

PI Server 2010: AF Inside

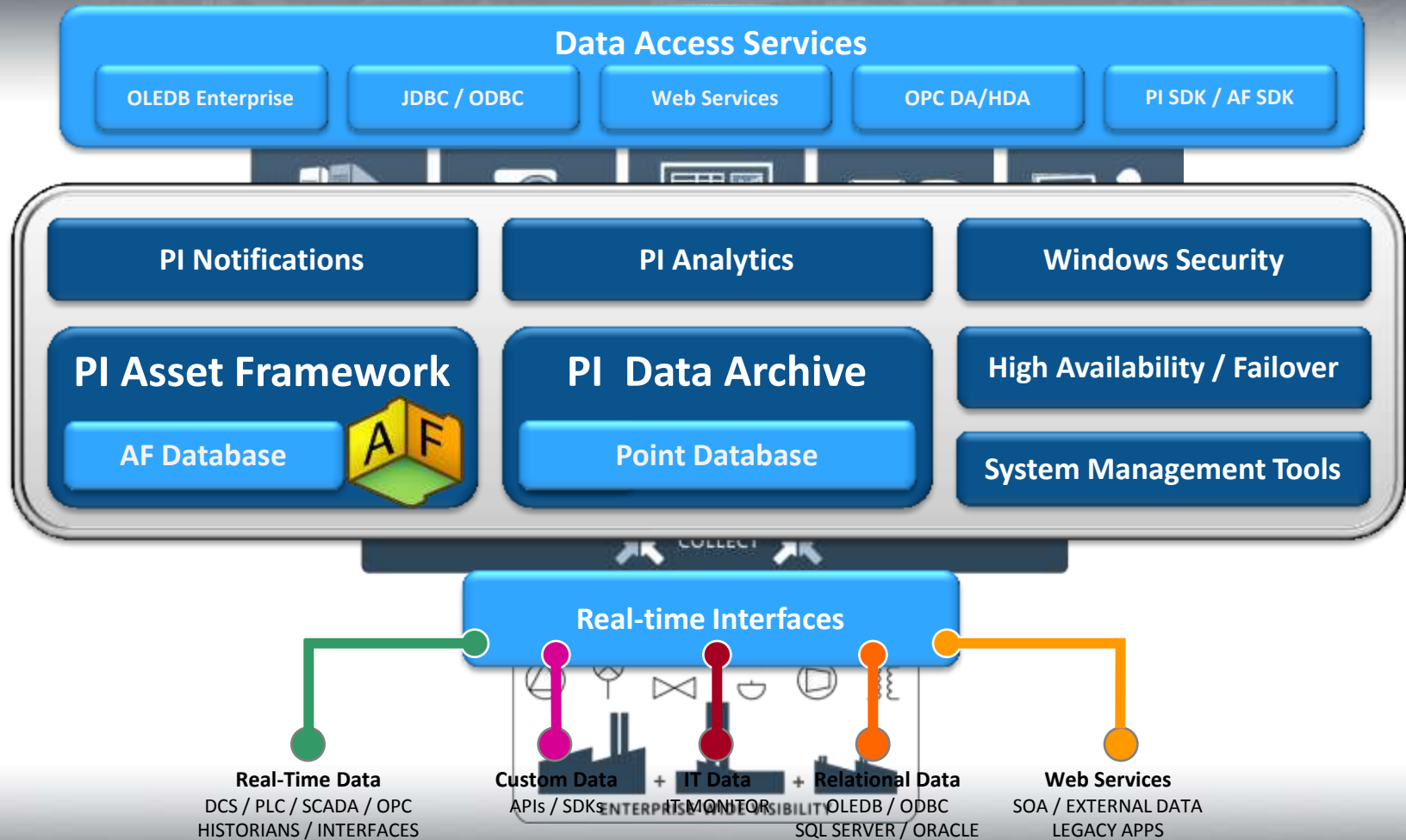
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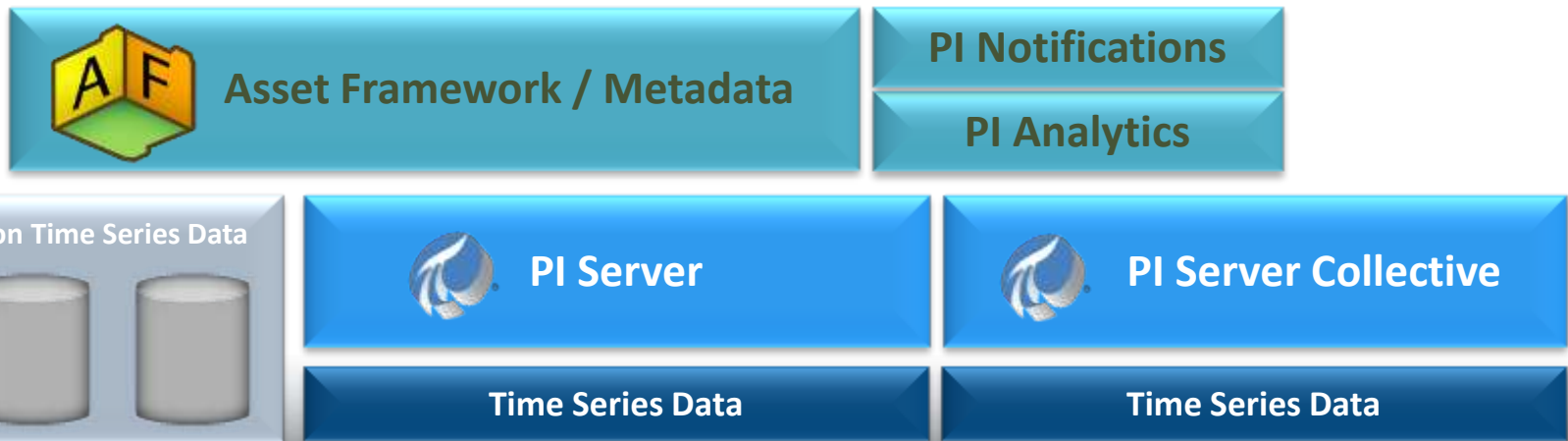
PI Server 2010



