

Project Managing a PI System Implementation

Module 3: Implementation and Adoption

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- About this course

About this course

Welcome to the “Project Manager” learning path. This series of modules will give you the knowledge and insight you need to effectively manage a PI System implementation. I will guide you all the way from OSIsoft introductions, to planning, implementation and adoption.

In this third part in the series, we will complete our PI System implementation plan by considering and recording important aspects of the process into the Gantt chart template provided. Aspects such as pre-installation checks, AF modelling and preparing your users for using the PI System.

You will also gain a better understanding of utilizing the customer portal to download install kits and generate licenses, as well as begin thinking about preparing your internal processes and support structures (e.g. software deployment, team training).

By the end of this module you'll have...

- Have a better understanding of hardware requirements and common delay points related to PI System installation.
- Know how to utilize the Customer Portal to download products and generate licenses.
- Have understood the hardware requirements, security models, pre-installation tasks, and installation workflow related to installing the PI Server, Asset Framework and Data Archive.
- Be able to consider a sequence of learning events to better instruct your colleagues.

Audience

This course is designed for people who are just starting their journey with OSIsoft and who would like to learn more about the company, our products, and services, and how customers are gaining valuable business impacts.

Level: Beginner

Study time: 2 hours

Prerequisites

- Optionally, Module 1: “Getting Started with OSIsoft” and Module 2: “Initiation and Planning”.
- This course should be part of your first steps as a PI System user or project manager.

Software Requirements

- There is no software requirement for this course. For the time being, simply watch the video tutorials.
- Microsoft Office or equivalent is required to access the workbook and presentation provided.

Further information

- This is a self-paced course. Any questions or assistance needed about the material can be asked in this [course's space in the OSIsoft PI Square community](#)
- When you complete the examination at the end of the course, you will receive a certificate of completion which can be shared and directly posted on LinkedIn.

- For more information about our Online Courses please visit our [FAQ page](#)

You can audit the full video lecture content **right now** on the [OSIssoft Learning YouTube Channel](#).

- Lesson 1: Solution Implementation

Learning outcomes

After completing this lesson, you will:

- Have a better understanding of hardware requirements and common delay points related to PI System installation.
- Understand your options in terms of OSIsoft and OSIsoft-partner support with your implementation.
- Have become familiar with the structure, contents and file types included in the install kits.

Download the Gantt Chart Template

Throughout this module we're going to be filling in a Gantt chart. If you have one, feel free to use your own project management software to create and modify it. If not, you can:

1. Download the template from the appropriate section on the module page.
2. Open the spreadsheet with a spreadsheet application, like Microsoft Excel
3. Follow along with the module as we guide you through the spreadsheet

The project Gantt chart is a living, breathing document and will move and change as you progress through the project. Excel is probably not the best tool to use for this, but we're using it here because it's more likely everyone has it already.

Implementation and 3rd party assistance

The OSIsoft team of [Field Service Engineers](#) (FSEs) has a well-deserved reputation for both its PI System expertise and its experience with real-world customer needs. A Field Service Engineer (FSE) can prepare for and conduct the PI software installation. This will address topics such as remote and onsite installation methodology and tools, services provided by the FSE while performing the installation, as well as the daily updates and install reports provided by the FSE.

You can also search the [OSIsoft Marketplace](#) for Partners that have completed the PI System Installation Specialist accreditation. These specialists demonstrate extensive experience installing and implementing the PI System in customer environments and have extensive knowledge of installation preparation, security guidelines, and configuration best practices for implementing a full PI System.

Preparation for PI System installation

The first part of the project execution will be focused on preparing for the PI System installation. The installation itself can be as little as just a couple of days – but this assumes that everything is in place and ready, and there are no delays.

Hardware

- Before installing the system, you need hardware to install it on. The hardware can be virtual or physical, in the cloud or on premises – it makes little difference to its performance. However, the hardware must be in place, accessible, and have software prerequisites installed before your installers arrive on site.
- Interfaces (Collectors) do not have hardware recommendations, as they are lightweight applications and can follow Microsoft's recommendations. There is no hardware sizing

tool for interface machines. Because interfaces are very light weight, we have no official sizing recommendations for them. In general, a computer with a modern OS should have enough computing power and memory to run an interface.

- The servers should be identical in the case of a collective and can be in different data centers.

Resource: Hardware and PI System Sizing Recommendations [Spreadsheet](#) - An excel spreadsheet used to assist with hardware and system sizing for the PI Server (Data Archive, AF, and Analyses).

