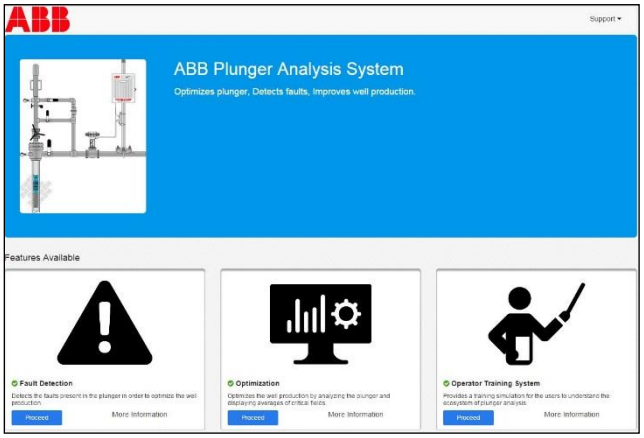
Administration Guide/2105844-MN Rev. AA

Host software
Plunger Analysis System

Enterprise workbench for optimization, fault detection, simulation, and training.



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Health and Safety

General information and notes for the reader

For first-time implementations which include installing and configuring Totalflow® devices, consult the device user manuals for details about safety.

The analysis results from the Plunger Analysis application provide optimal configuration information that can be used by operators to fine tune an existing plunger application operating on a Totalflow® device. Changes to the plunger application must be done by experienced or advanced users to prevent equipment damage, unintended production shutdown, or personal injury as a result of plunger configuration changes.

Safety / Warning symbols, note symbols

CAUTION – Minor injuries. This symbol, in conjunction with the signal word "CAUTION", indicates a potentially dangerous situation. Failure to observe this safety information may result in minor or moderate injury.

NOTICE – Property damage. This symbol indicates a potentially damaging situation. Failure to observe this safety information may result in damage to or destruction of the product and / or other system components.

IMPORTANT NOTE: This symbol indicates operator tips, particularly useful information, or important information about the product or its further uses. The signal word "NOTE" does not indicate a dangerous or harmful situation.

Although "WARNING" hazards are related to personal injury and "NOTICE" hazards are associated with equipment or property damage, it must be understood that under certain operating conditions, operating damaged equipment can result in degraded system / process performance leading to serious or life-threatening injuries. Therefore, compliance with all "WARNING" or "NOTICE" hazards is required at all times.

Typographical conventions

The following typographic conventions are used to highlight various types of texts:

– Links to sections referenced throughout the document appear in *italics*.

– Names of command or selection buttons appear in **bold**.

Additional information

Related additional free publications are available for download at www.abb.com/totalflow or by scanning this code:

1 Introduction

This guide describes the installation, activation and startup procedures for the Totalflow® Plunger Analysis System (PAS) application. PAS features optimization, fault detection and operator training functions.

1.1 Product notice

With the release of the Totalflow® PAS (part number 2105480), all previous PAS versions are discontinued. The optimization functionality from prior versions has been retained and improved. The new PAS supports new functionality for fault detection, operator training (which includes simulation).

The new PAS is based on different technology than prior versions, so it will install as new software rather than as an upgrade to any prior installations.

IMPORTANT NOTE: Previous PAS licenses are not valid for the new application. To obtain new PAS licenses see section 1.2.1, *Ordering*.

1.2 Product information

Each of the PAS features requires a valid license number for operation. Software downloads and licensing management are handled from an online customer portal. After purchase, Totalflow creates a customer account, generates the licenses that are required for feature activation, and adds account members authorized to download and use the application. Licenses are sent to the customer via email and software can be downloaded from the customer portal. The following sections describe product ordering, downloading and licensing.

1.2.1 Ordering

For product orders or license renewals please contact Totalflow sales support:

– 1-800-442-3097 (USA)

– 1-918-338-4880 (International)

– Totalflow.order@us.abb.com

1.2.2 Customer accounts and members

When the software is purchased, Totalflow creates a customer account. The customer must provide information for at least one of the users on the account (preferably the user who will have administrative privileges to the portal). The following information must be provided:

– Member email address

– Member first and last name

– Corporate mailing address

If only a single member is defined, the member will need to be given administrative rights on the account. The administrative member has the authorization to define additional account members as needed without having to call Totalflow sales each time a new member needs to be added or registered on the account.

1.2.3 Product versions

The PAS version is identified by the major version, minor version, hotfix, and build number. For example, PAS 2.03.01.20 is major version 2, minor version 03, hot fix 1, build 20. The following applies:

– Major version number: issued when a major new functionality has been added to the product.

– Minor version number: issued when minor changes or fixes are implemented in the current major version. The release of minor versions depends on the nature of the changes or fixes.

– Hot fix number: issued when an additional software patch or critical fix is implemented.
– Build number: reflects a specific software build and is incremented with every build

1.3 License description

Table 1 provides a summary of PAS user scenarios and applicable licenses for quick reference. Additional description of user scenarios and licensing is provided for details.

Table 1: PAS licenses (summary)

Use scenario	Target system	Activation and tracking mode available	Activating Licenses	Options	Package name
Single user requiring GUI mode	1 desktop/laptop (single user license)	Online/offline	Basic Activation	1	Single user GUI
			Operator Training	1	Single user
			Number of Runs	100, 500, 1000, 5,000, 10,000, 30,000, 50,000	
Single user requiring both GUI and Batch	1 desktop/laptop (single user license)	Online/Offline	Basic Activation	1	Single user GUI
			Advanced Activation	1	Single user GUI and Batch
			Operator Training	1	Single user
			Number of Runs	100, 500, 1000, 5,000, 10,000, 30,000, 50,000	
Multiple users	1 server (up to 5 multiuser license)	Online/offline for 1 user. Online only for more than 1 user	Basic Activation	1	Standard
			Advanced Activation	1	
			Operator Training	1	
			Number of Runs	5,000,10,000, 30,000, 50,000, 100,000, 200,000, 500,000	
			Number of concurrent users	1-5	
	5 servers (up to 10 multiuser license)		Basic Activation	1-5	Pro
			Advanced Activation	1-5	
			Operator Training	1-5	
			Number of Runs	5,000,10,000, 30,000, 50,000, 100,000, 200,000, 500,000	
			Number of concurrent users	1-10	
	10 servers (up to 100 multiuser license)		Basic Activation	1-10	Enterprise
			Advanced Activation	1-10	
			Operator Training	1-10	
			Number of Runs	5,000,10,000, 30,000, 50,000, 100,000, 200,000, 500,000	
			Number of concurrent users	1-100	

1.3.1 User scenarios

PAS is designed for single or multiple concurrent users. The target systems and licenses to enable feature use will vary depending on the desired use scenario. The following sections illustrate what is available for each case.

1.3.1.1 Single user on PC

Figure 1 illustrates a single user of PAS when installed on a PC or laptop. This scenario applies is applicable, for example, to a single user who is responsible for a single well.

The available licenses are the Basic Activation, the Operator Training, and the Number of Runs licenses. The Basic Activation and Number of run licenses enable the use of the optimization and fault detection features to run analyses for a selected number of times. Each analysis run is performed with data from a single well (no batch analysis is supported). The Operator Training license enables the use of the Operator Training feature by the user.

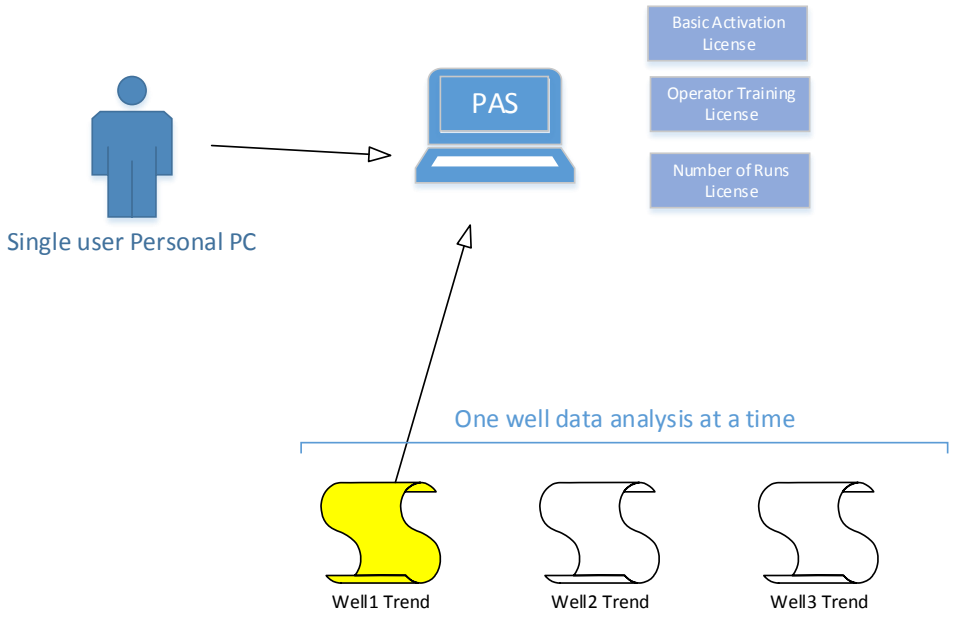

Figure 1: Single user on PC or laptop

1.3.1.2 Multiple users on server

Figure 2 illustrates multiple users of PAS when installed on a server. PAS is configured as a web application within the customer premise. Multiple users connect through their browsers to PAS.

The available licenses are the Basic Activation, the Advanced Activation, the Operator Training, the Number of Runs, and the number of concurrent users.

Several packages or configurations are available depending on the expected number of concurrent users and systems PAS will be installed on:

– Standard: single server supporting a maximum of 5 users or seats
– Pro: a maximum of 5 servers supporting a maximum of 10 users or seats
– Enterprise: a maximum of 10 servers (maximum number of 100 users)

IMPORTANT NOTE: Multiple user licenses require that the target system is connected to the customer premise network and is able to establish connection to the ABB portal on the cloud.

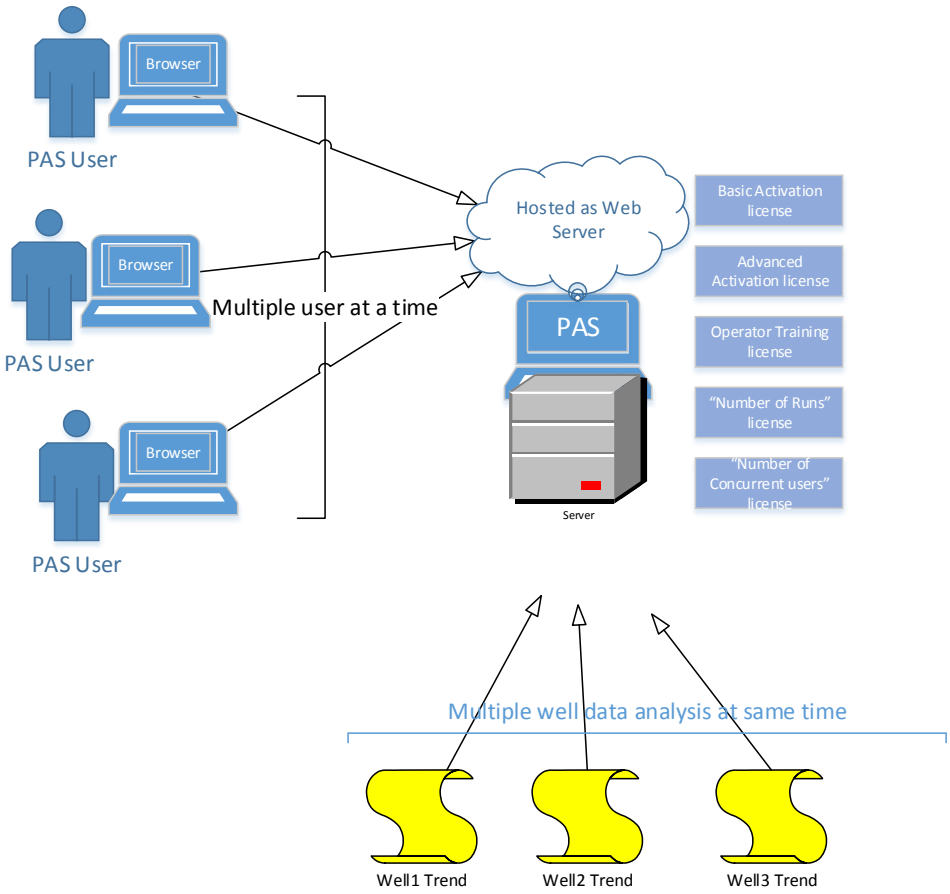

Figure 2: Multiple users on server

1.3.2 Activation licenses

Activation licenses are options defined to enable use of the PAS features based on the use scenarios.

IMPORTANT NOTE: Each activation license has its own key or activation code. License activation can be done online or offline. Requirements to support either activation method are described in section 3.1.4, *Target system network connectivity*. Procedures for both methods are described in section 5, *Activating PAS*.

1.3.2.1 Basic Activation license

The Basic Activation license authorizes the use of the Optimization and Fault Detection features on a PC. This option supports analysis for one well at a time using GUI mode. No batch (mode) analysis is supported. Basic activation requires the purchase of a Number of Runs package to define how many times analyses can be performed. The basic activation also has a time limit. Once the expiration date is reached, no optimization or fault detection will be allowed even if the total number of purchased runs has not been used. The basic activation license can be transferred to another PC, laptop, or server a maximum of once per year.

1.3.2.2 Advanced Activation license

The Advanced Activation license authorizes the use of the Optimization and Fault Detection features on a target system as Batch mode. Multiple .csv files can be analyzed and reported at the same time. Advanced activation requires the purchase of a Number of Runs package to define how many times analyses can be performed. The advanced activation also has a time limit. Once the expiration date is reached, no optimization or fault detection will be allowed even if the total number of purchased runs has not been used.

1.3.2.3 Operator Training license

The Operator Training license authorizes the use of the Operator Training feature. This type of license is time-bound (it has an expiration date). The customer obtains a license for a particular number of devices and a specific time duration. The specific time duration is defined as a number of calendar days.

1.3.3 Top-up licenses

Top up licenses provide additional authorization for use in terms of the number of times the files can be analyzed and the number of users able to be connected to PAS at the same time.

1.3.3.1 Number of Runs licenses

Number of Runs licenses are options defining the number of optimization and fault detection runs or analyses that will be authorized when optimization and fault detection features are activated. Customers must choose a license for a particular number of runs to be able to use these features.

1.3.3.2 Number of Concurrent Users licenses

Applicable for the multi-user scenario, the Number of Concurrent Users licenses are options defining the number of users authorized to operate the activated features at the same time.

1.4 Device registration

When authorized members activate a license for the first time, the system (or device) they activate from is registered automatically. The licensing center registers the target system and associates the license number provided to that system. If the license purchased specifies a limit in the number of authorized devices, the licensing center keeps track of the registered devices and blocks activation when that limit is exceeded. If a systems is no longer in use or become inoperable, call Totalflow sales support to deactivate the license for that device and make the license available for another system.

1.5 License compliance

License compliance or usage tracking will be automatically managed for all activated licenses. PAS provides the choice to perform usage tracking online or offline:

– Offline license compliance is monitored and controlled on the system PAS is installed on.

– Online license compliance is monitored and controlled on a license compliance system on the internet and requires network connectivity.

For requirements to select the appropriate usage tracking mode see section 3.1.4, *Target system network connectivity*.

1.5.1 Tracking feature usage from the customer portal

Authorized account members can proactively monitor feature usage from the customer portal and determine when it is time to renew the number of runs, devices or add more time depending on the features purchased. For more information, see section 7.3, *Usage tracking*.

1.6 License renewal

Contact Totalflow sales support to renew licenses. For contact information, see section 1.2.1, *Ordering*.

1.6.1 Product updates

Product updates, when available, can be downloaded from the customer portal. Please call Totalflow sales support for information on any update fees that may apply.

2 Product overview

2.1 Software design

PAS contains features that can be used together or separately. The system has been designed for web browser access on:

– Standalone systems

– Private dedicated severs across enterprise networks

– Cloud services across the Internet

– A combination of the above.

2.2 Features

PAS is designed to optimize the operation of the Totalflow® Plunger Control application in measurement or remote control devices by analyzing the Plunger Control application trend files. Table 2 describes the features available with PAS.

Table 2: PAS features

Feature	Description
Fault Detection	Detect and identify errors that can affect the optimal operation of the plunger system.
Optimization	Determine optimal parameter or set point values to fine tune the configuration of a plunger system.
Operator Training System	Provide a training or simulation tool to understand how a plunger system works and the effect of choosing different set points as triggers or parameters change on a plunger system behavior or operation.

2.3 Modes of operation

PAS provides single or batch file analysis for both Fault Detection and Optimization. Two modes of operation are available depending on the number of files to be analyzed:

– Graphical User Interface (GUI) mode for single file analysis: Used to perform analysis for one well at a time. A single trend file containing the well data is used as the input in a single analysis run. All required functions (uploading and performing the trend file analysis, configuring settings and results display and download) are available from the browser.

– Batch mode for batch (or multiple) file analysis: Used to perform analysis for several wells at a time. Several trend files containing the data for multiple wells can be used as the input in a single analysis run. Uploading and performing the analysis of the trend files, configuring paths for source files and the path to write analysis results, and results download are all functions available from the browser. No results view is provided. Analysis results can be downloaded and saved for viewing using third-party applications.

IMPORTANT NOTE: Batch file analysis can also be performed from the command line. Command line PAS execution is available for users whose third-party tools or applications rely on command line scripting. For details, see section 6.12, *Running batch optimization or fault detection from the command line*.

2.4 Main functions

PAS allows users to:

– Choose the mode of operation: single or batch file analysis.

– Configure: Several configuration menus are available depending on the mode of operation.

– Upload trend files: The operator specifies the path to the trend files to be analyzed.

– Analyze trend files: The application performs the appropriate algorithms for fault detection or optimization and generates results.

– Download results: Analysis results are stored in files that can be downloaded and saved for later viewing or reporting.

– View results for single file analysis: Results are presented in graphical view to facilitate analysis and highlight issues affecting the plunger system health and performance.

2.5 Theory of operation

PAS requires the upload of Plunger Control trend files. PAS checks the uploaded files, before executing the analysis, to determine if the files are the correct type and format, have valid data, etc.

Trend files are collected directly from the Totalflow device (either a remote controller or a flow computer configured for Plunger control) or obtained from SCADA systems.

Trend files obtained directly from Totalflow devices are the original files with the plunger application data as logged by the device. Trend files from a SCADA system have the same data as the original trend file, but can contain additional configuration data (such as well settings) that may have been entered after the trend file was collected from the device and stored in the SCADA system.

Figure 3 and Figure 4 show high level diagrams of the data flow when using PAS from the browser for GUI and Batch modes respectively.

In the Totalflow device, the trend system application is able to log the plunger control data on a trend file. The trend file must contain data values for five (5) required parameters for analysis:

– Casing pressure
– Tubing pressure
– Line pressure
– Flow rate
– Arrival time

Collect plunger trend files from the Totalflow devices and copy those files into the system containing PAS.

In GUI mode (Figure 3), upload and analyze one input file at a time. If the analysis is successful, the analysis result is immediately available on the graphical interface (browser). The output files can also be downloaded or saved in a folder on the PAS system.

