



The Road Ahead: Bridging Platform Releases 1 and 2

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The Platform Release

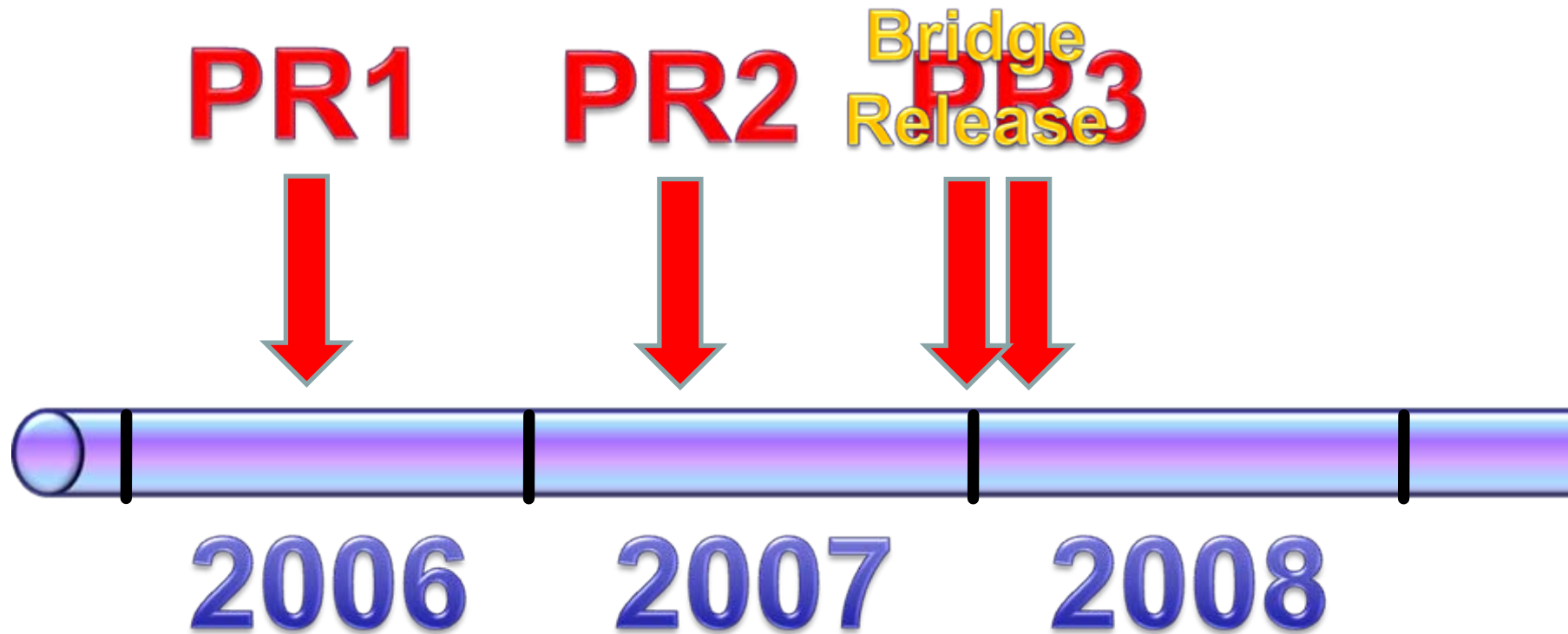
- What is it?
- What is the benefit to you?

An Example – PI Notifications

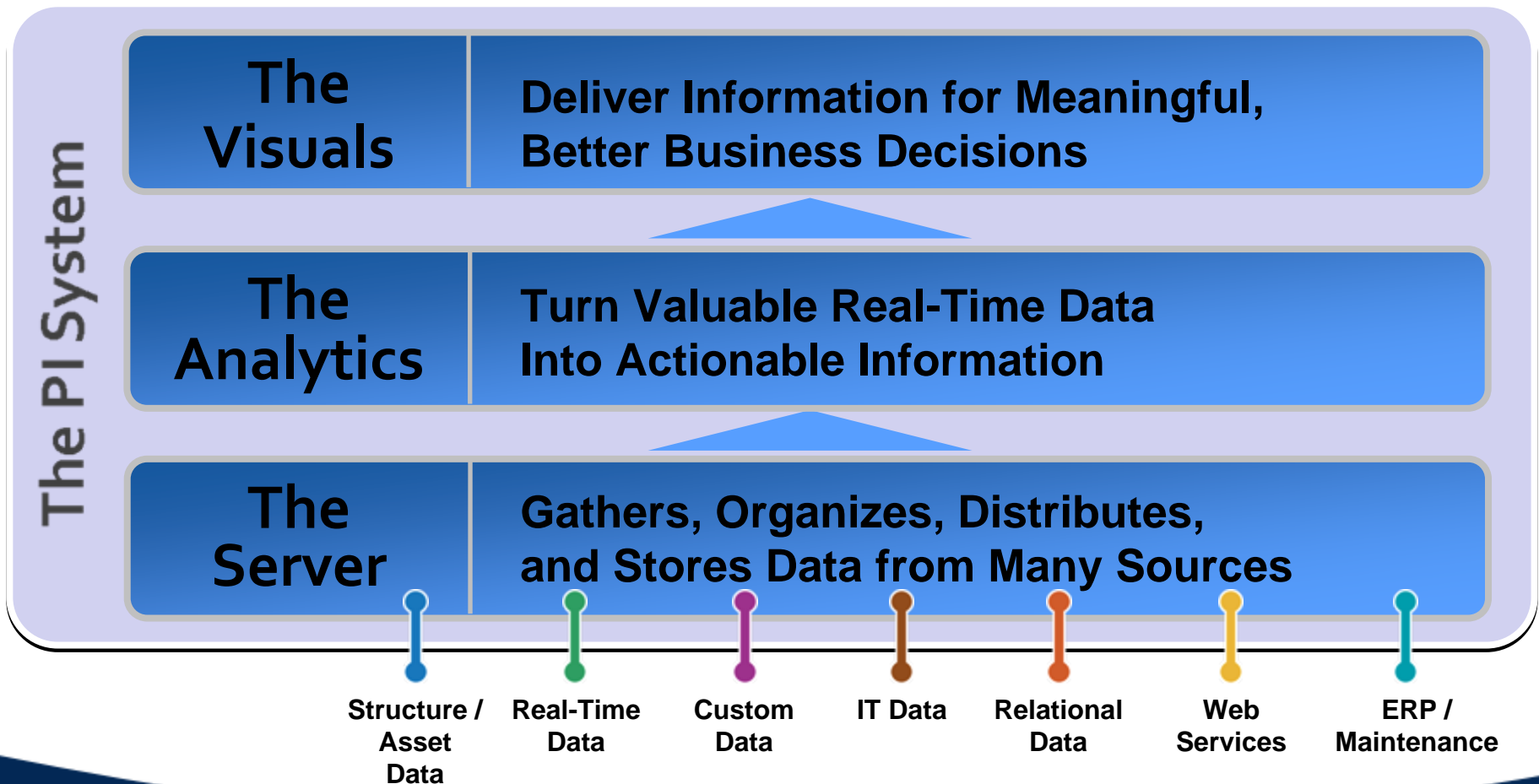
Affects at least six different components:

- Analysis Framework
- PI System Explorer Tool
- SDK for Programmatic Access
- ProcessBook Add-In
- Desktop Alert Client
- Web Acknowledgement/Comment