Common delay-causing points

If you are using OSIsoft Field Service to install the system they will guide you through the prerequisites, but a list of requirements necessary to avoid delays includes:

- Capable hardware must be in place and available at appropriate sites
- All hardware must have an appropriate version of Windows installed
- All hardware is network connected and domain joined appropriately
- All software licenses for OSIsoft and other prerequisite products (SQL Server, Microsoft Windows) must be obtained
- The IIS role is installed on any PI Vision servers
- Firewalls between networks allow PI System traffic through
- A Microsoft SQL Server must be available to host the required databases, either installed on the provided hardware or accessible over the network
- An administrator must be available to log in to the Microsoft SQL Server machine and run installation scripts
- If using PI Vision or PI Web API, a domain administrator must be available to make changes to the domain to allow Kerberos delegation
- Active Directory Domain Groups for PI Administrators, Power Users and Users
- If using PI Notifications, an SMTP server must be contactable to send emails to internal addresses

Install Kits

Contents

The files in any given OSIsoft installation kit can be classified into four different categories:

- General setup kit files that do not change from product to product (e.g. exactly the same file is in the AF Client setup kit and in the PI DataLink setup kit)
- The featured product
- Third-party prerequisites needed for the product to work properly, such as .NET or VSTO
- OSIsoft prerequisites needed for the product to work properly, such as AF Client (which includes the AF SDK) or the PI SDK.

File types

In general, OSIsoft products are Windows Installer Packages (.msi's). However, most third-party prerequisites are executables (.exe's) with a corresponding DLL. For example, to install Visual Studio Tools for Office (VSTO), you have VSTOWrapper.dll and vcredist_vsto2010.exe. This is for two main reasons:

- add logic to determine whether the prerequisite needs to be run instead of calling the prereq directly. Examples: VSTOWrapper.dll not installing VSTO on machines with no Office; PINS.dll not installing PINS on a machine with a Data Archive.
- .exe's can't be loaded in-process, but DLLs can. Since an installation kit is really a succession of installations chained together, we need to be able to continue the overall installation once a particular setup module has completed.

In addition, an .mst (Windows Installer Transform) file is effectively a changeset to an .msi. This allows developers to make changes without rebuilding the .msi, or to make small changes for particular use cases without needing to create another version of the .msi. An example of this is the pisdsk.mst and pisdsk_X64.mst transforms found in the PI DataLink installation kit, which change the dialog box title from "PI SDK" to "PI DataLink".

For details on how a particular file is used in an installation, first look at the default initialization file (setup.ini), as it typically includes customized comments for each setup module. For more information on our .ini files, check out [Initialization File Structure](#).

Exercise: Add appropriate tasks to Gantt Chart

Look at the above list and circle any points that will have to involve IT change control.

- How long does this usually take in your organization?
- What kind of time frame would you usually allow for tasks like this?

Make additions to your Gantt chart, taking this into account. Also make sure you create tasks or milestones to organize or book required internal IT resources needed during the installation.

Learn More

- [VIDEO](#): Data Archive Hardware Sizing & IT Recommendations (8:02)
- More information on our .ini files, check out [Initialization File Structure](#).
- More information on [install kit contents](#)

- Lesson 2: PI System Installation

Learning outcomes

After completing this lesson, you will:

- Know how to utilize the Customer Portal to download products and generate licenses.
- Have become familiar with the tasks and considerations required before a PI Server installation.
- Have understood the hardware requirements, security models, pre-installation tasks, and installation workflow related to installing the PI Server, Asset Framework and Data Archive.

PI Server

The actual PI System installation is very quick compared the rest of the project. A medium sized PI System installation would be quoted at under 5 days by OSIsoft field service.

OSIsoft Field Service installs to a specific published standard, outlined in [this document](#):

It is a good idea to read through the document before planning an installation to ensure all the prerequisites and requirements will be filled.

Before installing a PI Server

Before installing a PI Server it is essential that you take some time to evaluate your needs and available resources to help decide the type of deployment is most appropriate. The type of deployment you choose should take into account:

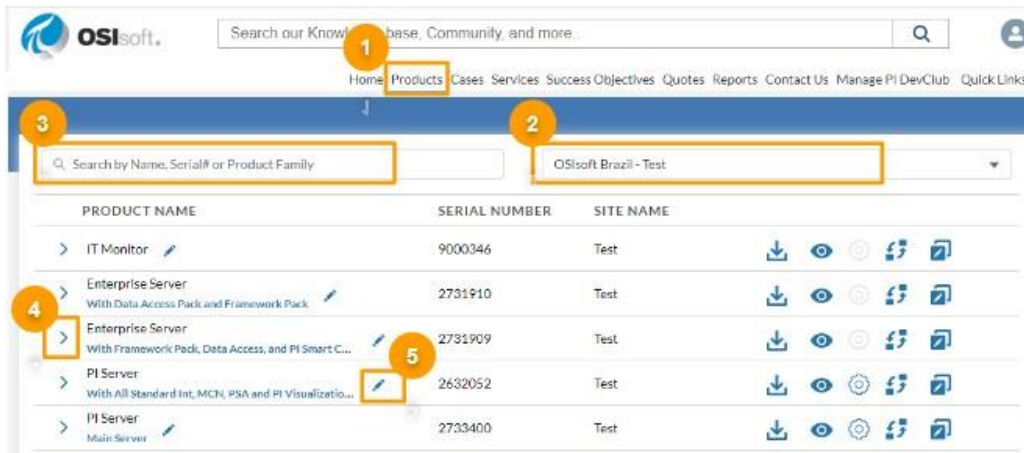
- Selecting the appropriate PI Server roles and individual features you will need in your deployment
- Evaluating and determining where you want to install each Server Role within your deployment to optimize performance
- Evaluating high availability options available for each of your Server Roles, and planning for those HA deployments as appropriate
- Understanding the security considerations that come along with implementing your chosen deployment