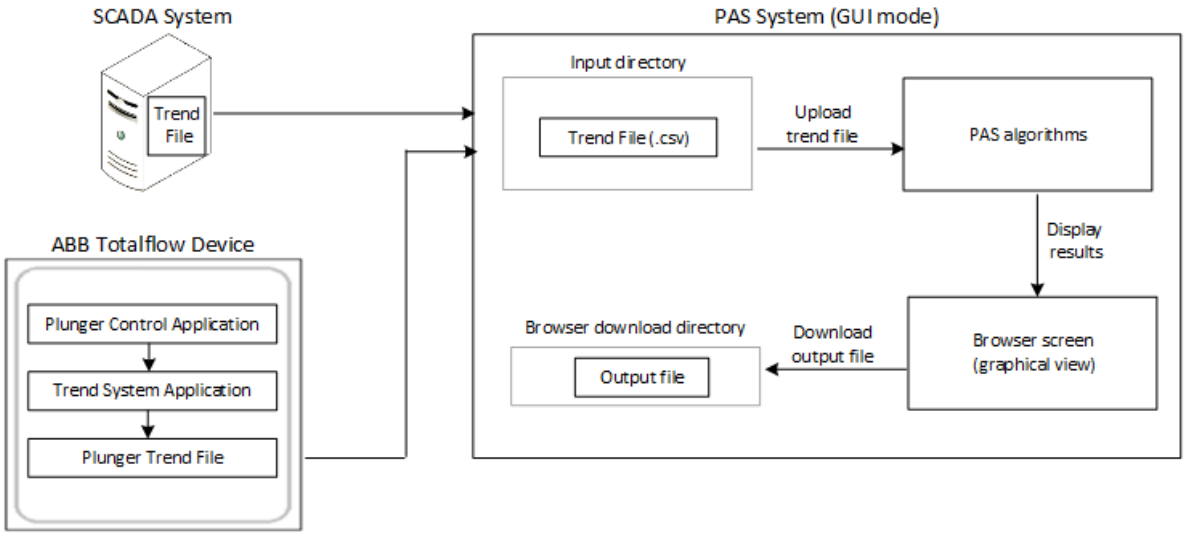

Figure 3: PAS GUI mode processing a single input file

In Batch mode (Figure 4), upload and analyze multiple input files at a time using the browser. However, no graphical view is available. The batch analysis results can be downloaded for viewing or processing by third-party applications or tools.

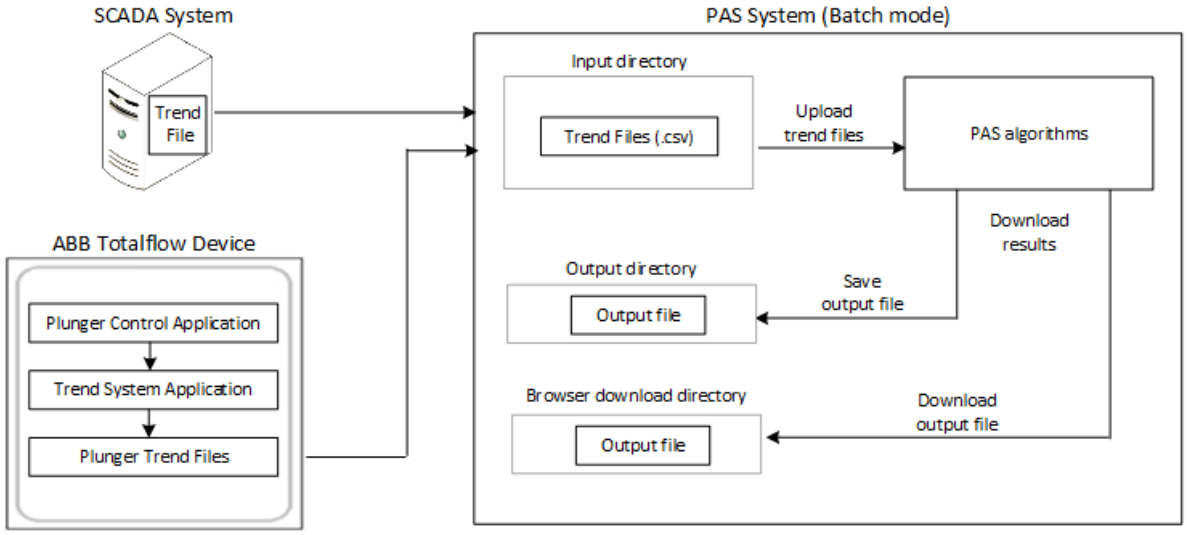

Figure 4: PAS Batch mode processing multiple files

To ensure the analysis can run and provide useful results, review the requirements for input files and the format for the output files in the following sections.

2.5.1 Required input file format

Trend files must be generated in .csv format to be usable for analysis.

2.5.2 Input file location

The plunger trend files can be collected from the Totalflow device using the PCCU or WinCCU collection utility. For procedures to collect files using PCCU, see section 3.2, *Trend file collection*.

Collected files can be uploaded for analysis from the default PCCU or WinCCU output directories (See Table 3) or any other folder defined by the user. If PAS is running on a separate system from PCCU or WinCCU, then copy the trend files to an appropriate location or folder on that system. The folder or directory where the file or files to be analyzed are stored is referred to as the input directory. Please note that:

– For single file analysis (GUI mode), the application provides the opportunity to select the file by browsing to the location of the file.

– For batch analysis (when using the browser), the application provides the opportunity to select the batch files by browsing to the location of the files.

– For batch analysis at the command line, provide the path to the input directory as part of a batch profile definition. A batch profile defines an input and output directory for input files and results respectively. The path to the input directory must be manually entered or configured in the batch profile before executing the analysis. The batch profile is a required parameter for running the analysis from the command line and must be manually entered.

The location for trend files stored on third-party systems depends on the type of system and is therefore customer-specific. Consult the system administrator for the file location or request files exported in .csv format to be copied on the required input directory.

Table 3: Default trend file locations

Interface used for collection	Default location for collected trend files
PCCU	C:\PCCU\spreadsh\archive\<*Station ID*>
WinCCU	TBD

Interface used for collection	Default location for collected trend files
Third party management system or database	Customer-specific. Manually export files to .csv before using the files.

2.5.3 Required output file format

PAS writes the results in XML or Microsoft Excel® (.xls) format. Viewing results requires third-party software such as XML viewers or Microsoft Excel®.

For the Operator Training System feature, simulation results can be exported into files with .csv format.

2.5.3.1 Output files naming conventions

Output file naming conventions vary depending on the feature, mode of operation, and format specified. For details see Table 4, *Output file naming conventions* and Table 5, *GUI Optimization .xml output files* description.

Table 4: Output file naming conventions

Feature	Mode or operation	Output file format	Output file naming convention
Optimization	GUI	XML	<Well name>.Ex <Well Name>.Op <Well Name>.Nr <Well Name>.Np <Well Name>.Fl See Table 5, *GUI Optimization .xml output files* description.
		Excel®	SetpointsSettings.xls
Fault Detection		XML	<Well Name>.ft
		Excel®	SetpointsSettings.xls
Optimization	Batch		OptimizationBatchOutput.zip
Fault Detection			FaultDetectionBatchOutput.zip
Operator Training System	N/A	CSV	OtsTrendDataFile.csv

Table 5: GUI Optimization .xml output files description

XML output file	Description
<Well name>.Ex	Exception file. This file contains all the set point settings (rise and fall time, pressure averages, etc.), but results were out of range for exception % limit range based on the tolerance set point defined in the .csv file (i.e, if tubing-line pressure was greater than exception % limit from the tolerance level defined in the .csv file).
<Well Name>.Op	Opportunity file. This file contains all the set point settings, but results were out of range for the opportunity % limit range based on the tolerance set point defined in the .csv file.
<Well Name>.Nr	Normal. This file contains all the set point settings where all the exception and opportunity set points are within optimal range of their respective tolerance set points.
<Well Name>.Np	No Optimization. This indicates that the .csv file was processed, and all the set point settings were calculated OK, but there were no tolerance set points defined in the .csv file for opportunity or exception checking.
<Well Name>.Fl	Failed. The .csv failed to be processed. The reason is given inside the .xml file or in the batch log file.

2.5.4 Output file location

Output files are saved as described in Table 6.

Table 6: Output file location

Feature	Location of output files
GUI Optimization and Fault Detection	The default location for the output file is the operator's system download directory as specified on the browser used. If an output directory has been defined, the output file can be saved at this location.
Batch Optimization and Fault Detection	The default location for the output files compressed in .zip format is the operator's system download directory as specified on the browser used. If an output directory has been defined, results can be saved at this location.
Operator Training System	The default location for the output file is the operator's system download directory as specified on the browser used.
Command line batch mode	The location of the output files is the output directory specified in the batch profile for either optimization or fault detection depending on the feature run from the command line. If no directory was created or specified, the application automatically creates an output directory to save the output files to. For details, see section 6.6, *Create batch profile for running optimization from the command line* and 6.5, *Create batch profile for running fault detection from the command line*.

3 Preparing for installation and use

Prior to PAS installation perform the tasks described in Table 7.

Table 7: Preparation tasks

	Action item	Notes
☐	To prepare for PAS installation, ensure the target system meets the minimum requirements.	See section 3.1, *System requirements*.
☐	Collect trend files correctly.	See section 3.2, *Trend file collection*.

IMPORTANT NOTE: PAS is typically used after the plunger control application has been running in Totalflow devices for a period of time. This manual assumes that the plunger and the trend system applications have been enabled and properly configured in the device.

3.1 System requirements

3.1.1 Target system

The target system must meet the following requirements (Table 8).

Table 8: System requirements

System component	Minimum requirements
Operating System[1]	Windows® 7 and above Windows® Servers: 2008 [R1, R2], 2012 [R1, R2]
Web or application services (IIS)	IIS 7 or above
.Net Framework	4.5
Runtime library	32 bit C++ runtime
CPU Type (Microprocessor)	Pentium® 4 or above
Memory (RAM)	3 GB or more
Hard disk space	1 GB or more

[1] Windows® Vista is not supported. Windows® 8 or 8.1 not fully supported.

3.1.2 Access requirements

To install PAS, users need read/write/modify permission (or system administrative permission). The PAS installer automatically checks if it has this type of access to the installation default or user-specified path. If the installer detects incorrect permissions, it notifies the user and stops the installation. Contact the system administrator if incorrect permissions have been detected before attempting installation again.

3.1.3 Web browsers

Web browser versions supported by the Plunger Application System are listed in Table 9.

Table 9: Supported browsers

Browser	Version
Internet Explorer®	11 and above
Chrome™	43 and above
Mozilla Firefox®	25.0 and above

3.1.4 Target system network connectivity

For online license activation and usage tracking network connectivity is required. Comply with the following:

– The target system (PC, laptop, or server) must be configured with a valid network address for connectivity with the licensing system over the Internet. Internet access is required for online software feature activation and operation. Usage tracking for the Optimization and Fault Detection features must be ongoing when running analyses.

– The target system (PC, laptop, or server) must be connected to the customer premise network

– The firewall on the customer premise network must have port 443 enabled

IMPORTANT NOTE: Single user systems, not connected to a network or if port 443 is not enabled in the firewall, will not be able to support online activation or usage tracking. For these systems activation and usage tracking should be offline.

3.2 Trend file collection

Trend files need to be collected to be available for input to the Plunger Analysis System. The following procedure describes how to use PCCU to collect the plunger trend file, in the appropriate format, from a Totalflow device.

To obtain the trend file:

1) Connect to the Totalflow device using PCCU.

1) Click **Collect Historical Data**. (If already connected, click the **Collect** icon on the PCCU toolbar menu).

2) At the Collect screen (Figure 5), on the tree view, check the **Trend Files** checkbox and the **PL trend** (or trend file name) checkboxes.

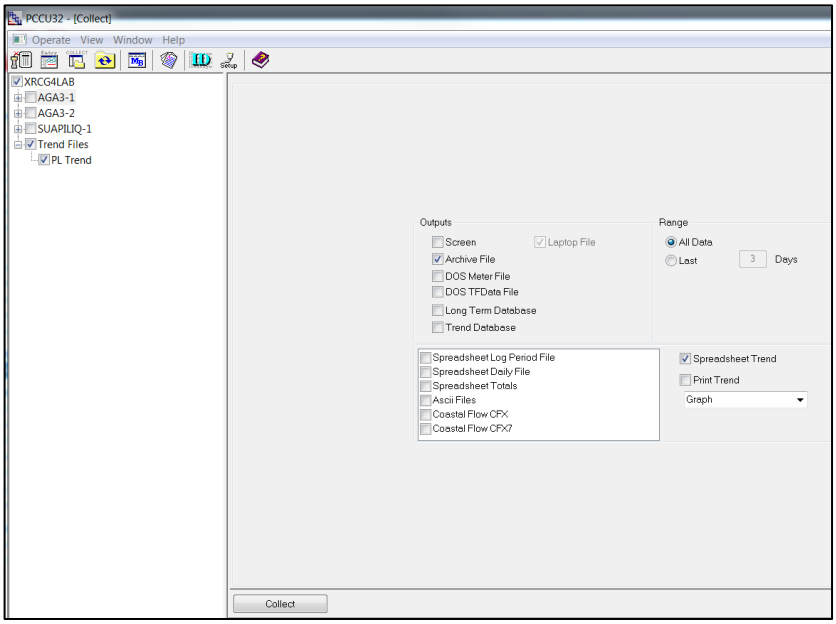

Figure 5: PCCU Collect screen

3) Under Outputs, check **Archive file**.

4) Click **Collect**.

5) To retrieve the collected file, use the file explorer to browse to C:\PCCU\spreadsh\archive. The file should be located under the folder named with the same name as the Totalflow device (Station ID).

6) Copy the file to the location where it will be uploaded by PAS.

3.3 Downloading the software

The procedures included in this section download the PAS installation package from the customer portal to the target system.

3.3.1 Logging in to the customer portal

To log in to the customer portal, user corporate email addresses must be registered on the licensing system. If a password is not provided, the login screen provides a link to request a password.

To log in:

1) Using a web browser, go to the ABB downloading and licensing center portal by navigating to the following web address: abb.flexnetoperations.com.

2) At the login screen (Figure 6), type the login credentials:

   a) Login ID: corporate email address registered in the customer account.

   b) Password: If a password was not provided or if it has been forgotten or lost, click **Password Finder** and request a new password. An automatic email message is sent to the requester for password reset.

3) Click **Login**.

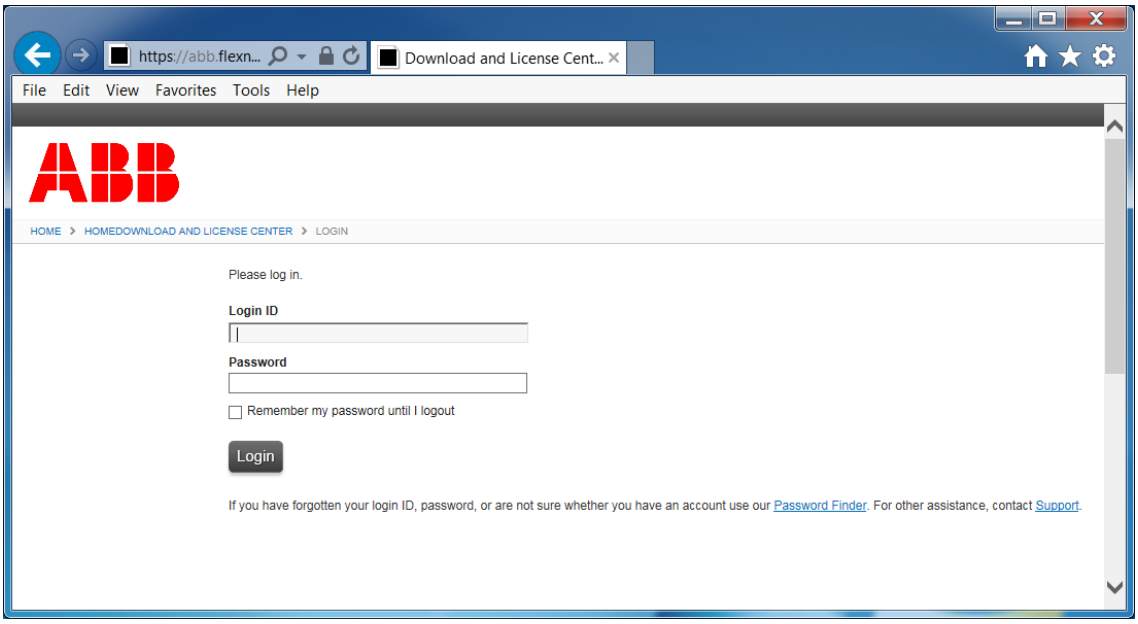

Figure 6: Customer portal login screen

4) Verify that the portal home screen displays.

3.3.2 Downloading the software

1) On the customer portal home page (Figure 7), under the Product Information **New Versions** tab, click the **ABB Plunger Analysis** link to navigate to the product download page.

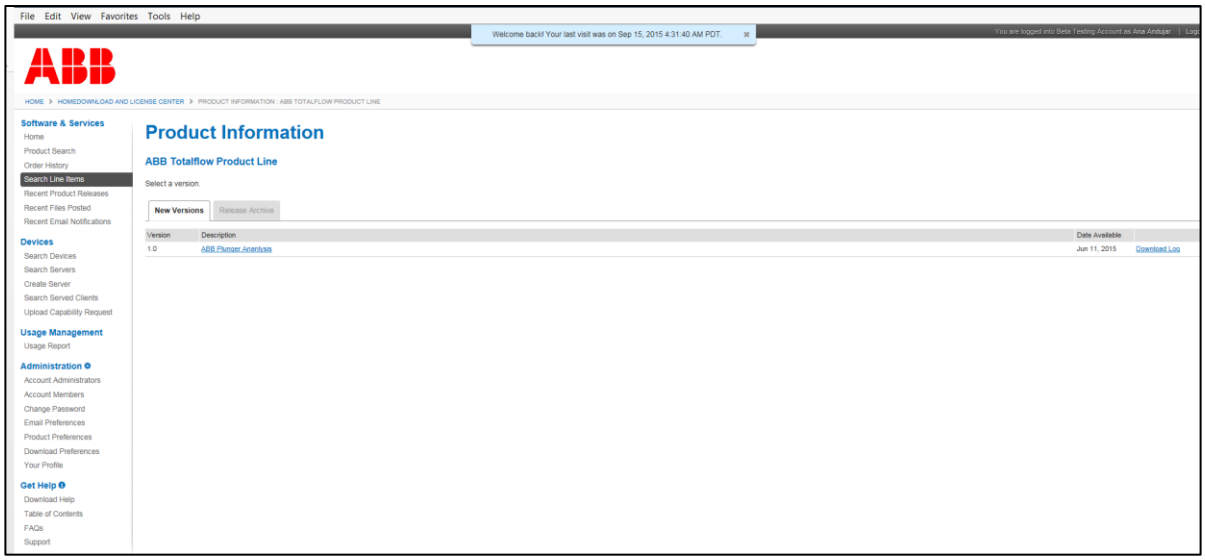

Figure 7: Customer portal home screen

2) At the Product Download page for Plunger Analysis (Figure 8), under the **Files** tab, click the **PlungerAnalysisSetup.exe** file.

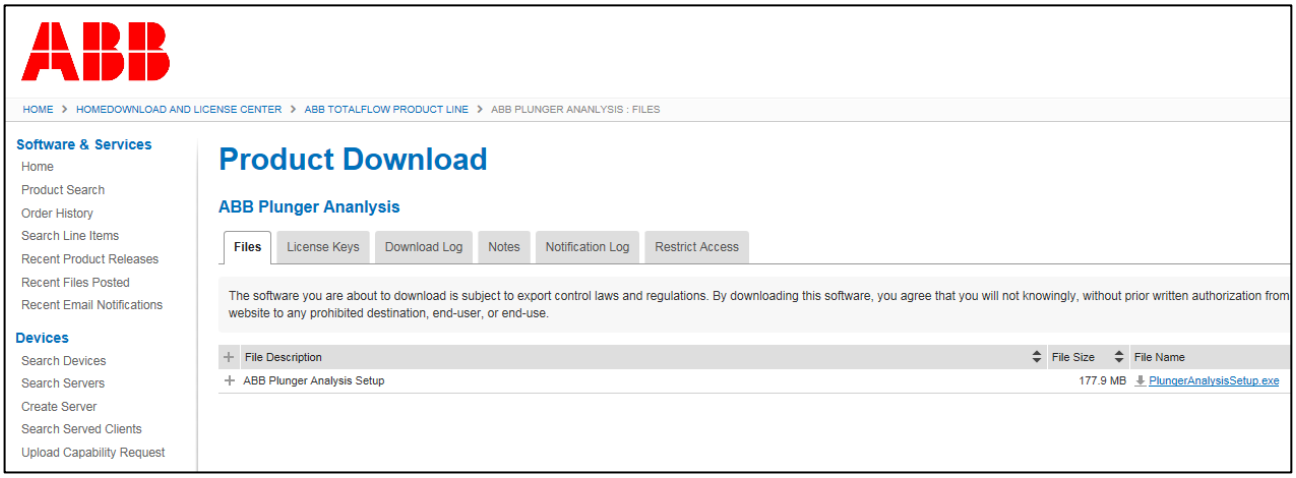

Figure 8: Plunger Analysis product download screen

3) Click **Save** when prompted. The Save drop down menu provides several options to save the file for later installation or to save and run the file. Take note of where the file is saved.

