Development Roadmap

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What is a Roadmap?

- From American Heritage Dictionary:
  - "A map, especially one for motorists, showing and designating the roads of a region."
  - "A set of guidelines, instructions, or explanations."

Technology we Adopted

- DEC VAX
- Windows 3.11 (16-bit)
- Visual Basic for Applications (VBA)
- Windows NT and UNIX
- OPC

Technology we Avoided

- DOS
- Macintosh
- “Dial-up” PI API
- Hardware emulation
- IPX networking
- PI3 on VMS
- Push Technology

OSIsoft Roadmap

- Preparing for the Enterprise
  - Security
  - Remote Management
  - Fault Tolerance
  - Replication
- Current Product Highlights

Preparing for the Enterprise

- Deploying a system throughout a corporation is what adds value
- NOT federation of all data into a single pool
- Best to think of an enterprise as a bunch of separate companies

What does “Enterprise” *really* mean?

Enterprise Software Mindset

- Deploy easily from one installation to another
- Be centrally or remotely maintained
- Expose performance information so that software health can be monitored
- Deliver usage statistics for auditing and licensing purposes
- Have a useful presence in appropriate user environments and transition between them
- Deploy easily to the desktop
- Integrate seamlessly with existing security models
- Have an appropriate roadmap that adopts appropriate technology from OSIsoft, Microsoft, or others as it emerges
- Have a toolkit
- Store, replicate, or roll-up important information to a central server
- Apply to more than just real-time data
- Be scalable enough
- Fits with a Service-Oriented Architecture (SOA)

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Enterprise Security

- Secure access to Windows and PI
- Secure access to the network
- Electronic signature (ESIG)
- Deliberately obscure data
  - Example: purchase a subsidiary that is not allowed to share data with existing sites

Windows Integrated Login

- Login to Windows domain == Login to PI
  - includes Windows domain groups
  - usernames written to PI Audit Database will be Windows names
- Likely include native Windows ACLs
  - you can be specific on allowing and disallowing access to data

Windows Integrated Login

- Still need to determine which domain users can be PI users
- We will not force sites to adopt Windows security
  - choice at install/upgrade time
  - identical to Microsoft SQL Server

Windows Integrated Login

- Doing very well right now with PItrust
  - Mapping Windows user to like-named PI user is very powerful
- Newest PI SDK-based applications use this:
  - PI SMT 3.0
  - ProcessBook 3.0
  - Datalink 3.0

Securing a PI Server

- White Paper:
  - "PI Server Security Best Practices"
  - http://support.osisoft.com/piserver
- EPRI Report on PI Security
  - Independent audit performed by security firm
  - Most concerns addressed by locking down PI files
    - adding this to PI Server installation

Securing Access to the Network

- Microsoft Active Directory
  - Windows 2000 Server and later
  - replaces Windows NT 4.0 Domain Controller

Security APIs

- PI uses Win32 API routines:
  - PI SDK obtains logged-in user credentials
  - PI Server validates them against Domain
- Works against Windows NT 4.0 domains and Active Directory
- does NOT work for LDAP-based network operating systems

Securing Access to the Network

- LDAP-based systems
  - "Lightweight Directory Access Protocol"
  - Enables communication with more Network Operating Systems (NOS)

Lightweight Directory Access Protocol

- Generic API for communicating with security databases
- Used natively by Novell
  - Seems to be the leading Network Operating System (NOS) at SAP sites
- Option for Microsoft Active Directory

Microsoft ADAM

- "Active Directory Application Mode"
  - "private" implementation of Active Directory
  - specific to application, not computer
  - replicates to other computers
  - cache for more than user database

Electronic Signature (ESIG)

- Emulated by re-prompting for password, writing note to string tag
- Strict definition:
  - digital certificate uniquely defining user
  - name of operation being performed
  - checksum on data being signed
  - notification upon retrieval if data have been changed
- Support for multiple ESIGs required

Licensing

- Lack of license controls is a problem with:
  - software bundles
  - piracy
  - accidental violations
  - change in licensed features requires new download
- Licenses will assist with your internal software distributions

Licensing

- Server features
- Client application usage
- Interface connectivity
- License Reporting

Why no licenses until now?