How to Download Products

In the Customer Portal, the product screen lists products available to you for download.

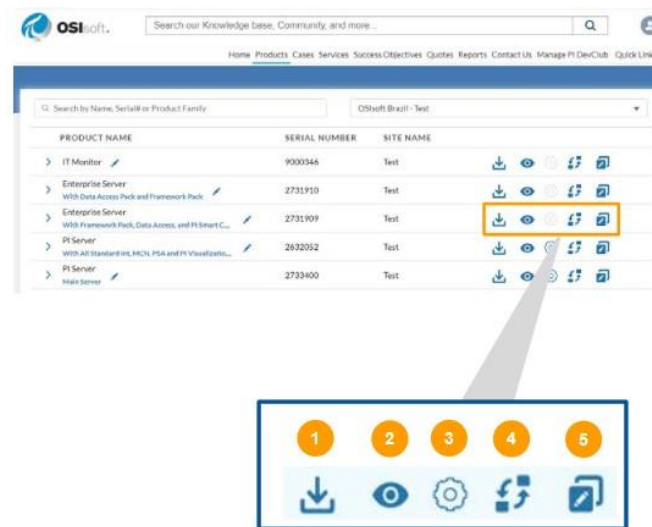
1. Click the 'Products' menu to view the OSIsoft products available through your license.
2. Select a site to filter available products licensed for that site.
3. Search for a product within a chosen site using the search box.
4. Expand 'product name' to see components of each product.
5. Give each product name a custom name to help distinguish between products.

Some product install kits are bundled into the packages and do not appear on the top level under Product Name. Use the Search to find them.



After you've located the product you'd like to install, the action icons help you complete installation. Use the action icons to complete download and licensing tasks for your products.

1. Download software and documentation for the respective product.
2. View details and related product information including Releases, Alerts, Known Issues and Knowledge Articles.
3. View system requirements for your software.
4. View your license activation history for the respective product.
5. Generate a new license for a PI Server instance by uploading a machine signature file (.msf).

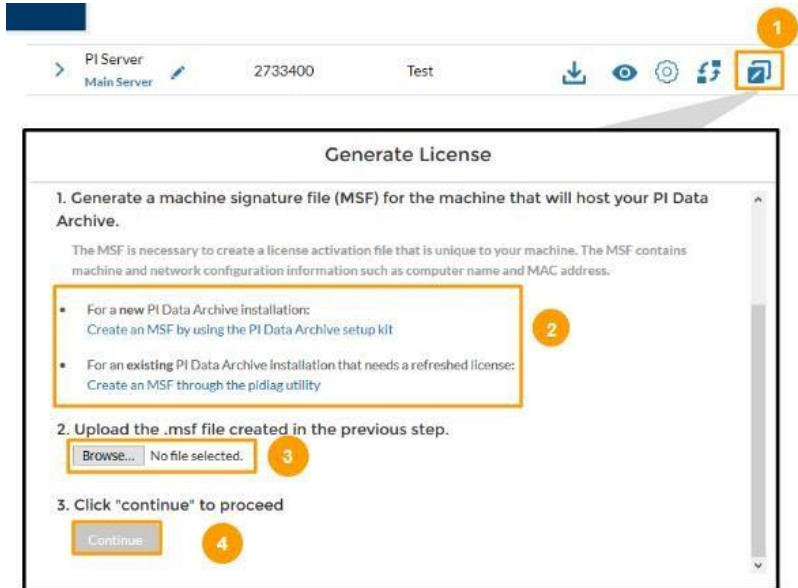


How to Generate Licenses

To license a PI Server, you must specify the hardware instance where your PI Server will run by generating and uploading a machine signature (.msf) file.