Platform Release Timeline



Functional Groups of The PI System



PI Server Direction

- Platform Release 1
High Availability PI
- Bridge Release
 - Analysis Framework 2
 - Windows Security
 - HA Enhancements
 - Future Data
- Platform Release 2
 - Partitioning
 - 64-bit PI

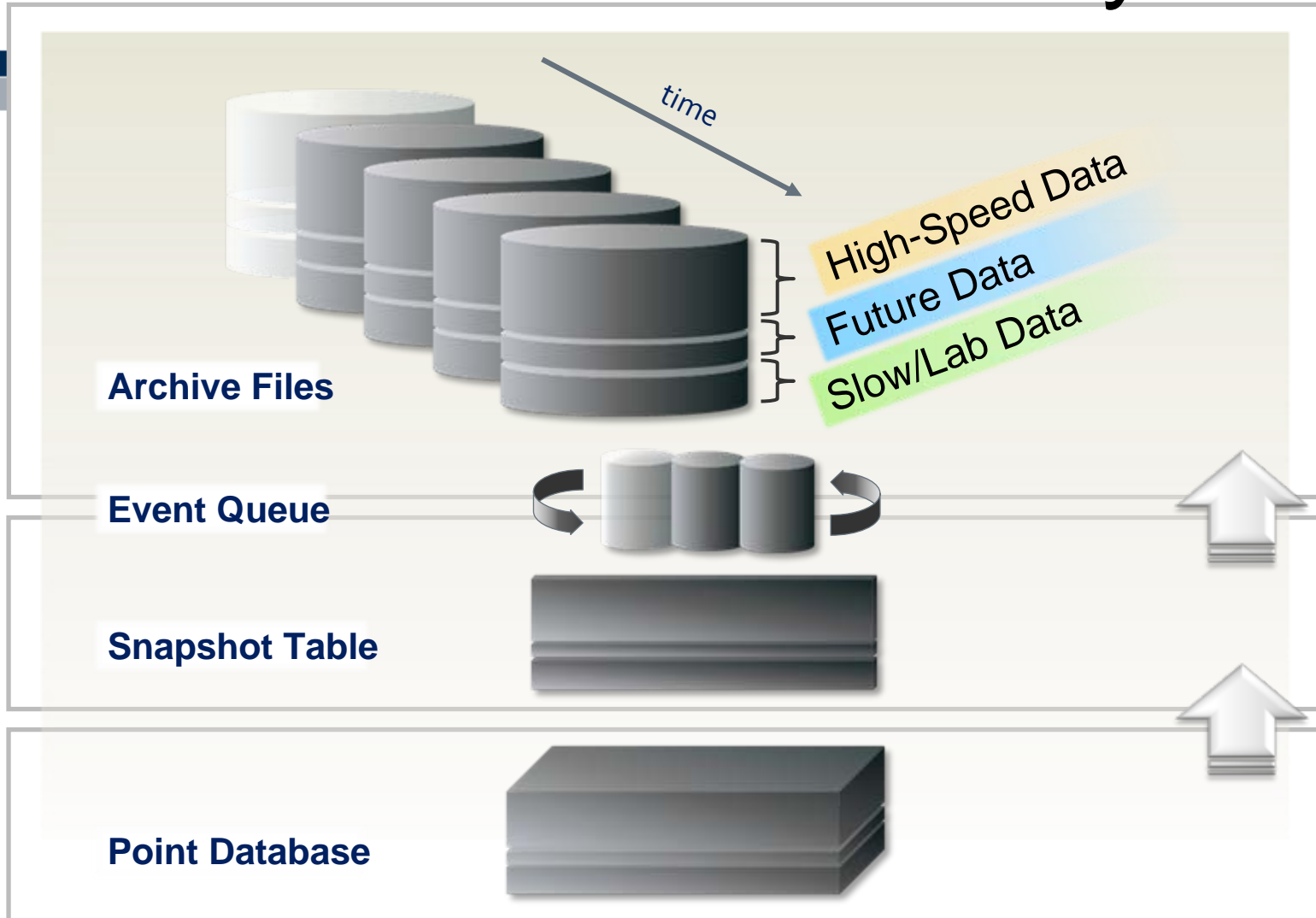


PI Server in PR1

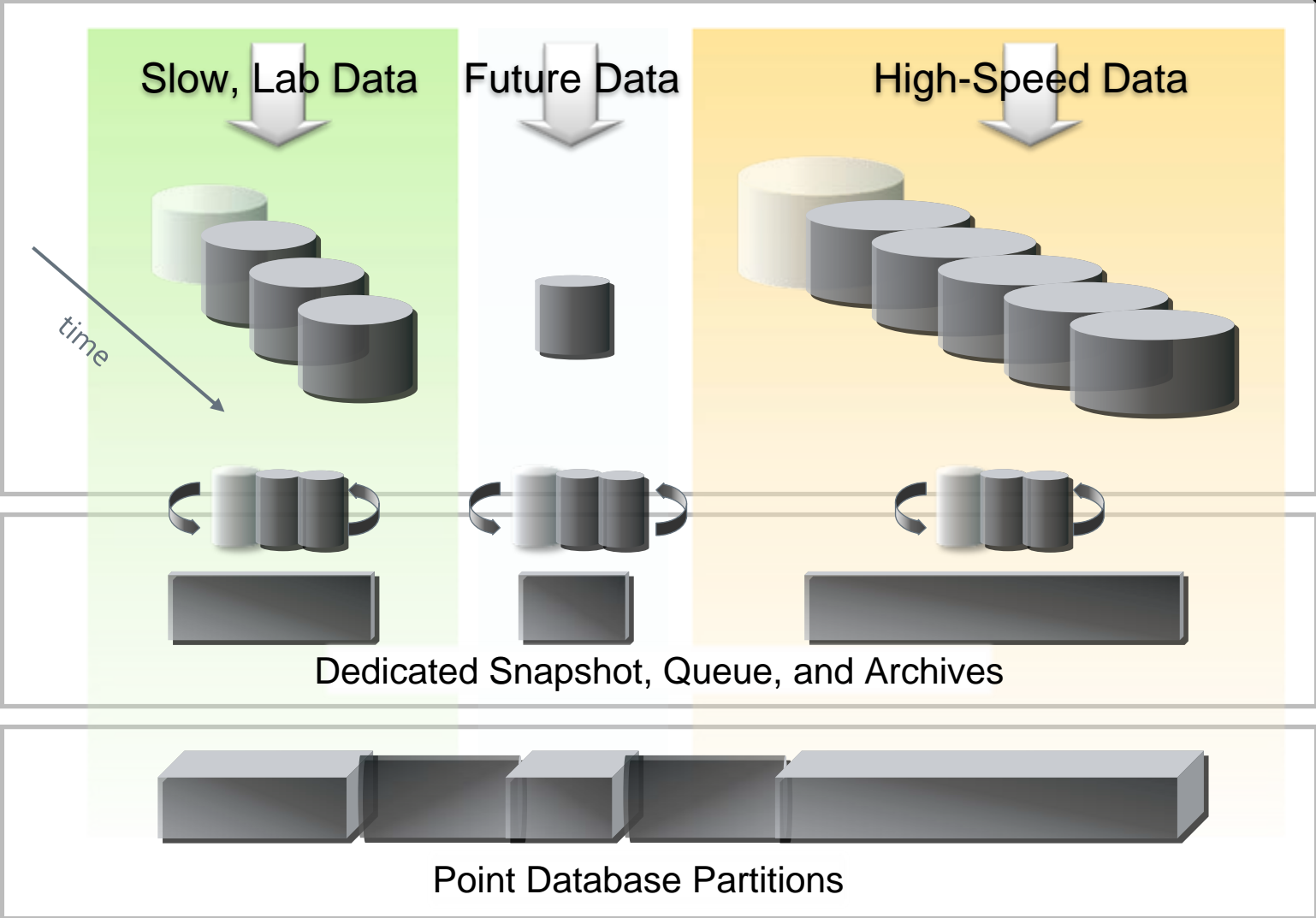
- Major Features
 - N-Node PI Server Replication of All Metadata
 - HA Services through the PI SDK
 - Easier Deployment, Configuration, and Maintenance
- Behind the Scene
 - New Metadata Infrastructure
 - New Interface Buffering
 - Enhanced Backup Infrastructure
 - New and Improved SMT