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PI AF Advantages

- Asset centric view of your plant via elements attributes – templates for standardization and reuse
- Build connectivity models and categories
- Data references to time series and other data
- Search across multiple PI Servers
- Leverage Analytics and Notifications
- Rich set of AF SDK functions to customize your applications



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MDB – AF Migration

MDB-based Products



RtWebParts
ProcessBook
DataLink
BatchView
RtReports

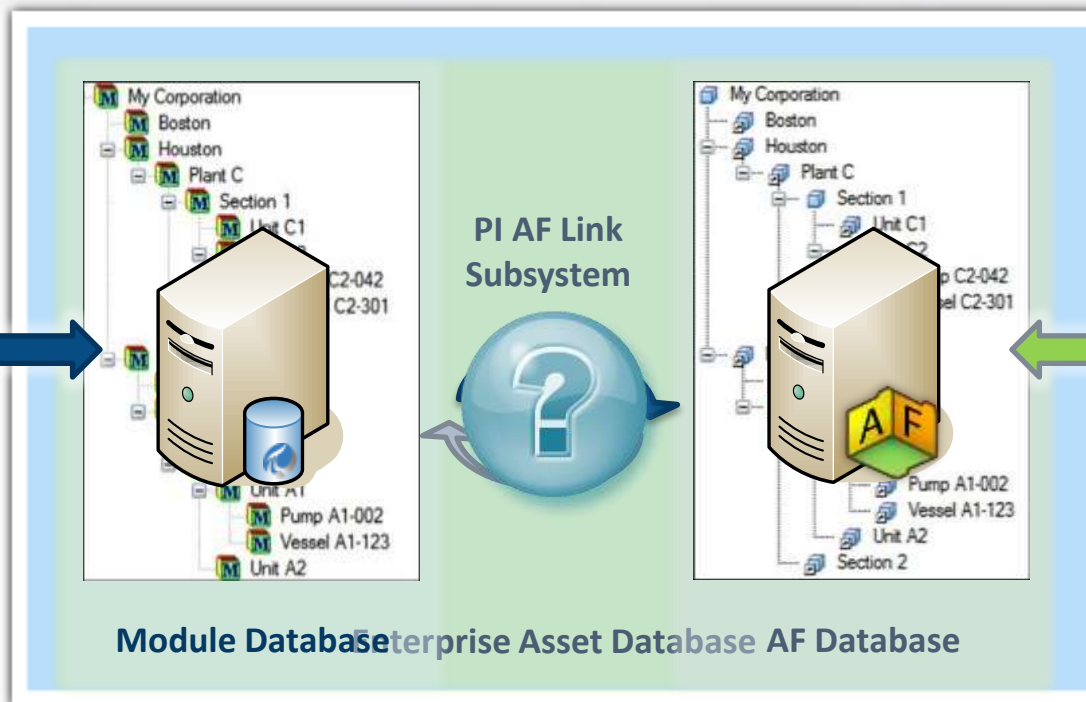


PI OLEDB
PI JDBC
PI OPC Server
PI SDK



PI ACE

Continue using your existing MDB-based products

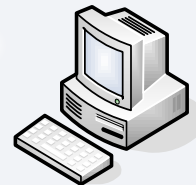


Upgrade to AF-based products when you are ready

AF-based Products



PI WebParts
ProcessBook
DataLink (future)



OLEDB Enterprise
PI JDBC (future)
PI Web Services
AF SDK



PI Notifications

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MDB – PI AF Migration

- PI AF is now the system-of-record for MDB
- What about MDB?
 - OSIsoft maintains support for MDB
 - You can still do everything with tags
 - All MDB application continue to work, including Batch, ACE, etc.
- Migrate to PI AF for new features and functions

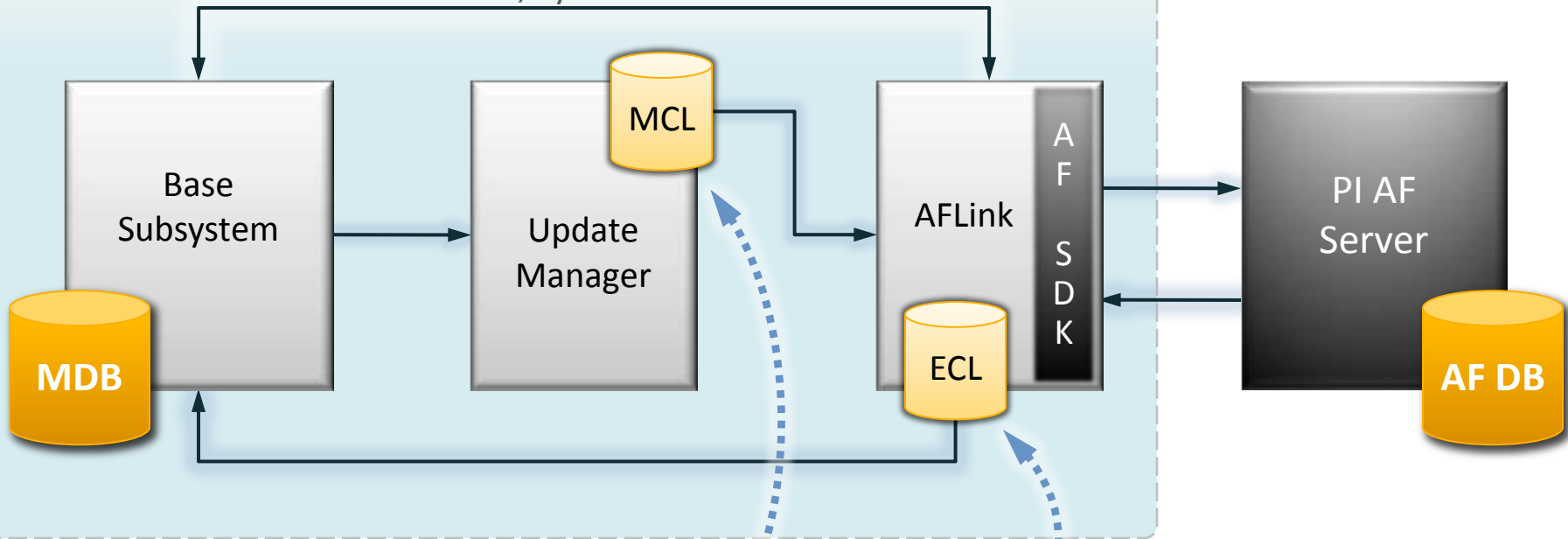


Design



PI Server

Check Out, SyncID Validation



Persisted Queues:

MCL = Module Change Log (MDB => AF)

ECL = Element Change Log (AF => MDB)

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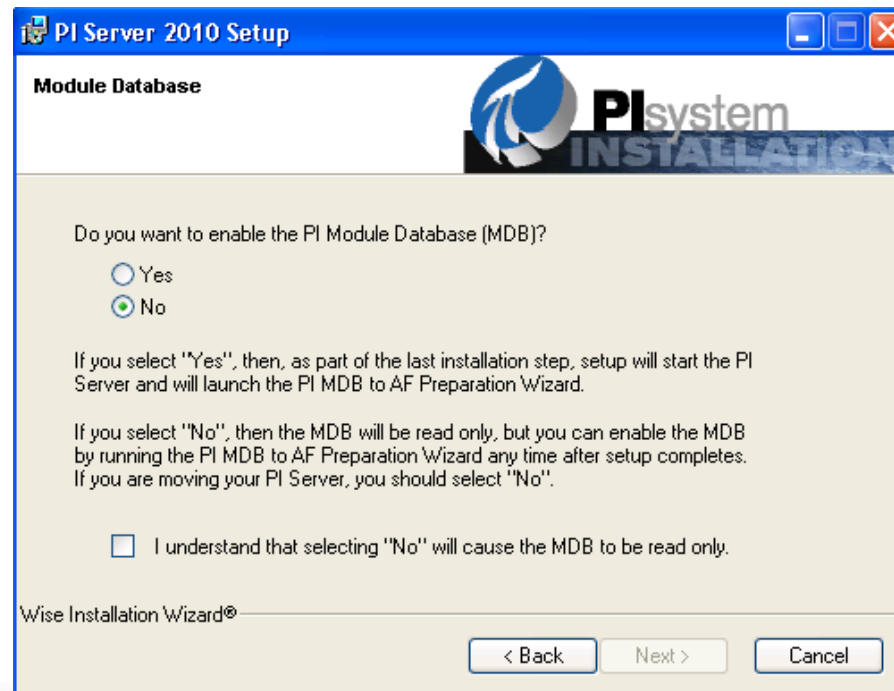
Install/Upgrade Steps

1. Install SQL Server
2. Install/Upgrade AF Server, AF Client
3. Install, Run MDB to AF Migration Wizard
 - Part of PI SMT 2010
4. Install/Upgrade PI Server
 - No MDB, or new install: MDB opt-in?
5. Complete Migration Wizard
6. Run SMT to Check Migration Status



To Enable or Not To Enable MDB?

- Setup will ask this question



Not To Enable MDB Means...

- MDB will be read-only
- No synchronization between PI AF and MDB
- Can be enabled at a later time (by running the Wizard)



To Enable MDB Means...

- Wizard must be completed
- MDB will be migrated to PI AF
- Entire MDB will be synchronized with PI AF

