

Explore the Asset Based PI Example Kits

1. Introduction

1.1 What are the Asset Based PI Example Kits?

The Asset Based PI Example Kits are intended as learning tools for PI AF and starting points for asset-based PI industry centric deployments. For common business objectives in your industry, each kit contains key PI AF library components such as element, analysis, and event frame templates, a representative hierarchy, information to create demo tags with demo data, and visuals - all focused around addressing one or more aspects of that business objective.

To learn more about the example kits, watch the example kit videos, and download the kits for your own environment, see the [PI Square Asset Based PI Example Kits space](#). Also, check out the [AF Community Library](#) to ask questions, see what others are working on, and share your own ideas and examples.

1.2 What should I do on the Virtual Learning Environment with the example kits?

The purpose of this Virtual Learning Environment is to provide an opportunity for you to explore the published Asset Based PI Example Kits without the need to install them on your own PI System.

Both the BASIC and FULL versions of the example kits have been installed on the PI System. For the FULL versions, the PI tags have been created and backfilled, and all asset-based analyses are running. The Excel spreadsheets and PI ProcessBook files have already been modified to point to the local PI Data Archive (PISRV1) and the PI AF Server (PISRV1).

On your Learning Environment virtual machine, feel free to modify and create new databases, assets, analyses, attributes, notifications, spreadsheets, and displays.

When exploring, please note the following about attributes that are calculated by PI Analysis Service:

- For the FULL PI AF databases, the demo data for the PI tags is populated by asset-based analyses. When PISRV1 starts up, there will likely be a gap in historical data or no searchable historical data. If you would like historical data, you will need to backfill the analyses. Each database will need to be backfilled individually. Please see Section 2.2.4 for instructions.
- Some attributes may show an error or “Calc Failed” when the virtual machine is first started, as they need a minimum amount of data to calculate. These errors will clear after 30 minutes to an hour.
- Some analyses use a date to calculate hours run or total production. The PI Data Archive in the Virtual Learning Environment is configured with a license that only

allows 180 days of historical data to be queried, and these calculations will show “Calc Failed.” Modifying the dates used in the calculation to dates within the last 180 days will clear the errors.



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2. Overview of the Example Kit Virtual Machines

Your environment includes two VMs:

- XXXX-PIDC – This is the environment domain controller.
- XXXX-PISRV1 – This contains the PI Server and all client tools.

2.1 Software

PISRV1 has the following PI System software installed:

- PI Data Archive 2016
- PI AF Server 2016
- PI System Explorer 2016 SP2
- PI System Management Tools 2016
- PI Analysis 2016 SP1
- PI Coresight 2016
- PI Web API 2016
- PI Notification 2012a
- PI Process Book 2015
- PI Datalink 2016
- PI ACE 2010 R2 SP2
- PI OLEDB Enterprise 2016

2.2 Accessing the Example Kit VM

2.2.1 Credentials:

The machines in this Virtual Learning Environment are all members of the `pischool.osisoft.com` domain. The user account that you can use to access these machines is `'pischool\student01'`, whose password is `'student'`.

2.2.2 Connecting

After choosing to launch the course, please ensure that you have waiting 15+ minutes before trying to connect to the machines. This is to ensure they have adequate time to be generated and start up. You should see a spinning progress wheel and the message "Working on your request" during the initial stage of this process. Even once the message has disappeared, please continue to give the environment a few more minutes before attempting to connect.

The Virtual Learning Environment is composed of virtual machines hosted on Microsoft Azure that you can access remotely. In order to access these virtual machines you need a Remote Desktop Protocol (RDP) Client and you will also need to be able to access the domain cloudapp.net where the machines are hosted. A typical connection string has the form cloudservice.cloudapp.net:xxxxx, where the cloud service name is specific to a group of virtual machines and xxxxx is a port in the range 41952-65535. Therefore users connecting to Azure virtual machines must be allowed to connect to the domain *.cloudapp.net throughout the port range 41952-65535. If you cannot connect, check your company firewall policies and ensure that you can connect to this domain on the required ports.