PI Server Core Today



PI Server Core with Partitioning



Point Count

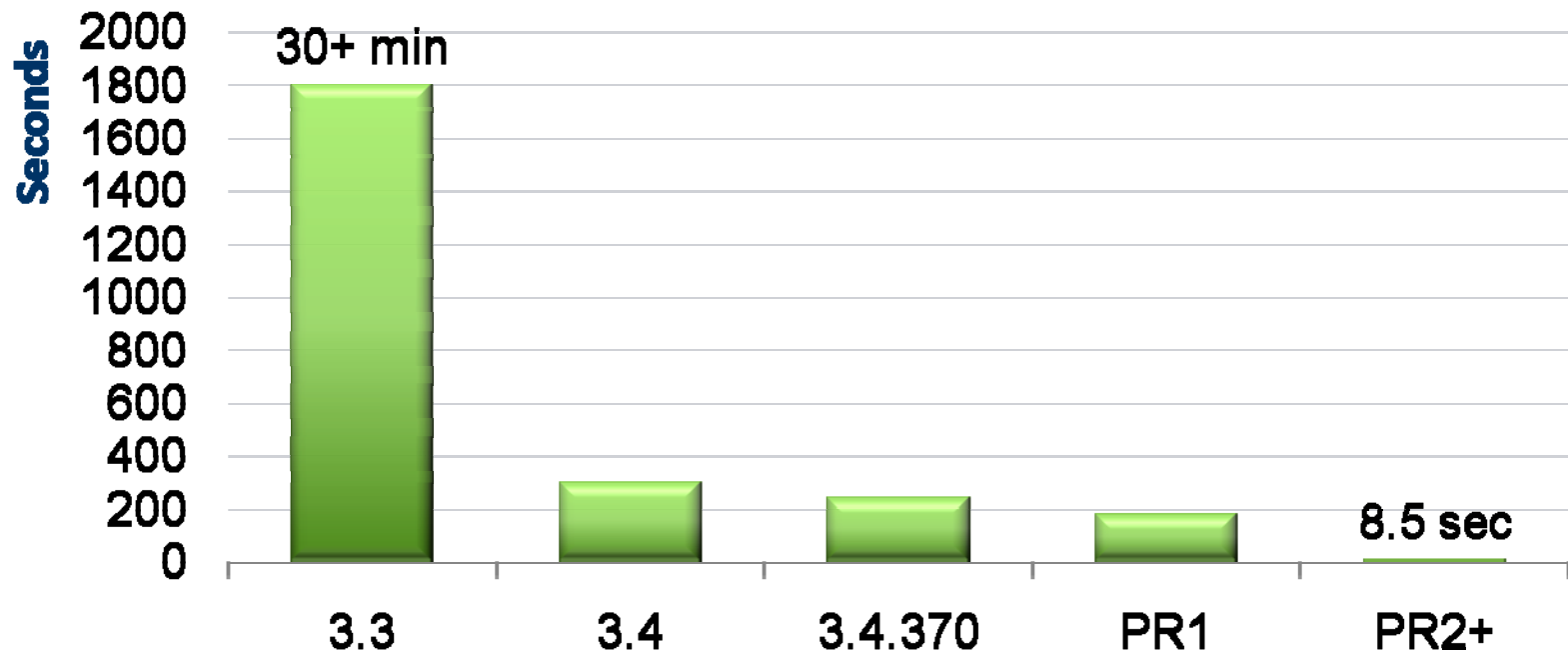
PRR 2345 (335) 5x644

21,000,000



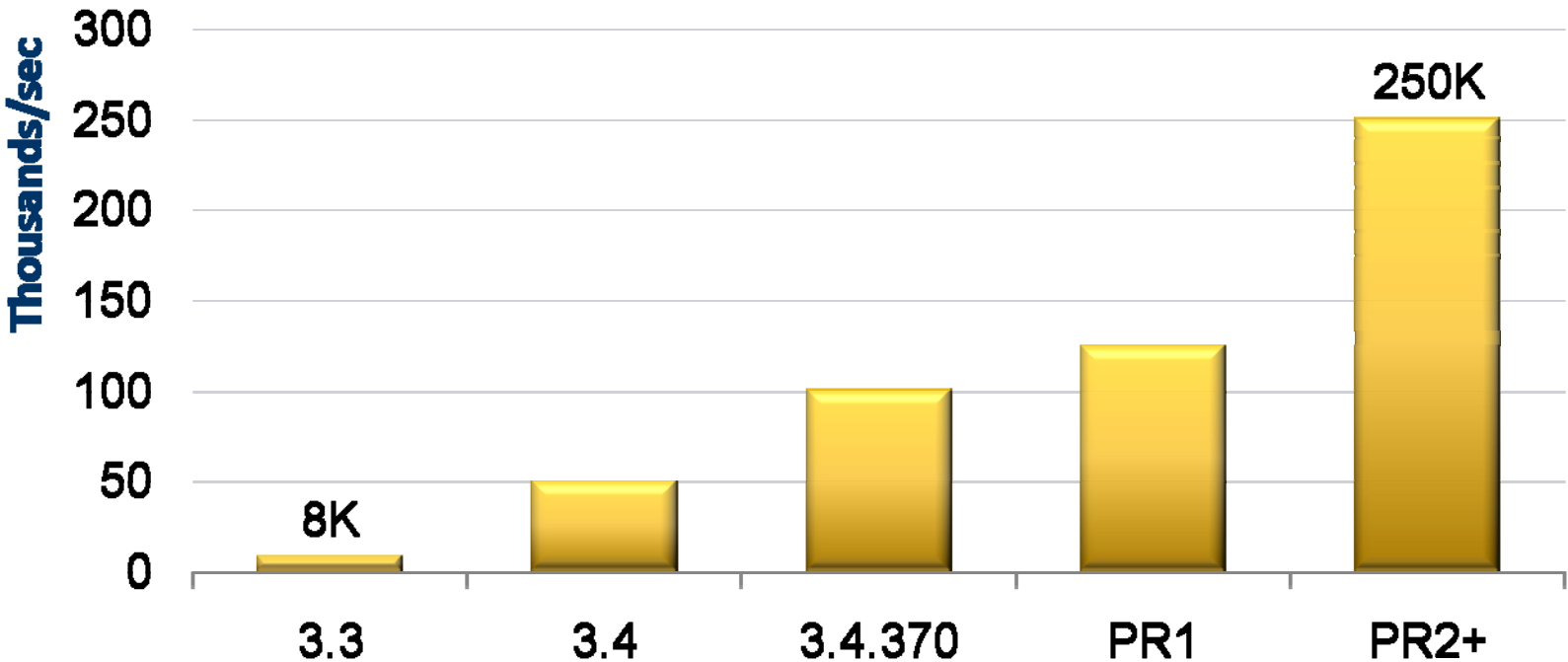
Startup Time

Initialization Time per Million of Points



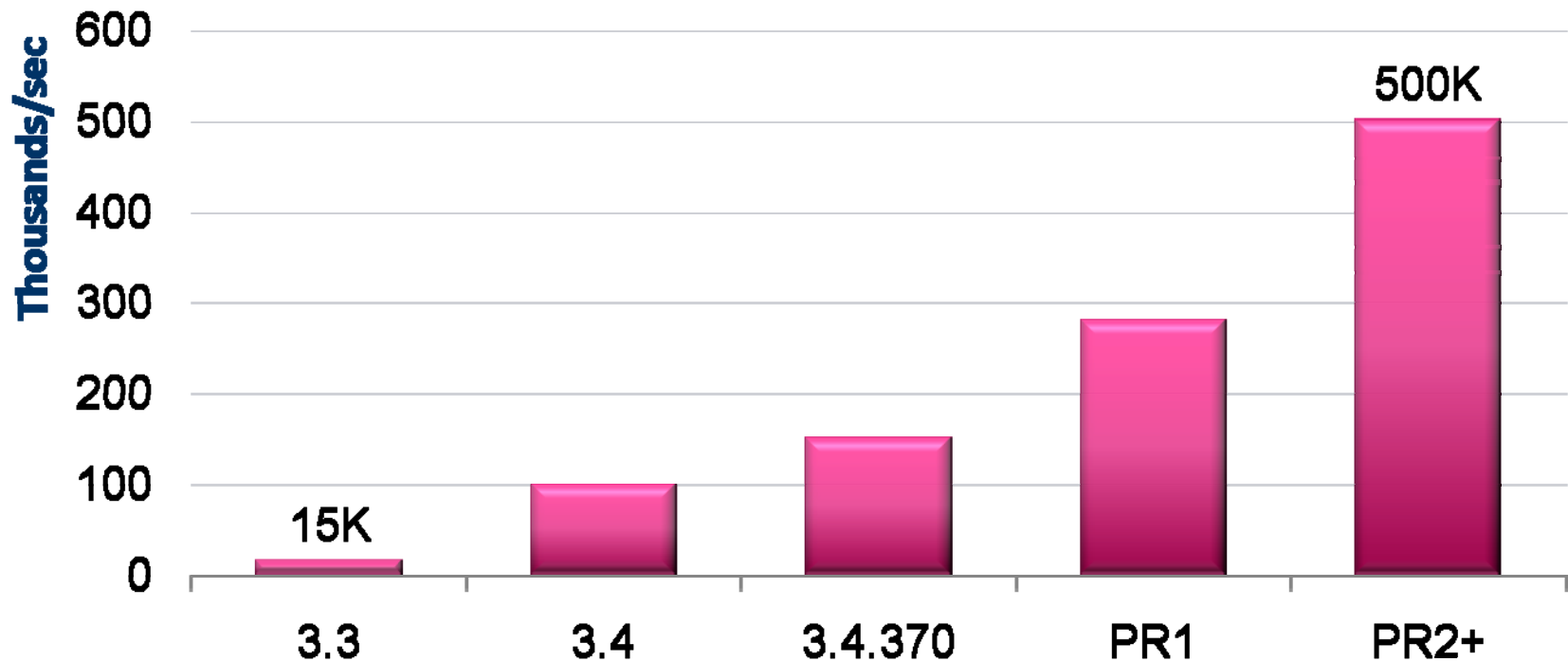
Archiving Rate

Events Stored to Disk



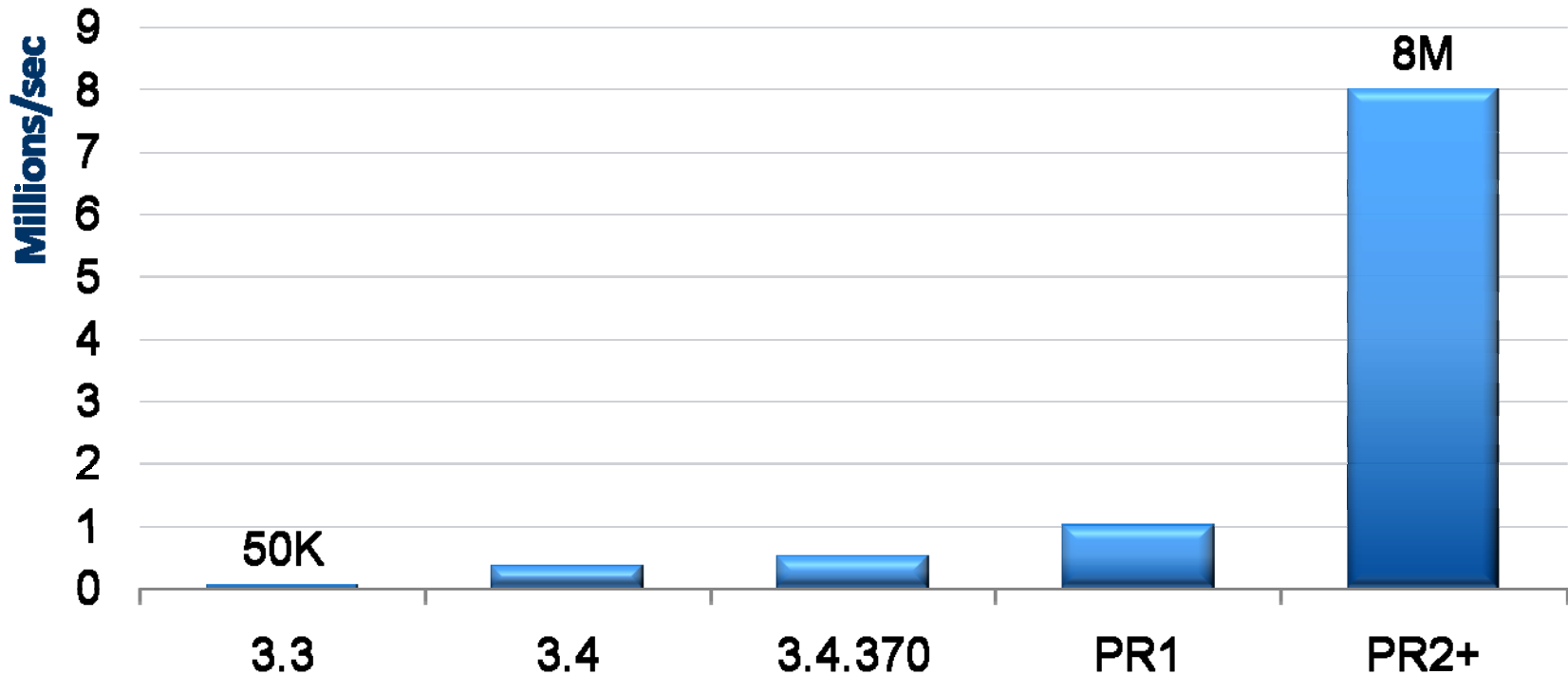
Snapshot Rate

Events Processed in Memory



Archive Query Rate

Events Served to Clients



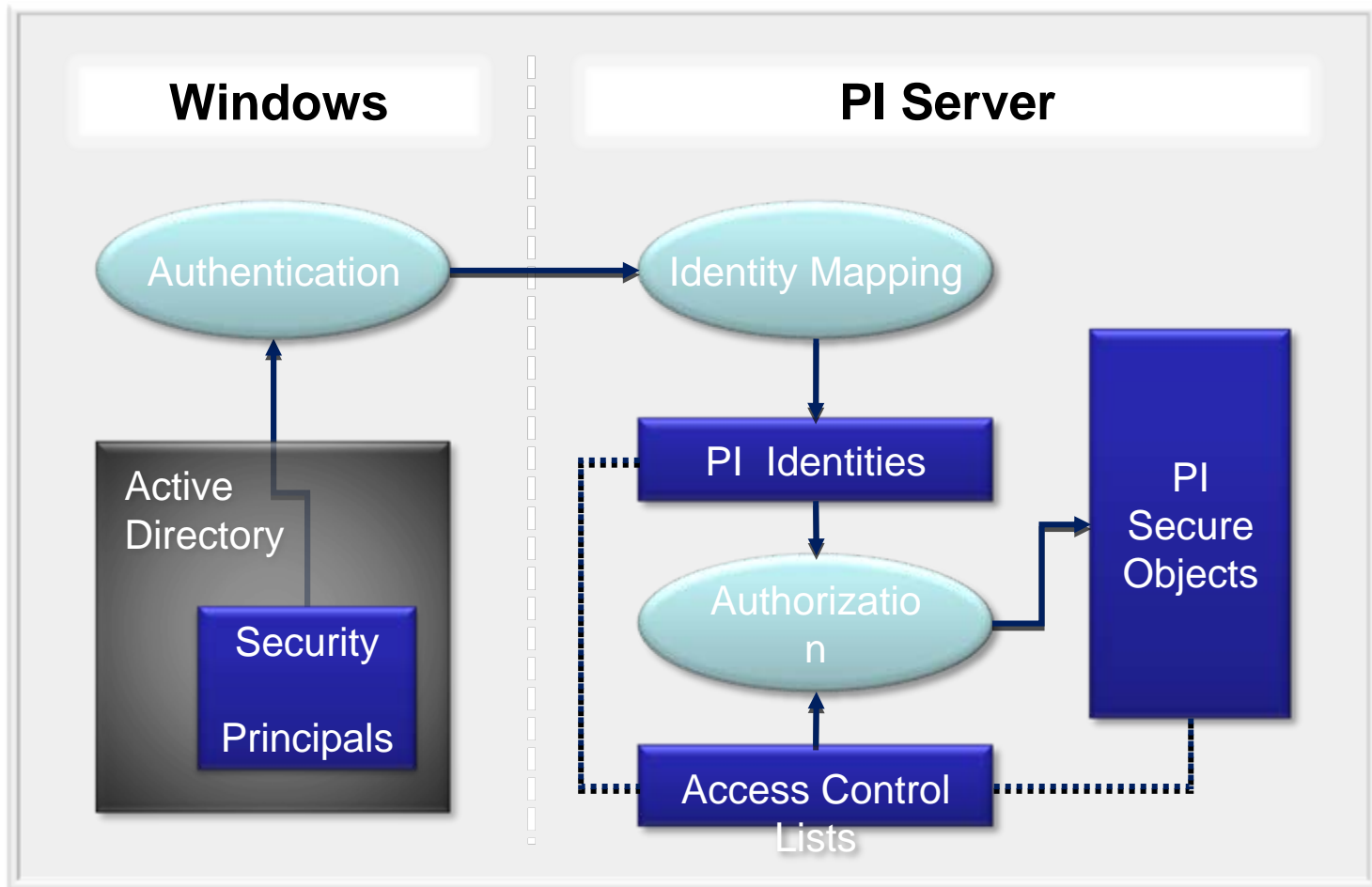
Recent Security Changes in PI

The screenshot shows the 'Permissions for Tank 001' dialog box in the PI System Explorer. The dialog is titled 'Permissions for Tank 001' and has a 'Private' tab selected. The 'Group or user names:' list contains three entries: 