

Px.Utils in Practice and Production

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Topics

What is Px.Utils

Px.Utils, Benefits

Production Case, PxGraf

In Development, Px API and Cloud

Dissemination Pipeline

PxWeb, Future Goals and Benefits

Px.Utils

- .NET/C# library.
- Open source, released under PxTools GitHub organization.
- Developed and maintained primarily by Statistics Finland since 2024.
- Served as a nuget library package.
- Reads and processes px files with goals of high performance, ease of use and modularity.
- Metadata reading and building, data reading, computing operations, and validation for databases and px files.

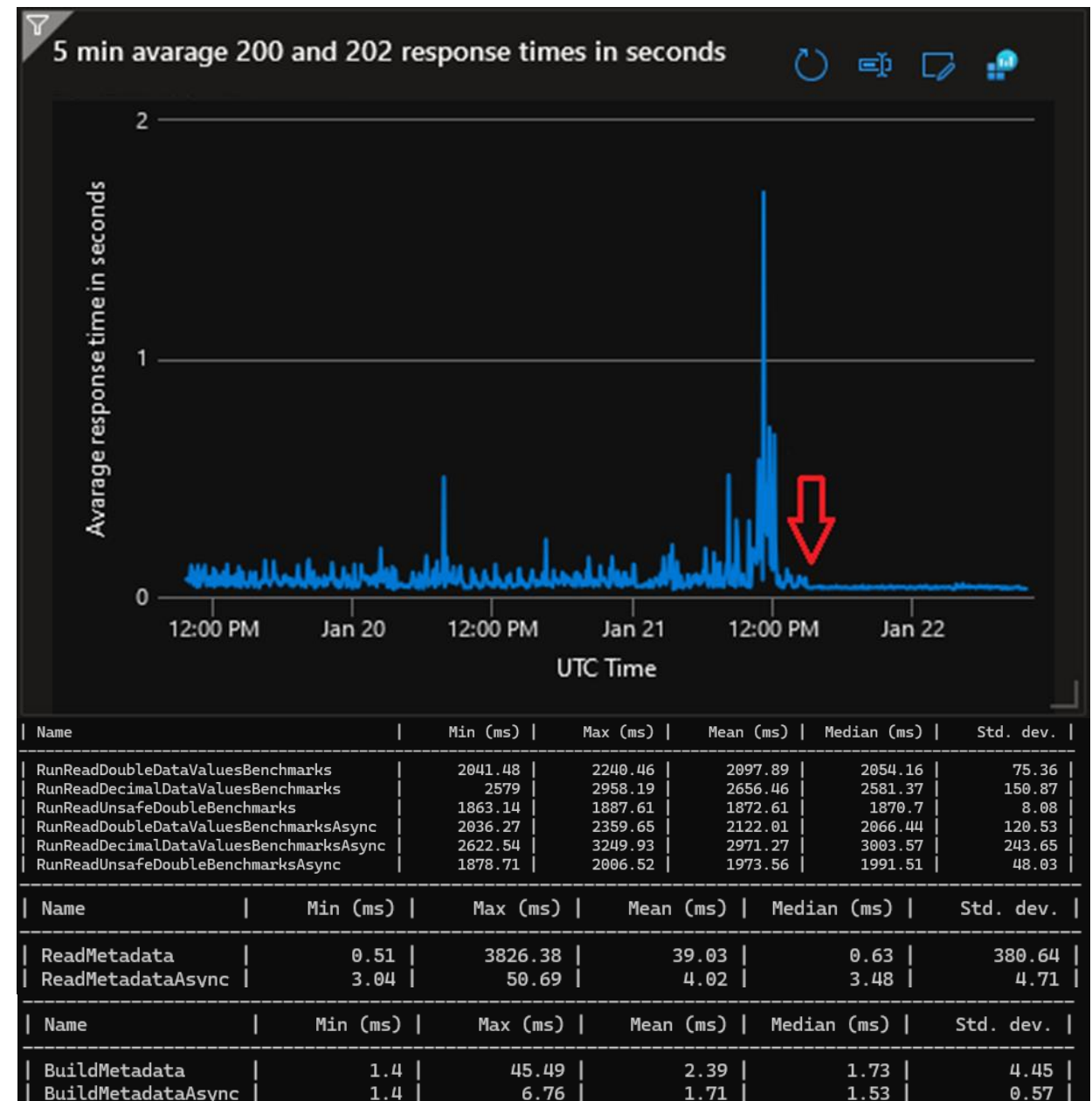
<https://github.com/PxTools/Px.Utils>

<https://www.nuget.org/packages/Px.Utils>



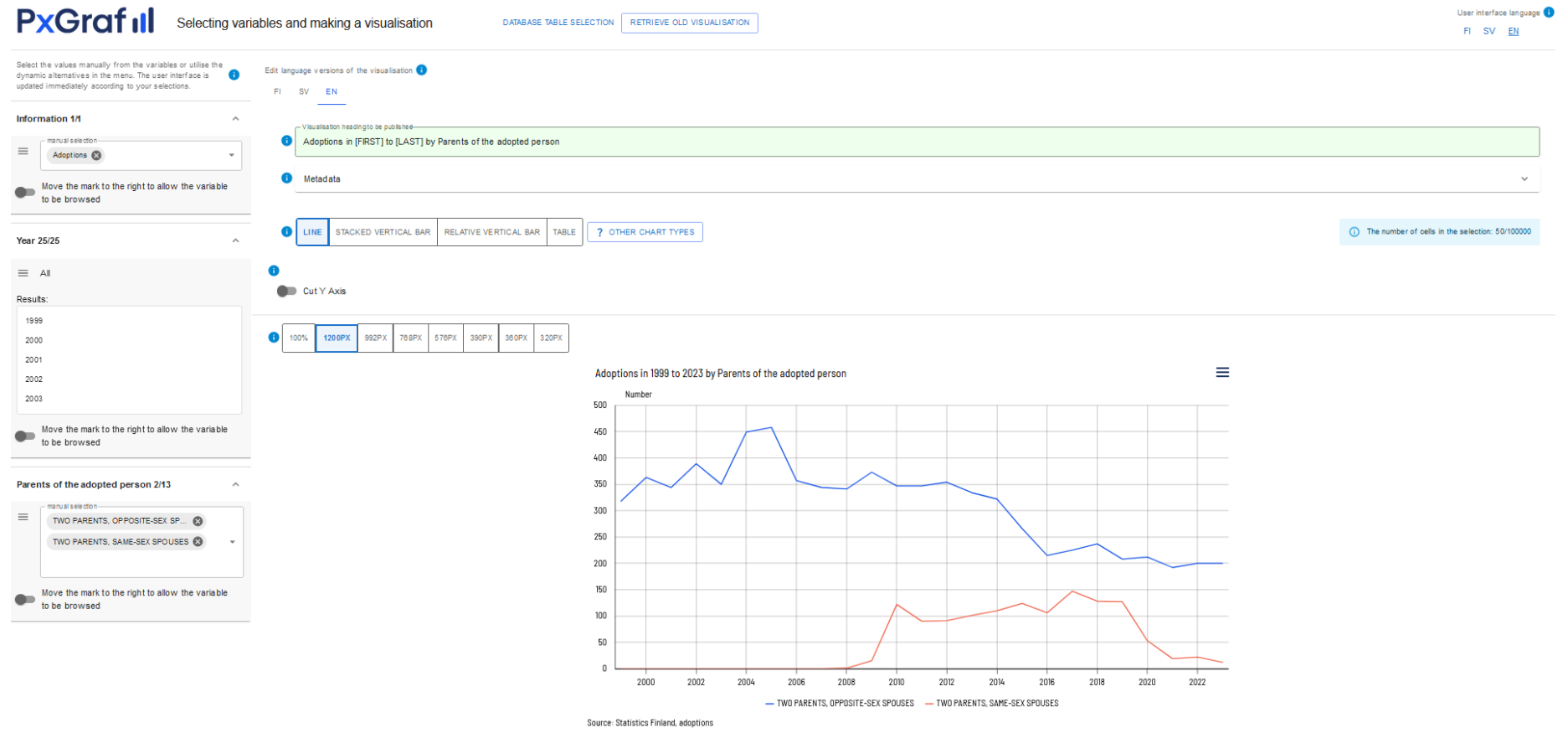
Px.Utils, benefits

- Performance
 - Metadata or data from our largest px files can be received within seconds.
 - Faster and more responsive end products.
- Reliability
 - No reliability issues in production use since introduction.
 - Battle proven by load tests.
- Potential for larger and more complex visualizations.
- Development opportunities
 - Easy integration with cloud services as data source.
 - Richer and more flexible metadata.
 - Modularity.