4) Verify that the download is completed.

5) To install proceed to section 4, Installing PAS.

4 Installing PAS

The following sections describe how to install and activate the PAS software.

4.1.1 Installing the software

If the software was successfully downloaded and saved on the target system, proceed with the installation. Follow the instructions as each of the installation wizard screens displays. The application can be started as soon as installation is completed. Choose to launch the application after the installation is complete, or click the application icon created on the computer desktop.

IMPORTANT NOTE: Additional components required for PAS operation, such as SQL Server® 2012, are also installed during this procedure. The installation wizard prompts for user input when required. Non-default authentication or configuration of the SQL Server during its installation requires advanced knowledge. If requiring non-default configuration or additional information call ABB technical support.

To install:

1) Using File Explorer, locate and open the folder where the installation file was saved during download.
2) Double click **PlungerAnalysisSetup.exe** to begin installation. The Plunger Analysis System InstallShield Wizard displays indicating that the SQL server, a component for PAS, is required (Figure 9).

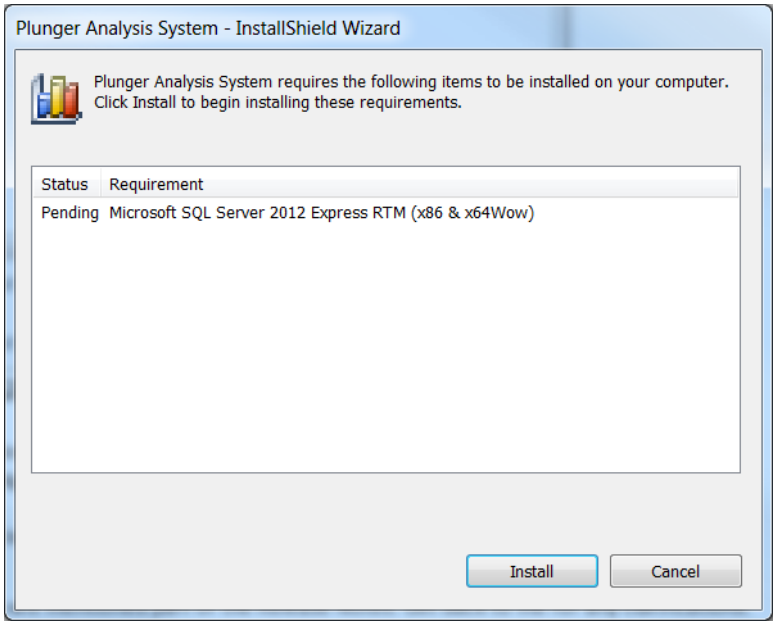

Figure 9: Plunger Analysis System InstallShield Wizard

3) Click **Install** and wait while the installer extracts the files.
4) When the SQL Server Installation Center window displays (Figure 10) , select the installation option:
   a) If a SQL 2012 server is not installed on the target system or there is already a SQL Server 2012 on the target system, select **New SQL Server stand-alone installation or add features to an existing installation**.
   b) If a previous version of a SQL server is already on the system, select **Upgrade from SQL Server 2005, SQL Server 2008 or SQL Server 2008 R2**.

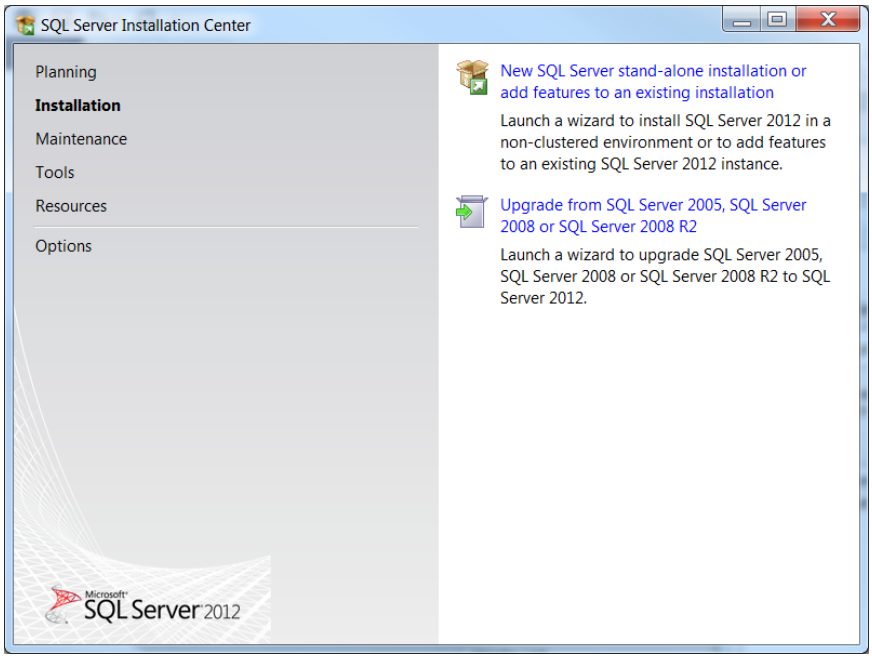

Figure 10: SQL Server Installation Center screen

IMPORTANT NOTE: The SQL Server Installation Center window remains open after the installation option is selected. It must be closed after installation is complete.

5) If the Product Updates window (Figure 11) displays, make sure to clear the **Include SQLServer product updates** checkbox.

IMPORTANT NOTE: Leaving this option selected causes the installer to automatically search for SQL Server product updates from Microsoft®. It may take many hours to complete this process and it halts the installation. It is recommended not to include product updates at the time of installation to avoid this delay. SQL product updates can be performed later after the PAS installation is completed. SQL Server updates are routine maintenance procedures that should be performed during appropriate times and as needed. After installation is complete the system administrator must schedule the installation of the SQL Server 2012 service pack.

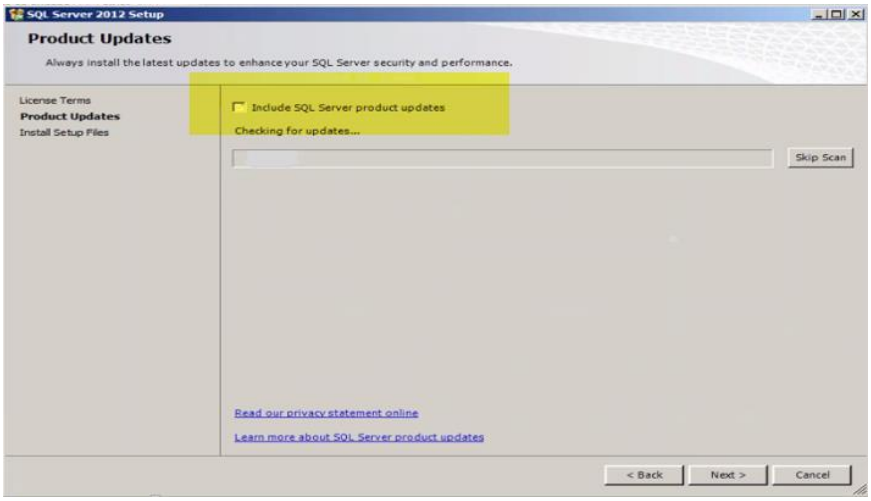

Figure 11: SQL Server 2012 Setup Product updates

6) At the SQL Server 2012 Setup License Terms window (Figure 12).accept License terms and click **Next**.

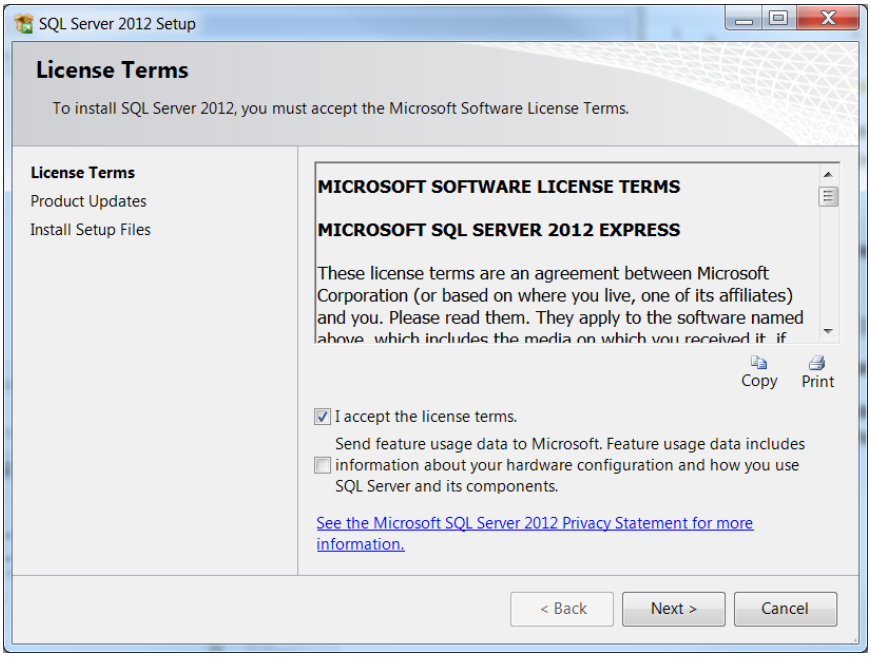

Figure 12: SQL Server 2012 Setup License Terms

7) To install setup files (Figure 13), click **Install**. Observe the progress bar as files are installed

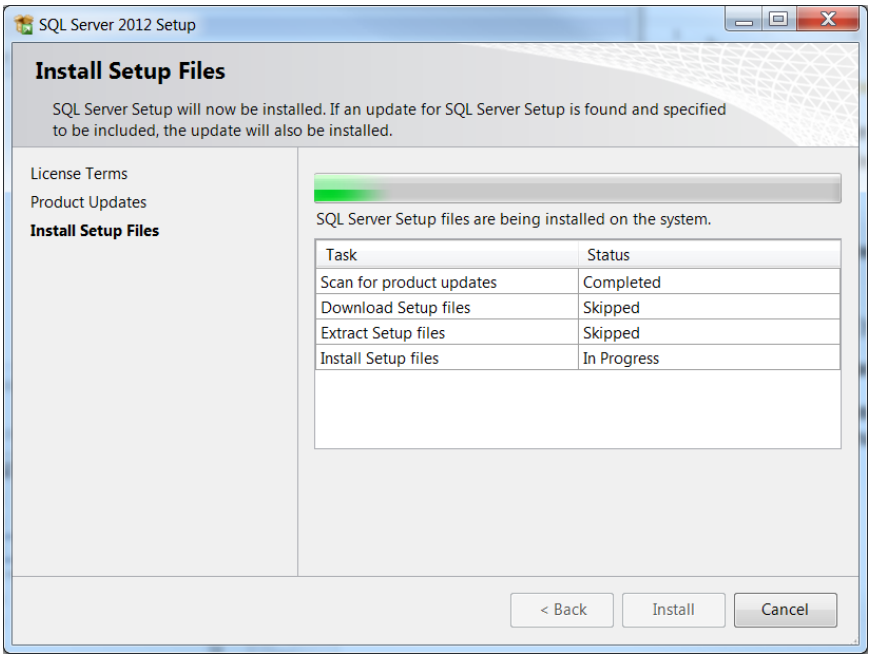

Figure 13: SQL Server 2012 Install Setup Files

8) At the Feature Selection window (Figure 14), keep default selections and click **Next**.

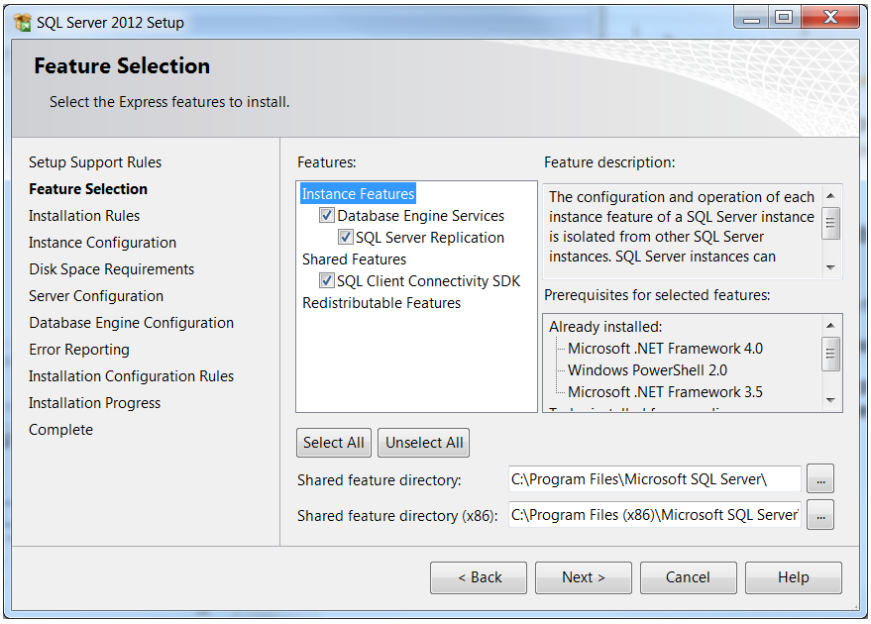

Figure 14: SQL Server 2012 Setup Feature Selection

9) At the Instance Configuration window (Figure 15), if keeping the selected Named instance option, click **Next**.

IMPORTANT NOTE: If the option **Default instance** is preferred, additional configuration of PAS prior to use is required. Contact ABB for support if needing to select **Default instance**.

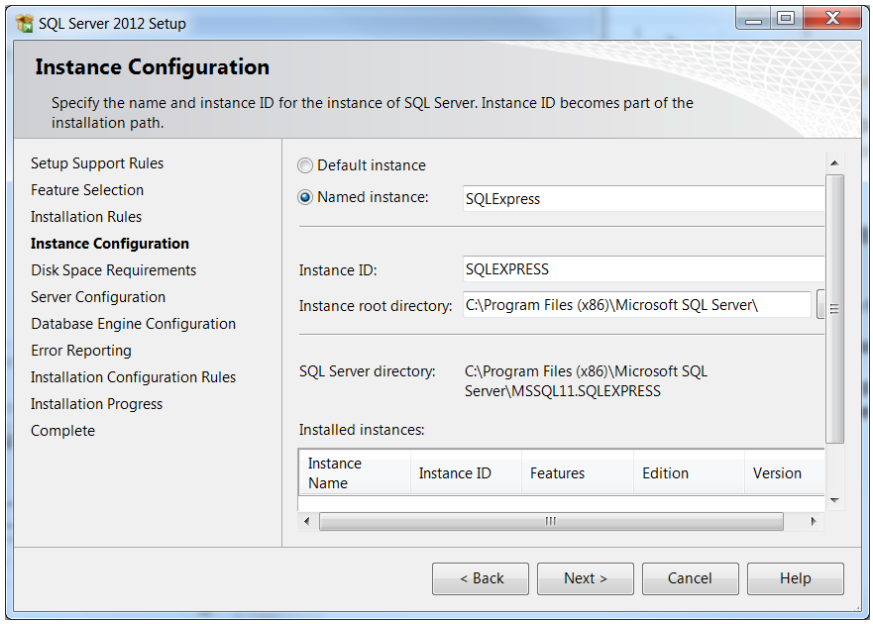

Figure 15: SQL Server 2012 Setup Instance Configuration

10) At the Server Configuration window (Figure 16), click **Next**.

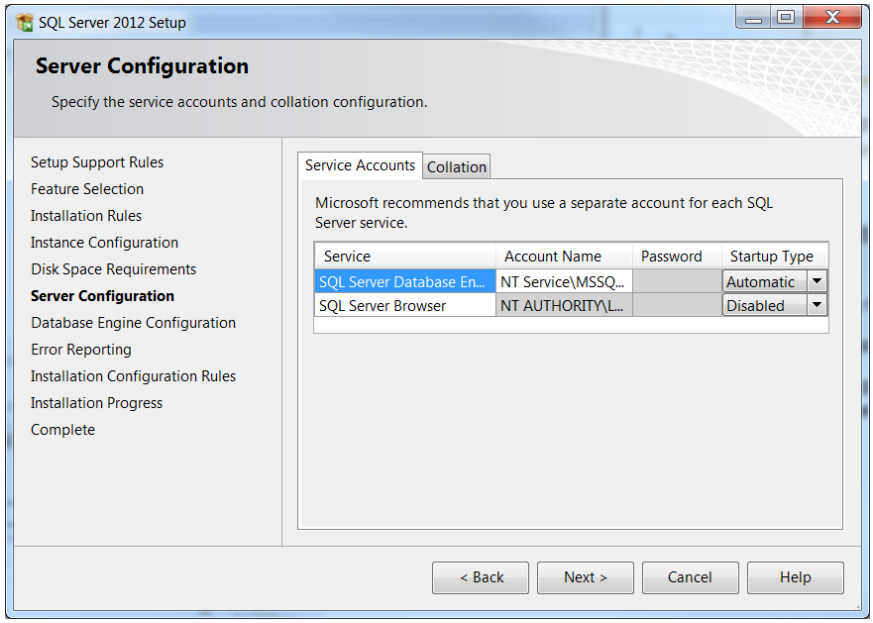

Figure 16: SQL Server 2012 Setup Server Configuration

11) At the Database Engine Configuration window (Figure 17), click **Add current user**. Verify the SQL server administrator area displays the user.

12) If keeping the default **Windows authentication mode** option selected, click **Next**.

IMPORTANT NOTE: The authentication mode defines the PAS authentication method to access the SQL server as part of its internal operation. If the Windows authentication mode is not used and the Mixed Mode option is required, then the system administrator credentials must be provided. PAS must be configured to use the same credentials to execute correctly. Contact ABB for more information or support for non-default authentication mode configuration.

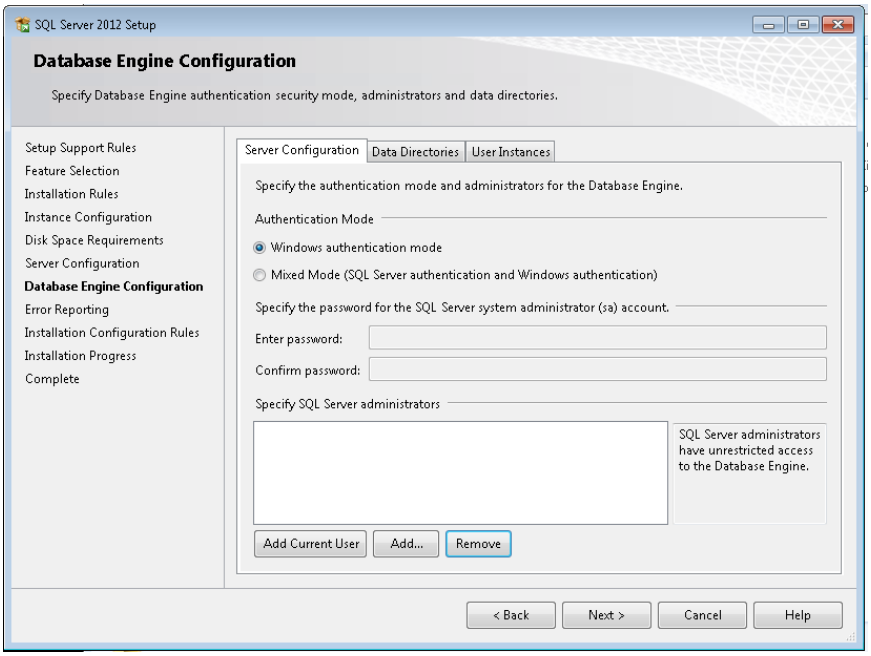

Figure 17: SQL Server 2012 Setup Database Engine Configuration

13) At the Error Reporting window (Figure 18), click **Next**. The installation process begins.