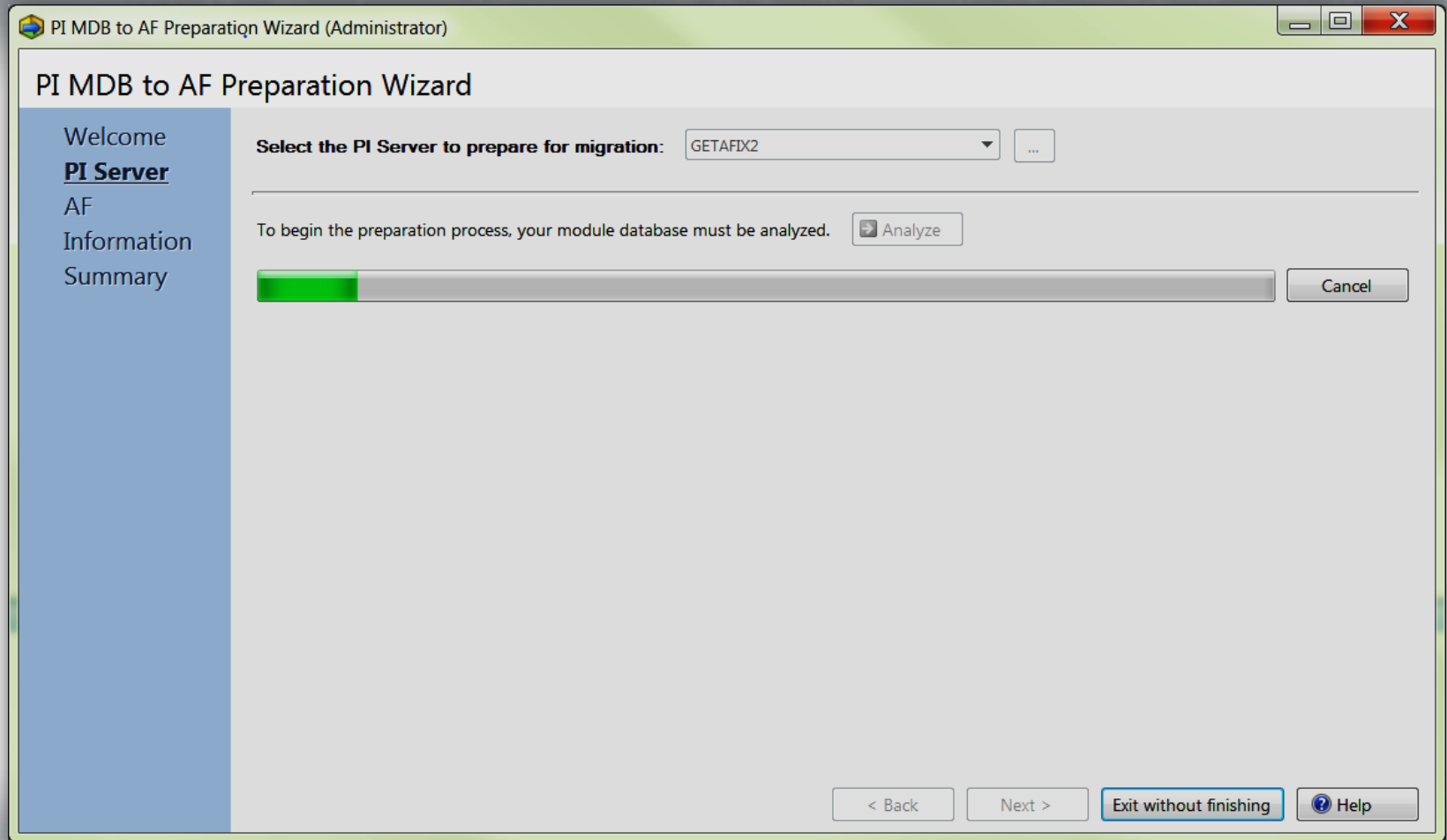


OSIsoft Metadata

- Metadata stored in 3 hierarchies
 - %OSI, %OSI_MCN and %OSI_ManagedPI
- Metadata not migrated to PI AF
- These hierarchies are always read-write
 - Even with “MDB Not Enabled”
 - Even if AF Link or PI AF Server are not running
- Customer data in these hierarchies (if any) must be moved out before upgrading if they want this information in PI AF



MDB-AF Preparation Wizard



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PI Identity Mapping

PI MDB to AF Preparation Wizard (Administrator)

PI MDB to AF Preparation Wizard

Welcome
PI Server
Security
AF
Information
Summary

The PI Identities listed below must be mapped to a Windows account. Select the Identity and click the Create New Mappings button, or create the Mappings in SMT.

1 Missing 1 Existing

Windows Account	PI Identity	Description
<Required>	piadmins	

Add New Mapping

Windows Account: Required

Windows SID:

Description:

PI Server: GETAFIX2

PI Identity: piadmins

OK Cancel

Create new mapping... Export...

< Back Next > Exit without finishing Help

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PI Identities vs Windows Accounts

- MDB uses only PI Identities
- PI AF uses only Windows Accounts
- 380 WIS is the key to synchronize MDB-AF security
- In case of conflicts
 - AF Security is preserved
 - MDB Security is clamped down

Replacement Characters

PI MDB to AF Preparation Wizard (Administrator)

PI MDB to AF Preparation Wizard

Welcome
PI Server
Substitution
ns
AF
Information
Summary

This screen shows all the MDB objects that will have a different name in AF, and what the AF name will be. If you are satisfied with the names, then no further action is required on your part. If you do not like them, you can change the replacement characters.

0 Modules | 0 Aliases | 1 Property

Module Path	MDB Name	AF Name
p1\c1	Installed\Maintained By	Installed/Maintained By

Replacement Characters

Some characters that are valid in MDB are not valid in AF. The AF name will use the following replacements:

	MDB	AF
Semicolon	;	,
Left Curly Bracket	{	<
Right Curly Bracket	}	>
Left Square Bracket	[(
Right Square Bracket])
Backslash	\	/

This suffix will be applied to a Property that has the same name as an Alias in the s...

Note: Analyze will need to be rerun after making any changes.

Reset all settings to default

Export...

Change replacement characters

Exit without finishing

Help

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PI AF Information

PI MDB to AF Preparation Wizard (Administrator)

PI MDB to AF Preparation Wizard

Welcome
PI Server
Substitution
s
AF
Information
Summary

Before you can migrate, you must connect to an AF Server, Database, and Element under which the MDB is synchronized. Click Help for more information.

