What's New with High Availability in the PI System

Presented by **Jay Lakumb**, Product Manager, OSIsoft

Charlie Henze, Software Engineering Group Leader, OSIsoft

Denis Vacher, Software Engineering Group Leader, OSIsoft

How to deal with the inevitable

- **Unplanned Downtime**
  - Power failures
  - Network failures
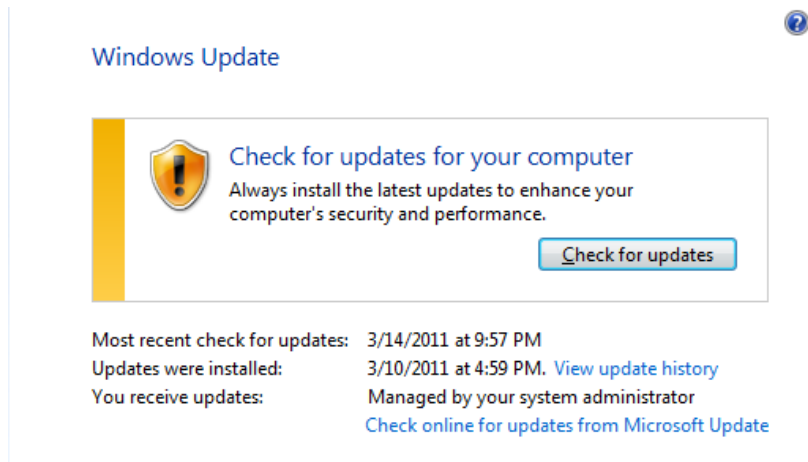 - Software failures
  - Hardware failures
- **Planned Downtime**
  - Windows Updates ("Patch Tuesday")
  - Software installation/upgrades
  - Hardware installation/upgrades
- **Disaster Recovery**

- **Risks!**
  - **No access to data**
  - **Loss of data**

Windows Update

Check for updates for your computer
Always install the latest updates to enhance your computer's security and performance.

Check for updates

Most recent check for updates: 3/14/2011 at 9:57 PM
Updates were installed: 3/10/2011 at 4:59 PM. View update history
You receive updates: Managed by your system administrator
Check online for updates from Microsoft Update

High Availability makes it easy to

- **Mitigate risk**
  - Eliminates single points of failure
  - Protects against potential data loss
- **Achieve higher uptime**
  - Handles unplanned or planned downtime
  - 24x7 access to the PI System

- **Provide higher quality of service**
  - Scales out with multiple nodes
  - Load distribution
  - Geographic distribution
- **Reduce TCO**
  - Simple configuration and administration
  - Automatic, hands free failover for PI Server

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High Availability in action

HA PI Collective

HA PI Interfaces

PIBufSS

PIBufSS
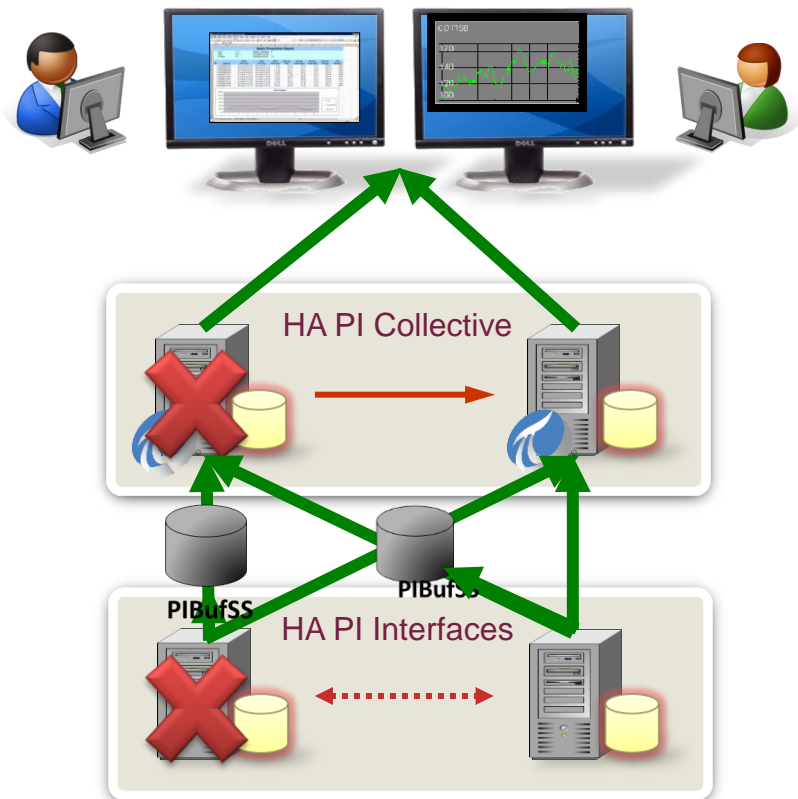
HA PI Clients Servers
SQL
SP/IIS
PI WebParts
PI DataLink Server