'Administrators (VDOM1\Administrators)', 'Bob Wilson (bwilson@VDOM1.ORG)', and 'Everyone'. Below this list are 'Add...' and 'Remove' buttons. A table titled 'Permissions for Bob Wilson' shows the following permissions:

Permissions for Bob Wilson	Allow	Deny
All	<input type="checkbox"/>	<input type="checkbox"/>
Read	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Write	<input type="checkbox"/>	<input type="checkbox"/>
Read/Write	<input type="checkbox"/>	<input type="checkbox"/>
Read Data	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Write Data	<input checked="" type="checkbox"/>	<input type="checkbox"/>

At the bottom of the dialog, there is a note: 'For special permissions or for advanced settings, click Advanced.' and an 'Advanced' button. The main dialog has 'OK', 'Cancel', and 'Apply' buttons at the very bottom.

WIS: Simplified Diagram



PI High Availability

Motivations: Why High Availability?

- Network Failure
- Hardware Failure
- Administrative/User Failure
- Upgrades and Migrations
 - Hardware
 - Operating System Software (Patches)
 - Applications Software

The Business Case for HA

Inconvenient to Unacceptable

- Performance Report
 - Can not be updated because network down
- Production Report
 - Inaccurate because data acquisition stopped due to software crash
- Regulatory Data
 - Emissions data lost due to hardware failure
- Condition-based Maintenance
 - Work orders not generated due to misconfigured IP address
- Power Outage
 - Transformer overheat goes unnoticed during system upgrade

