — OPC-UA server ■ Peer certificate (trusted) store
Ethernet configuration	

	Changes
Dual ethernet interface - Primary and Secondary	▪ Enable / Disable Secondary interface ▪ Static / DHCP configurable ▪ Default gateway on primary interface ▪ Out of box setting: — Primary - DHCP — Secondary - static: 192.168.254.10/24
Backup and restore	▪ Granular Backup – diagnostics and for each application ▪ Restore from pwi-v1.6.018 backup
MODBUS service	▪ Secure / non-secure connection ▪ MODBUS mapping download to setup clients
RESTful service	▪ Secure connection only ▪ Access control → registered API keys
Syslog-ng service	▪ Secure / non-secure connection ▪ Used for remote logging from wireless Gateways (NMA appl)
SMTP service	▪ Single SMTP connection can be configured ▪ Secure and non-secure ▪ Only service implemented – at the moment none of the apps use SMTP
Archiver service	▪ Deferred to next release
Internationalization	▪ Architecture is extensible to support multiple languages ▪ Initial release supports only English
Protocol and Ports configuration	▪ Manage inbound connections: — HTTP/S — OPC-UA — MODBUS — Syslog-ng ▪ User configurable: — Enable / Disable service — Change operation port — Client whitelist for each service
Security	▪ Strong firewall rules to dynamically manage: — Outbound connections – whitelisted server IP:port — Inbound connections – whitelisted client IP:port ▪ Certificate based authentication ▪ TLS-1.2 secure connections for most services ▪ Opc-ua secure connections for opc-ua end points ▪ Sign and encrypt application install/upgrade bundles ▪ Docker namespace remapping ▪ Block GRUB UI ▪ Strong root and user password

(1) *Client implemented but no data feed to any application.*

App name	App version	Release notes
Cooling Tower	2.0.35-hotfix-3	1. Changed API to open a read-only connection from polling_DB 2. Include APP ID in the OOS topic and ignore app published OOS messages (CTA-90) 3. Comment out batch insertion/deletion logic from API container (CTA-95)
STA	2.0.46-hotfix-2	1. Changed API to open a read-only connection from polling_DB 2. Include APP ID in the OOS topic and ignore app published OOS messages (STA-142)
Heat Exchanger	2.0.30-hotfix-2	1. Changed API to open a read-only connection from polling_DB 2. Include APP ID in the OOS topic and ignore app published OOS messages (HEA-53)
Air Cooled Heat Exchanger	2.0.23-hotfix-4	1. Changed API to open a read-only connection from polling_DB 2. Include APP ID in the OOS topic and ignore app published OOS messages (ACHE-81) 3. Fixed alert acknowledgement issue (ACHE-89) 4. Comment out batch insertion/deletion logic from API container (ACHE-90) 5. Editing the Asset Location Detail will clear the Device Detail configurations (ACHE-91)
PRV	2.0.73-hotfix-5	1. Changed API to open a read-only connection from polling_DB 2. Include APP ID in the OOS topic and ignore app published OOS messages (PRV-142) 3. Data jitter (PRV-140 & PP-304) 4. Asset Detail page "Minimum Detectable Event" bounces from 0 secs and back (PRV-137) 5. Manually changing the Threshold, changes it for all stored baseline (PRV-138) 6. Pin alert duration to the last calculation time (PRV-139) 7. Threshold reading on UI does not change when asset minimum detect interval is updated (PRV-151) 8. Comment out batch insertion/deletion logic from API container (PRV-152)
Pump	2.0.34-hotfix-2	1. Changed API to open a read-only connection from polling_DB 2. Include APP ID in the OOS topic and ignore app published OOS messages (AP20-93)
NMA	2.0.17-hotfix-1	Comment out VACUUM code (ANV0-39)
BMA	2.0.33-hotfix-2	1. Comment out VACUUM code (BM-114) 2. Wired devices Issues (BM-115)
WPG	2.0.10	No changes from last release
Inline Corrosion	1.0.8	No changes from last release

Previous versions	Release date
1.6.018	February 2020
1.6.017	January 2020

Previous versions	Release date
1.6.014	September 2019
1.5.022	January 2019
1.4.016	April 2018
1.3.002	September 2017
1.2.049	July 2017
1.1.016	February 2017
1.0.022	December 2016