AF Server: GETAFX2

AF Database: MDBAFMigration

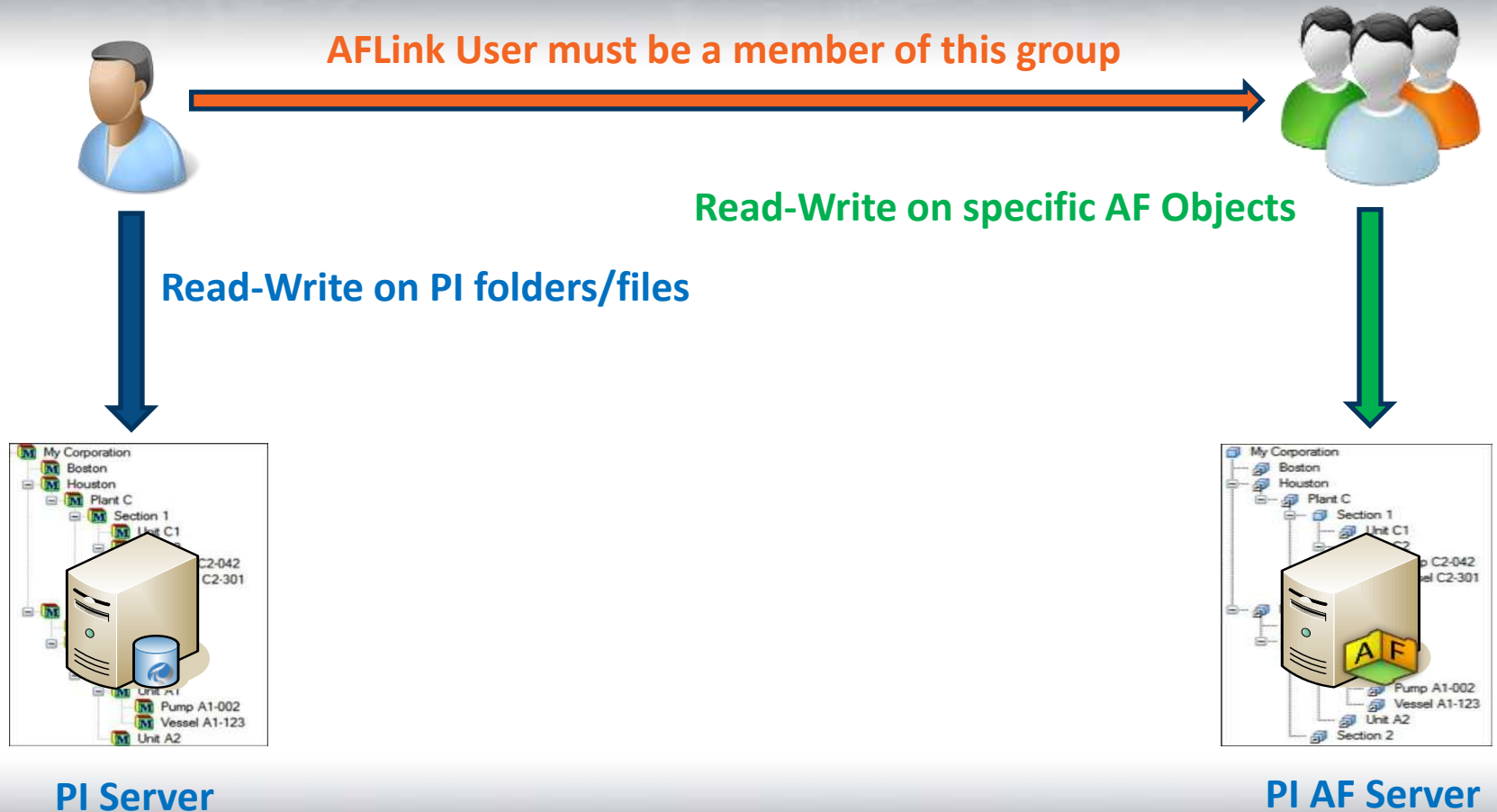
PI Server Element: GETAFX2 ModuleDB

The PI Server Element will be the element in AF under which all MDB modules are synchronized.

Important Security Notice: To prepare the AF Server for migration, this tool will create a unique Windows group on the AF Server computer. This group will be the owner of the PI Server element. After migration, this is the group that PI Server will use for access to the AF objects.

< Back Next > Exit without finishing ? Help

AFLink Access Permissions to PI AF



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Default Configuration



Network Service



Local Group created by Wizard



Network Service added as a member



PI & PI AF on same machine



Machine Account added as a member



PI & PI AF on different machines on same or trusted domains

Other Configurations

- PI Server Collectives
 - AF access not required on secondary
- PI AF Server Collectives
 - PI AF Link does not connect to secondary PI AF Server
- Non trusted domains and Workgroups
 - Require manual steps (Documented in Transition Guide)
- PI, PI AF or both on Clusters
 - Must use domain groups and domain users
 - Wizard doesn't currently support setting domain users and groups
 - Require manual procedure (Documentation in progress)
- Domain Controllers
 - Installing PI & PI AF not recommended on DCs

MDB AF Preparation Wizard Demo



Simple Module DB

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MDB AF Preparation Wizard Demo