- Needs unique machine signature
- Needs Internet communication with OSIsoft
- Needs accurate customer database
- We must make this unobtrusive for you

Installation

- OSIsoft focus is on bundles
- Single, integrated installation kit
  - model is MS Office install
- License controls enable bundling

System Management Server (SMS)

- Manages enterprise software distributions
  - Place install kit on SMS Server
  - Clients made aware of new kits
    - “Can have” vs. “Must have”
- SMS System administrator can read versions from clients

System Management Server

- Supports “silent” installation
- How to handle (inevitable) reboot?
  - Forced
  - Prompt user at next login
    - no support by SMS
- OSIsoft will provide “pre-install” kit

OSIsoft Roadmap

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  - ***Remote Management***
  - Fault Tolerance
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- Current Product Highlights

Remote Management Initiative

- Centralized management of PI Servers ***and interfaces***
- System Management Tools 3.0 represent ***considerable*** progress
- Objectives:
  - close whatever gap remains
  - No on-site PI System Manager

Remote Management Initiative

- Manage PI Servers, interface nodes and interfaces remotely
- Provide access to diagnostics
- On-line backup
  - Windows Volume Shadow Services (VSS)

OSIsoft Roadmap

- Preparing for the Enterprise
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  - Remote Management
  - ***Fault Tolerance***
  - ***Replication***
- Current Product Highlights

Fault Tolerance Initiative

- Objective: No data loss
- Guaranteed delivery of data
  - from remote OSIsoft interface
  - to PI Server archive file
- Currently exposed when data are in memory-based caches
- Approach:
  - interface node to hold data until PI Server confirms flush to archive

Replication

- Wide spectrum of models exist
  - Hot Spare through Server “Farm”
- Two through “n” partners
- Clusters vs. Wide-Area Partners
- Point/Module Edits
- High rates of incoming data
  - Perhaps solution is with interface nodes?

OSIsoft Roadmap

- Preparing for the Enterprise
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  - Remote Management
  - Fault Tolerance
  - Replication
- *Current Product Highlights*