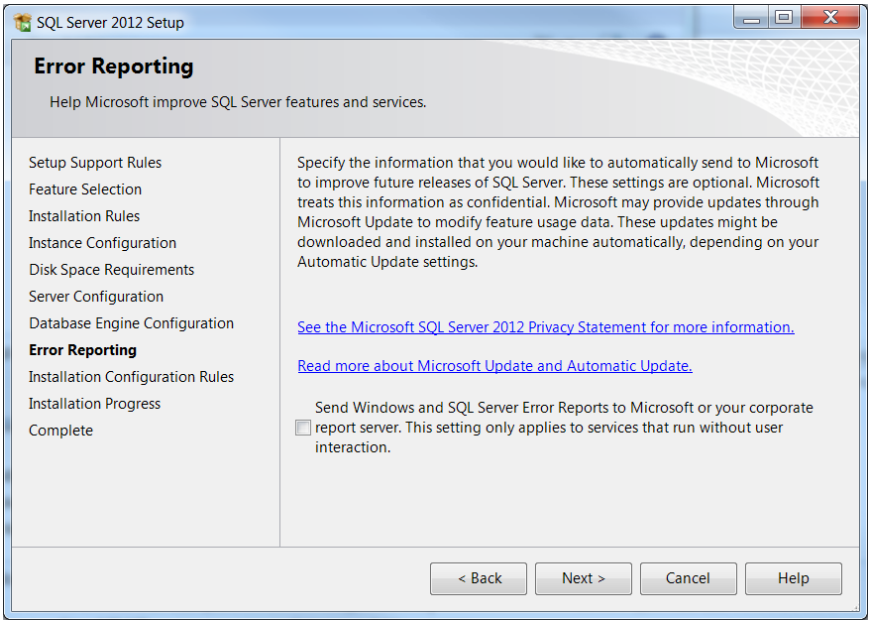

Figure 18: SQL Server 2012 Setup Error reporting

14) Observe the progress of the installation (Figure 19).

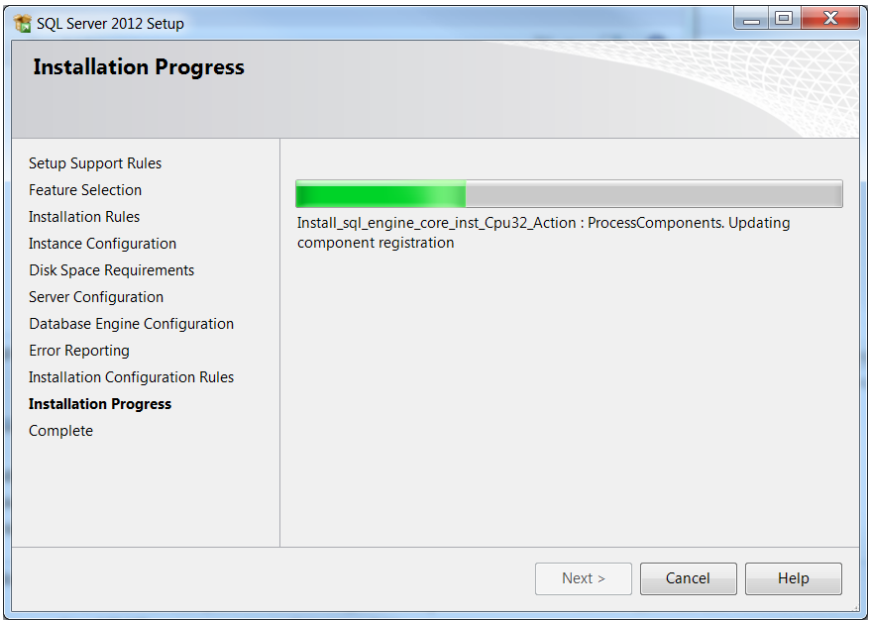

Figure 19: SQL Server 2012 Setup Installation Progress

15) Verify that the installation completes successfully (Figure 20). Scroll down to verify that the installation status of all features lists Succeeded and then click **Close**.

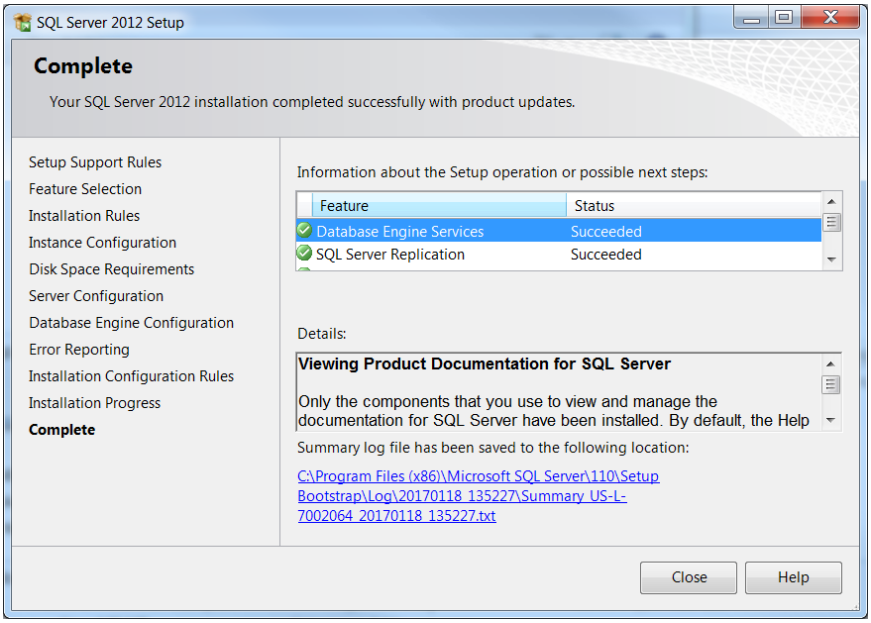

Figure 20: SQL Server 2012 Setup Complete

16) Return to the SQL Server Installation Center window (it was left open during the SQL setup process), and if not configuring anything further for SQL, click **Close**.

17) The welcome installation screen displays (Figure 21).

18) Click **Next**.

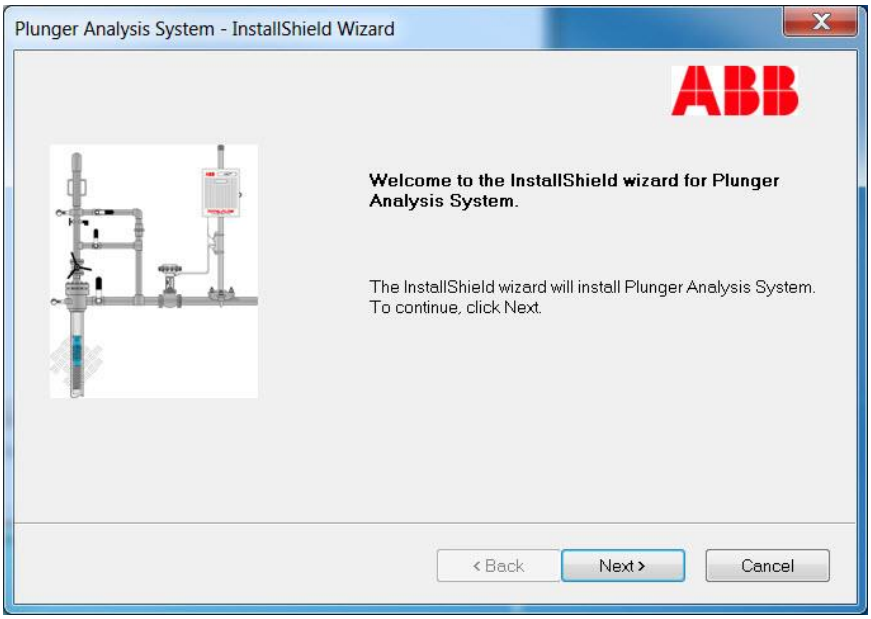

Figure 21: Plunger Analysis System InstallShield Wizard welcome screen

19) At the License Agreement screen (Figure 22) accept the terms and click **Next**.

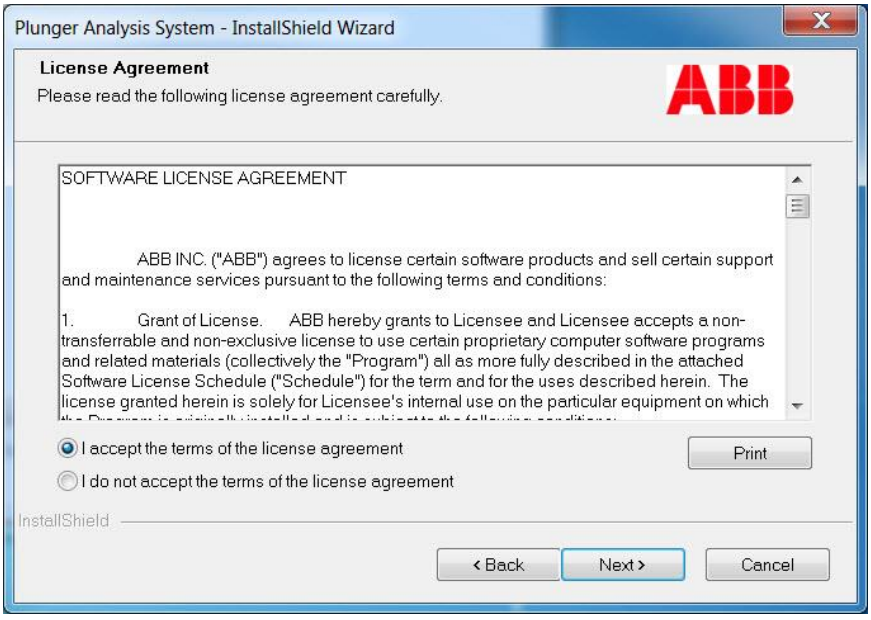

Figure 22: Plunger Analysis System InstallShield Wizard license agreement screen

20) At the Choose the Location screen (Figure 23), if not using the default destination folder shown, click **Browse** to define another destination folder.

IMPORTANT NOTE: Take note of the installation directory chosen. Knowing the path to the installation directory is required if running PAS from the command line. If planning to use the command line, see section 6.12, *Running batch optimization or fault detection from the command line*.

21) Click **Next**.

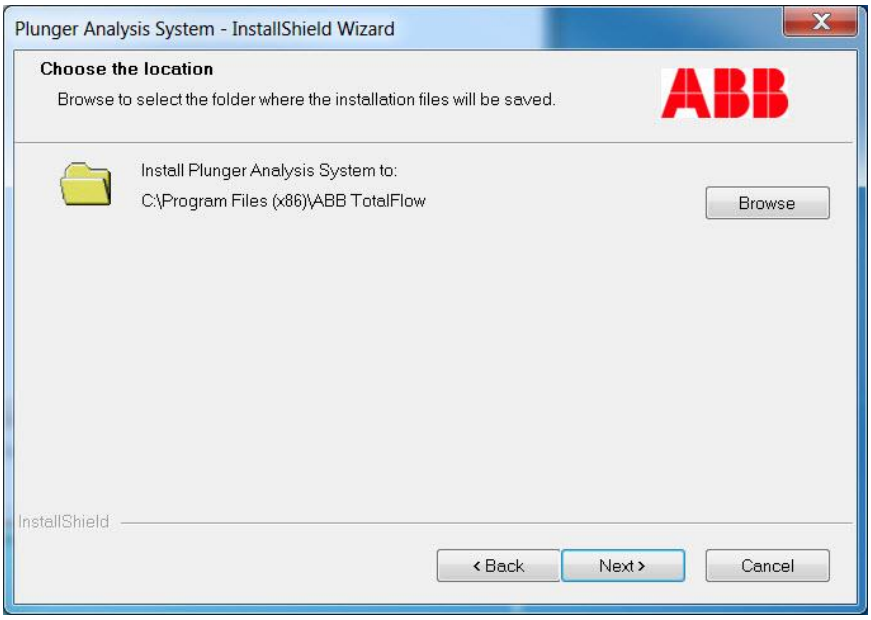

Figure 23: Plunger Analysis System installation screen to choose the location

22) At the Ready to install the program screen (Figure 24), click **Install**.

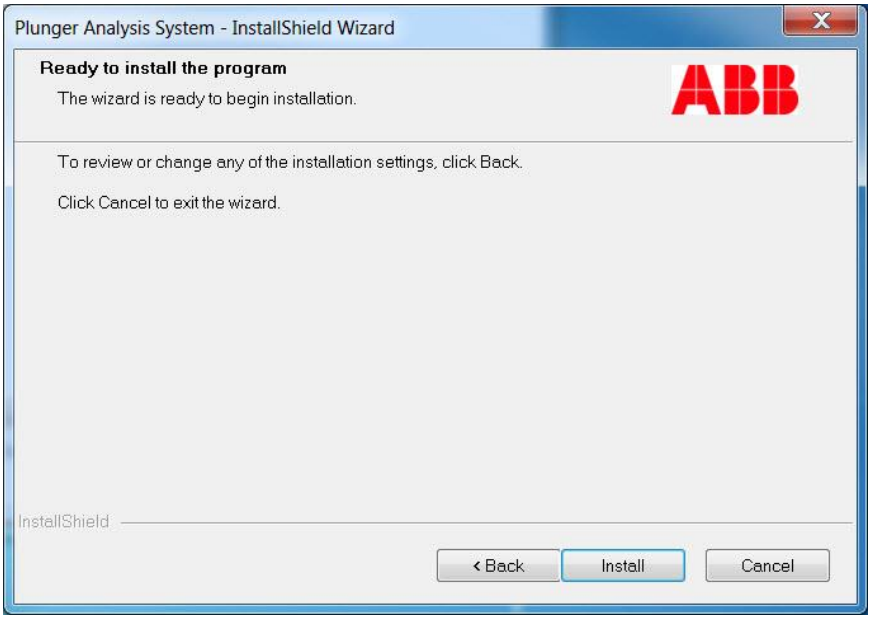

Figure 24: Ready to install the program installation screen

23) Wait for the InstallShield® Wizard Complete screen (Figure 25) to display.

a) To review the new features or bug fixes for the version just installed, leave the **View Release Notes** checkbox checked.

b) To start the application check the **Launch application** checkbox.

24) Click **Finish** to exit the installer.

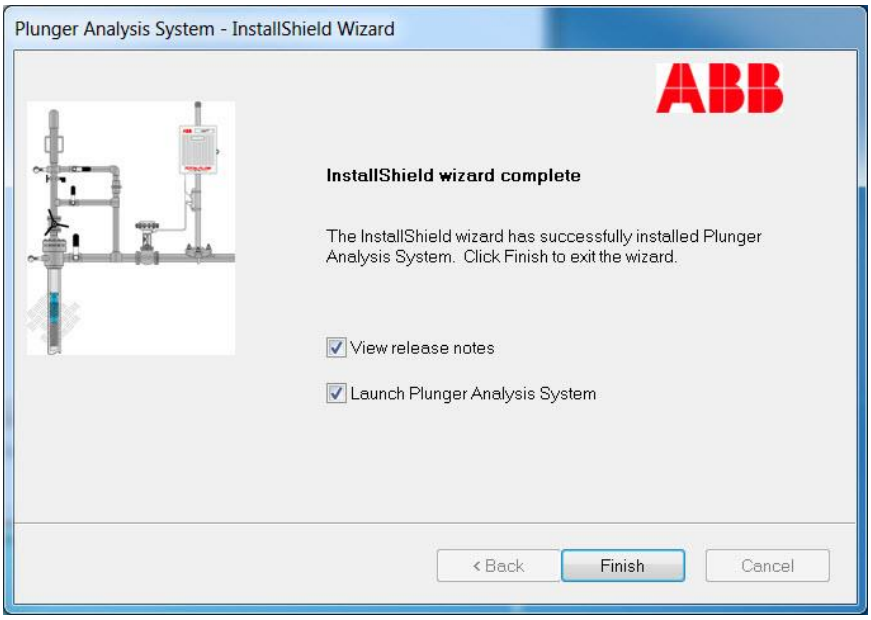

Figure 25: InstallShield Wizard Complete screen

25) If the application was launched, verify the home screen is displayed (the home screen should be displayed from the default browser). See section 5 *Activating PAS* to access the main screen.

5 Activating PAS

When the application is launched for the first time, none of its features are activated. To begin using the features, they must be activated using the correct license key or activation code as supplied at the time of purchase.

Two methods of activation are available: online and offline activation. If the system where PAS is installed meets the requirements described in section 3.1.4, *Target system network connectivity*, it is recommended that online activation is attempted first for expediency. If no network connectivity is available, activate offline.

IMPORTANT NOTE: When PAS is installed in a server for the multi-user scenario, activation of features must be performed by each user from their own PC or laptop. It is assumed that PAS will be used from the individual systems and not on the server itself. The system administrator must provide individual users the appropriate credentials for logging into the server

5.1 Launching the application

1) If Launch application was selected after the installation was completed, the main screen displays with credential fields for access (Figure 26).

IMPORTANT NOTE: If the application was not launched automatically go to the target system desktop, locate and double click the **Plunger Analysis System** icon to start the application.

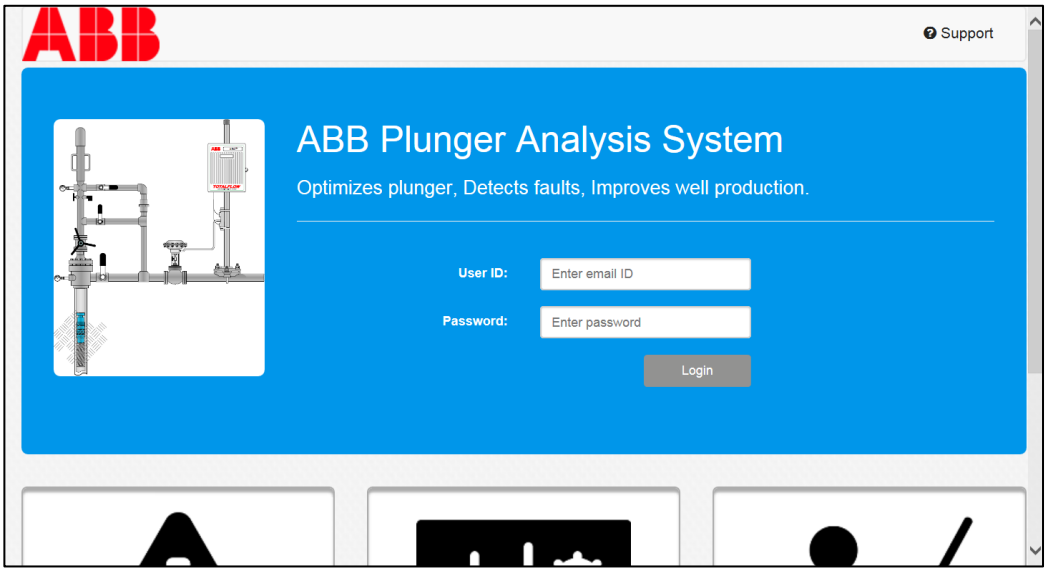

Figure 26: Plunger Analysis System login screen

2) Type credentials: User ID and Password.

IMPORTANT NOTE: When the credentials are successfully authenticated, the first time PAS is launched, it prompts to connect to the PAS database. The **Local Application Database** option is selected by default. Click **Connect**. This step is only required the first time the application is launched in order to create the internal database required for the operation of PAS. If unable to connect or an error message is displayed contact ABB for support.

3) Proceed to activate using the preferred method.

   a) For online activation see section 5.2, *Online activation*.

b) For offline activation see section 5.3, *Offline activation*.