SQL
SP/IIS
PI WebParts
PI DataLink Server

HA PI Data Access Servers
SQL
IIS
PI OLEDB
PI Web Services

SQL
IIS
PI OLEDB
PI Web Services

HA PI AF Servers
AF
SQL

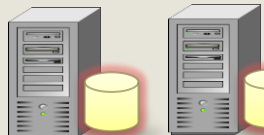AF
SQL

HA PI Servers

HA PI Analytics Servers
PI ACE
PI ACE

HA PI Notifications Servers

HA PI Interfaces

PI System Products with High Availability

- **PI Interfaces** – most support failover

- **PI Server** – built into PI Data Archive, PI Asset Framework

- **PI Analytics** – supported in PI ACE, PI Performance Equations, PI Totalizers, PI Real-time Statistical Quality Control

- **PI Notifications** – since initial release

- **PI Data Access** – PI OLEDB with Microsoft SQL Server (Standard or Enterprise), PI Web Services with Microsoft IIS

- **PI Clients** – PI WebParts with Microsoft SharePoint

COLLECT HISTORIZE FIND ANALYZE DELIVER VISUALIZE

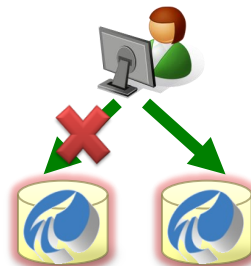# Features and Benefits of High Availability
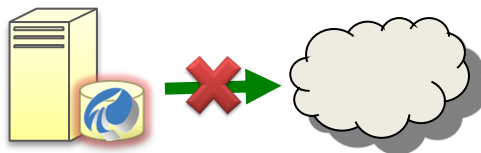
- **Replication** – easy to reproduce