Current Product Highlights

- BatchView
- Analysis Framework
- ProcessPoint
- Technical Support Website

OSIsoft Cycling

- Maximum heart rate
- Simple formula

$HR_{max} = 220 - Age$

Maximum Heart Rate

Bike Ride Search

Select

Find: All Rides

Include: Riding Ridden All Rides

Attributes

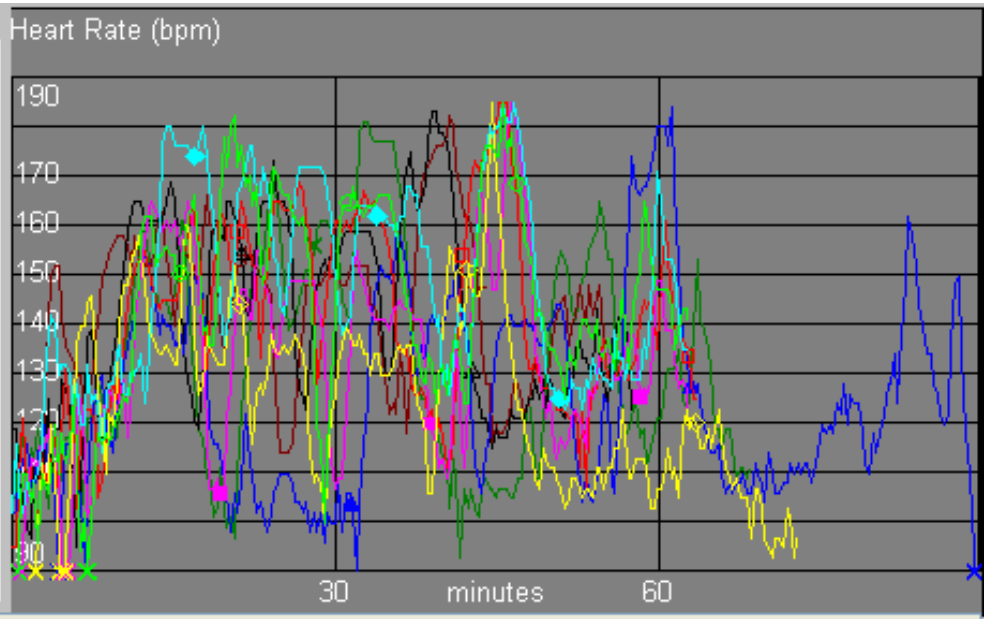
Ride Name: short*

Filter

'heart rate'>180

For Period: Any Time and

Search



	Ride ID	♂♀	Start Time	Ride Name	Distance	Duration	Ride HR Max	HR avg
○	04TH078	♂	3/18/2004 11:40:00 AM	Short ride	11.6 mi	01:02:47	185	143.4
◆	04TH015	♂	1/15/2004 12:21:00 PM	Short ride	11.7 mi	01:02:53	185	148.0
◇	03FR346	♂	12/12/2003 11:47:00 AM	Short ride	11.5 mi	01:12:58	185	122.4
■	03WE309	♂	11/5/2003 12:04:00 PM	Short ride	11.5 mi	01:02:48	185	133.9
□	03FR255	♂	9/12/2003 11:40:00 AM	Short ride	11.5 mi	01:03:36	185	140.9
▲	03TU336	♂	12/2/2003 12:08:00 PM	Short ride	11.6 mi	01:30:04	184	125.3
△	03WE274	♂	10/1/2003 12:15:00 PM	Short ride	11.4 mi	00:57:43	183	141.6
+	04WE063	♂	3/3/2004 12:02:00 PM	Short ride	11.5 mi	00:55:29	182	140.2
×	03FR206	♂	7/25/2003 11:44:00 AM	Short ride	11.4 mi	01:08:30	181	132.2