5.2 Online activation

Online activation requires network and internet access to the ABB service portal.

IMPORTANT NOTE: Corporate firewalls should allow TCP port 443 to communicate with the ABB license server.

5.2.1 Feature activation

Use this procedure to activate one feature or package at a time. Ensure that the appropriate activation code is used for the required feature.

To activate the features:

1) On the main PAS screen, type credentials to log in. The features are shown as Not Activated (Figure 27).

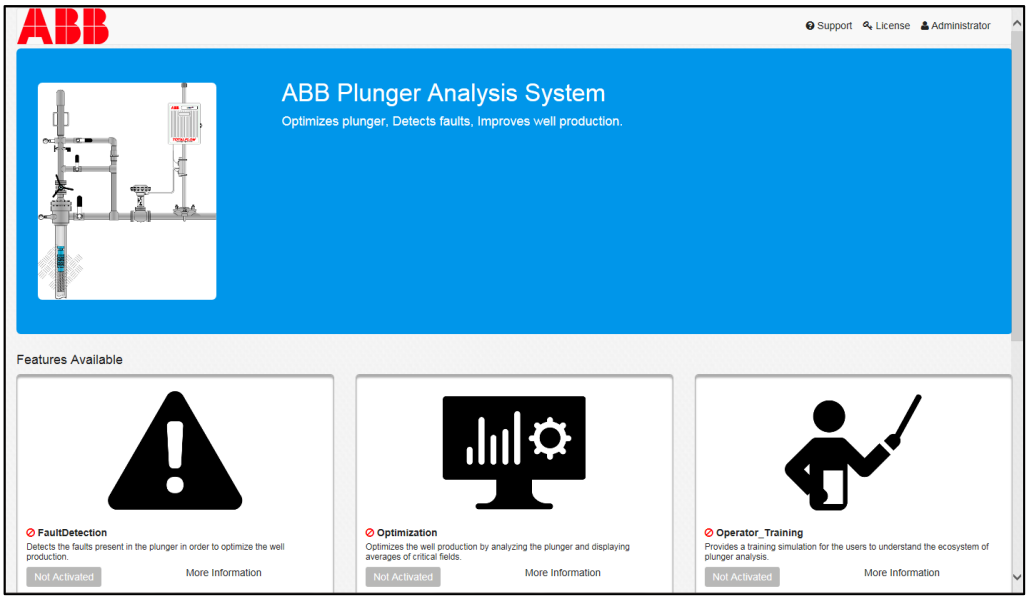

Figure 27: Plunger Analysis System main screen (before feature activation)

2) On the top, right-hand side of the page, click **License** and then **Activate/Status**.

3) At the License: Online Activation screen, click **Online Activation** (Figure 28).

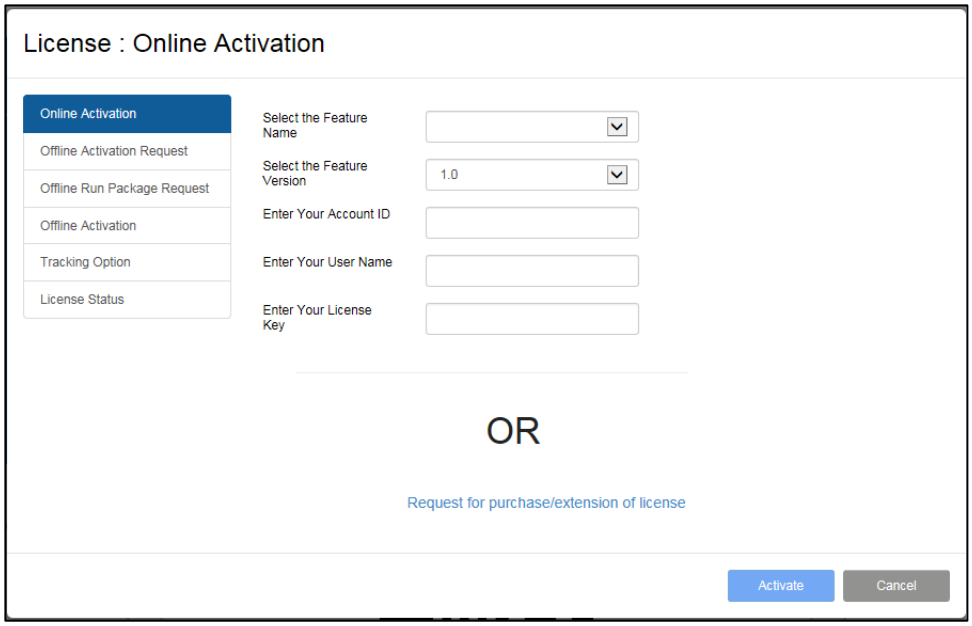

Figure 28: License: Online Activation screen

4) Select the feature name:
   a) For optimization and fault detection, for GUI support only, select Basic_Activation.
   b) For optimization and fault detection, for both GUI and Batch support, select Advanced_Activation.
   c) For the training feature, select Operator_Training.
5) Select the feature version.
6) Type the credentials:

IMPORTANT NOTE: Each activation license has its own key or activation code. Make sure you use the correct key issued for the feature.

   a) Account ID: email address registered for the customer account. This address is a unique address generated by Flexera for each customer account. It is provided along with the license keys.
   b) User Name: authorized account member corporate email address
   c) License key (also referred to as the activation code) for the feature.

IMPORTANT NOTE: Each activation license has its own key or activation code. Make sure to use the key issued for the feature.

7) Click **Activate**. After activation is performed, the Online Activation screen closes.
8) Repeat steps 1 – 7 to activate another feature.
9) If the optimization and fault detection features were activated (Basic or Advanced activation), enable usage tracking as described in section 5.2.2, *Enable tracking for the number of runs and concurrent users*.
10) If the operator training feature was activated, the feature is ready for use. To begin using the feature, see section 6 *Startup*.

5.2.2 Enable tracking for the number of runs and concurrent users

Use this procedure if an optimization and fault detection package (Basic or Advanced) was activated.

To enable usage tracking:

1) On the top, right-hand side of the page, click **License** and then **Activate**.
2) Click **Tracking option**. The License Tracking Option screen displays (Figure 29).

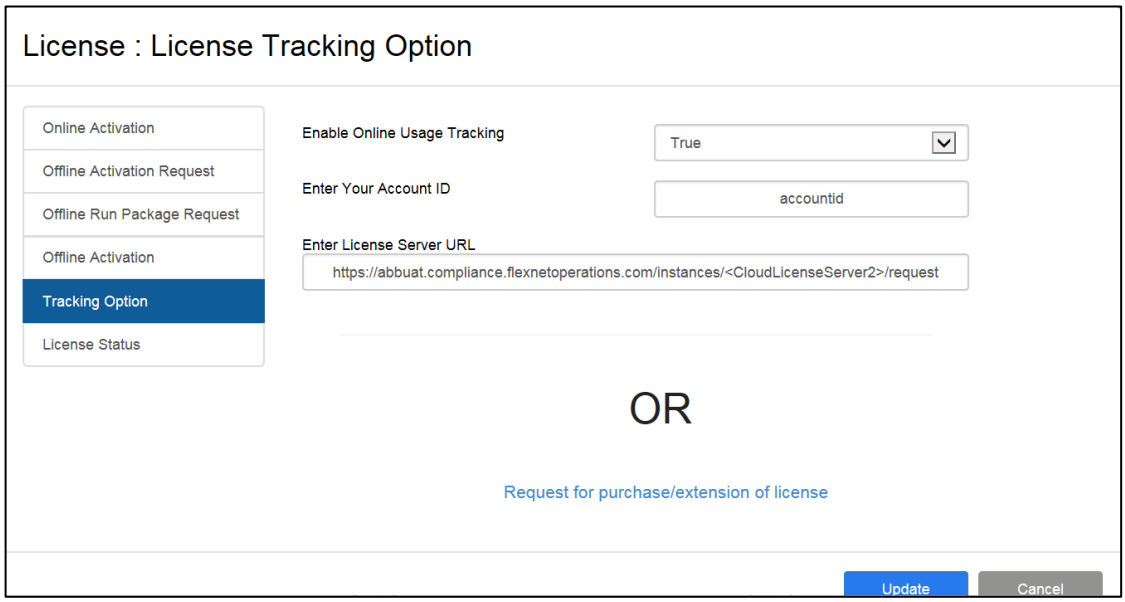

Figure 29: License Tracking Option

3) Set the Enable Online Usage Tracking field to **True**.
4) Type the Account ID.
5) Type the License Server URL provided by ABB. Be sure to type the correct URL. There is a different URL for every account.
6) Click **Update**.

5.3 Offline activation

If the system PAS is installed on does not have network connectivity, then activate the features offline. For contact information for offline activation requests see section 1.2.1, *Ordering* or the Contact us section in the back of this manual.

5.3.1 Generate and send an offline feature activation request

Offline licenses require that a request for activation be generated. The file generated from this request must be emailed to ABB. When ABB authorizes the activation, it sends back a file that must be uploaded in order to complete the activation process.

1) On the top, right-hand side of the page, click **License** and then **Activate**.
2) Click **Offline Activation Request**. The Offline Activation Request screen displays (Figure 30).
3) Select the feature name.
   a) To generate a request for optimization and fault detection for GUI, select **Basic _Activation**.

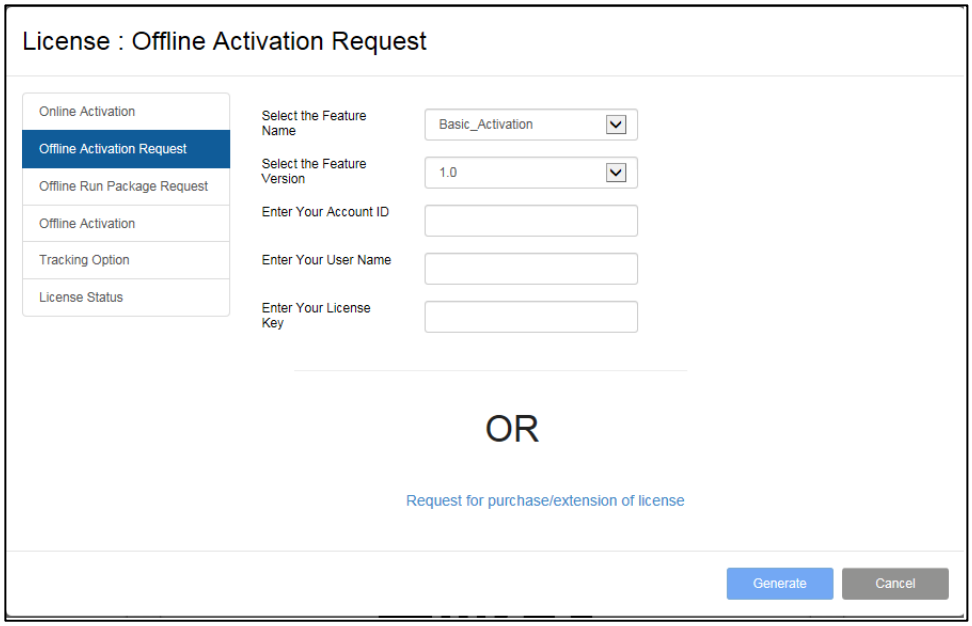

Figure 30: Offline Activation Request for optimization and fault detection

b) To generate a request for optimization and fault detection for both GUI and Batch support, select **Advanced_Activation** (Figure 31).

Figure 31: Offline activation of optimization and fault detection (Advanced package)

c) To generate a request for training, select **Operator_Training** (Figure 32).

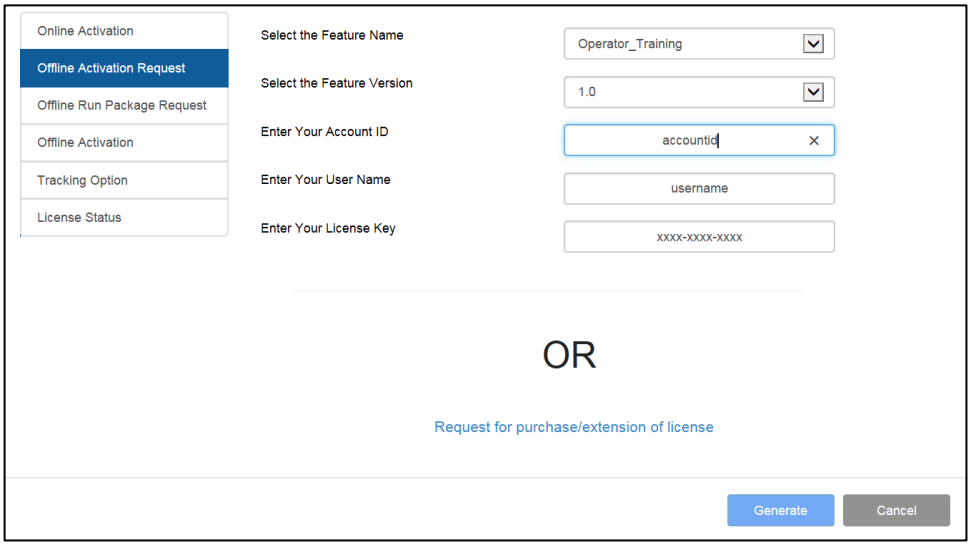

Figure 32: Offline Activation for operator training

4) Select the feature version.

5) Type the credentials provided by ABB:

   a) Account ID: corporate email address registered in the customer account

   b) User Name: authorized account member corporate email address

   c) License key (also referred to as the activation code) for the feature: Please note that there may be different license keys for each feature. Make sure to use the correct one for the feature.

6) Click **Generate**. A file named <feature_name>.bin is generated, where feature_name is the selected feature. For example: Basicactivation.bin, Advancedactivation.bin or OperatorTraining.bin.

7) Repeat steps 1- 7 for each feature.

8) Send the generated file(s) to the customer support email. ABB responds to the request by sending a response or authorization file back.

9) Check the email inbox the request was sent from for the license response file(s).

10) Save the file(s) and take note of the path or location.

11) Proceed to activate the features in section 5.3.2, *Activate features*.

5.3.2 Activate features

Use the activation authorization file(s) sent by ABB to complete the activation procedure.

1) Click **Offline Activation**. The offline activation screen displays (Figure 33).

2) Click **Add file**.

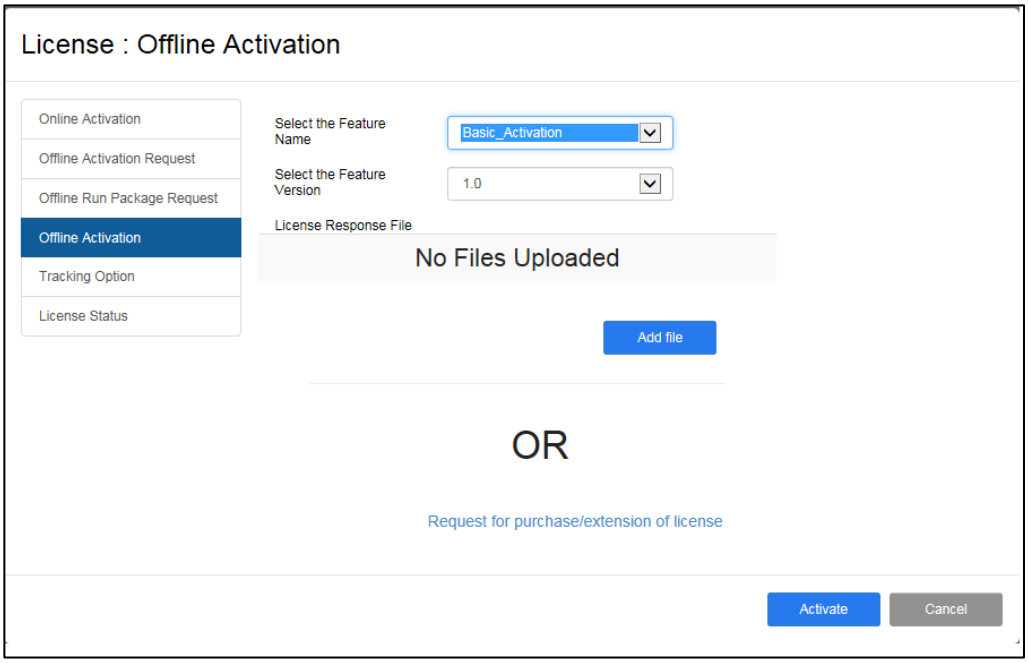

Figure 33: Offline activation

3) At the browser, locate and select the response (activation authorization) file which was sent by ABB for that feature.
4) Click **Activate**.
5) Repeat steps 1-4 for each feature.
6) If the optimization and fault detection features were activated (Basic or Advanced packages), proceed to generate a request for the number of runs required for package selected as described in section
7) If the operator training feature was activated, the feature is ready for use. To begin using the feature, see section 6 *Startup*.

5.3.3 Generate and send request for the number of runs

If activating the optimization and fault detection features (Basic activation package), generate and send a request for the number of runs required.

1) Click **Offline Run Package Request**. The License: Offline Run Package Request screen displays.
2) In the Select the Feature Name field, select **NumberOfRuns** (Figure 34).
3) Select the feature version.
4) Type the account ID.
5) Type the User Name.
6) Type or select the required number of runs as per the purchase order.
7) Click **Generate**. A file named <feature_name>.bin is generated, where feature_name is the selected feature. In this case, NumberOfRuns.bin.

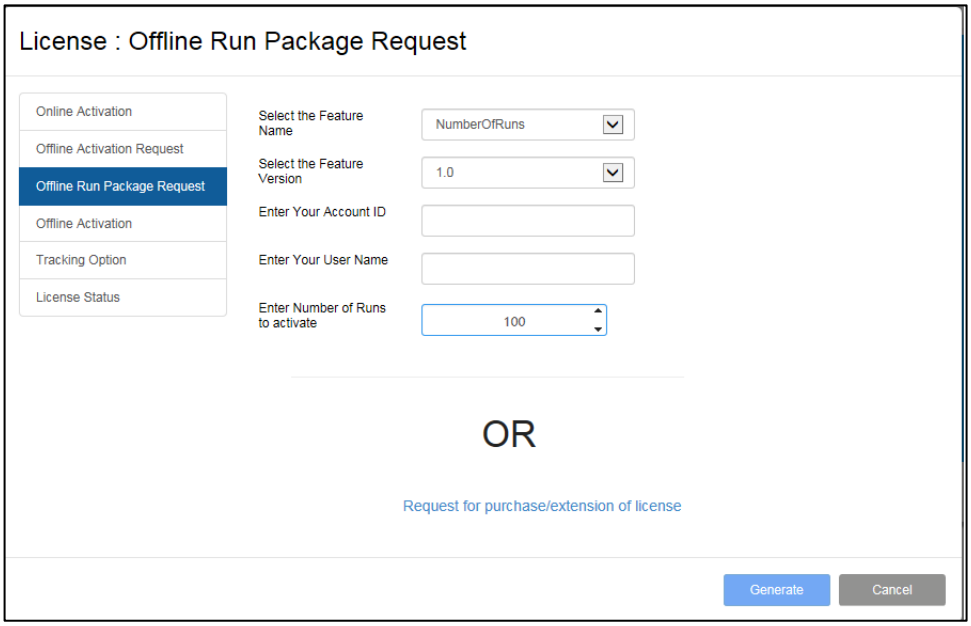

Figure 34: Offline Run Package Request screen

8) Send the file to the customer support email. ABB responds to the request by sending a response or authorization file back.

9) Check the email inbox the request was sent from for the license response file.

10) Save file and take note of the path or location.

5.3.4 Activate the number of runs

Perform this procedures when the activation request for the number of runs for optimization and fault detection has been received. Use the activation authorization file sent by ABB to complete the run activation procedure.

1) Click **Offline Activation**. The Offline Activation screen displays.

2) In the Select the Feature Name field, select **NumberOfRuns** (Figure 35).