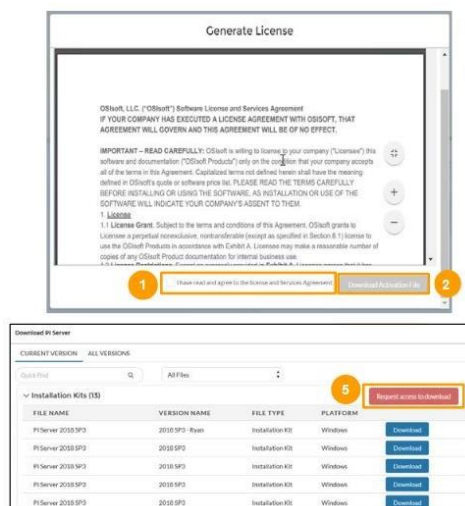
1. Click the generate license icon to begin the licensing process for your installed PI Server software.

2. To complete the licensing process, you must generate and upload a machine signature (.msf) file for the machine that will host the PI Server. Follow instructions to create the .msf file for your installation.
3. When you have the .msf file for your PI Server, browse to the file.
4. Click 'Continue' to upload and display the license.



Finally, you must approve the license to download your activation files.

1. Read the license. Click 'I have read and agree to the license and Services Agreement'.
2. Click 'Download Activation File' to begin your download.
3. The activation packageb.zip file includes a product manifest, copy of your license agreement, and a license.dat activation file.
4. Place the license.dat file in the PI\dat directory on your PI Server machine to activate your PI Server installation.
5. Note that if your software support agreement (SRP) has expired, you must request access to download software and new licenses.



PI Server Installation

The PI Server consists of the Data Archive, AF (including PI Notifications Service and PI Analysis Service), and PI Interfaces. Typically, you should install AF server before other Server Roles. In the case of the Data Archive, this order is merely advisory. However, other Server Roles (PI Notifications Server and PI Analysis Service) store configuration information during the setup process in the AF server itself. However, the AF server can be installed simultaneously with these other Server Roles if they are all installed on the same computer.

Install your PI Server components in the following recommended order. Refer to each PI Server role and feature install section for detailed installation procedures regarding the specific PI component. Use the [worksheet](#) to write down pertinent information about your PI System deployment. It is a companion piece to the [installation order presented here](#) in more detail.

1. Install Microsoft SQL Server.
2. Install the AF server using the PI Server install kit.
3. Install any instances of Data Archive.

Asset Framework

Introduction

Asset Framework (AF) is an increasingly important part of the PI System Infrastructure. It acts as the “index” for finding data in the system, as well as the part that gives context to the sensor data. Having this contextual “metadata” alongside sensor data gives a lot of power to BI tools, custom applications, and even real time dashboards in PI Vision.

When building Asset Framework, your team is essentially putting their expertise into the system. They know how to find things, they know how things work, and they know how it should look. This is what they are doing when they’re building AF. AF is the “smarts” of the PI system, the dashboards, spreadsheets, and reports should be doing as little as possible on top.

The approach here is important and is why we started this module with choosing small-scoped well defined measurables. Our recommendation is to build AF for a single targeted project, using best practices, and then add to the model as time goes on for future projects.

Recommended workflow

This part of the project best follows something like an agile methodology, rather than a waterfall methodology. For those unfamiliar with the terms, this means that the solution will be rolled out quickly and constantly improved upon with frequent pushes to production, rather than meticulously planned and worked on for many months (or years) before users are introduced to the system. Users should start using the project as soon as the first project outcome has been completed, and the first outcome should be simple and high impact. Having data online and available like this is one of the huge benefits to using the PI System, it can be connected and online very quickly, and low hanging fruit can be snagged much quicker than most anticipate.

We recommend the following workflow when building for an outcome with Asset Framework. The workflow is followed for a single outcome, then repeated and iterated upon thereafter.

1. Analyze what data needs to be in the system, then start collecting it
2. Build the Asset Framework structure to support the solution, and any views or dashboards required
3. Use the solution as built, or add supplementary or ad-hoc displays as needed

Each step will most likely feed back into the previous step when new information or issues arise, then the system is added to accordingly.

The challenge in this approach is ensuring that the Asset Framework is added to in a standard way, and later additions do not disturb solutions that have already been built using it.

Note: it is possible to create multiple, independent hierarchies for different outcomes. It is not recommended to do this each time an iteration loop is started. It is usually much better to improve and build features into the existing hierarchy so it can perform multiple outcomes. Building this way is more difficult to do in the short term, but much easier to manage and introduce users to in the long term.

Hardware Requirements

AF is extremely flexible and supports the storage of many different kinds of objects. For example: an AF object can be as simple as a static numeric value or string of text, or it can be a much more complicated object such as PI Event Frames, custom data references, or even binary objects. As such, it is not possible to definitely correlate the number of AF objects to hardware requirements. However, there are some general guidelines.

Your hardware sizing should be based upon workload, not AF object count, because they do not correlate. As input and output (I/O) workload increases, it is important to ensure the disk subsystem can handle the I/O count as well as the storage requirements. Adding memory (RAM) improves SQL Server read and write performance. Increasing the number or performance of the CPU is helpful for concurrent users. For more definitive guidance, see the Hardware and PI System Sizing Recommendations [Spreadsheet](#).