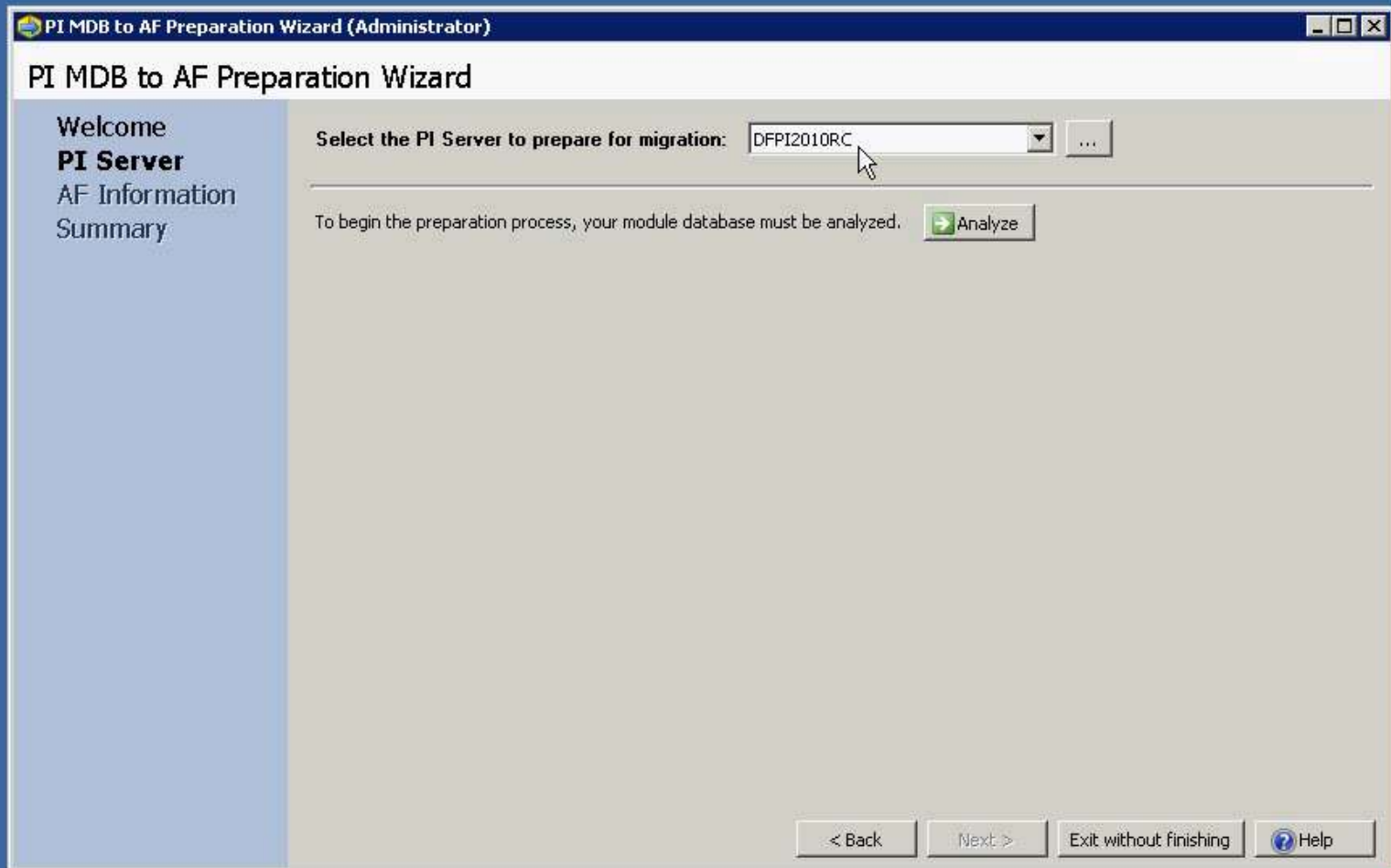


Slightly complex Module DB

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Recycle Bin



MDB AF Preparation Wizard Demo



More complex Module DB

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ation Wizard

Select the PI Server to prepare for migration:

DFPI2010RC

...

To begin the preparation process, your module database must be analyzed.

 Analyze

There is 1 security issue to be resolved.

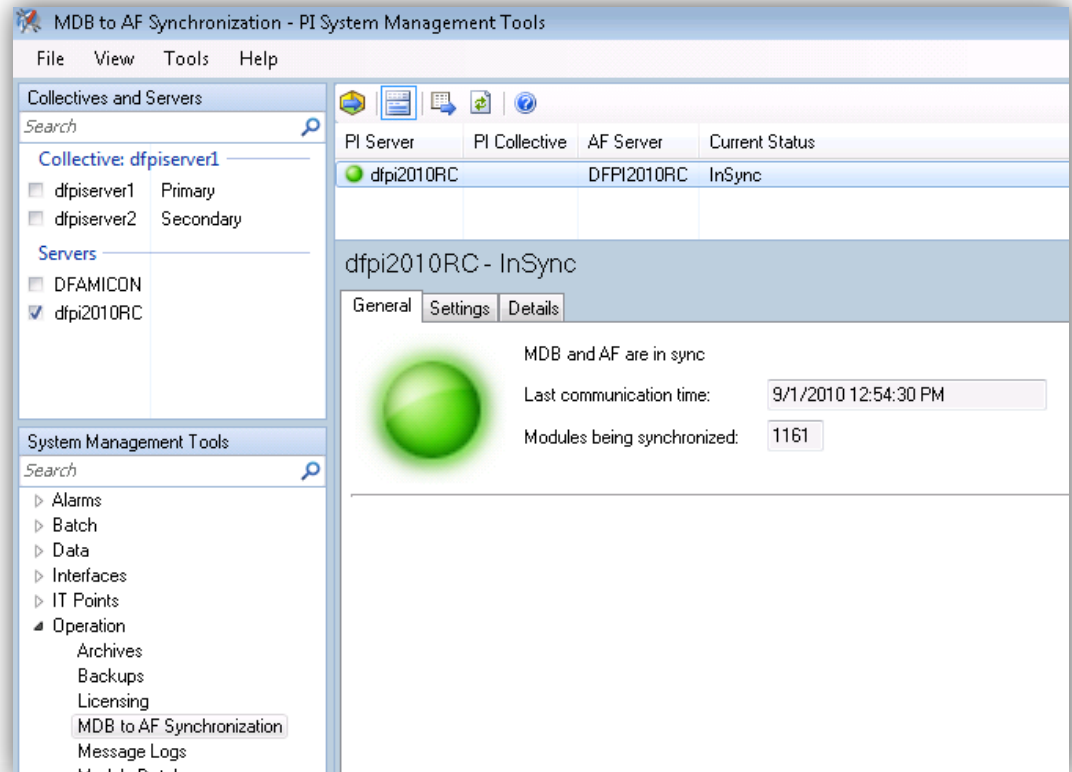
There is 1 Module Database entry that needs to be substituted with a new character due to incompatibilities with AF.

There are 30 Module Database entries that will be sucessfully substituted with a new character for AF compatibility.