Framework version 1.6.018

Release date: February 2020

	Changes
Fixes	Steam Trap excess No_Data/Error issue resolved

Previous versions	Release date
1.6.017	January 2020
1.6.014	September 2019
1.5.022	January 2019
1.4.016	April 2018
1.3.002	September 2017
1.2.049	July 2017
1.1.016	February 2017
1.0.022	December 2016

Framework version 1.6.017

Release date: January 2020

	Changes
Fixes	■ Graph not rendering error resolved (Pump, Heat Exchanger, PRD, ACHE) ■ Steam Trap excess No_Data/Error issue resolved ■ Newest alerts now replace oldest alerts when maximum alert limit is reached (all applications) ■ PRD application connection to Plantweb Optics resolved ■ PRD application asset details page no appearing issue resolved
Security	General security updates and patches included

Previous versions	Release date
1.6.014	September 2019

Previous versions	Release date
1.5.022	January 2019
1.4.016	April 2018
1.3.002	September 2017
1.2.049	July 2017
1.1.016	February 2017
1.0.022	December 2016

Framework version 1.6.014

Release date: September 2019

	Changes
Fixes	Excess energy costs and emissions accumulation calculation error resolved (Steam Trap)
New features	■ Cooling Tower app compatibility ■ Asset Details modal window replaced with separate page ■ Asset Details page segregated by key functions (general information, charts, devices, notes, etc.) ■ Event/alert log added to other applications
Security	General security updates and patches included

Previous versions	Release date
1.5.022	January 2019
1.4.016	April 2018
1.3.002	September 2017
1.2.049	July 2017
1.1.016	February 2017
1.0.022	December 2016

Framework version 1.5.022

Release date: January 2019

	Changes
Fixes	■ Vibration units bugged resolved in both Pump and ACHE apps ■ Vibration default alert thresholds resolved in both Pump and ACHE apps ■ Password options lock out bug resolved ■ Energy loss, emissions loss, health index sorting resolved ■ Heat Exchanger hidden calculations issue resolved

	Changes
New features	■　Accumulate excess energy costs and emissions (Steam Trap app) ■　Temperature display in Asset Summary page (Steam Trap app) ■　Pressure Relief Device, Network Management, Power Module Management app compatibility ■　New selectable time frames for graphs and charts (8 hours, 24 hours, 1 week, 1 month, 1 year) ■　Event/alert log: table used to accumulate all events/alerts (event/alert start, event/alert end, duration, other important considerations) – effective for PRD and Network Management app ■　Alerts dashboard graphic now indicates most prevalent alerts
Continuous improvements	HART-IP Client improvement
Security	General security updates

Previous versions	Release date
1.4.016	April 2018
1.3.002	September 2017
1.2.049	July 2017
1.1.016	February 2017
1.0.022	December 2016

Framework version 1.4.016

Release date: April 2018

	Changes
Fixes	User display table resolved
New features	■　OPC UA Client ■　Variable pressure inlet (Steam Trap app) ■　Working hours additions (Steam Trap app) ■　Temperature display in Asset Details page (Steam Trap app) ■　Air Cooled Heat Exchanger app compatibility
Continuous improvements	■　HART-IP Client improvement ■　Header and footer update
Security	General security updates

Previous versions	Release date
1.3.002	September 2017
1.2.049	July 2017
1.1.016	February 2017
1.0.022	December 2016

Framework version 1.3.002

Release date: September 2017

	Changes
Fixes	Vibration value bug resolved
Continuous improvements	HART-IP Client improvement
Security	General security updates

Previous versions	**Release date**
1.2.049	July 2017
1.1.016	February 2017
1.0.022	December 2016

Framework version 1.2.049

Release date: July 2017

	Changes
Fixes	Orifice size, line size, pressure inlet, pressure outlet entry bug resolved
Continuous improvements	▪ HART-IP Client improvement ▪ "Home" page added ▪ "Application Management" page added ▪ Apps separated ▪ Air Cooled Heat Exchanger app compatibility
Security	General security updates

Previous versions	**Release date**
1.1.016	February 2017
1.0.022	December 2016

Framework version 1.1.016

Release date: February 2017

	Changes
Fixes	708 update rate bounded

Previous versions	**Release date**
1.0.022	December 2016

Framework version 1.0.022

Release date: December 2016

	Changes
Fixes	■ Initial release of Plantweb Insight ■ Plantweb Insight and Steam Trap app combined release

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