

# Create Applications to monitor PI Analysis Service

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# What are we going to do?

## Live Coding against PI Analysis Service!

# What does it mean?

No laptop needed, just follow along

Discussion form – please feel free to ask questions

# What problem are we going to solve?

Identify couple of common challenges

Explore new ways to overcome those

# “All my analyses are running, how do I know the analyses evaluate good values?”

*Everything is “green”, but what’s actually going on?*

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**“All my analyses are running, but some outputs don’t have current values”**

*When did those analyses trigger last time?  
Are some of them lagging behind?*



**“Are there any analyses that skip evaluations?”**

*How can I easily find which ones?  
How often do those analyses trigger?*





**“I have some analyses in error – which is OK – but how do I know that all the errors are the expected ones?”**

*How to find analyses by their runtime error text?*



Getting answers to those, and  
similar questions has been  
quite a challenge...  
**until now!**

**2018 SP2 release of PI Server makes**  
it possible to query analyses *runtime*  
information via **AFSDK**

Let's explore what it means!

Define a **filter**  
query

Define **what** to  
query

Execute via  
AFSDK

*“Include **running** analyses  
with ‘Wind Farm’ in the **path**  
with **average Lag** > 10 s”*

*“Execute programmatically,  
determine offending analyses”*

*“I want to know the analyses  
elements, last lag, average lag,  
and how long it took to evaluate  
the last trigger.”*



# DEMO

A grayscale photograph of a person wearing a VR headset, smiling and holding the headset with both hands. The person is wearing a light-colored button-down shirt. The background is blurred, suggesting an indoor setting.

***AFSDK documentation***

# Live coding exercise #1

Write an AFSDK program in C# to explore running analyses fields

Consider different ways to consume the data

# Live coding exercise #1 recap

New *AFAnalysisService* methods:

- *RuntimeInformationFields*
- *QueryRuntimeInformation*

Retrieved running analyses information in 3 ways:

- 1) As *RuntimeFieldValue* objects
- 2) As user-defined objects
- 3) dynamic/JSON objects



# **Live ~~coding~~ investigation exercise #2**

Explore the running analyses in a database and see if there are any problems

# Live investigation exercise #2 recap

Explored a database to find analyses that...

- 1) evaluate 'Calc Failed', using *lastEvaluationStatus* and *lastEvaluationDetail*
- 2) are lagging, using *lastLag*, *averageTrigger*, *averageElapsed*, *skipCount*
- 3) Have unexpected configuration error, using *statusDetail*

# Live coding exercise #3

Write an application to monitor whether any analysis is falling behind or skipping evaluations



# Live coding exercise #3 recap

Wrote a simple program that queries PI Analysis Service to determine if any analysis appears to be lagging or skipping.

The used fields: *lastLag*, *skipCount*, *lastTriggerTime*

# Performance tip!

Always exclude 'Stopped' analyses if not needed.

# Speakers



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# Questions?

Please wait for  
the **microphone**

State your  
**name & company**



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