AF server pre-installation tasks

- See System requirements for AF Server to verify the most current system requirements.
- Log on to your Windows system using an account with administrator privileges.
- Review SQL Server roles and permissions for use with AF to help determine the appropriate SQL Server user roles and permissions for your AF. Refer also to General AF security recommendations for some recommendations to consider around the AF SQL database implementation for your AF.
- Ensure that you have the requisite privileges on the SQL server to install the AF SQL scripts necessary to create the AF SQL database. See SQL Server installation guidelines.
- Synchronize the time settings on PI Server host computers.

More information on AF server pre-installation tasks can be found [here](#).

Security configuration in AF

AF 2015 (version 2.7) and later uses a security model that is similar to that which the Data Archive uses. This model relies on integrated Windows security for authentication but provides its own authorization to AF objects using AF identities and mappings.

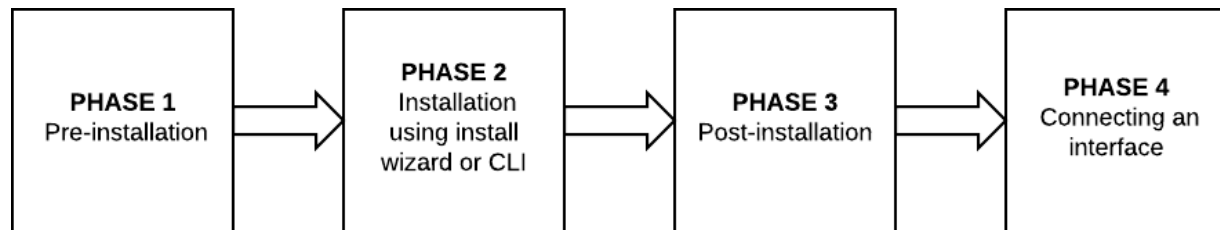
The AF security model enables administrators to configure access for AF identities at each level of the AF hierarchy. AF uses Windows integrated security to grant or deny connection to the AF server, to view or edit databases, and to change collections.

More information on AF security configuration can be found [here](#).

Data Archive

Installation process

There are four phases that comprise the Data Archive installation process.



Each phase contains tasks that achieve specific results relevant to that particular stage of installation. The four phases of installation are:

- Pre-installation
 - The first phase of installation focuses on the planning and preparation essential to ensure a successful installation. This phase involves such tasks as: selecting a deployment model, ensuring compatibility for the server hardware and operating system, opening a port for communication with the network, and preparing the necessary license files.
- Installation
 - The second phase of installation involves using the install wizard or command line to install the Data Archive server on the host computer.
- Post-installation
 - The third phase of installation focuses on verifying and setting up your newly installed Data Archive server for use in your data infrastructure. In this phase of the install, you verify that the installation was successful, and that the related services are running on your host computer. Some of the initial configurations include configuring nightly backup jobs and setting tuning parameters for your deployment.
- Connecting an interface
 - The fourth phase of installation involves connecting a PI interface to your newly installed Data Archive server, the source of incoming data for Data Archive.

For Data Archive collective deployments: If you want to deploy your Data Archive server as part of a collective, you must first perform the installation and post-installation tasks on the primary server. Afterwards, perform the same tasks on each secondary Data Archive server within your collective.

For more information look at this [Live Library link](#).

Data Archive security

Computer security has two parts: authentication (who is the user, and how do we confirm that the user is really who he or she says?) and authorization (once we know who the user is, what is that user allowed to do?).

The Windows integrated security model relies on Windows security for authentication but provides its own authorization to PI objects. This is accomplished through two structures: PI

identities for which you define PI permissions, and PI mappings which provide the mapping from Windows users and groups to PI identities.

Each PI identity represents a set of access permissions on the Data Archive server. Each PI mapping points from a Windows user or group to a PI identity (or a PI user or PI group). You cannot directly grant a Windows user or group access to a Data Archive resource (such as a point or a module). Instead, you create a PI identity that has that access and then you create a PI mapping between the Windows user or group and that PI identity.

For more information look at this [Live Library link](#).

Exercise: Add appropriate tasks to Gantt Chart

It is time to add the milestones you came up with from the previous sections to your Gantt chart. Define some assumed dates that these milestones should be finished, but do not spend too much time thinking about them. They will move around a fair bit throughout the rest of this module. For example:

- Analyze what data needs to be in the system.
- Security considerations.
- Verify the installation was successful, and that related services are running.

Learn More

- Detailed information on system requirements for PI Vision can be found in the [Hardware and software requirements section](#) of the user guide or the specific versions Release Notes. PI Vision Release Notes can be found on the Customer Portal or in the extracted files from a PI Vision installation kit.
- More information on [how to](#) Download Products and Generate Licenses.
- More information on [planning a PI Server deployment](#)

- Lesson 3: Adoption

Learning outcomes

After completing this lesson, you will:

- Be able to consider a sequence of learning events to better instruct your colleagues.
- Gain a better understanding of what you need to consider in order to setup an internal support structure and prepare the PCs of end-users.