Inconvenient

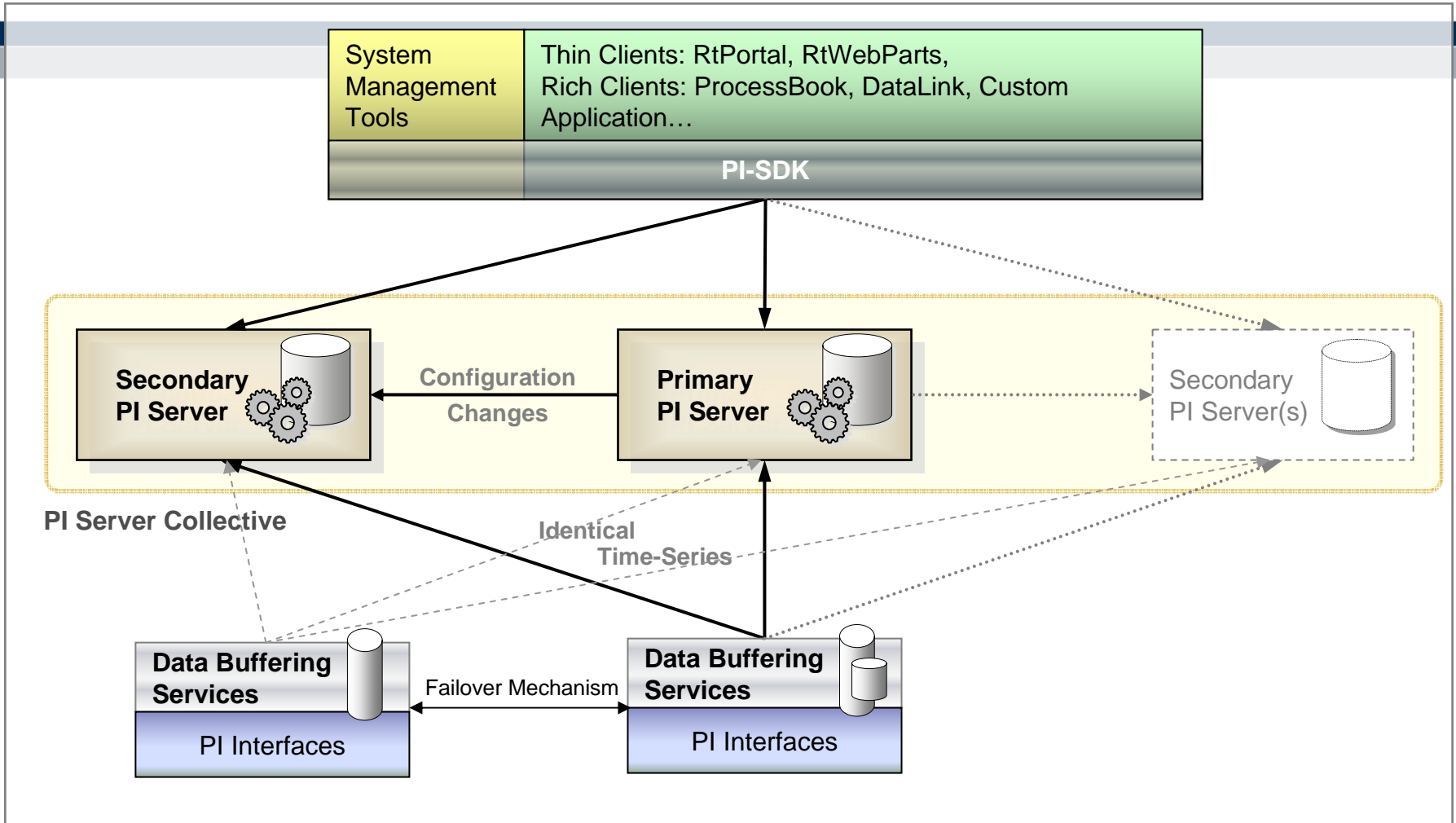


Unacceptable

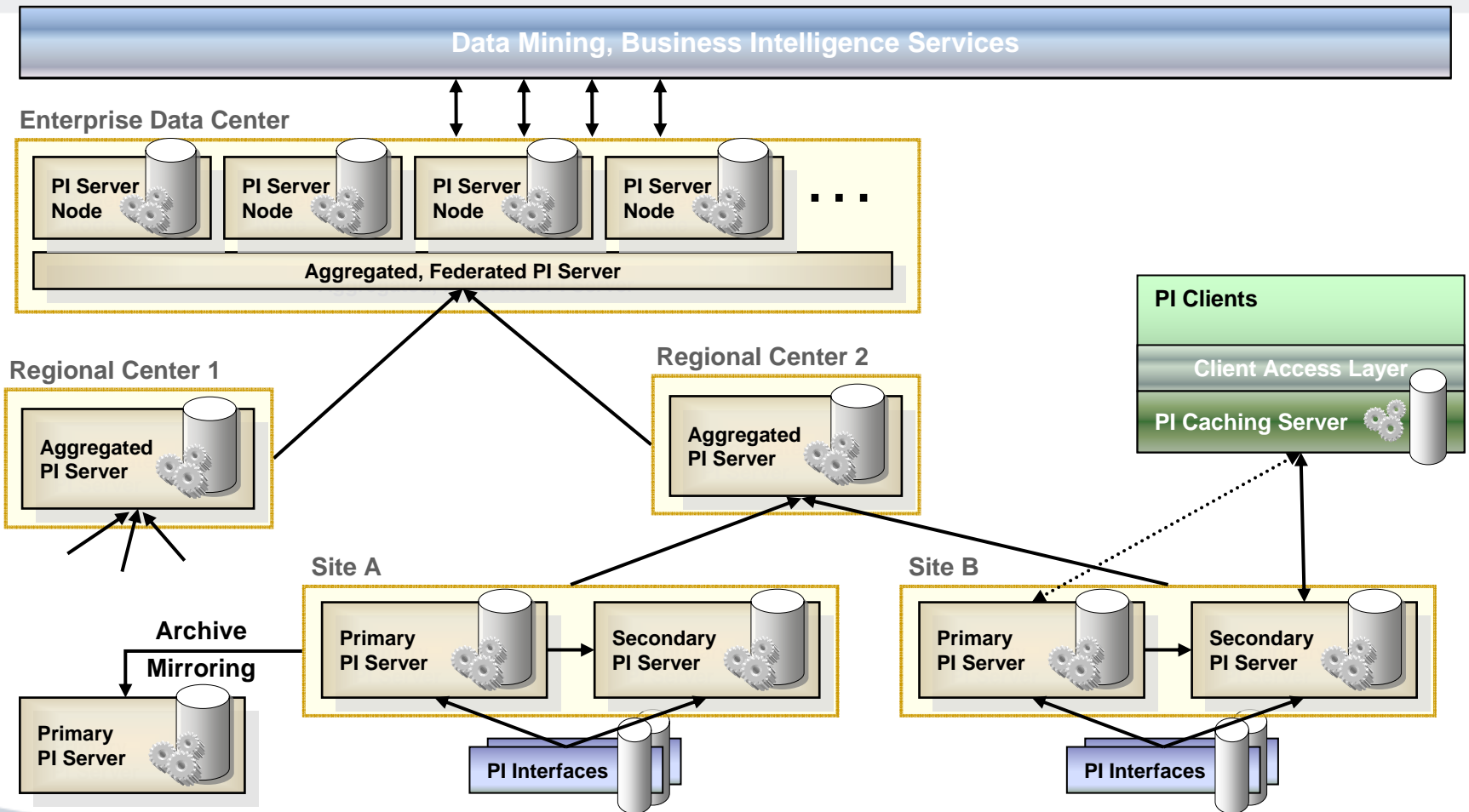
High Availability PI Features

- **Software and Hardware Fault-Tolerant System**
 - Interface Failover, Buffering, PI Server Replication, SDK Services
- **Near-Independent, Physically Separated Servers**
 - No hardware/network restrictions, no limit on server nodes
- **General Benefits**
 - Availability, end-user sees one logical system
 - Scalability, system load can be distributed
 - Flexibility, accommodates your environment
- **For IT and Management**
 - Simple to configure and manage
 - Simple disaster recovery