Fastest Ride

Bike Ride Search

Select

Find: All Rides

Include: Riding Ridden All Rides

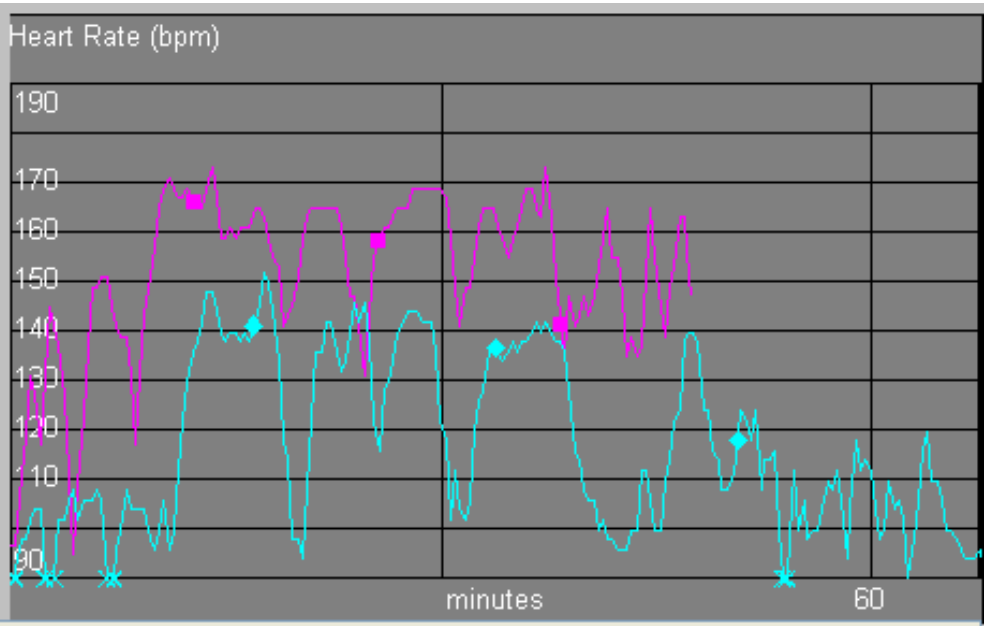
Attributes

Ride Name: short*

Filter

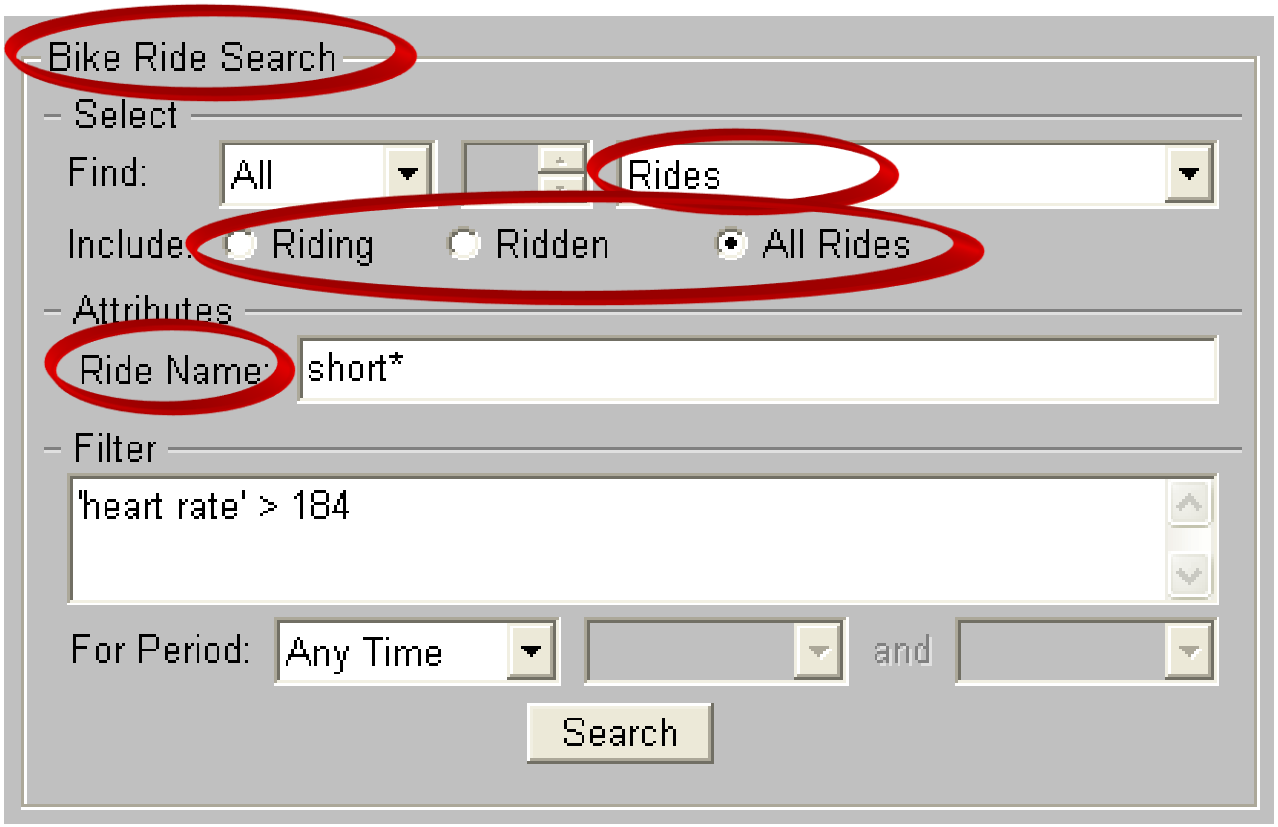
For Period: and

Search



Ride ID	Start Time	Ride Name	Distance	Duration	Ride HR Max	HR avg
03MO237	8/25/2003 12:15:00 PM	Short ride	11.2 mi	01:01:54	178	135.1
03WE225	8/13/2003 11:56:00 AM	Short ride	11.5 mi	01:07:44	152	116.6
03MO216	8/4/2003 11:53:00 AM	Short ride	11.6 mi	00:56:37	180	140.5
03FR213	8/1/2003 12:09:00 PM	Short ride	11.4 mi	00:47:27	173	152.0

PI BatchView – Custom Naming



A Batch Is…

An event that has a start and an end.