Introduction

If you are planning your AF build based on the process presented previously, then it should be straightforward when you need to train each group – directly before they are needed for the project. Training is effective if applied straight after taking it. Training is even more effective if the student is applying their training during the class. OSIsoft Learning has this in mind when building out learning paths for these roles.

When picking which training class to send people to, these questions should be asked:

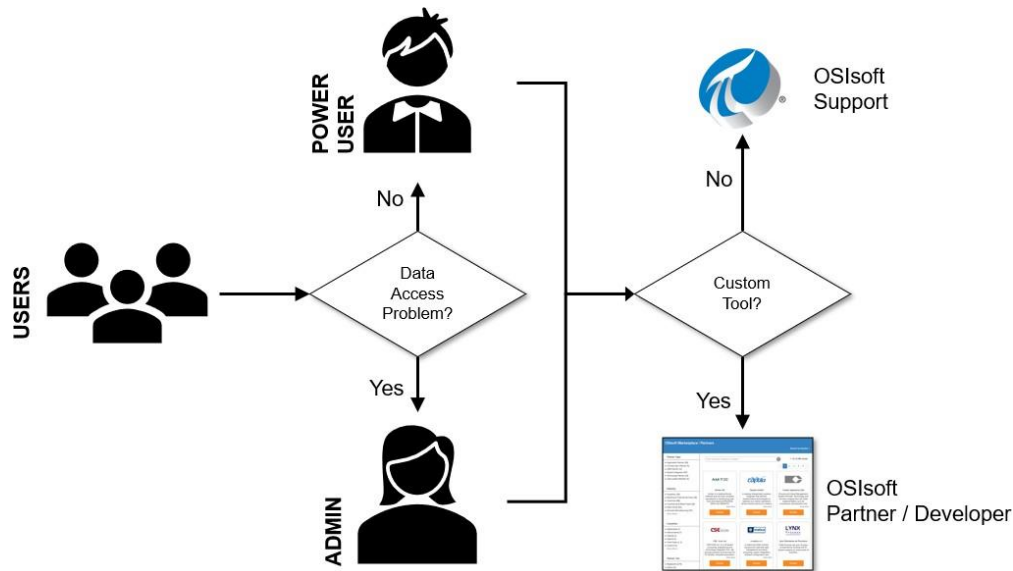
- When is the learner going to use their knowledge? (sooner is better)
- Will the learner be able to build something they will use when they get back to the office after the class? (yes, is better)
- Will the learner's training affect the production system? (no, is better)

You should pick a strategy that answers these questions in the right way, for every learner.

After going through the [Power User training](#), it is also a good idea to have an OSIsoft Field Service engineer visit for a workshop. Workshops are essentially “learn by doing” training classes, our engineers will work with you to establish best practices for building AF and go through a build – or part of a build – for a specific outcome. These workshops usually last three to four days, leaving you well on the way to a useful AF buildout.

Internal support structure

You will need to design a support structure before pushing software to your users. This should be well documented and should be included in the user training program you set up. The most common structures we see in our customers follow the groups we've been discussing during this module:



Your Administrators act as front-line support for data access problems (most likely connectivity or security problems) or to Power Users for non-data access problems (either user error or solution-related problems). Your front-line support contacts OSIsoft support or the developer of the application they are having the problem with, depending on who owns the application.

This is a simplified, but your support structure will most likely look like this.

Preparing user software

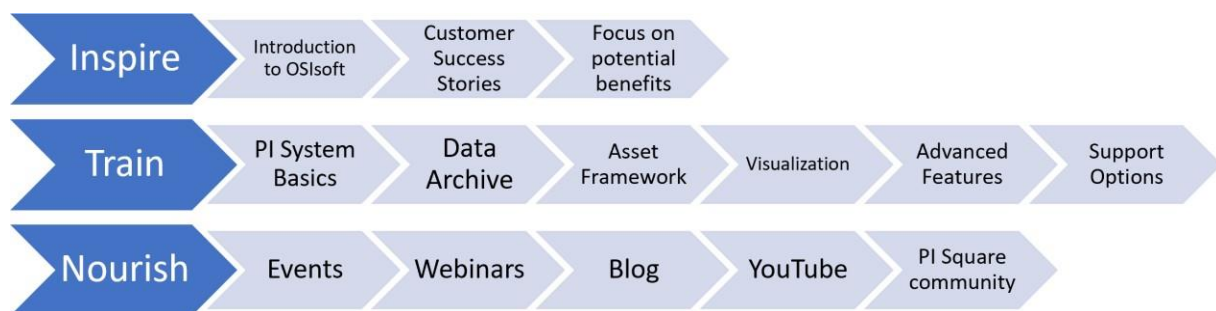
An important step in the project timeline is preparing the package to be installed on user PCs. It is common to work with IT to set up this package, containing all PI System software and configuration needed to get users up and running instantly. The package should then be pushed to all user PCs before they start their user training.