If you are still unable to connect, please contact OSISOFT tech support or learning@osisoft.com.

2.2.3 Example Kits

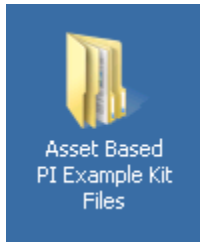
When opening PI System Explorer, you will see the following example kit databases to explore:

- OSIDemo Feed Voltage Monitoring BASIC database
- OSIDemo Feed Voltage Monitoring FULL database
- OSIDemo Load Forecasting BASIC database
- OSIDemo Load Forecasting FULL database
- OSIDemo MMM Mobile Asset Performance Monitoring BASIC database
- OSIDemo MMM Mobile Asset Performance Monitoring FULL database
- OSIDemo Oil & Gas Well Downtime Tracking BASIC database
- OSIDemo Oil & Gas Well Downtime Tracking FULL database
- OSIDemo Pump Condition Based Maintenance BASIC database
- OSIDemo Pump Condition Based Maintenance FULL database
- OSIDemo Substation Transformer Monitoring BASIC database
- OSIDemo Substation Transformer Monitoring FULL database
- OSIDemo UOG Well Drilling & Completion Monitoring BASIC database



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- OSIDemo UOG Well Drilling & Completion Monitoring FULL database
 - OSIDemo Utilities Cost Management BASIC database
 - OSIDemo Utilities Cost Management FULL database
 - OSIDemo MMM Mill Specific Power Consumption BASIC database
 - OSIDemo MMM Mill Specific Power Consumption FULL database
 - OSIDemo Turbine Efficiency BASIC database
 - OSIDemo Turbine Efficiency FULL database
 - OSIDemo Reactor OEE BASIC database
 - OSIDemo Reactor OEE FULL database

The ZIP files containing each example kit are located in a folder on the desktop called “Asset Based PI Example Kit Files.” Please note the Excel spreadsheets and PI ProcessBook files have already been modified to point to the local PI Data Archive and PI AF Server.



Additionally, the IT Asset Monitor Toolkit has been installed in the database:

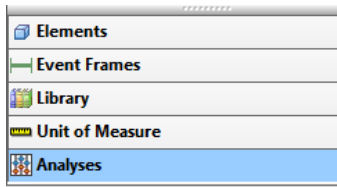
- OSIDemo IT Asset Monitor Toolkit Database

This toolkit database contains PI AF element templates that can be used to build an AF hierarchy around IT assets. The templates include configuration for creating PI tags on the standard IT monitoring PI Interfaces for Ping, TCP Response, Performance Monitor, and SNMP. Please note that for this installation, the PI tags have not been created and instead are set to the default PI tag *sinusoid*. More information can be found on the [PI Square page for the IT Asset Monitor Toolkit](#).

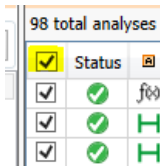
2.2.4 Backfilling the asset-based analyses to view historical data

To backfill the analysis data:

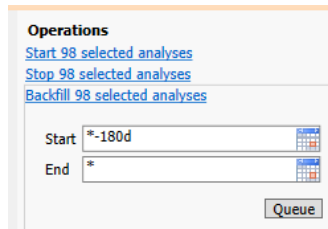
1. Open PI System Explorer, select the database you wish to view, and navigate to the Analyses tab in the lower left-hand corner.



2. Once in the Analyses tab select all of the analyses in the using the checkbox in the header row



3. Use the Operations windows pane (upper right-hand side) to backfill the data as needed by specifying the time frame for backfilling and pressing "Queue".



For more information on backfilling and a review of the PI Time format, please see the following:

- [Backfilling with PI Analytics YouTube video](#)
- [Live Library review of PI Time format](#)