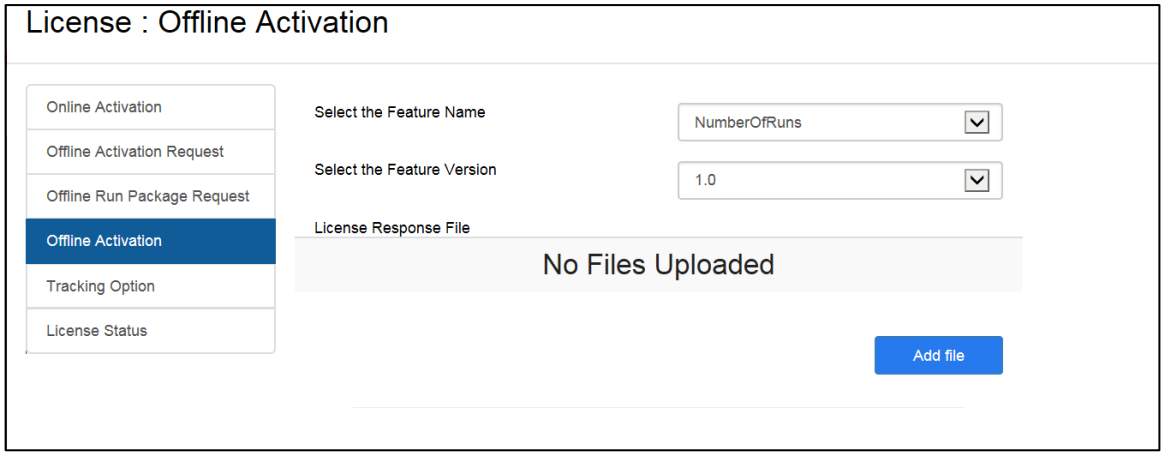

Figure 35: Offline activation of number of runs

3) Click **Add file**.

4) At the browser, locate and select the response file (number of runs activation authorization) sent by ABB.

5) Click **Activate**.

5.3.5 Enable online tracking for number of runs (optional)

Usage tracking for offline licenses can be done online or offline. Offline tracking is the default, but it can be changed to online tracking if the target system has been configured for network connectivity and is able to connect to the ABB portal (internet connection required). Perform this procedure only if online usage tracking is desired.

IMPORTANT NOTE: Enable online usage tracking (Figure 36) is set to False by default.

To switch to online tracking:

1) Click **Tracking option**. The license tracking option screen displays and shows the default online usage tracking set to False.

2) In the Enable Online Usage Tracking field (Figure 36), select **True**.

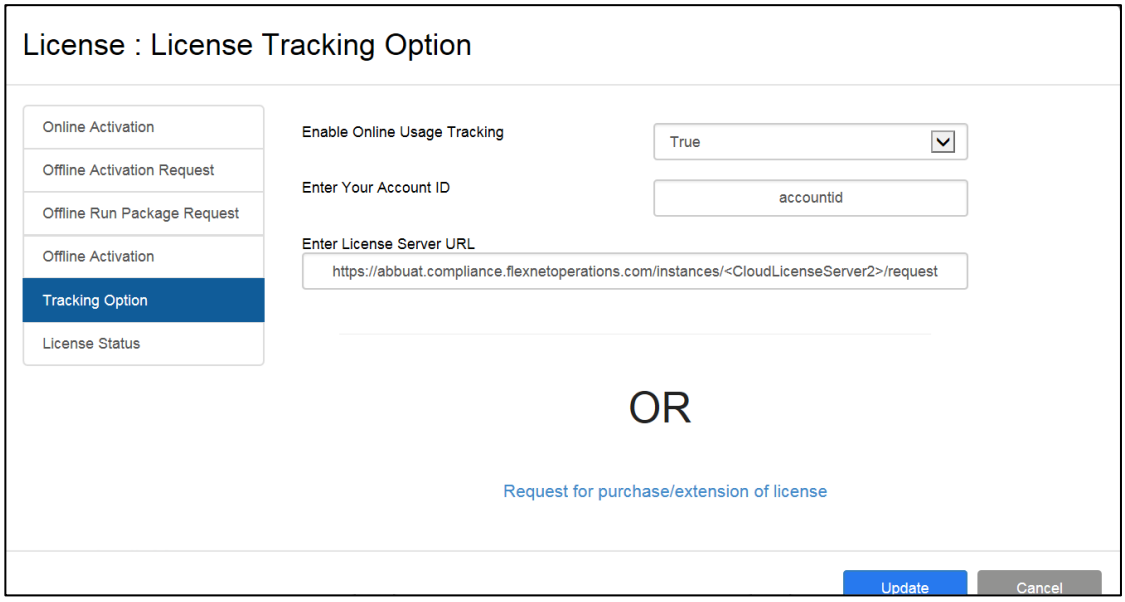

Figure 36: License Tracking Option screen

3) Type the account ID (provided by ABB).

4) Type the License server URL (provided by ABB).

5) Click **Update**.

5.4 Verify license status

To verify the status of the licenses:

1) On the top, right-hand side of the main page, click **License** and then **Status**. The License Status screen displays with details about each license package (Figure 37).

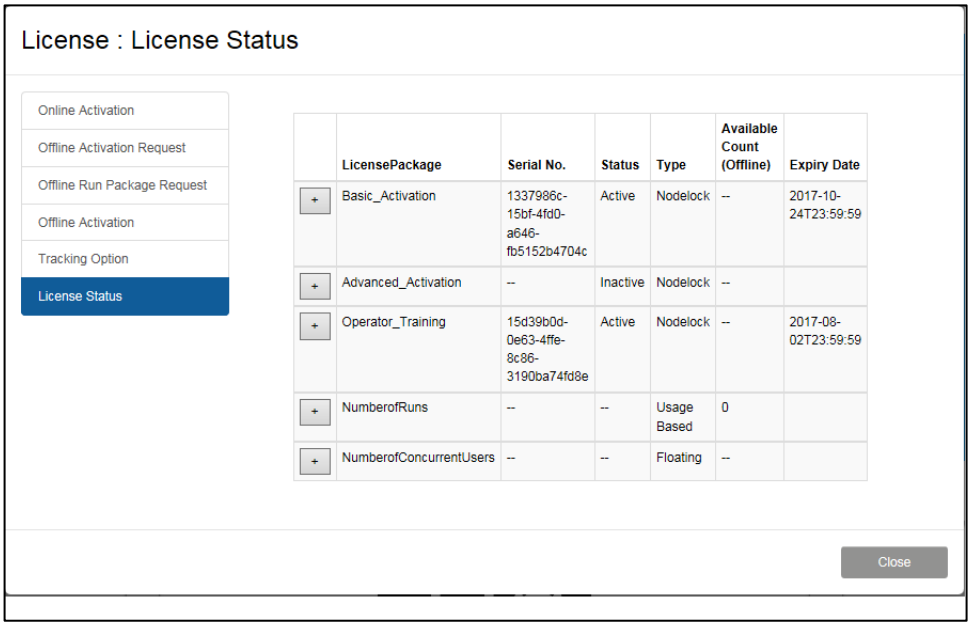

Figure 37: License Status screen

2) Review the selection and verify the status, run balance, and expiration date as applicable to the activated licenses.

3) Click **Close** when done.

4) Ensure that activation was successful. Figure 38 shows the activated Optimization feature as an example. A check mark is now displayed next to the feature name and a Proceed button is now available to access the application.

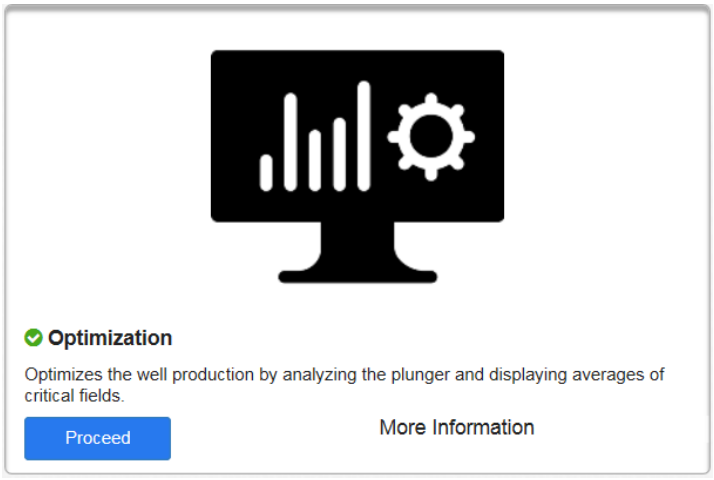

Figure 38: Activated feature (Optimization)

6 Startup

The procedures included in this section describe how to start PAS and its features. Details on the interpretation of analyses, parameter description and advanced use of the application are available in the online help files.

Choose the procedure(s) based on what features have been purchased. If both Optimization and Fault Detection are purchased, in some cases, it may be helpful to run the Fault Detection analysis first to quickly gain an overall sense of the health of the plunger system. Detecting critical faults and taking corrective action, before running an optimization analysis, will result in more accurate data in the input files, and therefore, more accurate recommendations for tuning the plunger system.

The procedures for running batch analysis from the command line are also included to support legacy operations. These procedures require the definition of batch profiles (paths to the input and output directories where input and output files are saved, respectively).

6.1 Startup checklist

Table 10: Startup checklist

	Action item	Notes
☐	Ensure features are activated.	See section 5.4, *Verify license status*.
☐	Ensure file(s) to be analyzed have been collected and are available for upload in the input directory.	See section 2.5.2, *Input file location*, for details. If several files need to be analyzed, plan carefully to maximize the number of executions purchased. Every time an analysis is run, the licensing compliance center will subtract the number of runs by one, whether the analysis was for one or multiple files.
☐	Ensure the target system has connectivity to the Internet.	See section 3.1.4, *Target system network connectivity,* for requirements.

6.2 Starting the application

1) Click the Start menu button.
2) Click **Plunger Analysis System**.
3) Verify the PAS main screen displays.
4) Ensure that the required features are activated. Activated features should have a check mark next to the name and display the Proceed button (Figure 39). If not, follow the procedure described in section 5, *Activating PAS*.

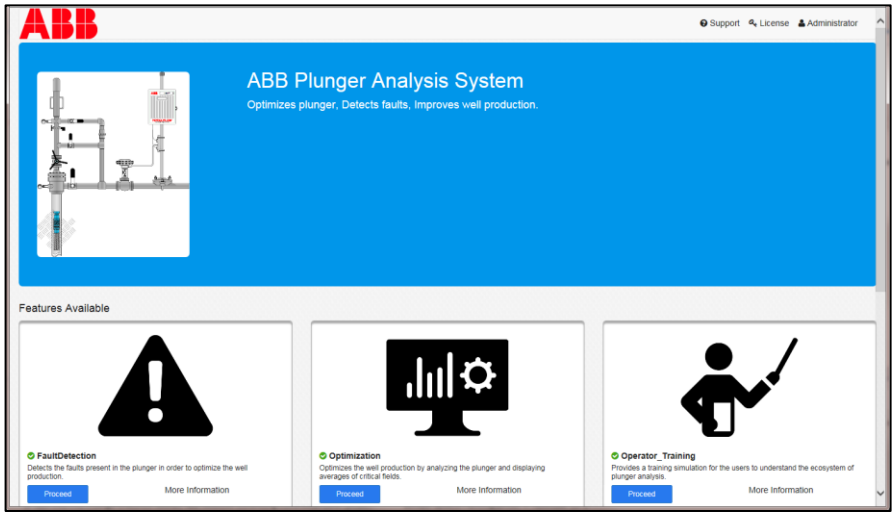

Figure 39: PAS main screen (all features activated)

6.3 Getting online help

Online help files are available while running the application. To access help:

1) Click **Support** on the main application screen.
2) Click **Help** and the provided link to navigate to the content.

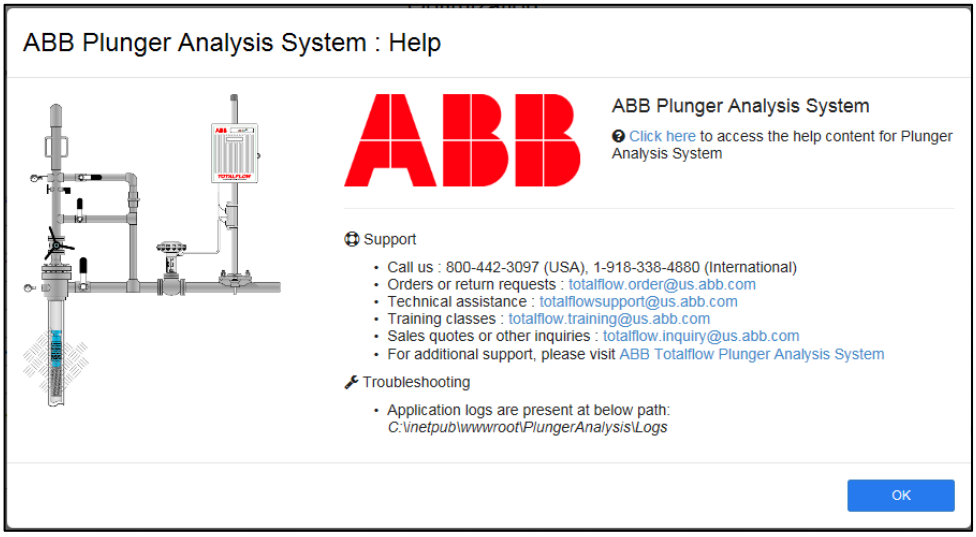

Figure 40: ABB Plunger Analysis System help screen

6.4 Create input and output directories

Input and output directories are the folders where the input files for analysis and the output files for results are saved, respectively. These directories can be created on the system where the application is running or on a mapped network drive. Create the input and output directory before starting an analysis to be able to browse to the files for upload or to save results.

1) Using Windows® File Explorer, create the input directory folder where the analysis files will be uploaded from. Take note of the directory path.
1) Copy the input files into the input folder.

2) Create the output folder where output files or analysis results will be saved. Take note of the directory path. Results can be downloaded into this folder for viewing after analysis is complete.

IMPORTANT NOTE: If planning to use the analysis program from the command line, create a profile containing the paths for the input and output directories for optimization and fault detection. The batch profile is a required parameter to run PAS.exe from the command line. See section 6.5, *Create batch profile for running fault detection from the command line* and section 6.6, *Create batch profile for running optimization from the command line* .

6.5 Create batch profile for running fault detection from the command line

Perform this procedure if planning to run fault detection batch analysis from the command line.

1) On the main screen, from the Fault Detection feature, click **Proceed**.
2) At the optimization file upload screen, select **Batch Mode**.
3) On the menu bar, click **Configure**.
4) Select **Settings**.
5) At the Batch Settings screen (Figure 41), click **Add new profile**.

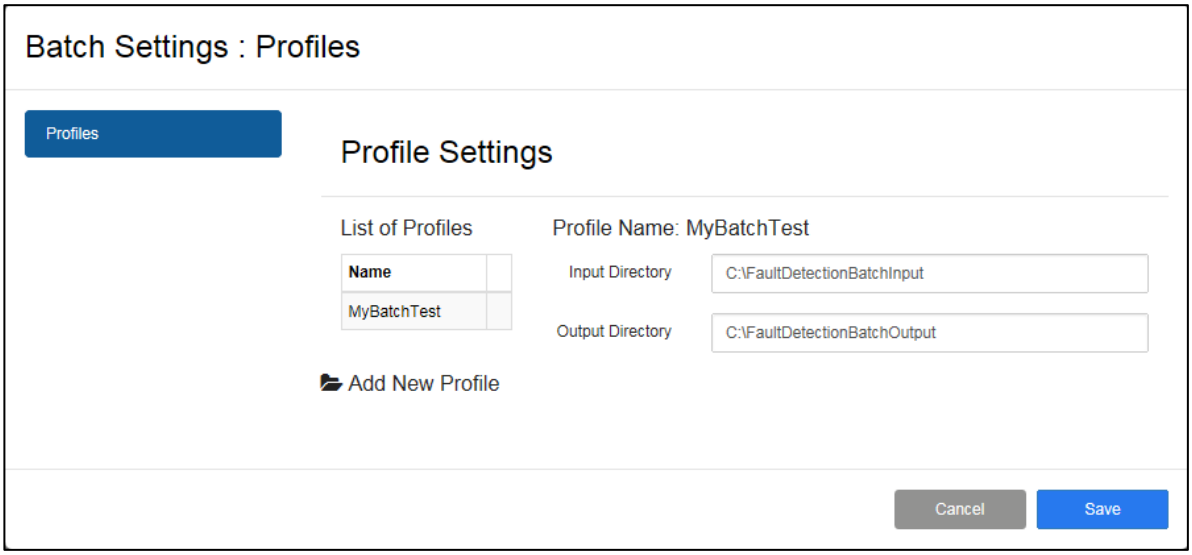

Figure 41: Fault detection batch profile settings

6) Type the name of the new profile. Take note of the profile name. It is a required argument for the procedure in section 6.12, *Running batch optimization or fault detection from the command line*.
7) Type the input directory and the output directory paths in the fields provided.
8) Click **OK** to save and confirm.

6.6 Create batch profile for running optimization from the command line

Perform this procedure if planning to run optimization batch analysis from the command line.

1) On the main screen, from the Optimization feature, click **Proceed**.
2) At the optimization file upload screen, select **Batch Mode**.
3) On the menu bar, click **Configure**.

4) Select **Settings**.
5) At the Batch Settings screen, select **Profiles**.
6) On the Profile Settings screen (Figure 42), click **Add new profile**.

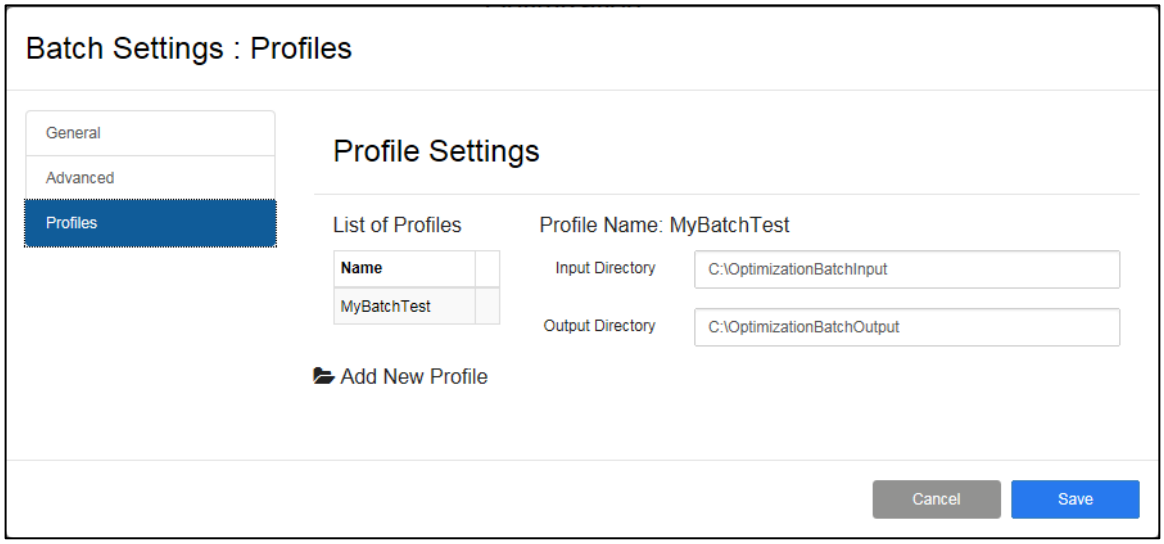

Figure 42: Optimization batch profile settings

7) Type the name of new profile. Take note of the profile name. It is a required argument for the procedure in section 6.12, *Running batch optimization or fault detection from the command line*.
8) Type the input directory and the output directory paths in the fields provided.
9) Click **OK** to save and confirm.

6.7 Starting the fault detection feature for single file analysis (GUI Mode)

Perform this procedure to use the browser to analyze and view results for a single input file.

1) On the main screen, from the Fault Detection feature, click **Proceed**.
2) Verify the Fault Detection file upload screen displays (Figure 43).