We are not going to cover creation of this package in this module, because every organization uses different software to do this. However, the timing of creation and execution of this package should be planned for. For more information on silently installing OSIsoft software, see this [knowledge base article](#):

Exercise – Your Support Structure

How would your support structure differ from the one shown here?

Recommended approach (training your team)



Inspire

Getting everyone interested in what you have to say and being enthusiastic about what is to come is incredibly important. Some points to focus on include:

- Introduce OSIsoft and the PI System but keep it short. The 2 minute video on “OSIsoft: What we do” will keep the audience engaged and inform them about the fundamentals: https://youtu.be/C5S3ogZ_0oM
- Concentrate on the “why” for now, rather than the “how” or the “what”. Make the content interesting and relevant by briefly presenting some Customer Success Stories related to your own industry. You can search our customer stories here: <https://tinyurl.com/sdotbpk>
- Also concentrate on the “why” at the personal level: impact on skills, benefits to process etc. Use specific examples for scenarios from your workplace that fit the PI System well. Give only a brief overview of features and functions.
- Ask your attendees questions and have them express how they can see themselves using the PI System. Organize activities or online spaces, for them to share their thoughts.
- Rather than simply showing slides, present the final product of a workshop, for example, a PI Vision display.

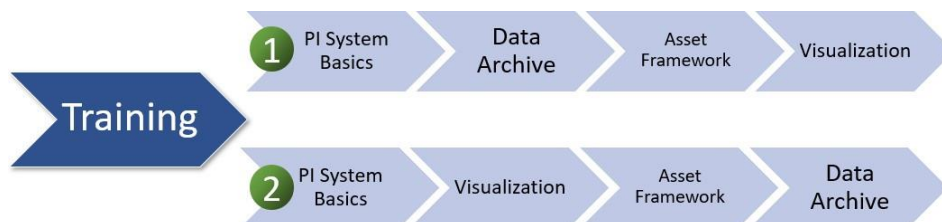
Train

In the final steps of a PI System implementation, you will need to train your users. There are a few options here, including online and classroom-based training. This could be a selection of

courses from our learning.osisoft.com offerings, an OSIsoft training session at your facilities or a customized workshop you've setup yourself.

Arguably, the most effective method is to run a workshop-style class, where the attendees use the solution you've built, work on actual data with use cases that are meaningful to them and start to realize how to apply it on the job. This greatly assists participants in the transferability of learning from the classroom to the workplace.

Any advanced or specialized training will depend greatly on the user's role within the organization. In the most basic case however, it is recommended that users complete the training in one of the two sequences presented below.



In path 1 we are following the data as it is stored in the Data Archive, organized, and contextualized in the Asset Framework and then presented in one of the visualization tools. Path 2 is the reverse of this. Sometimes, it is more engaging to impress the audience by showing the data displayed visually in a dashboard and then work backwards to trace the origin of the data and how it is structured internally.

Regardless of which path you prefer, if you are structuring your own learning courses, the below should be helpful in identifying key areas to focus your *curriculum design*.

Module	Content
PI System Basics	<ul style="list-style-type: none"> • Introduction to OSIsoft • Components of a simple PI System • PI Time • PI System Architectures and planning • Installing and configuring a PI Interface
Data Archive	<ul style="list-style-type: none"> • PI Points and viewing data in the Data Archive • Managing the Data Archive • Assets, Attributes and Templates • Backups and Buffering • Data Archive Security (Identities, Mappings, Trusts)
Asset Framework	<ul style="list-style-type: none"> • Connecting to a Data Archive • AF Modelling, Templates • Asset Analytics and Formulas • Event Frames • AF Security • Notifications and Contacts • Condition-based Maintenance
Visualization	<ul style="list-style-type: none"> • PI Vision <ul style="list-style-type: none"> • Building basic displays in PI Vision • Graphics, collections, navigation links, multi-states • Analyze event frames • Manage and share displays • PI DataLink <ul style="list-style-type: none"> • Search for PI Tags and PI AF attributes • Compressed Data, Sampled Data and Calculated Data • PI ProcessBook <ul style="list-style-type: none"> • Displays: Element Relative, Status, Linked • XY Plots, Client-side Calculations, SQC Charts