PI Replication Architecture



PI Replication Future



AF 2.0

Shifting Platform Usage

**Time Series
Centric**

**Time
Series**

**Data
Access**

**Operations
Centric**

**Time
Series**

**Context
(Data Directory)**

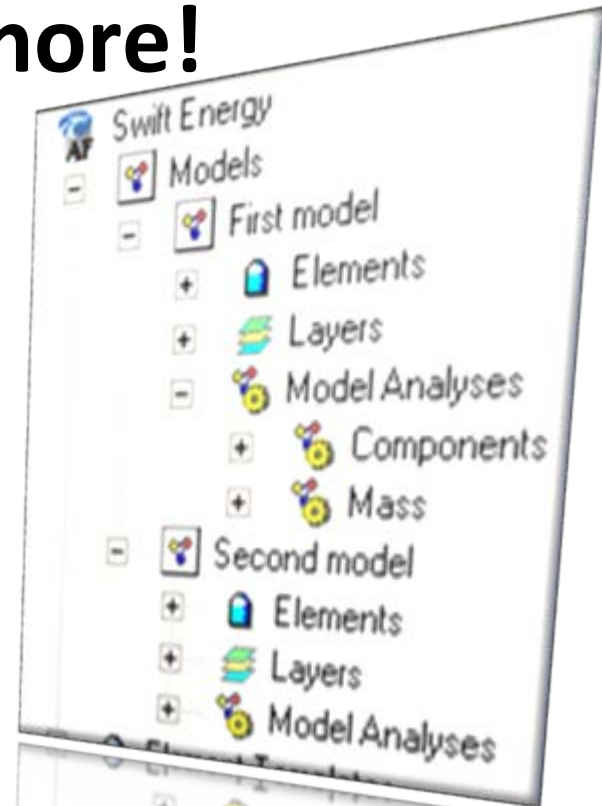
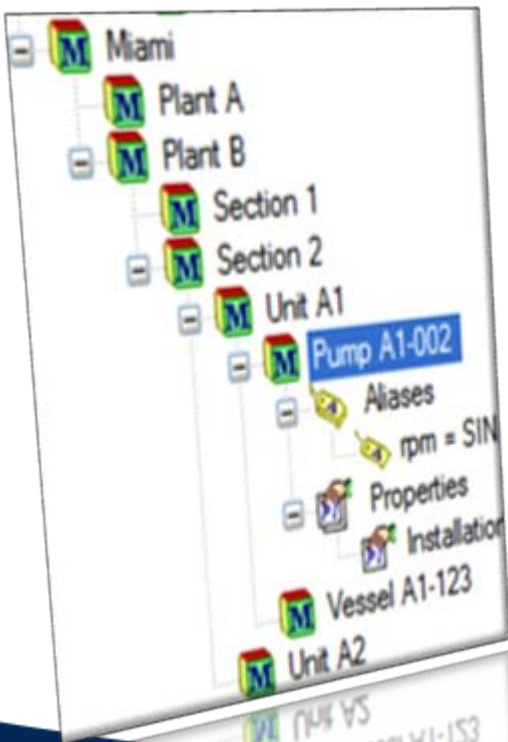
**Data
Access**

Connectivity

Analytics

What is AF 2.0?

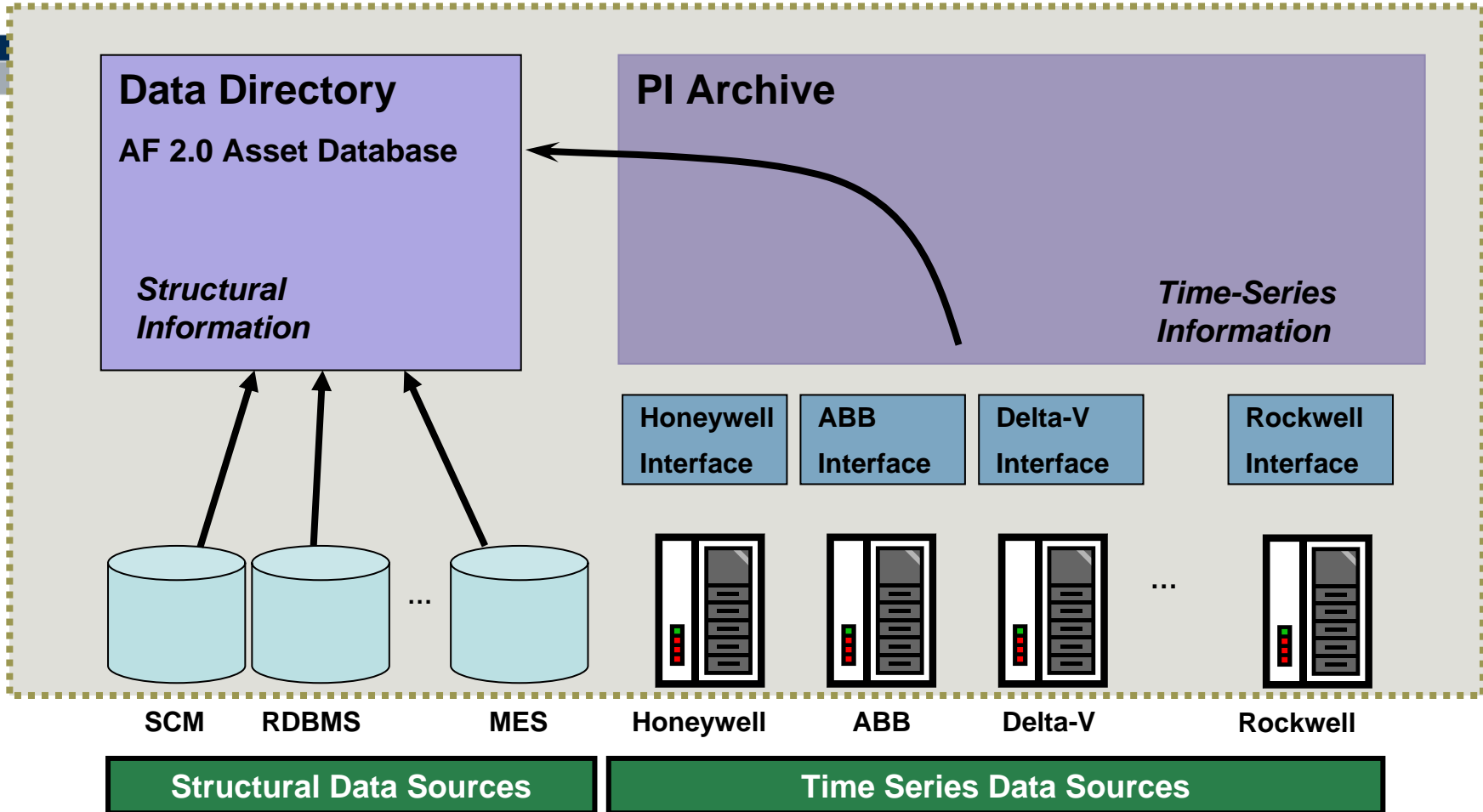
The best of PI MDB and PI AF 1.x combined
... and a lot more!



Why tree structure?

- Structure is *your* knowledge applied to *your* data
- Structure helps you:
 - Keep track of your assets and data
 - Store your domain expertise
 - Rapidly build applications and displays
 - Find information in user-friendly way

AF 2.x: Not Bound to PI Data



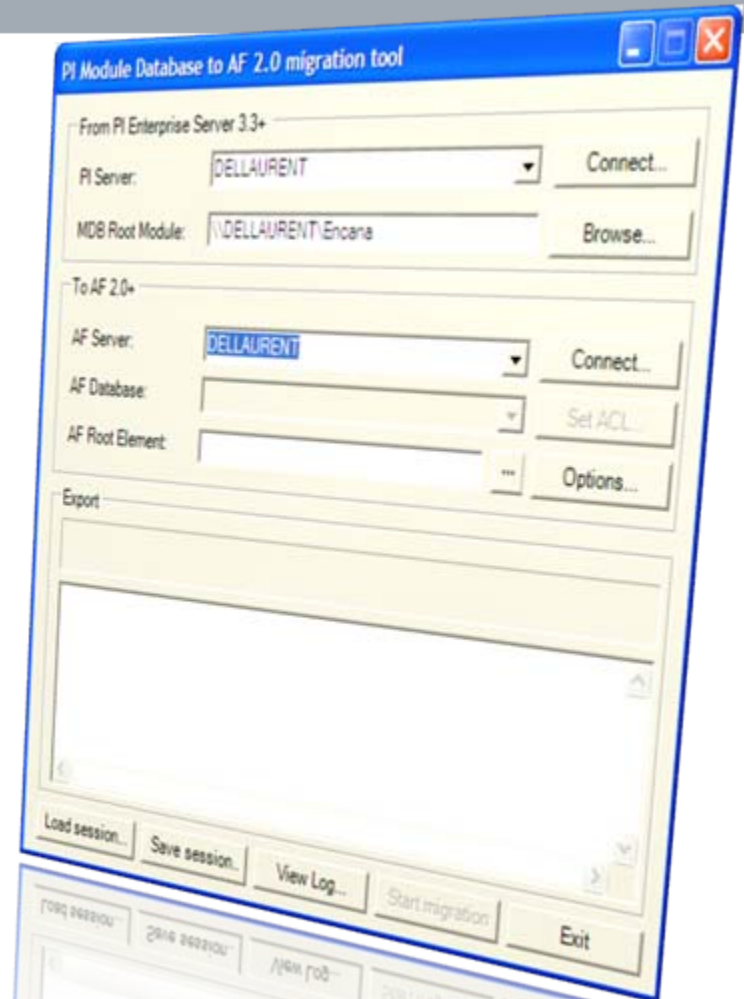
AF upgrade utility

From AF 1.x
To AF 2.0



Migration from PI MDB

From PI MDB
To AF 2.0



PI Notifications

The PI System

The Server

Windows Server 2003
SQL Server 2005

PI Archive

AF Context Database

Real-Time Interfaces

RLINK

Data Access

MCN HealthMonitor

The Analytics

Windows Server 2003
Visual Studio.NET

PI Alarm

RtAlerts

Performance Eq.