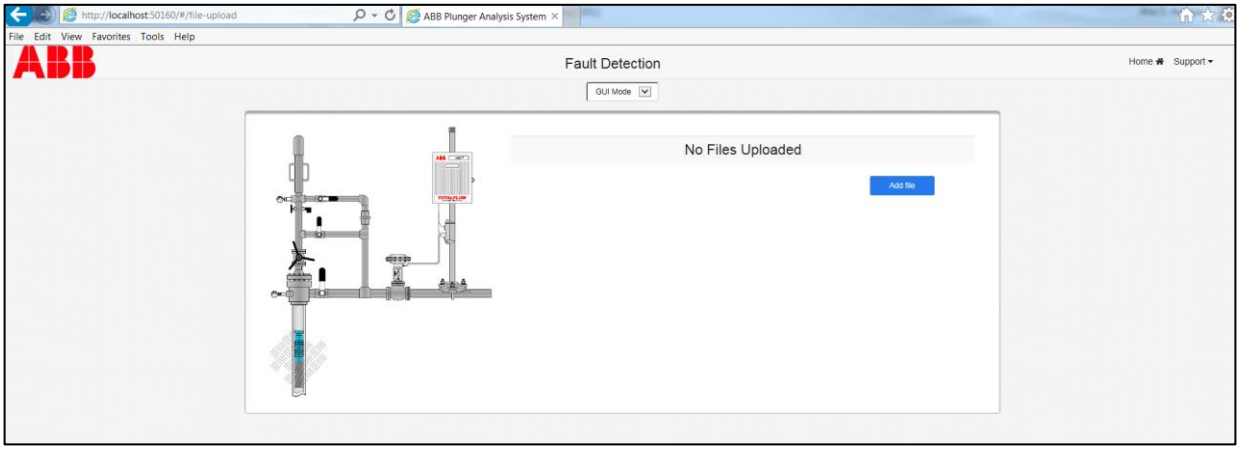

Figure 43: Fault Detection file upload screen

3) Ensure Fault Detection is in **GUI Mode**.

4) Click **Add file**.

5) Browse to the input directory, locate and select the input file (Figure 44).

6) Click **Upload & Analyze**.

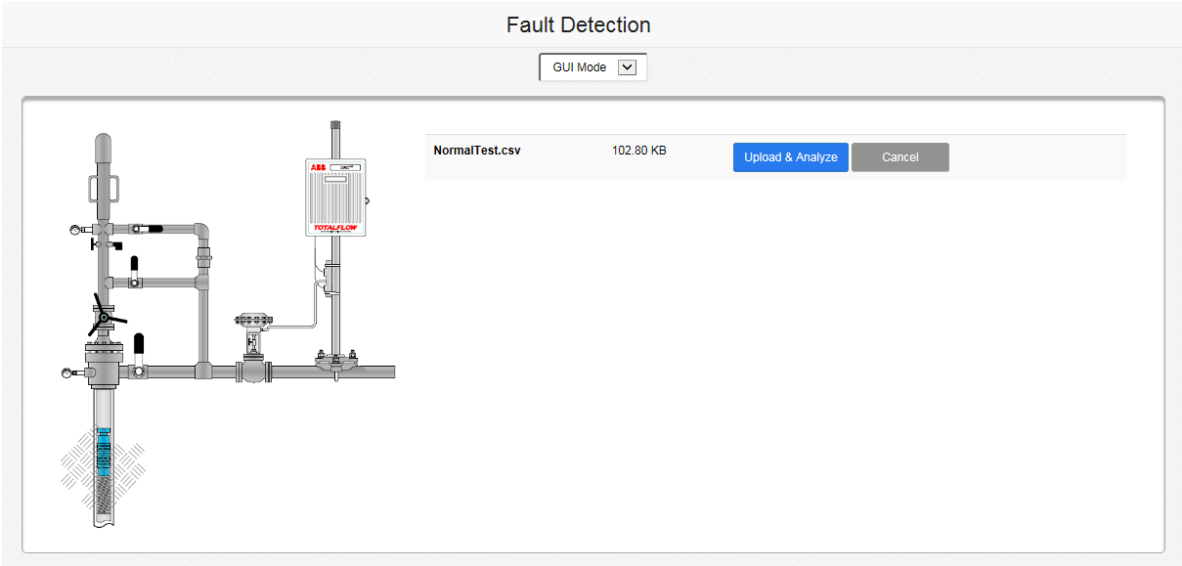

Figure 44: Uploading files for Fault Detection

7) When the application is able to analyze the file successfully, the main Fault Detection screen should display (Figure 45) with the analysis results.

IMPORTANT NOTE: Single file analysis results are displayed on the screen. Navigating to another screen will clear the results. If keeping a record of the results is needed, ensure the results are downloaded and saved for later viewing.

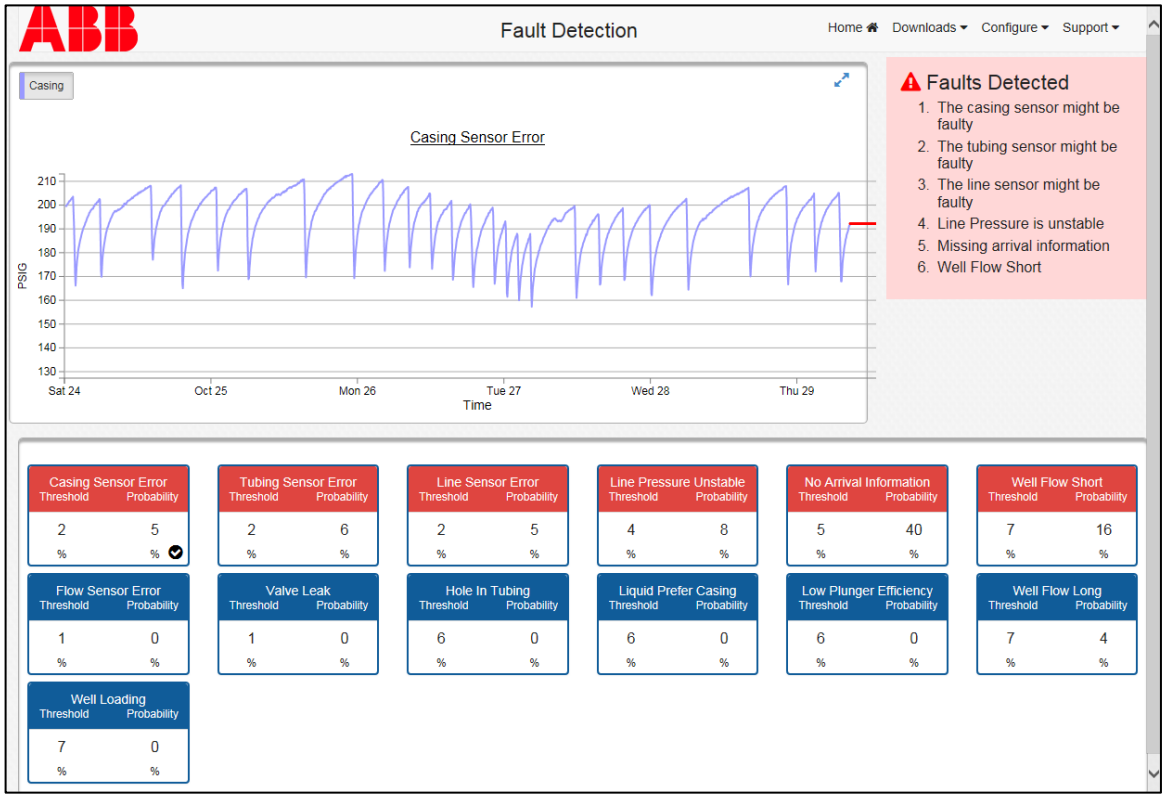

Figure 45: Fault Detection dashboard with single file analysis results

8) To store analysis results, click **Downloads**.

9) Choose the required format (.xml or Microsoft Excel® file format).

10) Save the output file in the output directory when prompted (Figure 46).

Figure 46: Saving result in Microsoft Excel® file format

11) For additional details about interpreting results, go to the online help. See section 6.3, *Getting online help*.

6.8 Starting the fault detection feature for batch analysis (batch mode)

Perform this procedure when running batch fault detection. Use the browser to upload input files, perform the fault detection analysis and download results. Results for batch analysis cannot be viewed from the screen, download and save files for later viewing.

1) On the main screen, from the Fault Detection feature, click **Proceed**.

2) Verify that the Fault Detection file upload screen displays.

3) Ensure that Fault Detection is in **Batch Mode** (Figure 47).

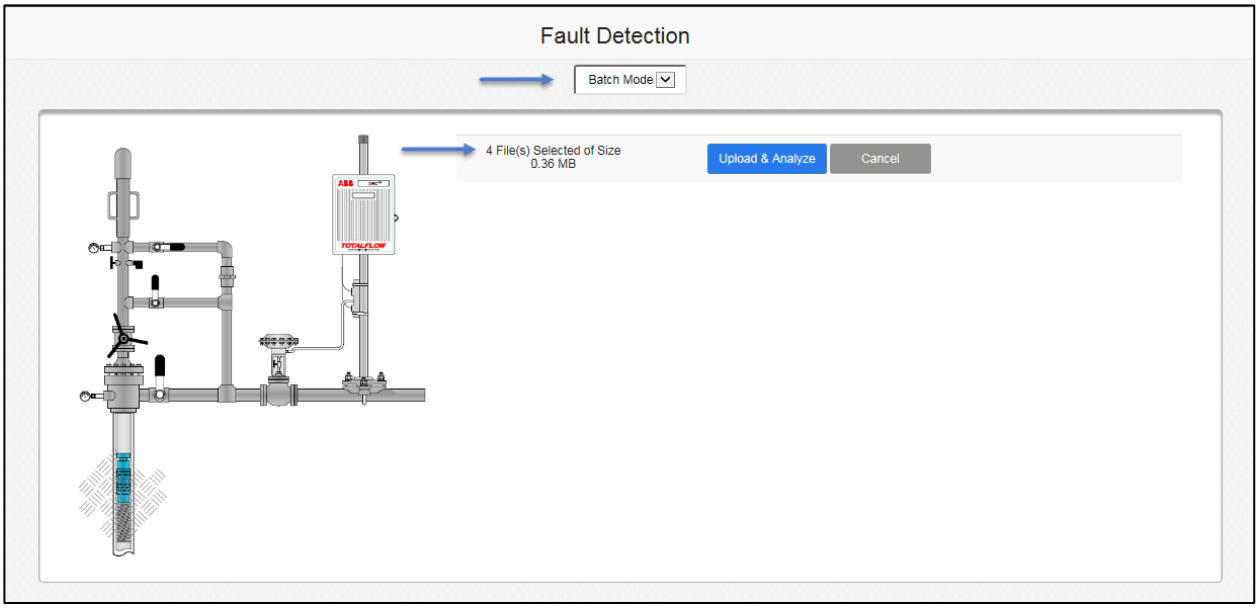

Figure 47: Starting fault detection in batch mode

4) Click **Add file**.

5) Browse to the input directory, locate and select the input files.

6) Click **Upload & Analyze**.

7) When the analysis is completed, at the prompt, save the results. The results are compressed in a .zip file and can be saved in the output directory for later viewing (Figure 48).

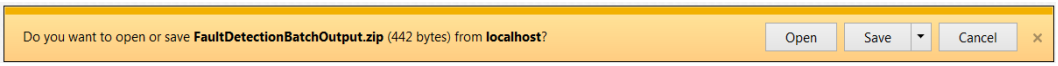

Figure 48: Saving the Fault Detection batch analysis output file

8) For additional details about interpreting results, go to the online help. See section 6.3, *Getting online help*.

6.9 Starting the optimization feature for single file analysis (GUI mode)

1) On the main screen, from the Optimization feature, click **Proceed**.

2) Verify that the Optimization file upload screen displays (Figure 49).

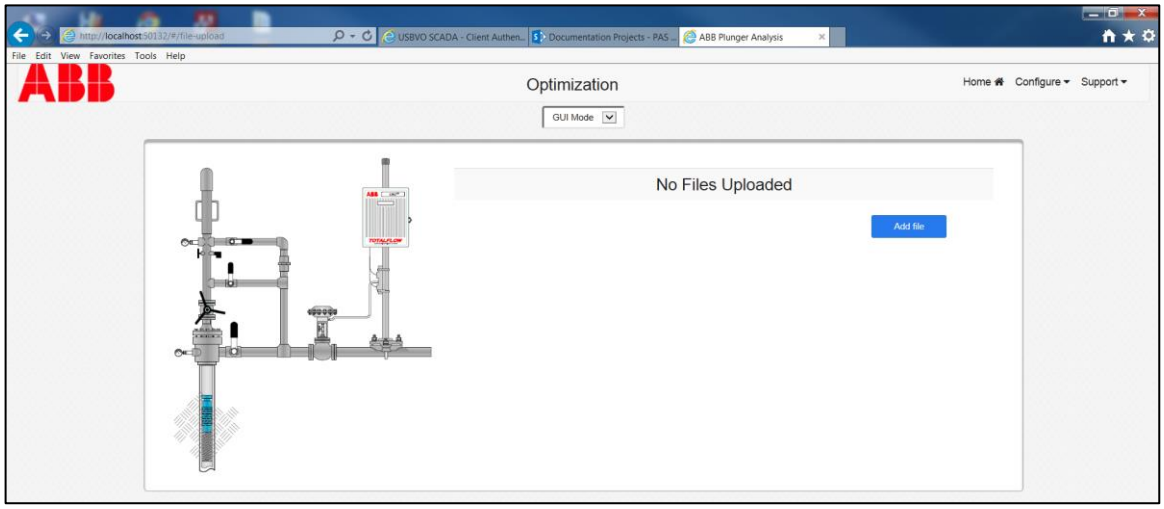

Figure 49: Optimization file upload screen in GUI mode

3) Ensure Optimization is in **GUI Mode** (Figure 50).

4) Click **Add file**.

5) Browse to the input directory, locate and select the input file.

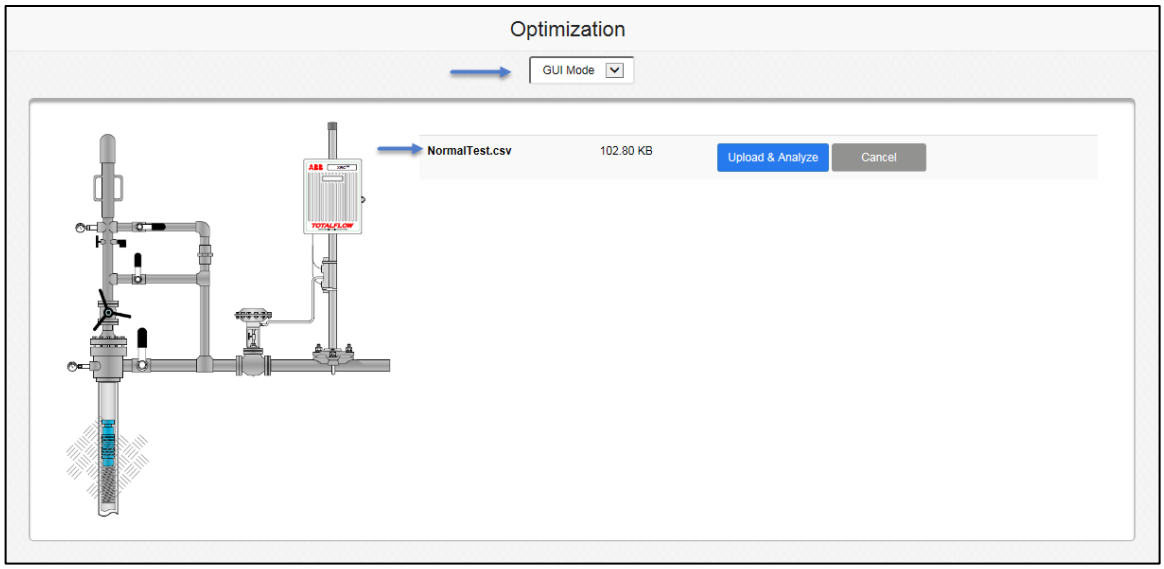

Figure 50: Starting optimization in GUI mode

6) Click **Upload & Analyze**. The first time the input file from a well is analyzed, the well settings dialog box displays (Figure 51) and prompts the user to provide information that may be missing (missing parameter fields are highlighted in red).

IMPORTANT NOTE: If the input files for the same well are analyzed again, the well settings do not have to be typed again. The application is designed to keep the well information for each well that is analyzed.

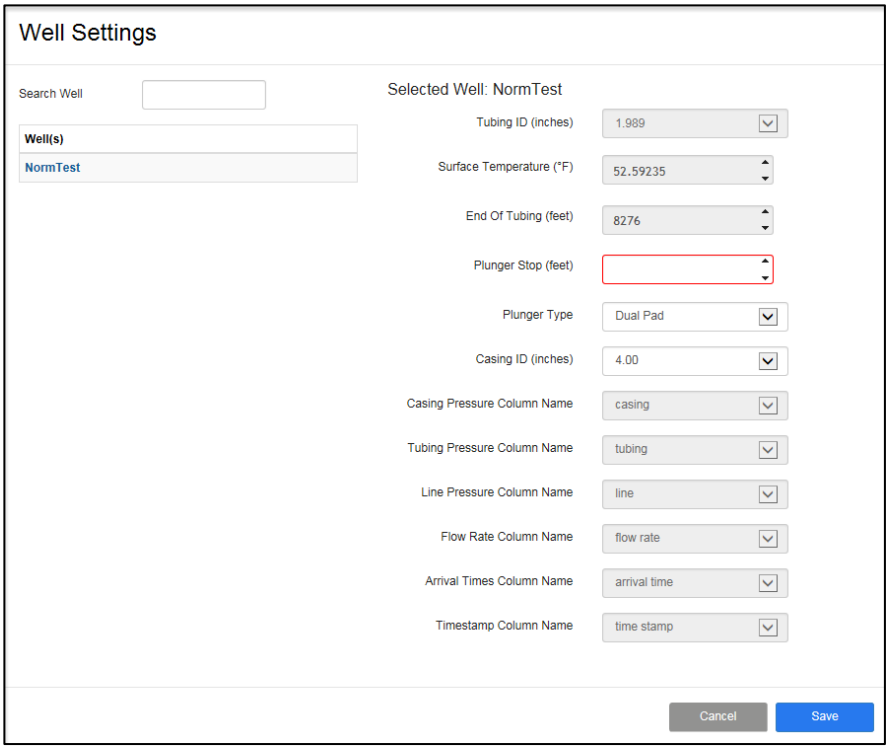

Figure 51: Well settings

7) Type the requested parameters and click **Save**.

8) When the application is able to analyze the file successfully, the main Optimization screen displays (Figure 52) with the analysis results.

IMPORTANT NOTE: Single file analysis results are displayed on the screen. Navigating to another screen will clear the results. If keeping a record of the results is required, ensure the results are downloaded and saved for later viewing.

Figure 52: Optimization dashboard with single file analysis results

9) To store the analysis results, click **Downloads**.

10) Choose the required format (.xml or Microsoft Excel® file format).

11) Save the output file in the output directory when prompted (Figure 53).

Figure 53: Saving result in Microsoft Excel® file format

12) For additional details about interpreting results, go to the online help. See section 6.3, *Getting online help*.

6.10 Starting the optimization feature for batch analysis (batch mode)

1) On the main screen, from the Optimization feature, click **Proceed**.

2) Verify that the Optimization file upload screen displays.

3) On the optimization mode dropdown menu select **Batch Mode** (Figure 54).

4) Click **Add file**.

5) Browse to the input directory, locate and select the input files. To select multiple files from the browser, press the Ctrl key and select the required files.