- **Redundancy** – no single point of failure

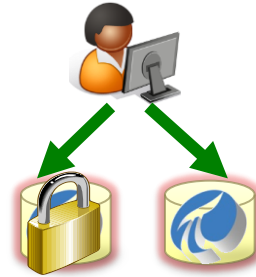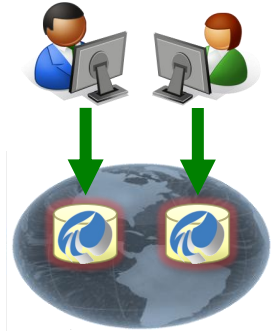- **Failover** – seamlessly switch over
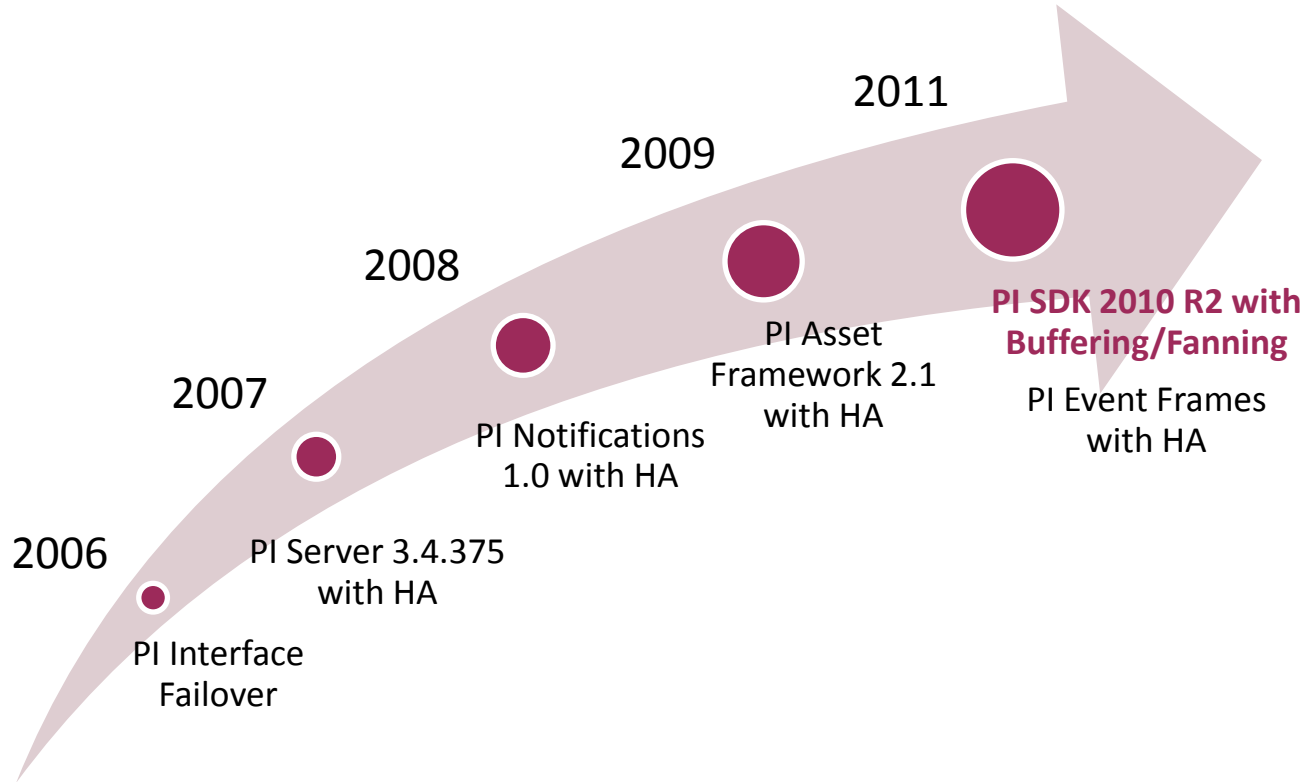
- **Buffering** – no data loss

More Features and Benefits

- **Distribution** – fast performance for all users

- **Security** – ensures your data is safe

- **Disaster recovery** – continuity, no matter what

Timeline for High Availability

2011

2009

2008

2007

2006

PI SDK 2010 R2 with Buffering/Fanning

PI Asset Framework 2.1 with HA

PI Notifications 1.0 with HA

PI Server 3.4.375 with HA

PI Interface Failover

PI Event Frames with HA

What's New with High Availability

- **PI SDK 2010 R2**
  - **Fanning**: Write the same data to HA PI Collective
  - **Buffering**: Queue data when disconnected from PI Server
  - Similar to PI API Buffering/Fanning
  - PI Clients, PI Data Access, and Custom PI SDK applications
  - For example manual entry applications, custom interfaces
  - Release in Q2

Demos

- Fanning/Buffering in PI Clients and
  PI Data Access products using PI SDK 2010 R2

Comparing technologies

- Microsoft Cluster Service
- **Virtualization Software**
- **High Availability PI System**

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Additional Resources

- **OSIsoft PI System Virtualization & High Availability (HA) - Complementary & Contrasting Technical Approaches to HA** presentation at UC 2010 by Corning, Inc. at osisoft.com (http://bit.ly/UC2010_HA)

- **High Availability and Virtualization: Even Better Together** webinar on OSIsoft vCampus (http://bit.ly/vCampus2009_HA)

- **OSIsoft High Availability Platform** whitepaper at osisoft.com (http://bit.ly/HA_WP)

- High Availability User Guides on Tech Support site

- PI System Manager II Training course

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Next Steps

- **Perform a risk analysis for potential failures**
- **Determine requirements for uptime and data integrity**
- Review available resources
- Plan your system architecture
- Upgrade your PI System to High Availability
- Contact Tech Support (or CoE) for help!

Key Takeaways

- High Availability is built into the full PI System infrastructure
- HA helps minimize risk of data loss and maximize data availability
- HA is insurance against unplanned or planned outages
- HA is an important part of a good disaster recovery plan
- **HA builds trust with users – PI System is there all the time**

Thank you

Turning **insight** into **action**.