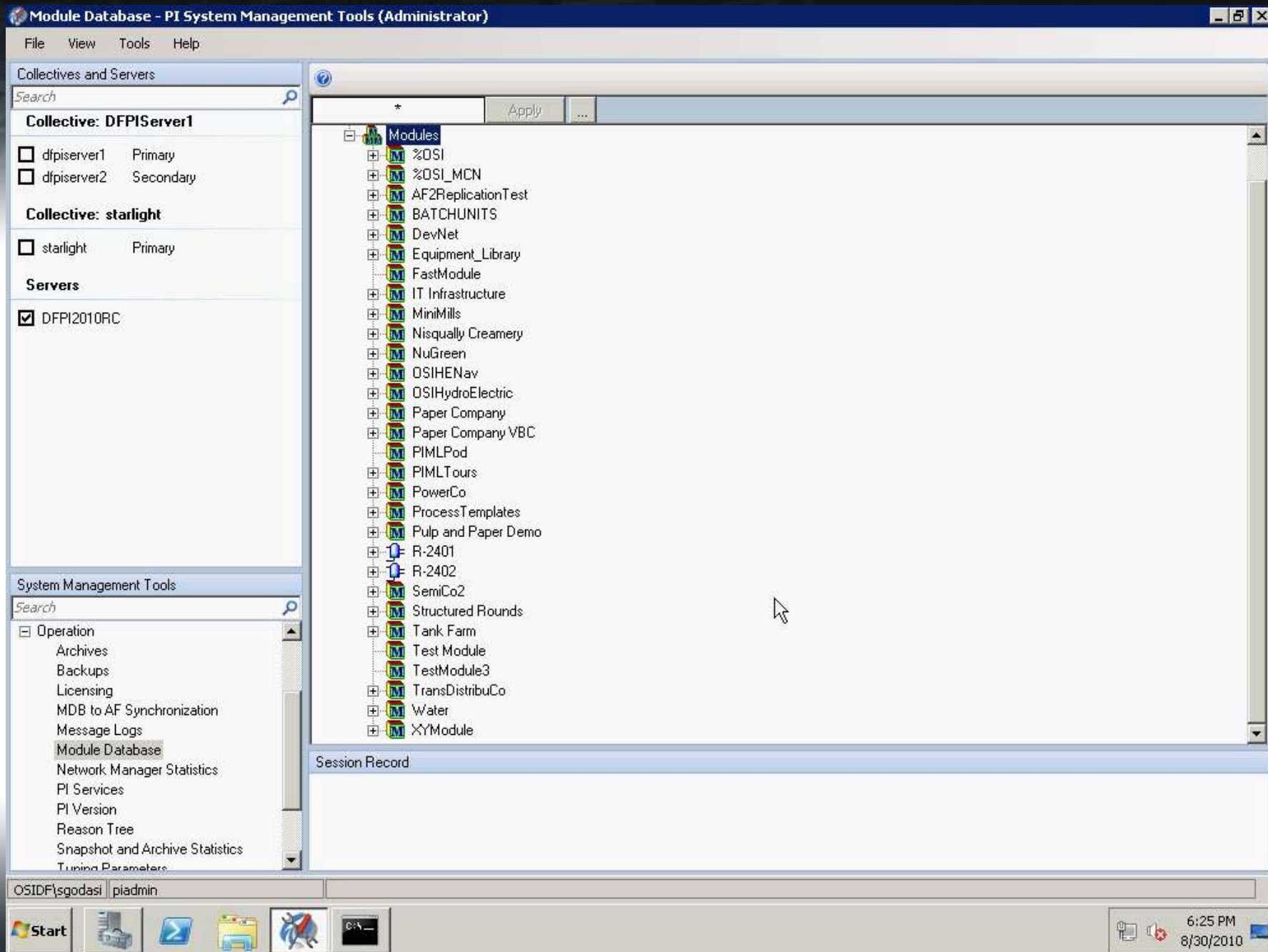
Press Next to see a report of, and optionally fix these problems.



Troubleshooting Tool – SMT Plugin



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MDB App Compatibility



Example App: ACE

NuGreenAssetDatabase - PI System Explorer

File Edit View Go Tools Help

Database Query Date Back Check In New Element Search

Elements

- DFPI2010RC ModuleDB
 - AF2ReplicationTest
 - BATCHUNITS
 - DevNet
 - Equipment_Library
 - FastModule
 - IT Infrastructure
 - MiniMills
 - Nisqually Creamery
 - NuGreen
 - OSIHENav
 - Paper Company
 - PIMLPod
 - PIMLTours
 - PowerCo
 - ProcessTemplates
 - Pulp and Paper Demo
 - R-2401
 - R-2402
 - SemiCo2
 - Structured Rounds
 - Tank Farm
 - Test Module
 - TestModule3
 - TransDistribuCo
 - Water

DFPI2010RC ModuleDB

General Child Elements Attributes Ports Version

Name: DFPI2010RC ModuleDB

Description: Do not delete this element. Deleting this element will delete all non-configuration modules on PI Server C

Template: Type: None

Categories:

Default Attribute: <None>

[Extended Properties](#)

Find: [Parents](#) [Models](#) [Layers](#) [Connections](#) [Analyses](#) [Notifications](#) [Event Frames](#)

Elements

Event Frames

Library

Unit of Measure

MyPI

Notifications

Contacts

DFPI2010RC ModuleDB Modified:8/30/2010 4:07:12 PM. Version: 1/1/1970 12:00:00 AM, Revision 12