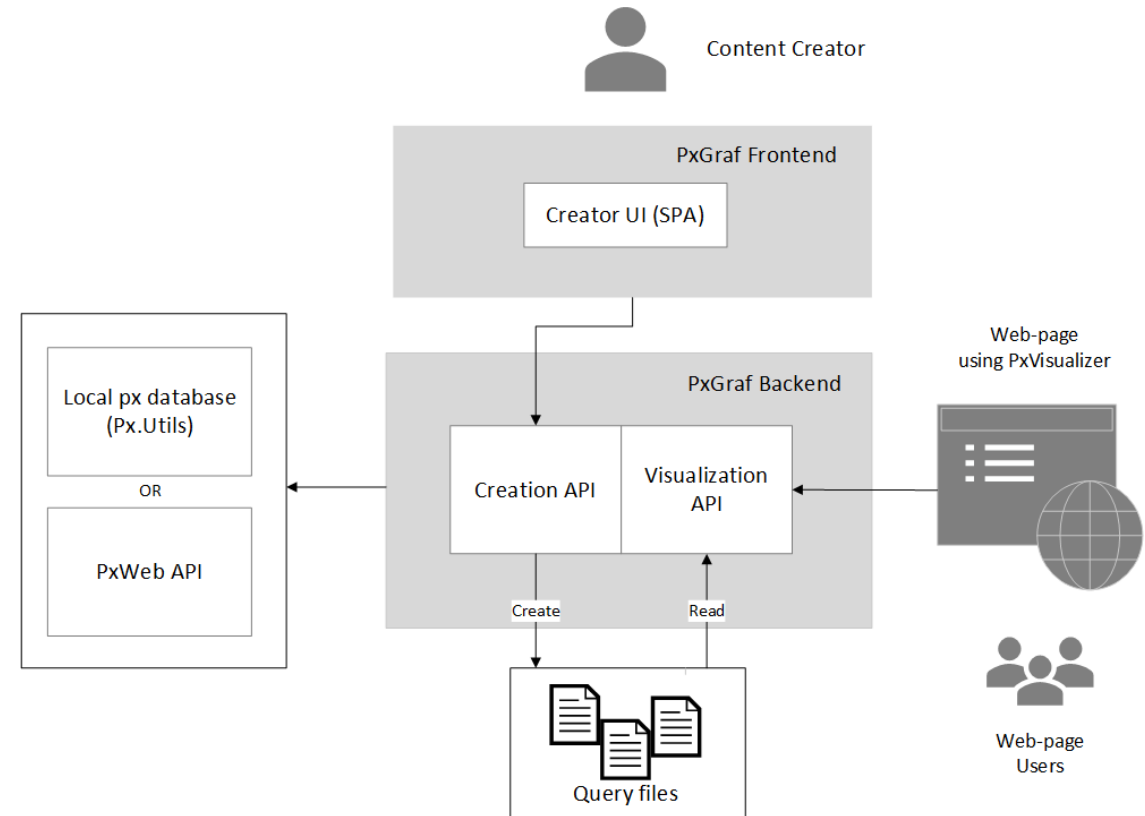
PxGraf

- Statistics Finland, GitHub, open source.
- In production use since 4/2022.
- ASP.NET/React.
- Used to create and display px data visualizations.
- Saves and loads queries.
- Powered by Px.Utils since 2025.
- PxWeb API still supported.
- Slowly being adopted by other organizations (LUKE).



Px.Utils in PxGraf

- Provides the same functionality for the backend as PxWeb did before.
- Px file metadata and data for the Creation API (editor) and Visualization API (web site graphs).
- In planning: provides calculations (virtual values) for the Creation API (sum/subtraction, product and division).
- In production use since January 2025.
 - Significant performance and reliability improvements.
 - Easier future development.
 - More flexible metadata model.
 - Potential for larger and more complex visualizations.



In development solutions

PxApi

- Our open source solution for distributing px file data and metadata for our own services and end-users.
 - Used by search service and cloud dissemination pipeline.
- Metadata API in production since spring 2025.
- Data API in development.
- Px.Utils powered from the get go.
 - Metadata.
 - Data.

Cloud dissemination pipeline

- In development since summer 2025.
- New publishing and dissemination pipeline for px files, on Azure cloud.
- Px.Utils in use for multiple different services and functions:
 - Px file validation.
 - Specific metadata information.
 - Cloud based PxGraf instance.

Px.Utils -> PxWeb

Future goals

PxWeb, powered by Px.Utils

- Integrating Px.Utils to PxWeb has been one of our goals from the very start.
- Regular check ups with SCB developers during early development.
- Perfect time to start integrating Px.Utils to PxWeb is now.
 - Tested in production.
 - Proven benefits.
 - Previous experience.
- Benefits for PxWeb – improved performance, maintainability and more flexible future development opportunities.
- Minimal integration – metadata and data reading functionality.
- Full integration – calculations, validation.
- We need your help! Let's get the ball rolling in the Developers' Workshop, this Friday!



Thank you!