- Traditional batch industries **(Lot #)**
- Discrete manufacturing **(Widgets)**
- Fixed time periods **(Day, Shift)**
- Equipment startups and shutdowns
- Downtime, excursion events
- Bike rides

Custom Naming lets you decide the terminology of these events

Analysis Framework (AF) 1.0

- Released!
- Environment for building models in order to perform analyses on them
- Infrastructure of Sigmafine 4.0

See Analysis Framework

- Presentations
  - Sigmafine 4.0
  - Sisco
  - RtAnalytics
- Demo Table

ProcessPoint role within RtPM

- Real-time
  - Being able to evaluate information
    - Quickly
    - Over any timeframe
    - ProcessPoint supports current and historical intent
- Performance
  - Actual vs. intent
    - PI supplies the actual
    - ProcessPoint supplies the intent
- Management
  - Actionable data
    - Put into context, data can easily drive decisions, action
    - ProcessPoint supplies context of “what should happen”

ProcessPoint Demonstration

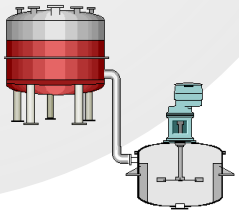
Research & Development
- ProcessPoint

Process Engineering
- PI SQC
- PI DataLink

Material Receipt
- RtPortal
- ProcessPoint WebParts

Quality Assurance
- Batch Data Entry
- RtReports

Manufacturing
- AlarmView
- ProcessBook
- BatchView



New Techsupport Website

- New look and feel
- On demand product downloads
- One login to access all info
- Google search
  - Solutions, Punchlists, Support Web
- Restricted to customers on TSA
- Available this summer

TECH SUPPORT SALES TRAINING DEVNET OSISOFT STORE SEARCH

Support Features | Products | Docs and Downloads | Contact Technical Support

Technical Support Home

My profile [clarissa@osisoft.com]

Release Announcements

- PI Network Manager 3.3.362.63 patch for UNIX fixes pinetmgr crash
- PI BatchView 3.0.2.3 patch released
- PI BatchView 2.1.1.2 patch released
- ControlMonitor 2.16 released
- PIPE2ACE patch released

More...

Support Bulletins

- PI ProcessBook 2.3 vertical axis scale plotted incorrectly
- PIBaGen crashes during point edits
- PI 2 incompatible with Alpha OpenVMS 7.3
- "Compile error in hidden module" error when starting Microsoft Excel
- "-1h" time expression evaluated incorrectly

More...

What's New In Support

Announcing the New Technical Support Site
We're proud to offer the following new features:

- New Download Center, your one-stop destination for docs, downloads, and utilities
- With a single password, view and download all the software licensed to your sites
- System Manager resources - everything a PI manager needs to support the PI system
- System Planning page for expert guidance in deploying PI solutions
- New Knowledge Base center - quickly search AnswerBooks, Punchlist Items, Documentation and the OSIsoft Technical Support Site
- What's New in Support - the latest news from the OSIsoft Technical Support Team

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Email: techsupport@osisoft.com

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PI SDK

Current Version: 1.3.1.237	Release Date: 16-Dec-2004

What is the PI-SDK?

The PI Software Development Kit (PI-SDK) is a programming tool providing access to PI servers. The software consists of an ActiveX in-process server, an ActiveX control, and supporting code libraries. The kit comes with on-line documentation, example code, various support files, and tools.