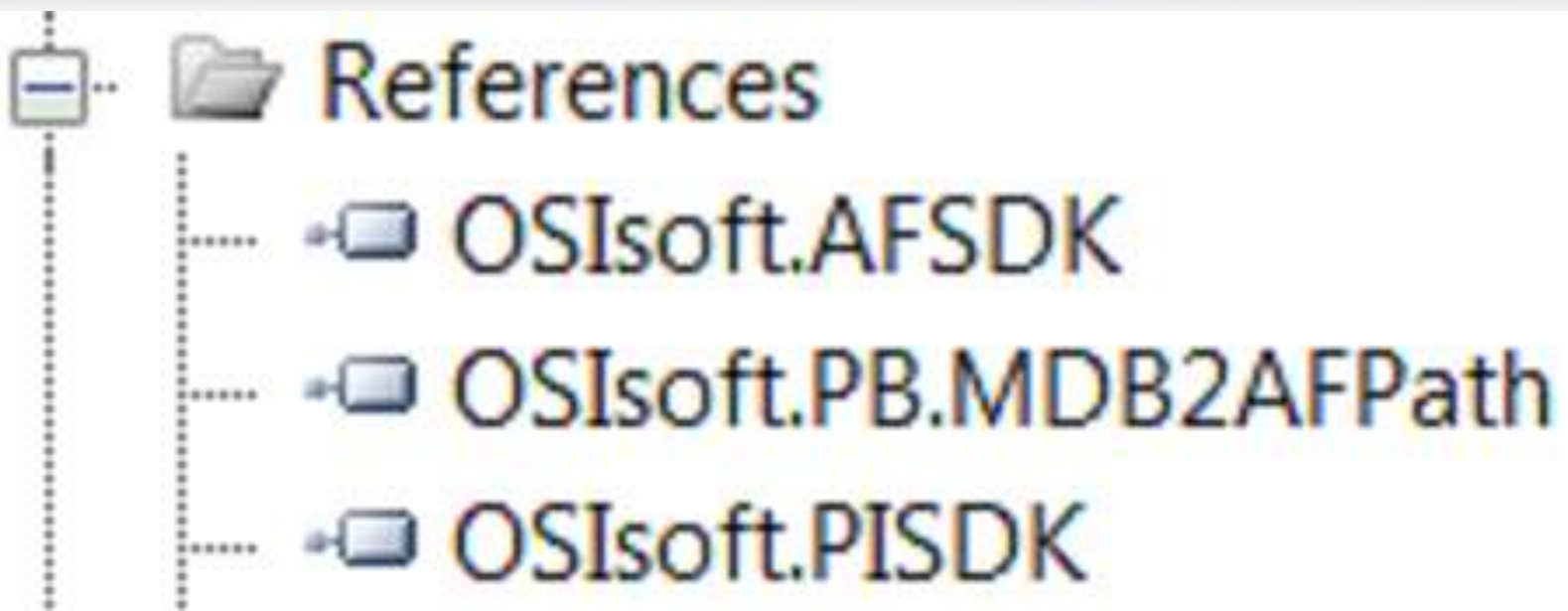
Start

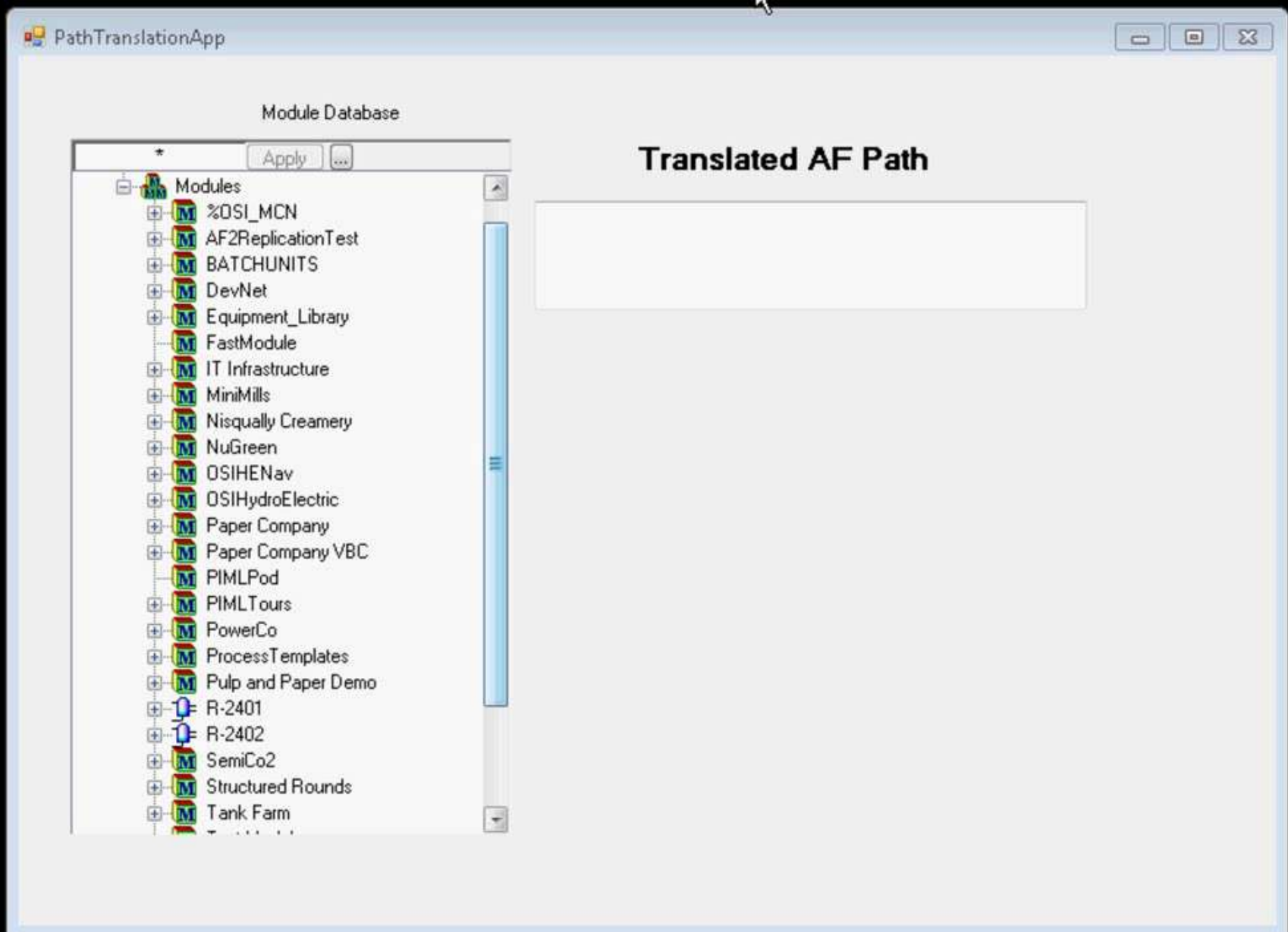
MDB to AF Path Translation



Sample Code

Project References





MDB to AF Path Translation

- Known Issue
 - Incorrect path when property name has a suffix. PLI 22981OSI8. Easy workaround available.

PI Server Documentation – New/Updated for 2010

- PI server 2010 PI MDB to AF Transition Guide
- PI Server 2010 Release Notes
- PI Server 2010 Install and Upgrade guide
- PI Server 2010 Configuring PI Server Security
- PI Server 2010 Introduction to System Management
- PI Server 2010 System Management Guide



PI Server Documentation – Last released in 2009

- Auditing the PI Server
- High Availability Administration Guide
- PI Server Applications User Guide
- PI Server Reference Guide
- PI Buffering User Guide



Summary

- Leverage rich AF metadata to enhance PI Server functionalities
- AFLink provides backward compatibility for MDB applications
- Customers – Plan to upgrade your apps from MDB to AF over time
 - Reduce or eliminate your dependency on MDB





Thank You!

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