PI Totalizer

PI ACE

Real Time SQC

RtReports

Sigmafine

The Visuals

The PI System

The Server

Windows Server 2003
SQL Server 2005

PI Archive

AF Context Database

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PI Notifications

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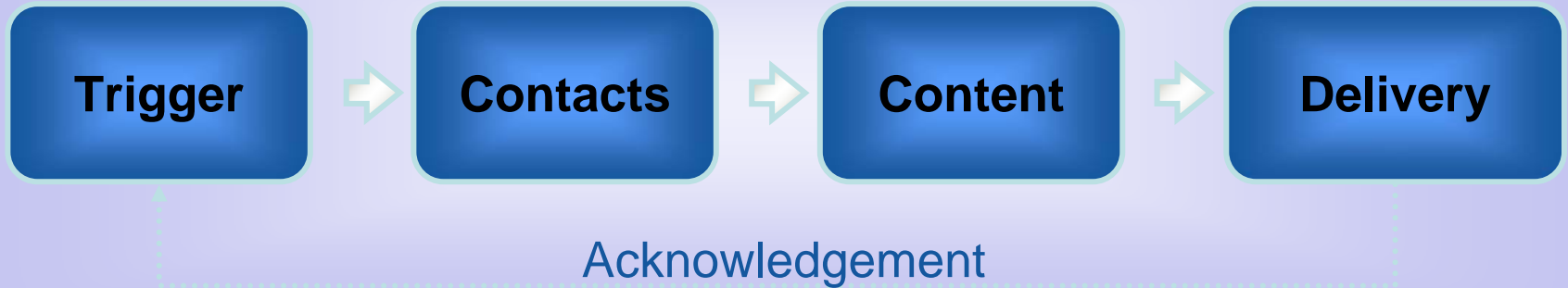
The Visuals

PI Notifications

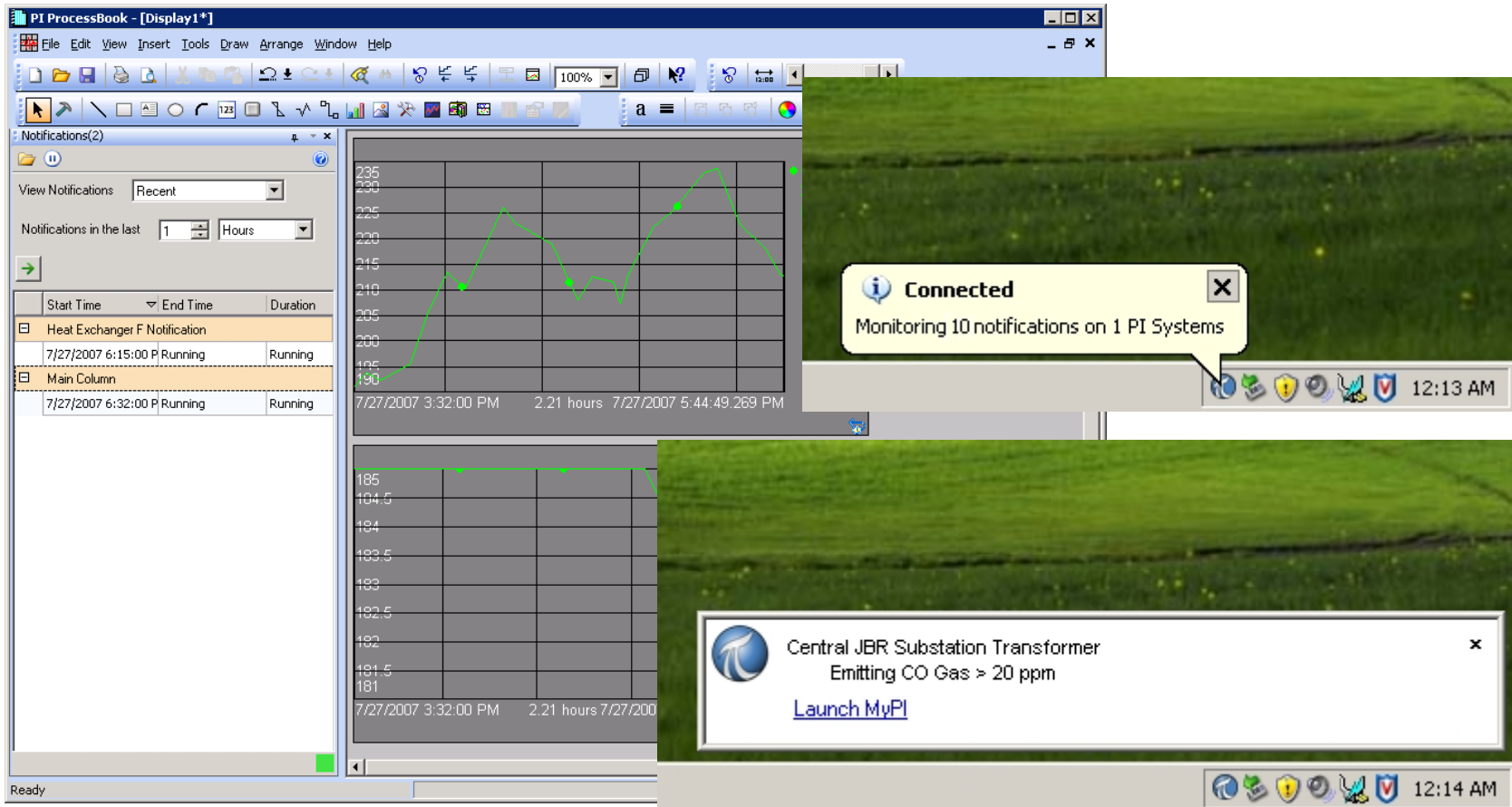
- A new alerting paradigm from OSIsoft
 - Historized alerting
 - Highly available scheduling
 - Escalation
 - Extensible delivery
 - Integration with OSI client tools

PI Notification

Notification Process



Visualization for PI Notifications



Platform Releases

- PR 1 = High Availability (January 2007)
- Bridge Release (Q1 2008)
 - Introduce AF 2.0 as infrastructure
 - Initial PI Notifications release
 - UI enhancements, MOSS adoption
 - Server throughput, HA, and security improvements
- PR 2 = Data Directory and Notifications + HA
 - Visualization of AF 2.0 metadata
 - Closer UI integration with PI Notifications
- PR 3 = Enterprise Data Access and Analysis

Any Questions?

Thank you!