The PI-SDK runs on 32-bit Windows platforms and provides access to servers on all PI platforms. Based on Microsoft's Component Object Model (COM), the PI-SDK can be used with most WIN32 programming environments. The kit is particularly well integrated with Microsoft Visual Basic providing rapid development and deployment of PI applications.

The PI-SDK provides an object-oriented approach to program interaction with PI Systems. It delivers a hierarchical model of objects and collections representing the components of PI servers. This approach provides for intuitive and efficient access.

PI SDK Information

About PI SDK
System Requirements
How is the PI SDK installed?
How does the PI SDK communicate with PI servers?
Examples
Active X Controls

PI SDK Resources

Product Executables (1)
User Manuals (1)
Release Notes (1)
Sample Code - .NET (3)
Sample Code - VB (9)
Sample Code - C++ (4)
Known Issues
Enhancements
Support Bulletins (3)

Contact techsupport@OSIsoft

Email: techsupport@osisoft.com
Phone: (510) 297-5828

Download Center

Filter Criteria: Product: PI SDK Content: Sample Code - .NET

3 Downloads(s) Found

1. **C#APISnap**
   This application demonstrates how to use the PISDK from Visual Studio.Net using C#. It displays a dialog box with a text box for a tag name. One button retrieves and displays the snapshot value for the tag entered. Another button brings up theTag Search Dialog for filling in the text box.

   Version: **Content:** Sample Code - .NET
   Platform: **Size:** 35840 Kb

2. **MDBBDBEventsCSharp**
   This example shows how to sign up for and retrieve events for PIModule, PIBatch, PIUnitBatch, and PITransferRecord database changes from C#.

   Version: **Content:** Sample Code - .NET
   Platform: **Size:** 211968 Kb

3. **MDBBDBEventsVBNet**
   This example shows how to sign up for and retrieve events for PIModule, PIBatch, PIUnitBatch, and PITransferRecord database changes from VisualBasic.NET.

   Version: **Content:** Sample Code - .NET
   Platform: **Size:** 210432 Kb

Known Issues - SDK - current version 1.3.1.237

Product: SDK Version: 1.3.1.237 Module: All Modules

Expand All 62 rows found.

	Issue No.	Module	Found In Version	Fixed In Version	Targeted In Version	Summary
+	5542OSI8	Data	1.3.1.237	1.3.1.240	(Fixed)	EventPipe.RemoveSignUp crashed when passed an ID that was...
+	5537OSI8	PITimeServer	1.3.1.237	(Targeted)	1.3.1p1	Memory corruption in PITimeZoneInfos possible in...
+	5497OSI8	Help	1.3.1.237	(Targeted)	1.3.2b	Some pictures are not shown in sdkintro.doc
+	5492OSI8	PITimeServer	1.3.1.237	(Targeted)	1.3.1p1	0 UTC time may not display properly for loaded time zones
-	5446OSI8	n/a	1.3.1.237	(Targeted)	1.3.2b	ServerTime adjustment for PI2 nodes after DST

Summary:

ServerTime adjustment for PI2 nodes after DST

Description:

Obtaining servertime from a PI2 server that does not change after DST changes may be off by 1 hour.

Workaround:

n/a

+	5416OSI8	PITimeServer	1.3.1.237	1.3.1.240	(Fixed)	Mixing locale specific strings and localeindependent works...
+	5376OSI8	Data	1.3.1.237	(Targeted)	1.3.1p1	Eventpipe # of events retrieved / fetch is fixed at 1000. ...
+	5369OSI8	n/a	1.3.1.237	1.3.1.240	(Fixed)	Accessing ListData .Parent after releasing source PointList...
+	5344OSI8	PITimeServer	1.3.1.237	1.3.1.240	(Fixed)	ParseTimeStepString does not parse German time strings
+	5336OSI8	n/a	1.3.1.237	1.3.1.240	(Fixed)	Enumerations missing from the PIConstants collection

Early Adopters Programs

- RtReports
- Sigmafine
- PI3
- RtPortal

Now what?

- Hear breakout and demo stage talks
- Visit our demo room
  - Staffed by developers
- Talk to us!

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