Primary areas of the PI System learning material

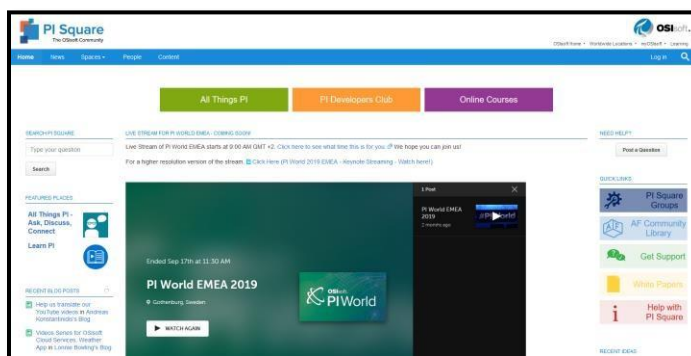
During training, make sure to advise you colleagues on who they should contact regarding questions and technical issues. This applies to both OSIsoft services and your internal support structure. OSIsoft offers unparalleled support in 12 languages, garnering a rating of 4.7 out of 5 for customer satisfaction. Customers can ask an engineer from Tech Support, submit a question to the community on PI Square or search the online documentation. Through the myOSIsoft Customer Portal you can request Field Service engineers to provide onsite or remote installations, upgrades or trainings. Alternatively, the Live Library (<https://tinyurl.com/uk5stdp>) includes online documentation and the most up to date information on all our tools and products.

Nourish

While using the PI System and facilitating the digital transformation of your assets, it's important to stay current with everything that's new and under discussion at OSIsoft and in our community of partners, developers and end users, and in the media at large.

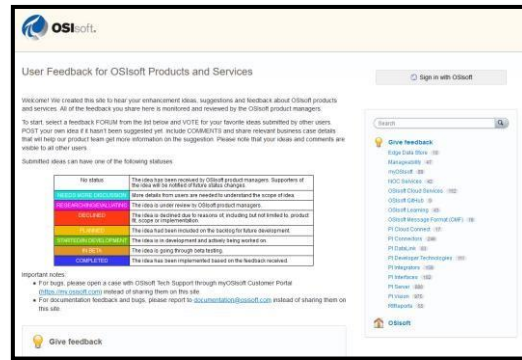
Maintain this relationship with OSIsoft by attending our **events**, regularly visiting our **blog page** and participating in our **webinars**. Subscribe to our **YouTube learning channel** to receive updates on new releases, technical walkthroughs, and training modules. Thousands of high-quality PI System training videos are available free of charge. Self-paced and delivered by our expert and experienced Field Service Engineers, these videos cover everything from simple trends to complex calculations.

Engage with the community by connecting, sharing and collaborating through PI System discussions with OSIsoft insiders and experts, and fellow users, developers and partners on **PI Square**: <https://pisquare.osisoft.com>



The OSIsoft community gathers in the PI Square website

Finally, don't hesitate to share with us your ideas and feedback on any OSIsoft products or services at <https://feedback.osisoft.com/>. Here you can also view, discuss, and vote on the ideas of others, organized by category such as: Asset Framework, Installation, System Management etc.



The OSIsoft product and service Feedback Page

Exercise: Add appropriate tasks to Gantt Chart

Fill in any tasks needed for the execution of your project to your chart. You should have already added the tasks associated with hardware acquisition and preparation. Fill in tasks and times for:

- PI System Installation
- Preparation of user installation package
- Training for Admins, Power Users and Users
- If developing custom applications, training for Developers
- Pushing user installation package to user machines
- Modelling AF
- Developing calculations inside AF as needed
- Create visualizations to achieve the desired outcome
- Integrate with third party tools (BI, SAP, etc. – if needed)

Learn More

- For a more detailed look on how adults learn and are motivated, take the [“Successful PI System Adoption Through Staff Training”](#) course.

- Lesson 4: Final thoughts

Example Gantt Chart

- A possible solution to the Gantt chart that was built during this course can be found here.
- Note that this is just one solution, with a specific sized system and use case in mind. Your project Gantt chart will most likely look very different to this one.

Conclusion

We hope by reaching the end of this module you have gained a cleared understanding of the different parts which come together for a successful PI System implementation. You should now be well-placed to document considerations such as pre-installation tasks, hardware requirements, licenses and security models, ensuring an accelerated path to value and a reliable, established workflow.

If you followed along the whole project manager learning path you have set solid foundations for your on-going OSIsoft customer journey. You now understand how customers obtain value from our products and services and are probably eager to unlock the potential of your own business through the features and services of the PI System. We look forward to hearing you share your valuable experiences through our events and online communities.

Next steps

Continue learning on <https://learning.osisoft.com> with our collection of modules aimed at beginner and advanced users. Jump into the more technical aspects of the PI System with our courses on:

- **PI System Basics** - get introduced to common terminology and syntax throughout the System.
- **PI Vision: Basics** - basic features and functions to start building and interacting with PI Vision displays
- **Configuring a Simple PI System** - working knowledge of the tasks required to configure and maintain a simple PI System

Finally, subscribe to our [YouTube channel](#) to be kept up to date on latest product developments and training opportunities.