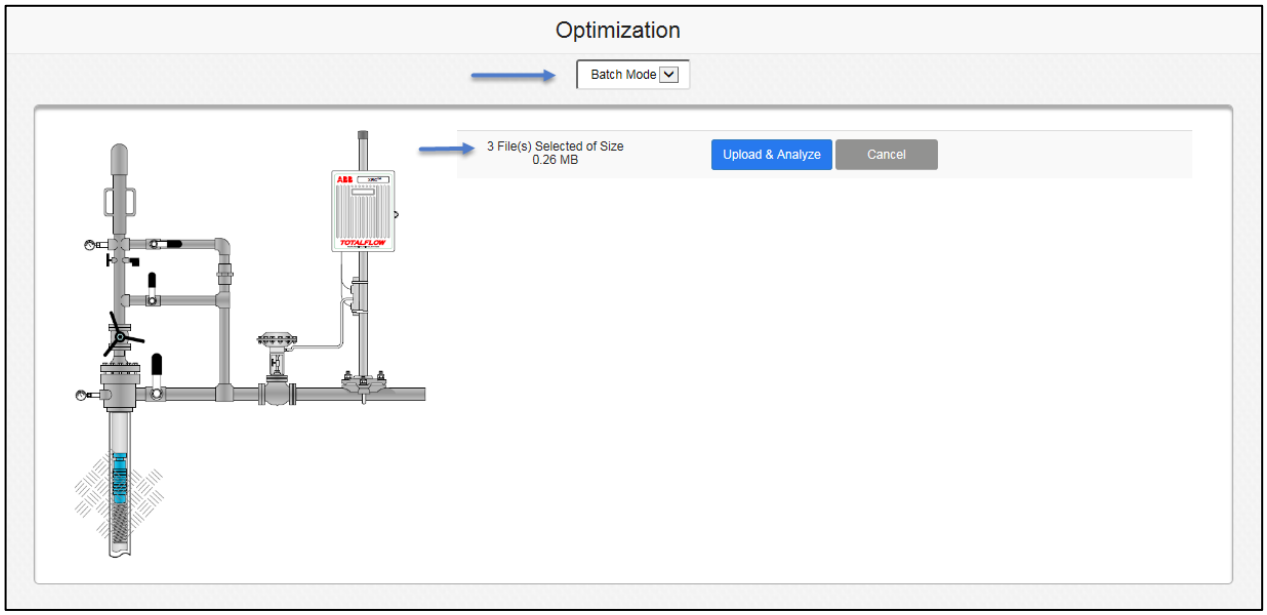

Figure 54: Starting optimization in batch mode

6) Click **Upload & Analyze**.

7) When the analysis is completed, at the prompt (Figure 55), save the results. The results are compressed in a .zip file and can be saved in the output directory for later viewing.

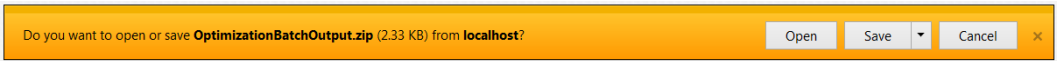

Figure 55: Completed batch optimization analysis output

8) For additional details about interpreting the results, go to the online help. See section 6.3, *Getting online help*.

6.11 Starting the operator training feature

1) On the main screen, from the Operator Training System feature, click **Proceed**.

2) Verify that the Operator Training System main screen displays (Figure 56).

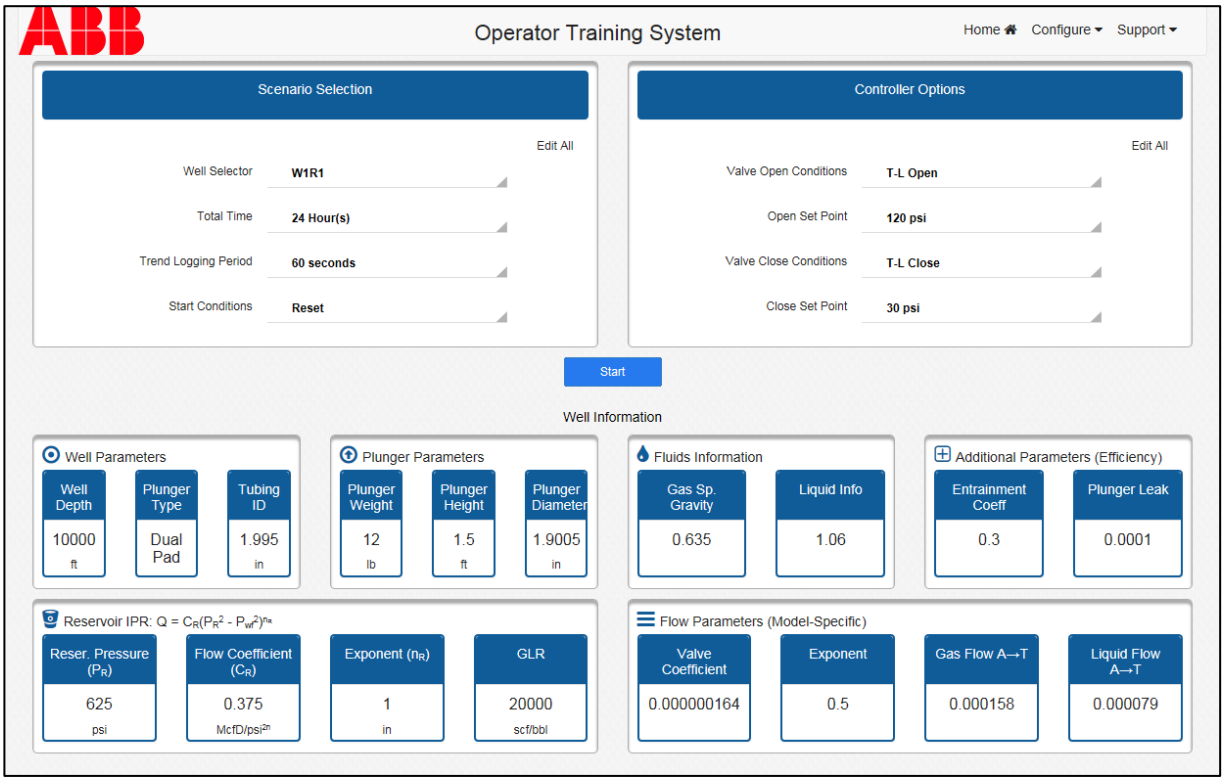

Figure 56: Operator Training System home page

3) For additional details about running the Operator Training System, go to the online help. See section 6.3, *Getting online help*.

6.12 Running batch optimization or fault detection from the command line

Batch file analysis for both optimization and fault detection can also be performed from the command line. PAS is saved in the installation directory and must be run from that location. Before performing this procedure, determine the location of PAS, which is either in the default directory or the directory specified by the user during installation. See section 4.1.1, *Installing the software*.

For command line execution, the feature name (Optimization or Fault Detection) as well as the profile name must be provided as arguments.

IMPORTANT NOTE: PAS can be run from the command line at any time, even if the PAS graphical interface is up and running.

1) Complete the procedure in section 6.2, *Starting the application*.

2) Complete the procedures in section 6.6, *Create batch profile for running optimization from the command line* or section 6.5, *Create batch profile for running fault detection from the command line.*

IMPORTANT NOTE: Batch profiles for each optimization and fault detection are defined separately.

3) Go to the Windows® Start menu. In the *Search programs and files* field, type **cmd** and press the **Enter** key.

4) At the command line prompt type **cd c:\<PAS installation directory path>**.

IMPORTANT NOTE: If not using the default installation directory, go to the user-defined installation directory instead.

5) Press the **Enter** key.

6) Verify that the current directory is the correct one. At the command prompt:

   a) Type **Dir**.

   b) Press the **Enter** key.

   c) Verify that the PAS.exe program is displayed in the list of directory contents (Figure 57).

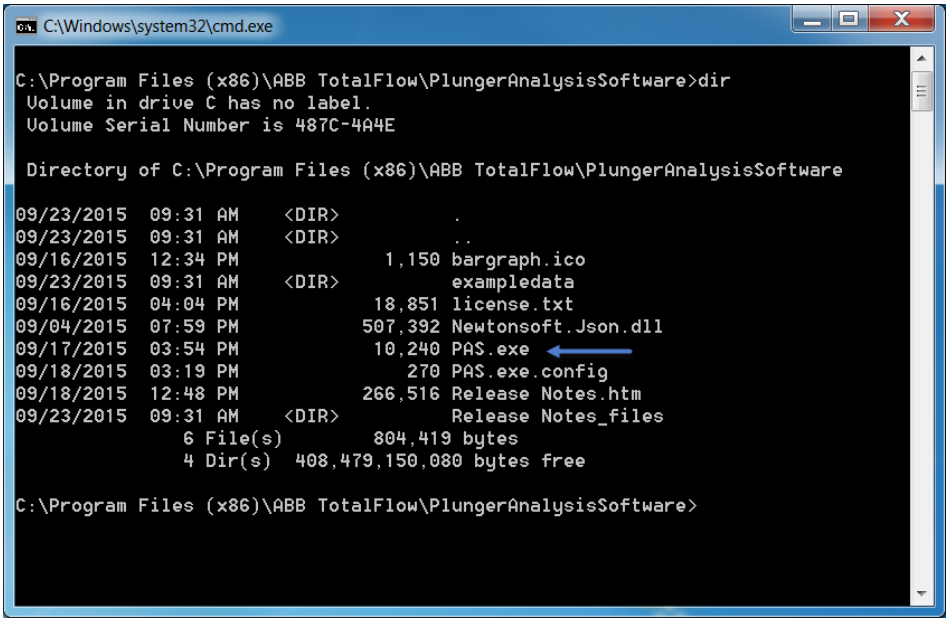

Figure 57: Location of PAS.exe

7) At the command line prompt, type PAS.exe <*feature*> <*profile name*> <*username*><*password*>. Where the feature is either optimization or fault detection and the profile name is the profile defined in step 2. Examples of running optimization and fault detection from the command line are the following:

   – c:\Program Files (x86)\ABB TotalFlow\PlungerAnalysisSoftware> **PAS.exe Optimization OPTProfile admin admin**

   – c:\Program Files (x86)\ABB TotalFlow\PlungerAnalysisSoftware> **PAS.exe FaultDetection FDProfile admin admin**

8) To obtain the results or output files, go to the output directory.

9) For additional details about running the analysis from the command line, go to the online help. See section 6.3, *Getting online help*.

7 Administrative and maintenance procedures

7.1 Overview of the ABB Totalflow Product Center

PAS is available for download at the ABB Totalflow Product Center (abb.flexnetoperations.com). Access to this customer portal is granted after the product has been purchased and licenses have been generated.

The customer portal provides account members with the following:

– Access to download the latest product releases, view product notifications, order and license information.

– Device management: Monitor registered systems and their associated licenses.

– Usage management: Monitor feature usage to help determine when to renew or upgrade the license.

– Portal administration for admin or user level: views of account members, password resets, and download preferences

– Online help for the portal users and administrators: provides details about the product download options and process and other administrative tasks.

7.2 Accessing customer portal online help

To manage the customer portal at the download and licensing center, online help is available. Help topics are related to downloading the software, administrating and customizing the portal, and adding and managing account members. To access the help content:

1) Log in to the ABB downloading and licensing center portal (abb.flexnetoperations.com).

2) Under Get Help, in the navigation pane on the left (Figure 58), click **Table of Contents** to access all topics.

3) Select the topic of interest by clicking on the topic link.

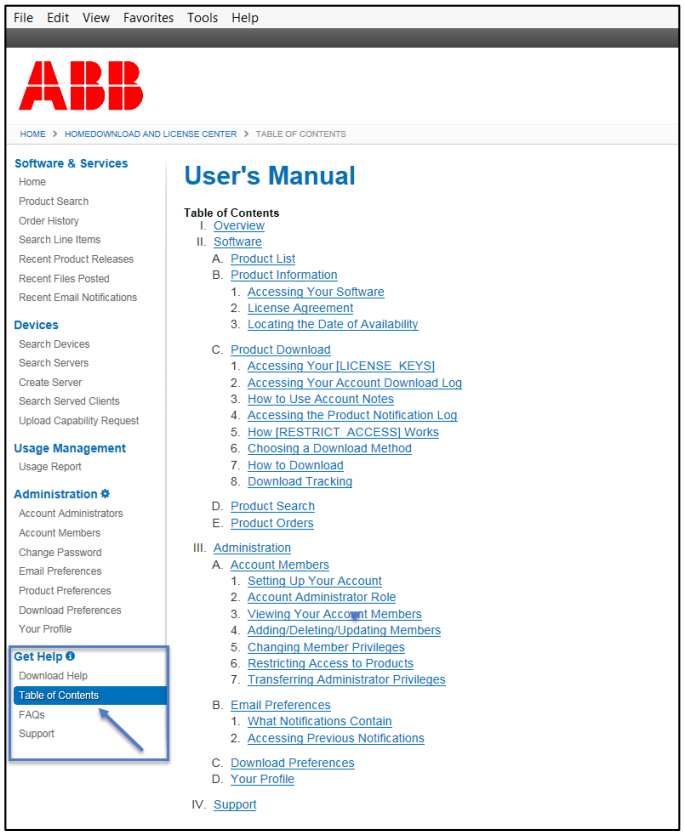

Figure 58: Online help for customer portal access and usage

7.3 Usage tracking

The Fault detection and Optimization usage can be tracked on the customer portal.

1) Using a web browser, go to the ABB downloading and licensing center portal by navigating to the following web address: abb.flexnetoperations.com.
2) Type credentials.
3) Click **Login**.
4) At the main screen, under Usage Management, on the left, click **Usage Report**.
5) View the usage on the default screen (Figure 59) or click on the graphical view buttons on the right side for additional usage views.
6) Download usage reports by clicking the **Download** link, if required.

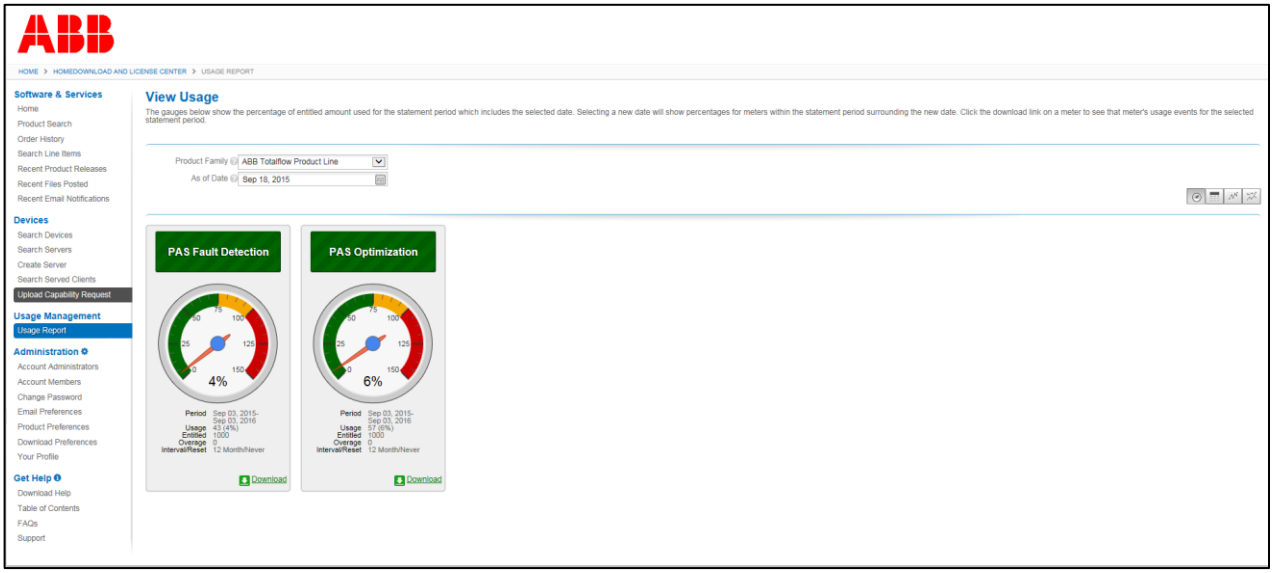

Figure 59: Usage Report screen

7.4 Uninstalling

1) Uninstall using the Windows® Control Panel utility.
2) Click the Start menu and go to Control Panel.
3) Go to **Programs > Uninstall a program** (Figure 60).

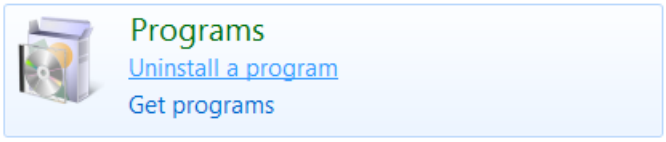

Figure 60: Windows® 7 Control Panel Uninstall a program utility

4) Scroll down to search for the Plunger Analysis System program to uninstall.
5) Right click to select **Uninstall**.

7.4.1 Manual verification of software removal

IMPORTANT NOTE: Contact ABB for manual software removal from the target system.

8 Troubleshooting

Table 11 describes the main categories of errors displayed when problems occur when downloading, installing, or running the software. Specific errors are displayed on the screen if issues occur. They provide the cause of the problem and describe the action to resolve the issue. The following categories are provided to help isolate the problem and determine appropriate contact information for resolution. Always take note of the error displayed or obtain a screen capture to send to technical support.

Table 11: General error categories to help troubleshooting

Error type	Description	Example
Generated during software download	Download-related. It is displayed by the download and licensing site. Contact **Download support.** See the *Customer support* section at the end of this guide for contact information.	Connection to the download and licensing center may be slow or experiencing issues.
Generated by the installer	Product-related. It is displayed if the installer runs into problems while attempting to install the PAS software on the target system. Call **Product-related support**. See the *Customer support* section at the end of this guide for contact information.	The target system may not meet minimum requirements or access rights for installation.
Generated during license activation or automatic license compliance	Displayed when license activation fails or feature usage cannot be tracked. These errors prevent feature use and operation of the software even if licenses have been purchased. This type of error is product-related. Contact sales support for this type of error. See the *Contact us* section on the last page of this guide for contact information.	Several reasons can cause this type of error: Incorrect credentials, non-existing account member IDs, unavailable license compliance services, unreleased licenses from devices no longer in use
Generated during file upload	Displayed when the application determines that the file selected for upload has not passed the basic input file requirements	Input file is not the correct type or it is too large. (The maximum file size allowed is 4 MB).
Generated while processing a trend file	Displayed when the application is not able to import a trend file due to errors found on the data or its format	The input file met basic requirements of type and size, but errors were found in the data or format.
Generated during settings configuration	Displayed during configuration of general, advanced, well, plunger settings or other parameters in all features	The wrong value for a parameter has been typed, or the application is unable to save the values typed by the user.
Generated when using the optimization feature	Displayed when the optimization feature is not able to complete analysis or is unable to download calculation results (set points)	The optimization function is unable to calculate new set points because it has found incorrect parameter values or the feature is unable to download the files to save results.
Generated when using the fault detection feature	Displayed during fault detection analysis	The fault detection function is unable to analyze faults.
Generated when using the operator training feature	Displayed when the operator training feature cannot complete the simulation	The user has typed incorrect values or configured the simulation with inconsistent information.
Generated when running batch mode on the command line	Displayed if the command line batch mode fails to execute	The input directory does not exist, the profile was not defined correctly, or incorrect syntax or names were entered when arguments were typed.

8.1 Installation log file

8.2 Error log files

Log files may be generated when features experience errors. These log files are automatically stored on the local drive of the system where the Plunger Analysis is installed. Customer support personnel may request the log file to be able to diagnose the problem.

To retrieve the log files:

1) Locate the log file in the target system at the following path: **C:\inetpub\wwwroot\PlungerAnalysis\Logs**.
2) Send a copy of the file to Totalflow technical support.

Customer support

Download support from the ABB software and licensing service

For help downloading or for questions regarding your account contact:

ABB software and license portal: abb@flexnetoperations.com or call 1-888-715-4687 (within the U.S.) or 1-408-642-3965 (outside the U.S.).

For urgent matters outside of U.S. business hours, page the on-call support representative by calling the phone numbers listed above.

Product support from ABB

See the *Contact us* section on the last page of this manual.

Contact us

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